



# A Local Government Guide to the Chesapeake Bay

## Module 7: Building the Workforce of Today and Tomorrow





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**\*Please refer to individual slide notes for data references and information sources.**

*Module 7: Building the Workforce of Today and Tomorrow*



# A Guide For Local Governments

As a local leader, your decisions set the course for your community. Your actions determine the health and vitality of your jurisdiction, as well as that of your local waterways and the Chesapeake Bay. You can achieve win-win outcomes by prioritizing local economic development, infrastructure resiliency, public health, and education while also protecting your environment.

This module is one in a series created by the Chesapeake Bay Program to support decision making by local officials. We encourage you to examine the full suite of modules:

1. How Your Watershed Works
2. Foundations of Clean Water
3. Healthy Water for the Economy
4. Capitalizing on the Benefits of Trees
5. Preserving Local Character and Landscapes
6. Protecting Your Infrastructure Through Stormwater Resiliency
7. **Building the Workforce of Today and Tomorrow**

To help local government representatives better understand how the information in the modules aligns with their priorities, look for these icons:



Economic Development



Public Health & Safety



Infrastructure Maintenance  
& Finance



Education



# Workforce Connections

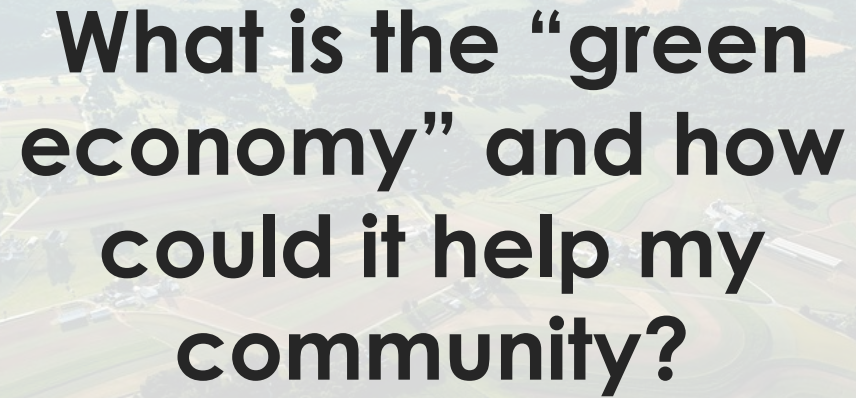


Jobs are a top priority for communities everywhere. The jobs of the 20<sup>th</sup> century, including those in agriculture, manufacturing, and mining, have dwindled and given rise to new fields, including what are referred to as green jobs.

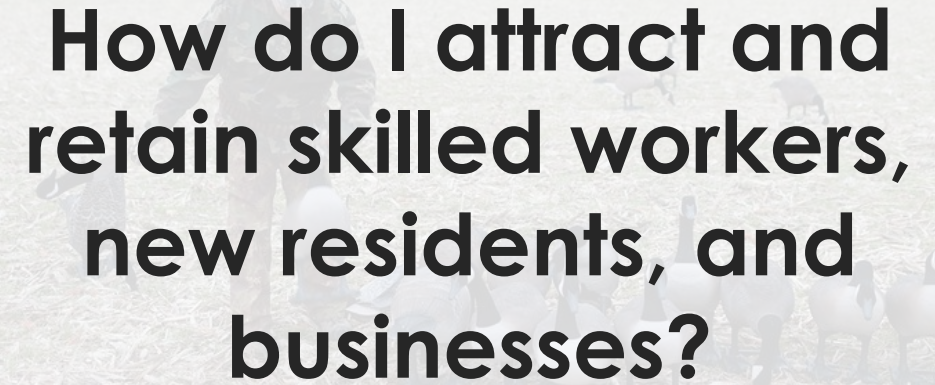
With a growth in the construction and installation of **stormwater** management and **green infrastructure** projects, it is imperative to have workers trained in operations and maintenance to ensure these systems continue to function properly over time. Public lands and recreational areas require a workforce for their upkeep and to cater to tourists, who will need amenities, such as lodging and food, when they visit your community.

By developing our capacity to train and support green jobs, we can prepare our communities to thrive in the face of coming challenges.

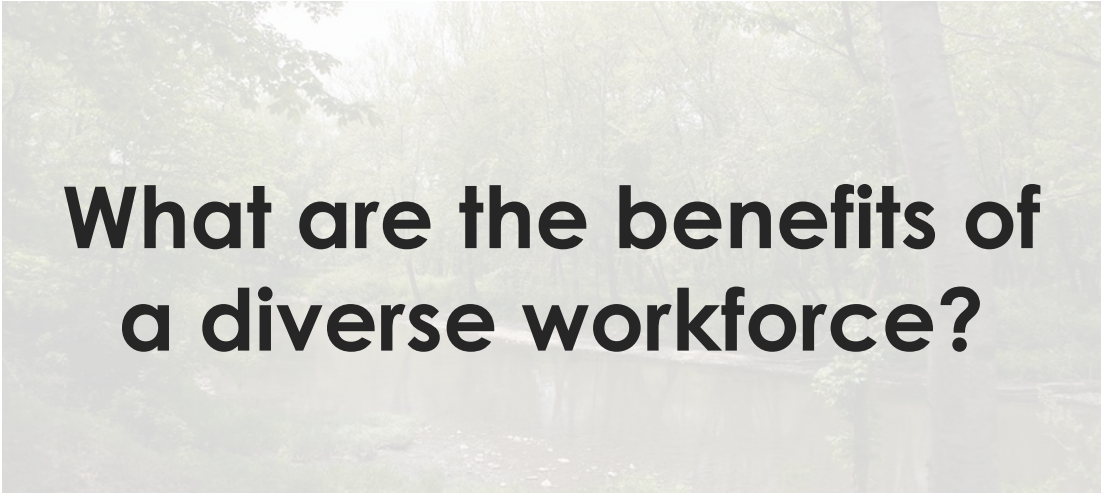
## What You'll Learn



**What is the “green economy” and how could it help my community?**



**How do I attract and retain skilled workers, new residents, and businesses?**



**What are the benefits of a diverse workforce?**



## Green Collar Workforce

The green economy in the US is estimated to be worth \$1.3 trillion annually, employing nearly 9.5 million workers.

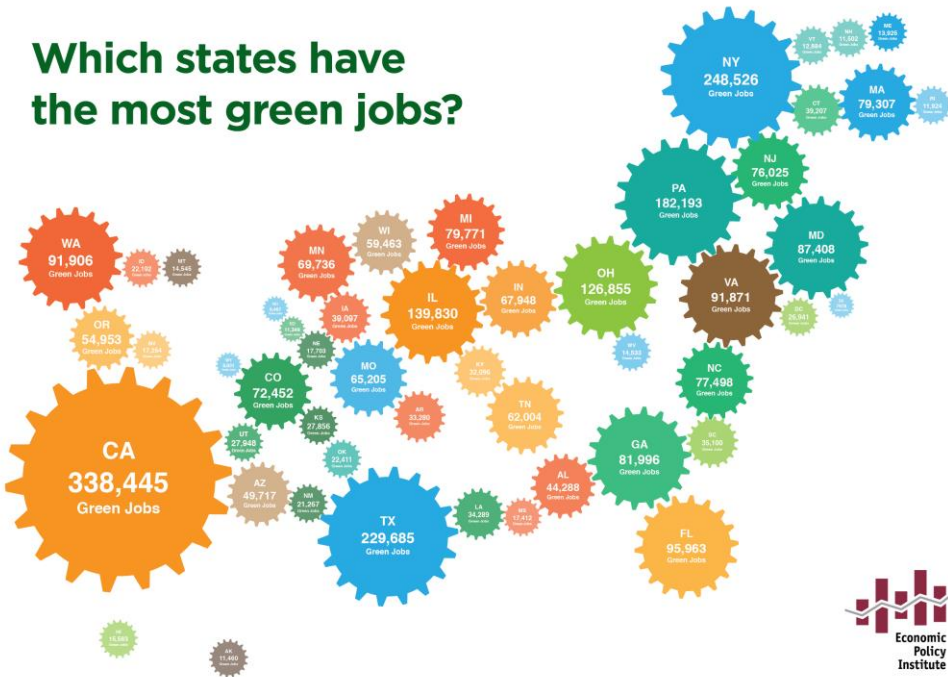


# What's Green Collar?



The Bureau of Labor Statistics defines **green jobs** as those in businesses that benefit the environment or jobs in which workers' duties involve making their establishment's production processes more environmentally friendly.

## Which states have the most green jobs?



In 2012, four of the ten states with the most green jobs were in the Chesapeake Bay watershed.

- |       |        |
|-------|--------|
| 1. CA | 6. OH  |
| 2. NY | 7. FL  |
| 3. TX | 8. WA  |
| 4. PA | 9. VA  |
| 5. IL | 10. MD |

# Why Green Jobs Matter



Community leaders must address many priorities, including economic development, education, human health and safety, and more, usually with limited staff and budgets. Investing in green workforce development is one way to address multiple local concerns.

## Case study: Washington, DC



The District is connecting its environmental goals, like cleaner energy and improved stormwater management, with career opportunities for residents by prioritizing a green workforce.

Maintenance of the 1200+ green infrastructure installations in DC's public spaces will take a new, skilled workforce. Training programs for underemployed and unemployed residents, like the Solar for All program, are providing economic mobility while meeting the District's need for green workers.

Department of Energy & Environment director Tommy Wells emphasized the importance of the training programs "to help meet Mayor Bowser's water quality, habitat restoration and clean energy targets, while also attracting top talent and cultivating the next generation of environmental leaders."



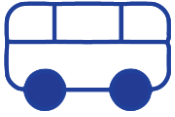
# Outdoor Recreation



Nationally, there are approximately **7.6 million jobs** in the outdoor recreation economy. Outdoor recreation provides a wide array of jobs across skills and sectors. Examples include:



park rangers



bus drivers



local shop owners



fishing guides



environmental educators



park maintenance

## Case study: Coal Township, PA



Anthracite Outdoor Adventure Area is located on 7,000 acres of reclaimed coal mines that were vacant for decades. The outdoor recreation center sees tens of thousands of visitors per year, bringing patrons to nearby restaurants, gas stations, and hotels.

Mine reclamation creates jobs in areas with limited opportunities. These projects typically hire construction contractors who were often former mine operators and who in turn employ former miners and other local workers in depressed coalfield communities.

# Green Infrastructure and Maintenance



Green infrastructure, or systems that use natural processes to manage stormwater, requires many skills to implement and maintain. They include landscape architects, tree trimmers, engineers, pipelayers, groundskeepers, pavers, hydrologists, and excavation machine operators.



Your community's rain gardens, bioswales, and tree buffers need inspection and maintenance to ensure that they are operating properly and still contributing benefits to your community. By contracting with local businesses and workforce development programs, you benefit your community. Verification, inspection, and mapping of best management practices can also bridge the workload gaps during the slow seasons, like summer and winter.

"I have seen many planting projects fail due to lack of maintenance..."

Craig Highfield, Chesapeake Forests

"Planting the tree is the easiest part. Getting the tree to survive the first 5 years is the hardest part."

Lamonte Garber, Stroud Water Research Center



# Green Buildings

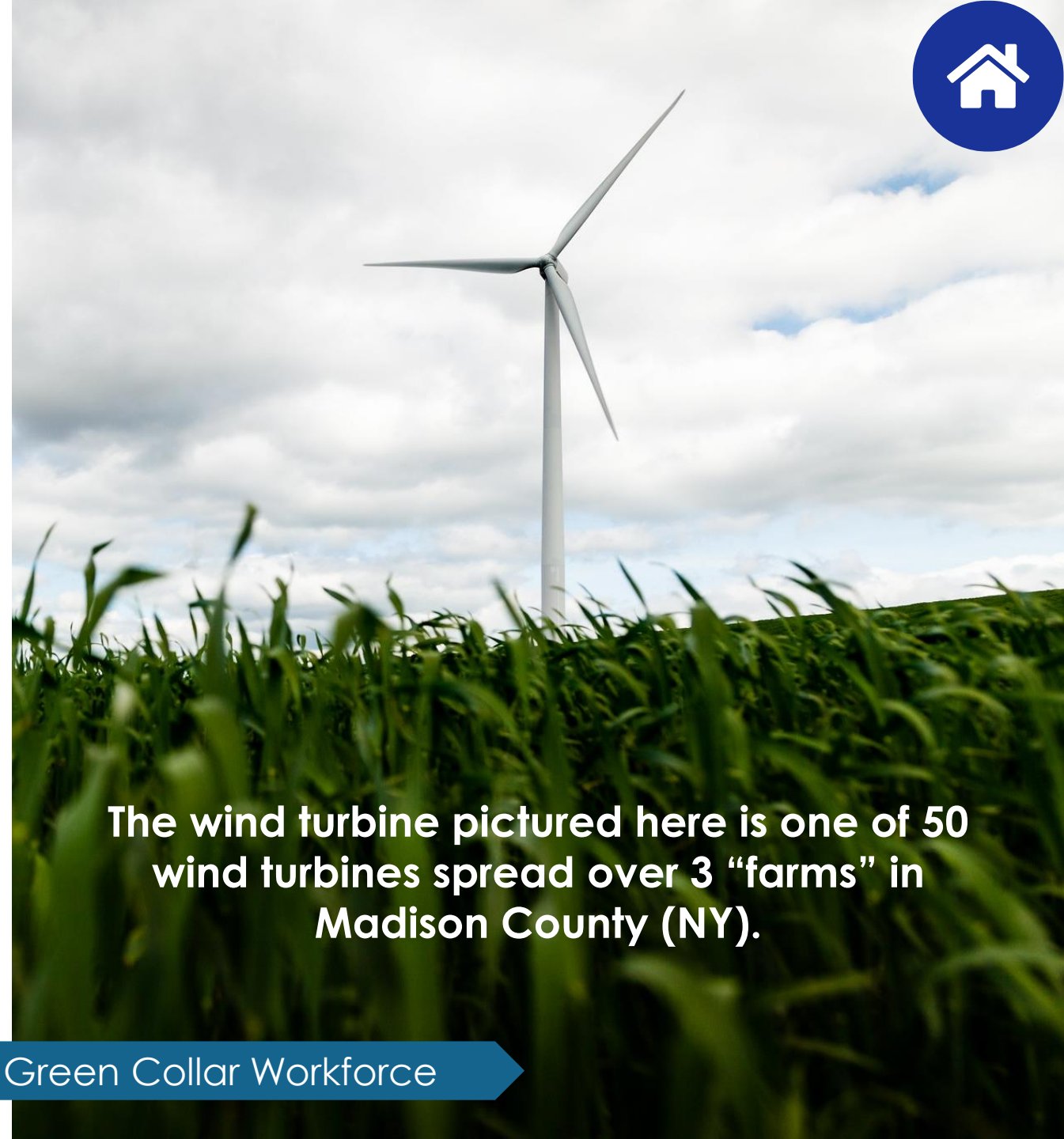
Green construction is the practice using processes that are environmentally responsible and resource efficient when erecting buildings. There are national sustainability certifications, like the Leadership in Energy and Environmental Design (LEED) sustainability rating. The U.S. General Services Administration requires all Federal new construction and major renovation projects to meet LEED Gold standards. Many private developers pursue LEED certification to advertise their green credentials to the public.

Earning a LEED certified, Silver, Gold, or Platinum status requires workers with knowledge of energy and water efficiency, green landscaping, and low-impact materials. These workers include architects, engineers, urban planners, construction laborers, electricians, plumbers, roofers, and more.



# Clean Energy

In the United States, clean energy jobs outnumbered total fossil fuel employment by more than 3 to 1 in 2019. Clean energy is thriving worldwide but is also a large employer within the Chesapeake Bay watershed states. NY, PA, VA, and MD were in the top 15 states with the highest number of clean energy jobs, including in the sectors of renewable energy, grids and storage, energy efficiency, clean fuels, and clean vehicles. MD and DE were both in the top five states with the highest number of clean energy jobs per capita.



**The wind turbine pictured here is one of 50 wind turbines spread over 3 “farms” in Madison County (NY).**



# Diversity as an Asset

Let's look at how a diverse and inclusive workforce makes a community stronger.

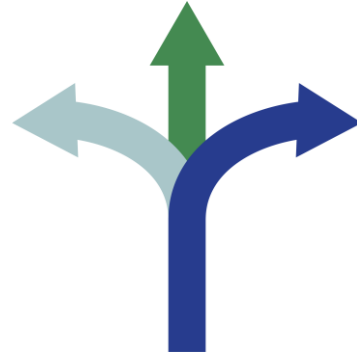


# Benefits of Diversity

A diverse workforce has a broad base of talents and perspectives. This base allows organizations to thrive in key areas: innovation, adaptability, and connection.



A diverse group of workers might have heterogeneous ideas because of their varying experiences, allowing the group to “think outside of the box”.



Similarly, varied experiences help fuel creative solutions to problems, allowing flexibility in the face of disruption.



Lastly, a multicultural workforce is better able to serve a multicultural community, due to an understanding of language, culture, and shared experiences.



# Environmental Justice

## Levels of Involvement

**Inform:** One way street; told what's happening

**Ask:** Give options; gives information to help others make decisions; provides feedback

**Consult:** Provides feedback; approach seeing approval; option to get involved

**Participate:** Bought-in; help strategizes and/or promote

**Collaborate:** Shares ownership of project; formal role; allows others to take a leadership role

Awareness

Engagement

Partnership

**Environmental justice** is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.

Increasing diversity and inclusion within environmental organizations and agencies in the watershed is one step towards addressing environmental justice concerns and increasing meaningful involvement of underrepresented communities. Reflecting your community's diversity within your organization or agency includes perspectives that represent the community's experiences. Since environmental stressors tend to affect underrepresented and underserved communities first and hardest, including their voices is vital to achieving justice.

# Education

K-12 education and targeted training programs are essential in developing a workforce tied to the green economy.





Enhancing formal and informal education about the watershed builds a foundation for greater understanding and improved stewardship, and capacity to produce future scientists, managers, and members of a dynamic and innovative workforce. Investments in education are a proven economic development tool because they attract development, new residents, businesses and top earners.

## Case study: Richmond, VA



“Taking a School by Storm” is a schoolyard retrofit project at Binford Middle School. It reduces stormwater runoff using several methods, including a rain garden with a collaboratively-designed rain harvesting sculpture. Through this hands-on project, students were exposed to the career paths of architect, land use planner, hydrologist, and more.

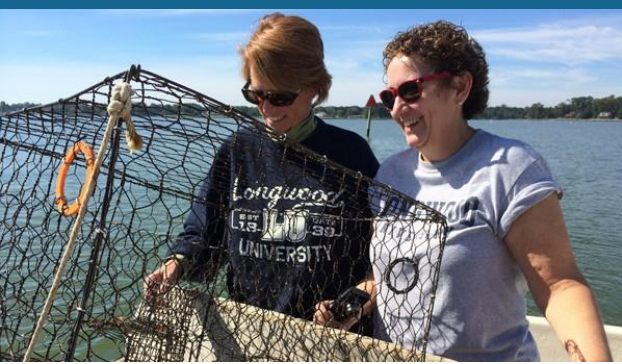
The project was funded with \$200,000 awarded by the by National Fish and Wildlife Foundation through the EPA's Small Watershed Grants Program.

# Job Training



Rather than creating new jobs, sometimes reimagining and expanding the current workforce's skillsets are paths to the workforce of the future.

## Case study: Watermen Tours



Programs in Maryland and Virginia have trained commercial fishers (or watermen) to lead on-water tours using their own vessels and expertise. These tourism opportunities bring new visitors to communities who often book lodging, eat in restaurants, and shop at local businesses. The watermen guides show tourists first-hand why a clean, restored Chesapeake Bay is necessary for healthy, abundant local seafood. The Watermen Heritage Tourism Program in Virginia also helps watermen supplement their fishing incomes while sharing their knowledge with others.

## Case study: Baltimore, MD



Through the Brownfields Job Training Program, EPA provides environmental cleanup and safety training to residents of brownfields-impacted communities who are seeking new skills and opportunities.

Civic Works in Baltimore, MD, has used Brownfields Job Training Grant funds to train 80+ people with a 90% employment rate on graduation due to education and the network of alumni and employers that the program has built.



## Existing Programs

Let's discuss some programs currently operating around the watershed as examples of what you could do in your community.





# Chesapeake Bay Landscape Professional Certification Program



The [CBLP](#) is a voluntary certification program for professionals in the watershed who design, install, and maintain sustainable landscapes. The credential training and examination are based on a core set of standards in sustainable landscaping, emphasizing stormwater retrofit best practices and conservation landscaping with native plants. There are two levels of training aimed at landscape professionals, an Associate program for the youth workforce, and two new certificate programs for stormwater management practices maintenance and riparian buffers.

Over **650** professionals have been certified since the program began in 2016.



# Howard EcoWorks

[Howard EcoWorks](https://www.howardecoworks.org) provides three programs in Maryland that train individuals on the construction and maintenance of green infrastructure while simultaneously helping the county to meet water quality goals. Each of the programs focuses on a different target audience.

- Restoring the Environment and Developing Youth (READY): a summer workforce program for young adults ages 16-25. This program teaches high school students and young adults about the environment, increases stewardship, and gives them valuable work experience in a green collar job.
- UpLift: a 9-10 month adult workforce development program targeting under-served populations for entry-level jobs. There are no prerequisites and the curriculum includes the CBLP-Associates certificate.
- Seeds of Change: a workforce development program offered at the Howard County's Corrections Department that develops inmate skills and knowledge to maintain a native plant nursery. The program is six weeks in length with no-prerequisites and participants receive a Landscape of Life certificate.

Learn more by watching the video on the right or visiting their website: <https://www.howardecoworks.org>



# Workforce Training for Incarcerated Individuals



Pennsylvania's [Correctional Conservation Collaborative](#) is a multi-agency partnership that supports a workforce development program in forestry/arboriculture and riparian buffers for inmates nearing release. The targeted job sectors include tree service in the riparian and forest sectors. The focus area was identified, in part, based on the riparian buffer projects planned in the region with multiple job types: tree climber/arborist, utility line clearer, tree nursery worker, and riparian forest buffer technician. There are no educational or work experience prerequisites. The program presents an opportunity for participants to take Pesticide Applicators Certification courses and become a Tree Worker Climber Specialist.



# Clean Water Certificate (CWC) Training Program



The program trains workers to fill entry-level jobs in the stormwater industry. The certificate program is a foundation for additional credentials and helps the existing workforce expand their career path or responsibilities. The program also aims to increase opportunities for individuals in low-income communities and under- or unemployed individuals to secure a living wage job leading to financial stability.

Hear from a perspective employer above and learn more [here](#).

The program operates on a contractual or fee for service model where the CWC training is integrated with existing programs that provide life skills and support services to participants. It serves as a pathway for local businesses to hire trained and ready workers following successful completion of the program.

# River Corps

The [River Corps](#) program is funded through the DC DOEE and implemented through a local Conservation Corps Program, Latin American Youth Center (LAYC). LAYC offers job training in green infrastructure and conservation to residents of Montgomery County, MD and the District of Columbia. The programs provide field experience and classroom instruction, and may include job readiness training, certifications, and career development opportunities. Over five months, young adults ages 18-24 monitor streams, remove invasive plants, maintain bioretention cells, conduct RiverSmart Homes inspections, and more. River Corps seeks to build the next generation of environmental stewards.

*Building the Workforce of Today and Tomorrow* Existing Programs





# Solar Installation Training

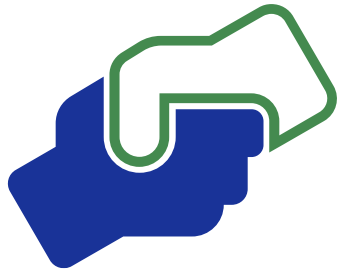


During the summer of 2019, [Bridging the Gap in Virginia](#) held their first solar installation training program in the Union Hill community of Buckingham County, VA. The 40-hour week of training was led by master trainer Sean White, who shared his expertise in solar knowledge with program participants. The training week brought together members of the community, contractors, and formerly incarcerated individuals to engage with renewable energy firsthand. This program seeks to provide opportunities for individuals seeking to be competitive candidates in the renewable energy job market.

## What You Can Do



**Create hands-on learning opportunities** for installation and maintenance of best practices that address local needs, such as flooding and beautification.



**Prioritize contracting with local workforce development programs** for green infrastructure installation/maintenance, especially those that work with previously incarcerated, veteran, and other disadvantaged populations.



**Require the hiring of trained and certified contractors** to install and maintain publicly-funded green infrastructure.



**Invest in your future workforce** by funding STEM education, with a particular focus on under-resourced communities.



# To Learn More

[Visit the Delaware Department of Natural Resources and Environmental Control website](#)



- Alliance for the Chesapeake Bay's [Workforce Development Programs](#)
  - Learn about the Correctional Conservation Collaborative, Ready Green Jobs Training Project, and RiverSmart Stormwater Contractor Training programs
- [Delaware Climate Leadership Academy](#)

The education and training programs will build from standardized curriculum and integrate a focus on Delaware state and local issues and implications.

Programs will address regionally specific data and state policy, including the Delaware Climate Action Plan, and the state's greenhouse gas emissions inventory, goals and reduction efforts. They will also incorporate Delaware's plans to maximize resilience and look at how the state plans to adapt to increasing temperatures, precipitation, flooding and sea level rise in while protecting public health, economic vitality and infrastructure security and protection.

- EPA's [Environmental Workforce Development and Job Training Grants](#)
  - Find information about EPA's workforce development grants, including resources like FAQs
- EPA's [Making Water a Career of Choice](#)
  - Explore water workforce case studies from across the country (including one in PA and one in VA)

# Glossary

[Visit the Delaware Department of Natural Resources and Environmental Control website](#)



- Stormwater Runoff

Precipitation that does not evaporate or soak into the ground but instead flows over the land and into the nearest waterway

- Green Jobs

Jobs in businesses that produce goods or provide services that benefit the environment or conserve natural resources and jobs in which workers' duties involve making their establishment's production processes more environmentally friendly or use fewer natural resources

- Green Infrastructure

Nature-based solutions that use soil and vegetation to help slow the flow of runoff and manage rainwater where it falls

- Green Construction

The practice of erecting buildings and using processes that are environmentally responsible and resource efficient

- Clean Energy

Energy that comes from renewable, zero emission sources that do not pollute the atmosphere when used

- Environmental Justice

The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies

- Brownfields

A property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant