

Seattle Jobs Initiative's Job Trends Report

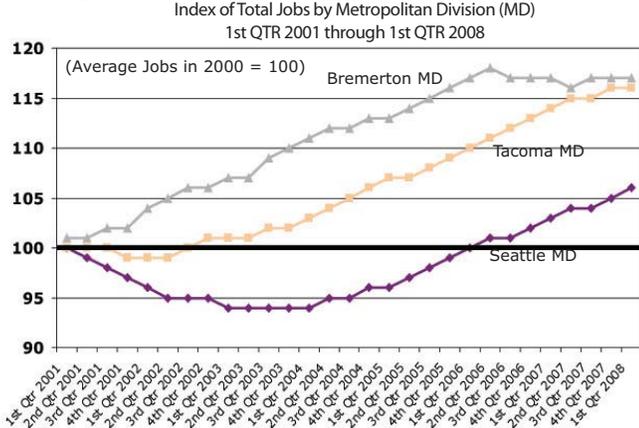
July 2008



Trend Tracker

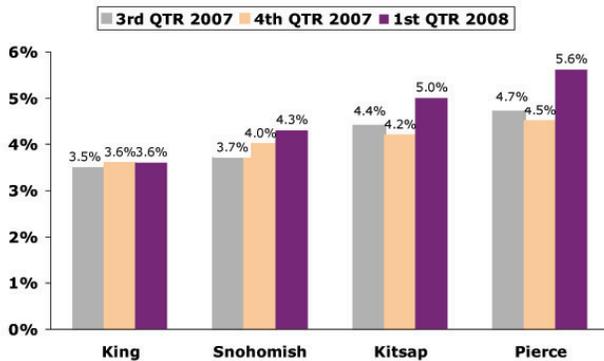
What's changing in the local job market?

Chart 1. While the greater Seattle area* has seen continued positive job growth into 2008, other parts of the region has leveled off.



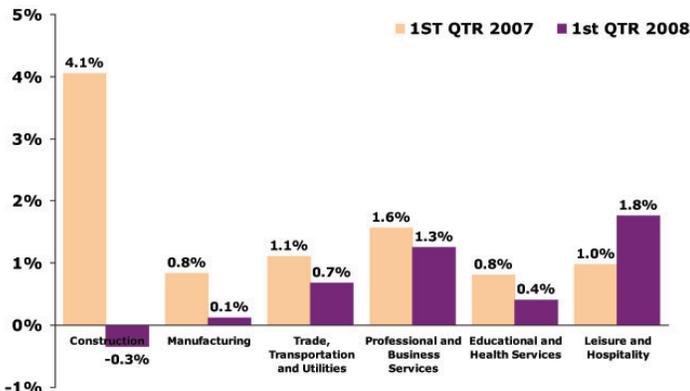
Calculated from seasonally adjusted numbers, Washington State Employment Security Department, Nonagricultural Wage and Salary Workers Employed in Washington State, http://www.workforceexplorer.com/admin/uploadedPublications/3392_industry_seasonal.xls
NOTE: September 2005 Employment was adjusted upward to compensate for a short-term employment decline from the Boeing strike
*Bremerton MD: Kitsap County ; Tacoma MD: Pierce County; Seattle MD: King & Snohomish Counties

Chart 2. Resident Unemployment Rates went up for Snohomish, Pierce and Kitsap counties in the 1st Quarter of 2008, while remaining constant at 3.6% for King County.



Washington State Employment Security Department, Resident Civilian Labor Force and Employment in Washington State, http://www.workforceexplorer.com/admin/uploadedPublications/1886_jaus_historical.xls

Chart 3. Most major regional* industry sectors saw drops in job growth over the last year. Seattle MD Job Growth by Selected Industrial Sectors 1st QTR 2007 & 1st QTR 2008



Calculated from seasonally adjusted numbers, Washington State Employment Security Department, Nonagricultural Wage and Salary Workers Employed in Washington State, http://www.workforceexplorer.com/admin/uploadedPublications/3392_industry_seasonal.xls
*Data shown is for King and Snohomish Counties

Industry Spotlight: Green Jobs

Interest in green issues and sustainability practices has boomed in the Puget Sound region within recent years, foreshadowing what some have called the next industrial revolution¹. This growing green economy is diverse, defined not only by jobs and products, but also major public and private investments, and government policy effecting change in the market. Many current and emergent industries and sectors will be touched by new green innovations and policies, ranging from sustainable agriculture to energy efficiency, and from green building to new and renewable energy resources.

Protecting the environment and promoting economic development are no longer considered mutually exclusive priorities. The two can be coupled in a way that simultaneously creates jobs to help counter the harmful effects of global warming and creates real economic opportunity for individuals to get on pathways toward living wage careers that a green economy will demand. The creation of these pathways requires accessible and applicable training in the skills required for the work ahead.

What is a Green Job?

Green jobs may generally be defined as jobs that have a direct positive impact on the environment. These jobs include a mix of skilled trades and professional jobs in the primary sectors of a clean-energy economy – energy efficiency, renewable energy, and alternative transportation and fuels². Other industries include green building and design, land use planning, sustainable agriculture, waste remediation and conservation.

Green-collar jobs are a subset of all green jobs. These jobs are traditionally blue-collar jobs, concentrated in industries such as construction and manufacturing, and specifically in those green businesses, providing services and products that directly improve environmental quality. **While many will be new occupations, most green collar jobs are existing jobs that may demand new green economy skills.** These jobs pay family-supporting wages and provide good benefits and healthy working conditions³. They are localized, making them harder to move offshore and providing a greater economic ripple effect in local communities⁴. Typically, they are obtainable middle-skill jobs, requiring some education and training beyond a high school diploma but less than a 4-year degree. Most importantly, these are jobs with opportunities for advancement through available skills training and career pathways.

¹ Crai Bower. *Clean technology signals next industrial revolution*. 36th Annual enterpriseSeattle Economic Forecast: The Economics of Clean Technology. January 2004.

² Apollo Alliance. "Green-Collar Jobs: Pathways out of Poverty, Careers in the Clean Energy Economy", 2007.

³ Apollo Alliance, Green For All. 2008. "Green-Collar Jobs in America's Cities."

⁴ Center for American Progress. "Green Jobs by the Numbers". November 6, 2007.

Green Occupations & Industries

The variety of occupations and industries within the green economy is extensive. The current market demand and available workforce for green jobs is largely reflective of their traditional blue-collar counterparts. In essence, the majority of these green jobs are the existing traditional skilled trades jobs, varied only by the possibility for specialization or material use. For instance, a traditional electrician and an electrician working on solar panels differ only in specialized knowledge and skills, but in terms of training and wages, the two are essentially equal. Further, an electrician contracted to work on a non-green project one week may move to a green building retrofit the following week.



EIGHT GREEN SUBSECTORS

By synthesizing information from various sources on the green economy, Seattle Jobs Initiative (SJI) has categorized the growing green economy and its green jobs into eight subsectors:

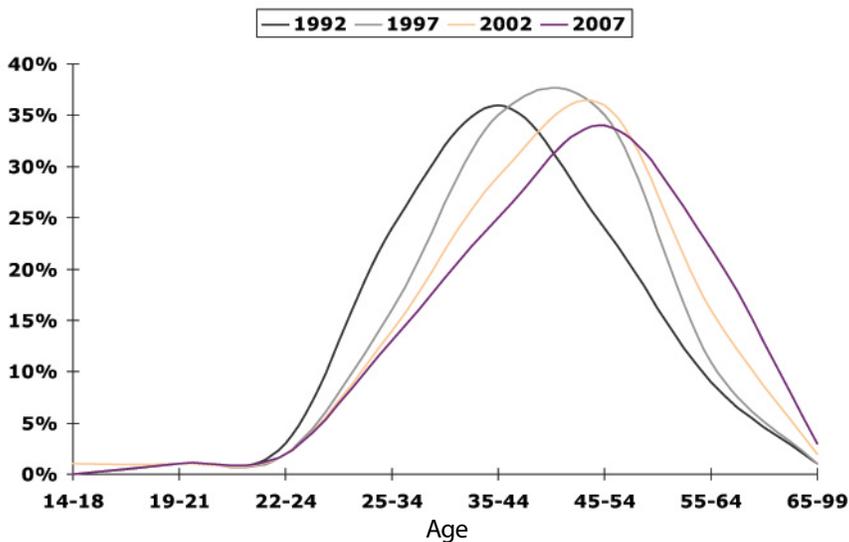
- **Green Building** is the practice of increasing the efficiency with which buildings use resources — energy, water, and materials — while reducing building impacts on human health and the environment through better design, construction, operation, maintenance, and removal. The green building sector employs architects versed in green design to plant operators creating green materials to laborers at green construction sites.
- **Energy Efficiency** is the use of technology that requires less energy to perform the same function – getting more use out of the energy we already create. HVAC engineers, building control technicians, electricians, energy auditors, and insulation workers are only a few of the occupations defining this sector. (See Page 4 for a **Focus on Energy Efficiency**).
- **Renewable Energy** is produced through resources such as sunlight, wind, rain, tides and geothermal heat which may be naturally replenished. Increases in the use of these technologies for energy production will require jobs in manufacturing (solar panels, wind turbines), as well as operators and maintenance technicians to keep these systems running properly and efficiently.
- **Recycling & Waste Management** is the collection, transport, processing, recycling or disposal of waste materials to reduce their effect on human health and the environment and/or to recover resources from them. Waste treatment operators, technicians, and all types of handling positions are required to meet the functions of this subsector.
- **SmartGrid/Smart Energy** can be defined as the improvement of power delivery systems to be more efficient, reliable and safe. Occupations typically associated with this subsector include power engineers and computer technicians to design, manufacture, and provide maintenance for these new systems.
- **Biofuels/Biomass** refers to the creation of fuel sources from chemical or biological materials other than fossil fuels. This industry requires the cultivation of resources such as corn crops to produce ethanol, and therefore employs a host of different occupations – from farmers to process technicians in biodiesel companies.
- **Alternative Transportation** encourages the creation of modes of transportation (electric cars, mass transit, bicycles) that are powered by sources other than depleting fuel sources. Occupations range from technology designers to hybrid automotive maintenance workers.
- **Sustainable Agriculture** encourages practices in plant and animal production that are efficient and sustainable. This subsector employs a variety of occupations – from organic farmers to urban agriculture land use planners to green roof designers.

WORKFORCE DYNAMICS

Estimates predict that investments in the green economy in Washington State could as much as quadruple the number of "green jobs" - from more than 8,000 currently to more than 31,000 by 2020⁵. The industries which contain many of the blue-collar jobs going green - Construction, Manufacturing, Utilities - will be pressed to produce the critical workforce needed for filling the demand of the green economy. These green-collar jobs are the same blue-collar jobs that have been around for decades.

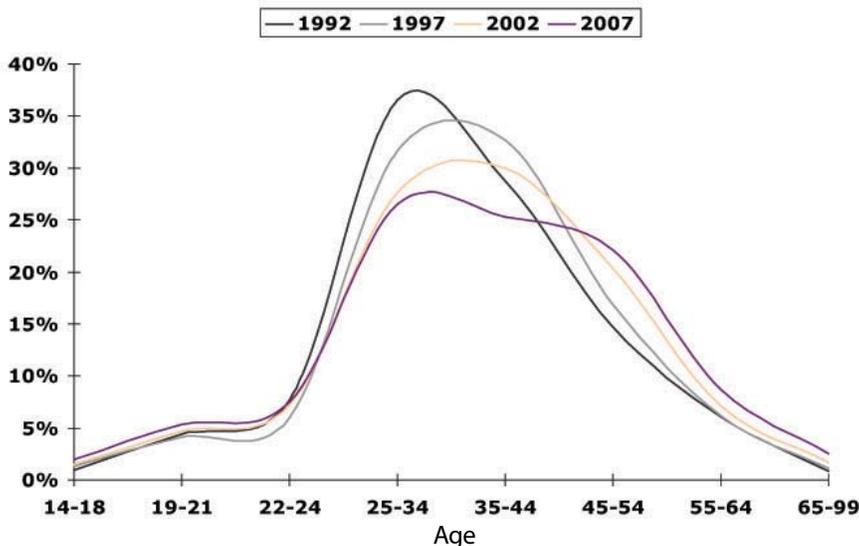
The potential job growth of the green job sectors identified above will therefore likely be checked by the looming labor shortage within these traditional industry sectors in terms of both quantity and quality of available workers. The lack of a skilled workforce is the largest non-technical barrier to the advancement of renewable energy and energy efficiency technologies, according to a 2006 study by the National Renewable Energy Laboratory (NREL)⁶.

Chart 4. Age Distribution of Seattle Area* Utilities Employment



* Seattle Area = Seattle-Tacoma-Bellevue Workforce Development Area
NOTE: Data is 2nd Quarter estimates from each year.
Source: U.S. Census Bureau, Census Bureau, Local Employment Dynamics

Chart 5. Age Distribution of Seattle Area* Construction Employment



* Seattle Area = Seattle-Tacoma-Bellevue Workforce Development Area
NOTE: Data is 2nd Quarter estimates from each year.
Source: U.S. Census Bureau, Census Bureau, Local Employment Dynamics

In terms of quantity, one major reason for the shortage is aging demographics within key trades industries. While Washington State has seen a 62% increase in registered apprentices over the last 2 years, the need to fill positions increasingly vacated by a retiring workforce presents a tough scenario for the trades⁷. As Charts 4-6 illustrate, the majority of these blue-collar workforces are aging out, with a small supply of individuals coming in to fill vacancies once these aging baby boomers retire. For the local utilities industry, 25% of its current workforce is over 55, compared to 12% ten years earlier. Seattle City Light reports that half of its workforce can potentially retire in the next 5 years. At the same time, the percentage of young workers available to fill these positions has shrunk from 19% to 16% over the same time period. Without a balance of workers trained and ready to replace those workers ready to retire, the shortage problem in these trades will continue to grow. ■

⁵ Shirley Skeel. *Number of green jobs in the Pacific Northwest may quadruple.* The Green Report: Supplement to the Puget Sound Business Journal. February 15, 2008.
⁶ R. Margolis and J. Zuboy. "Nontechnical Barriers to Solar Energy Use: Review of Recent Literature" National Renewable Energy Laboratory, 2006.
⁷ Amy Rolph. *State falling short on labor needs in trades, high tech.* Seattle Post-Intelligencer. March 26, 2008.

A GREEN-COLLAR JOB...

- Pays a family-supporting wage
- Provides a career track
- Is good for the planet
- Can be a pathway out of poverty
- Is a local job, and vital to cities and communities
- Is a middle-skill job (requires more than high school but not necessarily a 4-year degree)
- Provides good benefits
- Has healthy working conditions

Source: Green For All, The Apollo Alliance, Center for American Progress



Workforce Dynamics, cont'd

Another contributing factor to the skilled labor shortage is the lack of interest among young people in entering the trades. The shortage is further exacerbated by the decline of vocational training and career education in schools⁸. Still, much of the shortage can be attributed to quality issues, specifically a lack of individuals with job-specific skills, including critical thinking and math. Washington employers continue to report difficulty finding qualified applicants to fill their openings, with the shortage being greatest in those positions requiring some form of post-secondary training^{9,10}, many of which are green jobs.

This perfect storm of shortages in skills, numbers, interest and investment in training, especially with the projected growth in jobs impacted by a booming green economy, will mean a devastating shortfall of workers in just a decade or two¹¹. At the same time, the potential exists to promote policies that are both beneficial to the environment while creating opportunities for individuals to get on pathways towards living wage careers.

⁸ Shirley Skeel. *Number of green jobs in the Pacific Northwest may quadruple*. The Green Report: Supplement to the Puget Sound Business Journal. February 15, 2008.

⁹ Washington State Workforce Education and Training Board. "Washington State Employers' Workforce Training Needs and Practices", 2006.

¹⁰ Washington State Workforce Education and Training Board. "Postsecondary Career & Technical Education Works", 2007.

¹¹ Amy Rolph. *State falling short on labor needs in trades, high tech*. Seattle Post-Intelligencer. March 26, 2008.

FOCUS ON ENERGY EFFICIENCY

Of the many sectors created in the green economy, Energy Efficiency (EE) is considered a major economic and employment driver—a dynamic sector rich in new jobs. As part of a group of subsectors making up Clean Technology¹¹, Energy Efficiency is getting significant attention, both in terms of investment and entrepreneurial interest.^{12,13,14} Behind much of this attention is the fact that as a conservation effort, energy efficiency is the cheapest source of new power. In Seattle, Mayor Nickels' effort to make the city "America's Green Building Capital" focuses on improving energy efficiency in commercial and residential buildings by 20 percent and creating new green collar jobs through investment in energy efficiency.

The EE subsector generally focuses on retrofitting existing buildings that would otherwise not have been improved upon, which may include mechanical, electrical and plumbing upgrades. Retrofitting existing buildings to be more energy efficient includes a variety of skills and jobs.

¹¹ Clean Technology includes the subsectors of Smart grid, Renewable Energy, Energy Efficiency, Biomass, Recycling and Green Design (as identified by Sustainable Business Consulting).

¹² Angel Gonzalez. "Seattle area a new hub for 'clean technology'" Seattle Times. January 2, 2008.

¹³ Crai Bower. Clean Technology signals next industrial revolution, enterpriseSeattle economic forecast supplement to the Puget Sound Business Journal, January 18-24, 2008.

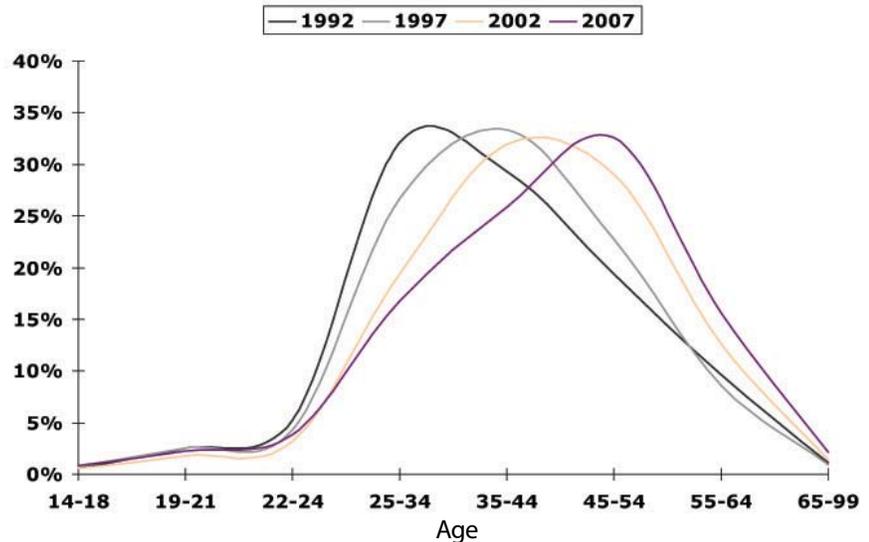
¹⁴ Poised for Profit: How Clean Energy Can Power the Next High-Tech Job Surge in the Northwest. Climate Solutions. 2001.

SAVE THE DATE Green Industry, Business & Career Expo

Friday, October 10th
Puget Sound Industrial Excellence Center
South Seattle Community College Georgetown Campus

For more information:
Contact Katie Manuel, National Wildlife Federation (206) 285-8707

Chart 6. Age Distribution of Seattle Area* Manufacturing Employment



* Seattle Area = Seattle-Tacoma-Bellevue Workforce Development Area

NOTE: Data is 2nd Quarter estimates from each year.

Source: U.S. Census Bureau, Census Bureau, Local Employment Dynamics



Energy Efficiency, cont'd

New sustainable job opportunities may require new skills and specializations within the EE sector—however, the majority of jobs within the sector will be in fields that presently exist. Among these existing fields is HVAC system installation, one of the most highly skilled and labor-intensive jobs associated with retrofits. While there will continue to be a need for degreed engineers to design and understand new building systems in the course of energy efficiency retrofit, a significant number of currently existing EE sector occupations will be middle-skilled occupations, requiring some post-secondary training but not a 4-year degree¹⁵. The table below depicts estimated job projections for selected middle-skill occupations in the EE subsector.

Employment Outlook for Energy Efficiency Industry

Energy Efficiency's growth comes with substantial employment impact potential. As the table below illustrates, of those skilled occupations related to the building construction industry that are likely to be energy efficiency retrofit careers, firms reported as many as 550 positions going unfilled in 2007. Commercial building retrofit jobs will require sheet metal workers, plumbers, pipefitters and electricians, while residential work will require carpenters and insulation workers. Projections for these potential EE occupations forecast as many as 2,200 jobs to be added between 2009 and 2016 in the Seattle-King County region. While projection estimates total all jobs in the larger building construction industry – green or not – given the large investment in energy efficiency both publically and privately to spur the market, the majority of these newly created

openings will be touched wholly or in part by green skills, materials, and projects.

Still, the energy efficiency market is particular, according to Stan Price of the Northwest Energy Efficiency Council (NEEC), and requires employees to be equipped with language and skills essential to understanding the industry. The market for EE products and services will ultimately determine the types of jobs created. Further, the growth of this industry, Price notes, is largely dependent on connecting employers' workforce needs to the changes in the market. NEEC is currently in the process of trying to determine these skills and job needs through surveys of employers in the industry. "It's important to carefully analyze where energy efficiency is going to occur, using a sophisticated snapshot to determine markers for where the market is going to be," states Price. "The market for energy efficient products will be the ultimate determinant of the job profiles created....It is important to link the analysis of green job growth with forecasts on where energy efficiency is headed."

The commitment to energy efficiency through investment and policy will create many opportunities for green collar jobs in the EE sector – those skilled and semi-skilled positions in the trades that are vital to the commercial retrofit projects of the future. The level of growth of these local EE sector jobs is contingent on the specific policies and investments undertaken by the City of Seattle as well as state and federal governments.

¹⁵ For more information on middle-skill and middle-wage jobs, see *Washington's Forgotten Middle-Skill Jobs* (Kermit Kaleba and Andrea Mayo, June 2008), available at www.skills2compete.org/washington/; and *Skills Required: Preparing Puget Sound for Tomorrow's Middle-Wage Jobs* (Paul Sommers, Mark Gardner and Juliet Scarpa, March 2008), available at www.seattlejobsinitiative.com/policy/.

Seattle-King County Workforce Development Area Energy Efficiency Job Projections*

Occupation	Ave. Education Level (BLS) ⁺	Estimated Vacancies in 2007**	Estimated Employment in 2009***	Estimated Employment in 2011***	Estimated Employment in 2016****	Median March 2007 Wage****
Carpenters	Long-term OJT	221	17,328	17,278	17,895	\$53,310
Construction Laborers	Moderate-term OJT	133	9,601	9,724	10,005	\$31,855
Electricians	Long-term OJT	51	5,266	5,451	5,747	\$53,796
Plumbers, Pipefitters, & Steamfitters	Long-term OJT	36	4,496	4,638	4,863	\$59,443
Sheet Metal Workers	Moderate-term OJT	18	2,277	2,298	2,415	\$46,348
Heating, AC, and Refr. Mechs & Installers	Long-term OJT	55	1,594	1,659	1,753	\$54,691
Cement Masons and Concrete Finishers	Long-term OJT	20	1,188	1,189	1,239	\$58,839
Insulation Workers, Floor, Ceiling, & Wall	Moderate-term OJT	20	111	107	113	\$51,101
Hazardous Materials Removal Workers	Moderate-term OJT	0	636	644	666	\$56,817
Boilermakers	Long-term OJT	0	132	142	152	\$44,336

⁺ OJT: On-the-job training. Moderate-term on-the-job training requires from one to twelve months of training, which typically occurs at the workplace. Long-term on-the-job training requires more than one year of on-the-job training, or combined work experience and classroom instruction, and may include apprenticeships of up to five years.

* EE occupations in this chart come from "Greener Pathways: Jobs and Workforce Development in the Clean Energy Economy" March 2008. Sarah White & Jason Walsh, Center on Wisconsin Strategy, The Workforce Alliance, The Apollo Alliance: p 16.

** Spring 2008 Job Vacancy Survey, Washington Employment Security Department. Data represents current openings as of April 2008.

*** Occupational Employment Projections, June 2008, Washington Employment Security Department.

**** Occupational Employment Statistics Wage Survey, March 2007, Bureau of Labor Statistics.

National & Local Green Jobs Training Efforts

Efforts are developing to meet the demand of the local green economy by preparing workers—especially those with low-skills—to take advantage of emerging green jobs opportunities. Community advocates are beginning to realize the opportunities created by this new green economy for helping local residents onto pathways out of poverty. As Van Jones, founder and director of Green For All and advocate for green-collar jobs states, the growing green economic tide has the ability to be the wave that lifts all boats – connecting environmental solutions to economic opportunities¹⁶.

Momentum is increasing to utilize green job training programs to connect people most in need of jobs with those jobs currently available. Around the country, programs in various stages of development seek to provide workers, mainly low-income residents, with the skills required to enter the green economy and navigate a path out of poverty. Programs range from skills training in pre-apprenticeship construction to hazardous material removal to horticulture.

A few of these Green Jobs Training programs include¹⁷:

- B'More Green (Baltimore, MD)
- GreenCorps Chicago (Chicago, IL)
- DC Greenworks (Washington, DC)
- Bronx Environmental Stewardship Training (Bronx, NY)
- RichmondBUILD (Richmond, CA)
- Green Career Ladder Training Program (Los Angeles, CA)
- Oakland Green Jobs Corps (Oakland, CA)
- GreenCAP (Newark, NJ)

Locally, some community and technical colleges currently offer green programs with a focus on green skills and technologies, and have begun to implement certificate and degree programs specifically geared towards the growing green economy. The table on page 7 outlines some examples of opportunities for green-oriented training in King County. In general, training opportunities currently available trend towards workshops for the general public or industry professionals, with a handful of articulated curricula aimed at preparing students for middle-skilled occupations in the growing green economy. Many programs are still in the planning stages.

¹⁶ Van Jones, November 11, 2007. *A green wave lifts all boats*. Gristmill. (<http://www.gristmill.grist.org/story/2007/11/9/15452/2394>)

¹⁷ Apollo Alliance, Green For All. 2008. "Green-Collar Jobs in America's Cities."

Traditionally, apprenticeships have been the means through which on-the-job training is provided in the trades—and they will remain the primary educational vehicle for green-collar jobs as well. Pre-apprenticeship training is also available and can provide an entry point to apprenticeships for those individuals traditionally not represented in the trades – women and people of color – and those in need of basic skills and on-the-job training. A variety of local pre-apprenticeship training programs exist in the Seattle area, including training offered through Seattle Vocational Institute, South Seattle Community College, and Renton Technical College. (For more information on Pre-Apprenticeship programs in construction, see **SJI Job Trends Report** September 2007).

New Local Green Jobs Training Program

One promising opportunity in development is the **Seattle Green Jobs Training Program**. Using its strong connections to the trades and apprenticeship programs at the Georgetown Campus of South Seattle Community College, the Puget Sound Industry and Excellence Center (PSIEC) has created an articulated pipeline into green work through 12-week training programs and additional remediation efforts.

The core of this pipeline rests on two existing programs – Seattle City Light's Pre-Apprenticeship Basic Electric and Applied Math training (BEAM) and Apprenticeship and Nontraditional Employment for Women (ANEW). The BEAM program provides contextualized math training for individuals interested in entering the Seattle City Light Lineworker Pre-Apprenticeship Program, while the E-NEW training (A-NEW with an eye towards green apprenticeships) is a retrofit of the current A-NEW pre-construction training program currently housed at PSIEC, with the idea incorporating modified skills for greening trades.

This pipeline aims to move individuals with little or no background in the trades through programs that are suited to their entry skill level and aptitude. Those who pass initial assessment tests in English as a second language, math, physical, and personal background thresholds can enter either the BEAM or E-NEW programs, which function as pre-apprenticeship programs for work in various greening trades. Individuals who require further assistance with math or English may be provided opportunities to work on these in remediation courses. This program is currently piloted through the King County YouthBuild program for 7 weeks during Summer 2008.

FOR MORE INFORMATION ON GREEN JOBS & THE GROWING GREEN ECONOMY:

Green For All

<http://www.greenforall.org>

BlueGreen Alliance

<http://www.bluegreenalliance.org>

Apollo Alliance

<http://www.apolloalliance.org>

Climate Solutions

<http://www.climatesolutions.org>

Center for American Progress

<http://www.americanprogress.org>

The Workforce Alliance

<http://www.twa.org>

Green Training Opportunities at Community Colleges in the King County Area

Though not detailed here, many construction pre-apprenticeship and apprenticeship programs are available to provide skills and training required to fill many of the growing green occupations. For more information, see SJI Job Trends Report September 2007: Construction.

Community College	Program	Entry Requirements	Credits/ Length of Program	Certificates
Lake Washington Technical College	Environmental Horticulture	No prerequisite courses. To earn the AAS or the Certificate, a student must take additional elective and general educational courses.	Certificate: 84 credits (1 year) AAS*: 105 credits (2 years)	Certificate of Proficiency AAS
North Seattle Community College ⁺	HVAC ⁺ Program	Prerequisite courses in Math, English, and computer skills. An I-BEST Program is available.	Certificate: 40 credits AAS option	Certificate of Achievement in HVAC Service
Seattle Central Community College	Sustainable Building Advisor	Aimed at working professionals who currently design, develop and construct buildings.	Non-credit (9 mo.--10 hrs Fri. & Sat. once/month)	Professional accreditation as a Certified Sustainable Building Advisor, upon completion of the course and exam.
South Seattle Community College	Residential Energy Auditing <i>Building Management Curricula</i>		Non-credit (6 weeks --2 nights/wk and on Saturdays)	Prepared for national energy auditor certification exam upon completion.
Shoreline Community College	Solar/Photovoltaic (PV) Designer <i>Zero Energy Building Certificate (Fall 2008)</i> <i>National Training Center will offer standard training and education on advanced technology, clean energy vehicles</i>	College English or COMPASS Test Score at the ENGL & 101 level. Completion of Intermediate Algebra or placement into college-level Math with COMPASS Test. Current background in Environmental Sciences, Engineering, Physics, and Business Field experience in electrical work and/or the design, build, and construction recommended Prerequisite course: Solar Elec Design & Apps (5 credits)	5 credits (5 weeks)	Certificate of Completion Silicon Energy Manufacturing Certificate (to work for Silicon Energy) Will also prepare students for the NABCEP certification exam.
Green River Community College	Water Supply Technology and Wastewater Technology	Students must be physically able to perform the work required to gain employment in the field.	Water Distribution Technology Certificate: 31-41 credits (3-4 quarters) Municipal Wastewater Treatment: 31-41 credits (3-4 quarters) Wastewater Collection Technology: 20-30 credits (3-4 quarters) Water Supply Tech AAS: 90 credits (8 quarters) Wastewater Tech AAS: 90 credits (8 quarters)	Certificate of Proficiency – Water Distribution Technology; Municipal Wastewater Treatment Technology; Wastewater Collection Technology Associate in Applied Science Degree – Water Supply Technology; Wastewater Technology

Italicized programs currently in development.

* Associate of Applied Science Degree

⁺ Heating, Ventilating, and Air Conditioning - this is one of the occupational areas expected to see growth due to an increase in energy efficiency measures.

