

TRANSFORMING LIVES AND ADVANCING ECONOMIC OPPORTUNITY: EPA'S ENVIRONMENTAL WORKFORCE DEVELOPMENT AND JOB TRAINING PROGRAM



PREPARING UNEMPLOYED AND UNDEREMPLOYED RESIDENTS OF WASTE-IMPACTED COMMUNITIES FOR FULL-TIME ENVIRONMENTAL CAREERS



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INTRODUCTION

Having a job means more than just generating income to pay bills and put food on the table. It is a means of establishing self-identity, self-worth and a sense of personal accomplishment. A career provides a sense of belonging—of being a contributor and a valued member of society.

“EPA’s job training program advances economic development by training people to take advantage of job opportunities in their own communities. Many graduates—including formerly incarcerated individuals and veterans—secure meaningful employment that protects the environment and promotes economic development in some of our neediest communities.”

— Mathy Stanislaus
Assistant Administrator
EPA’s Office of Land and Emergency Management

Over nearly two decades, the U.S. Environmental Protection Agency’s (EPA) Environmental Workforce Development and Job Training program (hereafter referred to as EPA’s environmental job training program) has helped put people to work by building a skilled environmental workforce across the country. The program awards competitive grants to nonprofit organizations and other eligible entities to recruit, train and place unemployed and underemployed individuals, including low-income and minority residents of solid and hazardous waste-impacted communities, in a wide range of environmental careers. By doing so, EPA is helping unemployed individuals develop skills they can use to find sustainable careers that advance social, economic and environmental betterment and make a living wage.

EPA’s environmental job training program was created to help build a skilled workforce in communities where EPA brownfields assessment and cleanup activities were taking place. Rather than seeing local jobs filled by contractors from distant cities, EPA’s environmental job training program was designed to offer the opportunity for unemployed residents historically affected by environmental pollution, economic disinvestment and brownfields to gain the skills and certifications

needed to secure cleanup work in their communities. The program was also developed as a result of recommendations raised by local residents and environmental justice activists to support workforce development as part of the EPA’s Brownfields Redevelopment Initiative, and as referenced in the National Environmental Justice Advisory Council report, “Environmental Justice, Urban Revitalization and Brownfields: The Search for Authentic Signs of Hope.” Coordinating brownfields revitalization with broader strategies of job creation, training and career development produces demonstrable benefits for communities facing environmental justice issues.

EPA funded its first round of Brownfields Job Training Pilots in 1998. These initial pilots were a success: The first program graduates quickly found jobs, and individual stories of lives being transformed through environmental job training emerged. As a result, 25 additional Brownfields Job Training Pilots were awarded in 2000. Through 2010, EPA awarded nearly 146 Brownfields Job Training grants to environmentally impacted communities across the country.

Broadening Training and Expanding Opportunities

In 2010, EPA’s Office of Brownfields and Land Revitalization led an effort to more closely collaborate with other programs within the Agency on workforce development and job training by broadening the Brownfields Job Training program to include other EPA program areas. Program offices participating in the workforce development and job training have included:

- Office of Superfund Remediation and Technology Innovation
- Office of Emergency Management
- Office of Resource Conservation and Recovery
- Office of Underground Storage Tanks
- Office of Wastewater Management
- Office of Pollution Prevention and Toxics
- Office of Environmental Justice
- Center for Program Analysis
- EPA Pesticide Program
- EPA Urban Waters Program
- EPA Lead Program
- Innovation, Partnerships and Communication Office

Through the broader program, participants receive comprehensive, multifaceted, and cross-disciplinary training in a variety of environmental media. Program graduates develop a wider skill set that improves their ability to secure full-time, sustainable employment in various aspects of hazardous and solid waste management and within the larger environmental field, including water quality improvement, chemical safety, renewable energy and disaster response. This program also gives communities more flexibility to provide different types of environmental training based on local labor market assessments and employers' hiring needs.

In addition, program participants build skills to deal effectively with the demands and challenges of everyday life, including effective communication and decision-making, interpersonal relationships, stress management, sexual harassment awareness, proper dress, personal financial management and other life skills training leveraged through non-EPA funding sources.

Measuring Success: 10,000+ Environmental Jobs and Counting

Since the program's inception in 1998, and as of December 2015, EPA has funded 256 job training grants exceeding \$54 million; more than 14,100 individuals have completed training; and of those, more than 10,200 have secured employment in the environmental field, with an average starting hourly wage of \$14.29. This equates to a cumulative job placement rate of 72 percent.

Whether cleaning up contaminated properties in their own neighborhoods, working at wastewater treatment facilities, installing renewable energy infrastructure or responding to oil spills, graduates of EPA's environmental job training programs are gaining the know-how to solve today's most challenging environmental problems. They have also secured employment in response and cleanup at events of national significance. Graduates of EPA's environmental job training were among the first responders on the scene after the attacks at the World Trade Center in New York City and helped with the cleanup effort. They also responded to multiple anthrax threats in the city. When an explosion on the Deepwater Horizon rig released millions of gallons of oil into the Gulf of Mexico, graduates participated in the cleanup. And they were there in the wakes of Hurricanes Katrina, Rita and Sandy.

EPA is investing in America's future by advancing economic opportunities, strengthening communities and helping a diverse array of formerly unemployed individuals to thrive and succeed.

What follows are just a few of the many examples of successful EPA environmental job training programs nationwide. Insights from grantees, graduates and the employers who hired them reveal the true benefits of these programs: cleaner communities, a healthier environment and a locally trained and green workforce made up of individuals whose lives have transformed for the better through sustained careers with livable wages and opportunities for upward advancement.



St. Nicks job training graduates supporting first responders at Ground Zero after the attacks at the World Trade Center in New York City.

“A key aspect of the success of the program is the partnership between grantees and the private sector to design curricula based on local markets with an eye toward hiring graduates, which is why there is a 72 percent job placement rate.”

— Gina McCarthy
U.S. EPA Administrator

EPA'S ENVIRONMENTAL WORKFORCE DEVELOPMENT AND JOB TRAINING PROGRAM

EPA supports a wide range of training to prepare unemployed and underemployed local residents from waste-impacted communities for a variety of environmental careers.

Superfund Site Cleanup Training

Superfund site-specific cleanup methods; innovative and alternative treatment technologies, such as phytoremediation, bioremediation, compost and soil amendments; operation of advanced sampling instruments and design considerations; and reuse of biosolids and other industry residuals associated with remediation of contaminated lands or sites for urban agriculture and horticulture and other end uses.

Renewable Energy Installation Training

Alternative fuels; installation of solar, wind and other renewable energy technologies; and preparation of formerly contaminated sites and landfills for renewable energy installation.

Integrated Pest Management Training

Pesticide prevention and the safe application of pesticides for public housing and project-based rental assistance properties.

Enhanced Environmental Health and Chemical Safety Training

Environmental health and safety; promoting chemical safety and stewardship; engineering controls; universal hazard communication; green chemistry; medical waste handling and disposal; and chemical-specific worker training and certification programs.

Solid Waste Management Training

Integrated solid waste management and waste minimization, including household and industrial recycling; operation of material recovery facilities and recycling centers; collection and recycling of electronics and household hazardous waste and construction and demolition material; and training associated with solid and hazardous waste facility corrective action, landfill closures and capping activities.

Brownfields Remediation Training

Inventory, assessment and cleanup methods of sites contaminated, or perceived to be contaminated, with hazardous substances or petroleum, including abandoned gas stations, mine-scarred land, meth labs and former manufacturing facilities.

Wastewater Management Training

Wastewater treatment facility operations, including treatment, collection, storage and disposal; stormwater management, including low-impact development, green infrastructure design, installation, operation and maintenance; and maintenance of decentralized wastewater treatment systems.

Emergency Planning and Response Training

Hazard analyses on chemical facility risks in the community; development of local emergency response plans; organization and implementation of exercises; outreach to the public; spill response and cleanup, including industrial and environmental emergencies; first response; disaster site worker certification; and National Incident Management System.

Other Training

- Lead abatement; lead renovation, repair and painting; and mold remediation.
- Confined space entry.
- First-aid and cardiopulmonary resuscitation, and bloodborne pathogens.
- Chemistry, toxicology and geology to inventory, assess and clean up contaminated sites.
- All Appropriate Inquiries Final Rule and due diligence.
- Radiation safety, including training in the cleanup of uranium contaminated mine tailings.
- Hazardous materials transportation, commercial driver's license, forklift and machine operations.
- Freon removal or the removal of hazardous substances from white goods.
- Weatherization, energy efficiency retrofitting and energy auditing.
- Ecological restoration, including wetland and coastal restoration.
- Green building design and Leadership in Energy and Environmental Design certifications.
- Construction trades related to caps, synthetic barriers and pumping facilities to remediate contamination.
- National historic preservation and tribal historic preservation regulations.
- Vapor intrusion testing and mitigation and radon testing.
- Site surveying, mapping, blueprint reading, computer-aided design and drafting, and geographic information systems.
- Wildlife hazing and climate adaptation.

SUPERFUND SITE CLEANUP

St. Louis Community College Readies Local Workforce for Superfund Cleanups

Abandoned hazardous waste sites pose a serious health and safety problem for many communities. St. Louis, Missouri, for example, has a large stock of dilapidated properties, including a number of Superfund sites that contain hazardous materials left behind from years of manufacturing activities.

“Over time, the city has acquired over 10,000 vacant properties due to tax foreclosure,” says Rene Dulle, a Project Manager with St. Louis Community College’s Workforce Solutions Group. “Some owners simply abandon properties when they realize there may be a contaminant issue that costs more to clean up than the property is worth.”

To address the problem, St. Louis Community College is leading the charge to train the local workforce for critical careers in the cleanup of Superfund sites and other contaminated properties. In partnership with Saint Louis University’s Center for Environmental Education and Training, the college offers a free six-week training program for residents interested in careers in the remediation of contaminated properties.

The economic recovery in St. Louis has been slow. With unemployment at 11.8 percent in East St. Louis, where nearly 98 percent of residents are minorities and 47 percent are living below the poverty level, job training and placement is desperately needed in this community.

Laying the Foundation for Careers

St. Louis Community College’s environmental job training program prepares residents in the St. Louis metropolitan area for careers in the assessment, cleanup and revitalization of Superfund sites, brownfields and other contaminated properties and structures. A unique feature of the program is that participants walk away with bi-state licensing in lead and asbestos abatement, so they’re able to work as technicians in both Illinois and Missouri.

“I don’t think the extended training that you get in the program is offered anywhere else,” says

Core Training:

- Occupational Safety and Health Administration 40-Hour Hazardous Waste Operations and Emergency Response (OSHA 40-Hour HAZWOPER)
- First Aid and Cardiopulmonary Resuscitation (CPR)
- Introduction to Environmental Technology
- OSHA 10-Hour Construction Safety
- OSHA 7205 Health Hazards
- OSHA 7200 Bloodborne Pathogens
- Radiation Worker I
- Lead Abatement Worker
- Mold Remediation
- Lead Renovation, Repair, Painting
- Asbestos Abatement Worker
- Leaking Underground Storage Tank Removal
- Environmental Sampling and Monitoring
- Superfund Site Cleanup and Innovative and Alternative Treatment Technologies
- Stormwater Management
- OSHA 7405 Fall Protection
- OSHA 7410 Excavation and Trenching
- OSHA 7300 Permit Required Confined Spaces
- Ecosystem Restoration

Graduates Trained: 310 since 2000

Graduates Employed: 233

Average Starting Hourly Wage: \$15.70

training participant Donald Partee, who worked on the Chemetco Superfund Site in nearby Chouteau Township, Illinois. “It makes you more employable.”

Partee, an ex-offender, says he had never had steady employment. But, after graduating from St. Louis Community College’s environmental job training program, he says, “I found my career in this field.”

The Chemetco site, a former secondary copper smelting facility that produced cathodes and anodes for electrical and electronic manufacturing, was closed in 2001, leaving behind contamination, including cadmium, copper, lead, and zinc. After graduating, Partee took a job with Environmental Resources, Inc., supervising a 10-person crew cleaning out an old storage facility at the Chemetco site.

Since then, Partee has earned an Associate Degree in environmental science and a Bachelor’s Degree in public health. Today, he’s established a successful career as a Project Manager with Spray Services, Inc. Plus, he’s hired six other program graduates to work on his team.



The Carter Carburetor Superfund site, shown here, is one of thousands of contaminated properties in and around St. Louis. Photo: Gene Watson, HRP.

of asbestos-containing materials, polychlorinated biphenyls (PCBs) and trichloroethylene.

Greg Lomax, a 46-year-old graduate of St. Louis Community College’s environmental job training program, is one of the crew members working at the Carter Carburetor site. Before taking the training, he was working two jobs—as a prep cook and setting up for banquets. When a friend told him about the college’s job training program, his ears perked up. “Going green was all over the news,” he says. “I wanted to get the training and see what the environmental field had to offer—and what I have to offer the environmental field.”

“We focus our recruitment where we know people are living in areas with Superfund sites and other contaminated properties, where the buildings are crumbling. The intent is to train people, not only to get a job, but also to enable them to better themselves and their own community.”

— Rene Dulle
Project Manager
St. Louis Community College’s
Workforce Solutions Group



Greg Lomax, a graduate of St. Louis Community College’s environmental remediation program, is a Senior Site Technician at the Carter Carburetor site.

Finding Success in Superfund Cleanup

St. Louis is home to the Carter Carburetor Superfund site. From the 1920s to the 1980s, the plant manufactured carburetors for gasoline- and diesel-powered engines. The 480,000-square-foot facility, spanning a six-block radius, consists of several multi-story buildings used for manufacturing, testing, warehousing and offices. When the plant closed in 1984, the owner dismantled much of the equipment, but the buildings remained idle, with fencing and signs warning of contamination. In 2014, efforts got underway to clean up the site, including removal

Married with two children, Lomax knew he needed a more stable job to support his family. “It wasn’t about me anymore,” Lomax says. “I wanted to build a foundation for my kids, so they could witness through my actions the benefits of working hard to succeed in life.”

Shortly after completing the training, Lomax found himself with two job opportunities the same week. His first job was with a St. Louis-based environmental

contractor specializing in asbestos, lead and mold abatement, where he made \$13.50 an hour. Later, he helped monitor air quality for crews cleaning out boilers. Eventually, he landed a salaried position with HRP Associates, where he now serves as a Senior Site Technician at the Carter Carburetor site. He supervises workers removing lead-based paint and asbestos-containing materials. His responsibilities include routine site inspections for environmental, health and safety compliance. He also performs environmental oversight, contractor management, environmental multimedia sampling, and coordination with EPA.



Lomax ensures that workers like these who are removing asbestos-containing materials from the Carter Carburetor site do so safely. Photo: Gene Watson, HRP.

“Once you get a foot in the door, prove that you can be depended upon and show that you are receptive to learning, you can be as successful as you want to be,” Lomax says.

Eugene Watson, Regional Office Manager at HRP Associates, Inc., applauds the work Lomax is doing and the efforts of the training team at St. Louis Community College. “Mr. Lomax is one of the best employees I have had the opportunity to work with in my 29 years,” Watson says. “Not only have I experienced the quality of training and preparedness of the graduates as provided by the team at St. Louis

“Just because you are raised in a particular environment, doesn’t mean you have to remain a product of that environment. You can succeed in life if you apply yourself.”

— Greg Lomax
Program Graduate

Community College, but I also have witnessed the difference that the team can make in individuals’ lives.”

Increasing Impact Through Partnerships

To maximize opportunities for mutual benefits, the college’s training program collaborates with other service providers in the community, such as Fathers’ Support Center, which works to address the problem of absentee and non-involved fathers. Marcel Scaife, Transitional Case Manager at Fathers’ Support Center, says the college “has helped many of our men obtain and retain employment. Just recently, four of our clients went through the program, and three of them received employment within the first month. This program is essential, because it allows individuals to acquire the skills necessary to gain employment.”

Another training program graduate, who was a referral from Fathers’ Support Center, is Carl Baldes. He came to St. Louis Community College at a difficult point in his life. Having been formerly incarcerated, he had struggled to find steady work. “His morale was low when I met him,” Dulle says, “but after he completed the training, he found work in lead abatement.” With some experience under his belt, he landed a job with Miller Construction, doing asbestos abatement in an old school in Jefferson City, Missouri. Later, he took a job with Clean Harbors, a large environmental services company, traveling across the country to clean up asbestos and other hazardous materials at manufacturing plants and in rail cars.

“The college’s environmental job training program helped me get back on my feet and gave me the confidence to go out and apply for these jobs. It opened so many doors for me.”

— Carl Baldes
Program Graduate

Diverse Careers and Second Chances

Many hiring managers now call Dulle directly when they have a need for asbestos, lead or mold abatement and confined space management. “For example, we have a good relationship with Spray Services, Inc.,” Dulle says. “Over the years, the company has hired several graduates of our program, primarily for asbestos and lead abatement.”

Examples of other employers hiring graduates include Cardinal Environmental, Cenpro Services, Inc., Code

Red Safety, Making America Better, and Midwest Service Group. Environmental Resources, Inc., offered all 10 graduates who completed the training in May 2015 jobs responding to the avian flu outbreak in Iowa. Six accepted those jobs, while three others are doing asbestos abatement in St. Louis with All in 1 Environmental Services, a woman-owned business established by Nina Algee, a 2010 program graduate.

Algee, President and Chief Executive Officer of All in 1 Environmental Services, is eager to hire graduates from St. Louis Community College's environmental job training program. As a graduate herself, she understands the challenges many participants face when trying to enter the job market, especially those who've been previously incarcerated. "I've got seven graduates working for me, and six of them had spent time in jail," Algee says. But, you know what? Not one of them has missed a day on the job. They are fantastic employees."

"This program gives people a second chance, especially those who've been previously incarcerated."

— Nina Algee
President and Chief Executive Officer
All in 1 Environmental Services

Evolving With the Times

Since 2000, St. Louis Community College has received four rounds of funding from EPA to support the college's environmental job training program and was selected to receive a fifth award in September 2015. Over those years, the college placed more than 75 percent of its graduates in the local job market in specialized, in-demand positions. "Our graduates are well suited for multiple roles," Dulle says. "We see our graduates finding themselves headed into supervisory roles pretty quickly, and the comprehensiveness of the training is a big reason for that."

Over time, Dulle and her team have adapted the college's job training program to meet the evolving demands of employers and local needs. For example, the St. Louis Development Corporation is leading an initiative to clean up abandoned gas stations at the neighborhood level. In response, Dulle says, "We've added underground storage tank training to our program, based on this initiative and the possibility for future job opportunities for graduates."

But finding a job isn't the only end benefit. Graduates walk away with greater confidence and self-esteem.

"It's been a great ride," Lomax says. "I'm living the highest of the highs, but I've visited the lowest of the low. I'm thankful and appreciative that I can contribute to a team. It feels good knowing that you are appreciated and can be relied upon to complete whatever the task is."

His next task? Giving a commencement speech at graduation for the next class of job training participants.

Cypress Mandela Trains Oakland's Unemployed to Clean Up Superfund Sites

Oakland, California, is a city of approximately 400,000, with one of the most ethnically diverse populations in the country. Fifty-eight percent of residents are African American, and 40 percent are Hispanic. The neighborhood of West Oakland, in the northwest corner of the city and across the bay from San Francisco, has one of the highest crime rates in the state.

Several former military bases in Oakland and the Port of Oakland have hazardous materials and waste sites on them. The area is also home to several high-profile Superfund sites.

"Contamination seems to thrive in areas with minorities and people with low incomes and low education," says Art Shanks, Executive Director of Cypress Mandela Training Center, a community-based organization working with unemployed and underemployed Bay area men and women. "The basic challenge in this community is that it's been devastated by unemployment, with a jobless rate near 29 percent. Rampant drug use and substandard education are problems as well."

But Shanks' organization has come up with a proven formula for preparing its training participants to succeed in life and in environmental careers.

A Recipe for Success

Cypress Mandela was one of the first organizations in the country to receive funding from EPA for its job training pilot program in 1998. Since then, the nonprofit has been a repeat grant recipient for its job training program, which targets economically disadvantaged residents of Oakland and surrounding East Bay communities. The focus is on minorities, veterans, formerly incarcerated individuals and at-risk youth.

Cypress's boot camp-style approach involves physical training, drug testing and a variety of life skills, including

time management, budgeting, nutrition, chemical dependency education, sexual harassment awareness, job survival skills, mentoring and team building.

“My first day there, I knew Cypress would be good for me,” says Jarell Davis, a 2011 Cypress graduate who supported cleanup efforts at the West Oakland Residential Lead investigation area, which is adjacent to the former AMCO Chemical Facility Superfund site. “I was coming off some hard times. I was incarcerated, and when I came home, I was looking to turn my life around. All the instructors have a strict way of going about things. They care and want you to do better. There’s no horsing around. I’ve never been in the military, but I’m sure Cypress isn’t too far off in terms of guidelines and handling business.”

Jerry Wade, the Response Manager at Environmental Quality Management who hired Davis and several other Cypress graduates to work on Superfund cleanups in the area, spent four years in the Marine Corps, and the disciplined approach he witnessed at Cypress really caught his attention. “How the program’s run, the expectations and the demands put upon the students can be compared to the military,” Wade says.



Two Cypress Mandela participants are suited up for the 40-hour HAZWOPER training module.

Core Training:

- Occupational Safety and Health Administration 40-Hour Hazardous Waste Operations and Emergency Response (OSHA 40-Hour HAZWOPER)
- Mold Remediation
- OSHA 10-Hour Construction Safety
- First Aid and Cardiopulmonary Resuscitation (CPR)
- Labor Occupational Health Program Training 24-Hour
- Heavy Equipment Operation Safety Training

Supplemental Training:

- Solar Panel Installation
- Orientation to the Construction Industry and the Apprentice Structure*
- Applied Math for Construction Purposes*
- Job Safety*
- Tool and Material Identification*
- Introduction to Structural Steel and Ironwork*
- Introduction to Framing, Form and Foundation Work*
- Introduction to Cement Work*
- Site Surveying
- Blueprint Reading
- Electrical Fundamentals*
- Plumbing Fundamentals*
- Introduction to Operating Engineers*

Graduates Trained: 1,548 since 1998

Graduates Employed: 1,238

Average Starting Hourly Wage: \$13.00

**EPA does not fund this component of the program.*

Experts from all over California serve as guest instructors alongside in-house staff. The 16-week training includes 77 hours of instruction in everything from handling hazardous materials and confined space entry to EPA and OSHA requirements and injury and illness prevention. A combination of classroom and hands-on learning prepares participants for skilled trade jobs and stable employment in the environmental field. In addition to receiving six state and federal certifications, participants can earn up to seven college credits from the University of California (UC), Berkeley; UC Davis; or Laney College.

“What our program does is educate participants on the contaminants, how they affect the environment and our community, and what steps they can take to clean up the contamination. In doing so, they earn a living wage and clean up their communities at the same time.”

— Art Shanks
Executive Director
Cypress Mandela Training Center

At Work on Superfund Sites

Cypress also assists with job placement. That's how Davis landed his Superfund job at the West Oakland Residential Lead investigation area, adjacent to the former AMCO Chemical Facility. With a history of uses, including bulk chemical storage, a scrap metal yard and cable storage, the AMCO property was on EPA's Superfund National Priorities List (NPL). Previous activities there had left high concentrations of lead in the soil spanning six nearby residential blocks.

To address the contamination, EPA undertook an innovative and alternative cleanup approach to reduce the bioavailability of the lead and covered the treated soil with sod and organic material. This solution promised far less of an impact on the neighborhood than a traditional dig-and-haul removal would have, because treating the contaminants onsite significantly reduced the amount of truck traffic. Not only did the project use a small, disadvantaged business for the contractor, but it also employed Davis and nine other Cypress graduates.

Davis was recruited by SFS Chemical to work as an Environmental Technician on the Superfund cleanup, with starting pay at \$23 an hour. After eight months on the job, Jerry Wade at Environmental Quality Management recruited Davis to join his company,

also working at the Superfund site. Davis was promoted to Site Supervisor, at a rate of \$45 an hour, and was responsible for homeowner engagement on the project.

Davis worked on that Superfund job for nearly two years, and he attributes his success and personal growth to Cypress's job training program. “Cypress changed my work ethic,” he says. “It humbled me. They taught me self-discipline and changed my whole attitude toward working with other people. I wouldn't have made it this far without them.”



Workers, including Cypress graduate Jarell Davis (third from left), are gathered at the West Oakland Residential Lead investigation area.

Clarence Andrews is another graduate who worked at the West Oakland Residential Lead investigation area. He had been incarcerated for five years before signing up for Cypress's environmental job training program. After graduating, he too joined SFS Chemical, working on the remediation crew at the Superfund site and making \$18.24 an hour.

“[Cypress] started with some guys who felt like they were shut out from the system, and over time, these guys evolved into believing that they are part of the system—and that it can work for them. They also learned that when they change their own lives, they can change the lives of those around them—girlfriends, children, friends and parents.”

— Jerry Wade
Manager
Environmental Quality Management

Cypress graduates have also worked on other Superfund sites in the area, including the Oakland Army Base and Alameda Naval Station. Current participants will have an opportunity to work on an upcoming removal action at the AMCO Chemical Superfund site, scheduled to begin in late 2015.

Graduates Employed in Other Fields

In addition to Superfund projects, Cypress has placed graduates in jobs across the spectrum of construction and environmental work. Shanks underscores the importance of the breadth of skills for which his organization conveys thanks to EPA's environmental job training program. "We're in a heavily union area," he says. "When you open it up like EPA has done, you maximize the potential of the training and employment opportunities in the community. Now, you can place graduates in so many other positions."

Shanks says that about a dozen graduates a year find work on brownfield sites and cleaning up old gas stations. Two graduates are employed at a wastewater treatment plant a few blocks from the training center. Others have gone on to work as safety inspectors and engineers, equipment operators, solar installers and workers in green construction.

Some are employed in emergency response. Cypress graduates participated in the responses to Hurricanes Katrina and Sandy, for example. "We are certified West Coast responders," Shanks says. "We train like police and firefighters, and most of our participants are supervisor level when they graduate."

Global Diving & Salvage, Inc., a large diving contractor on the West Coast, employs three Cypress graduates and plans to hire more to support its emergency response work. "We've been bringing on residents in an effort to utilize local labor and keep the money in the community," says Kyle Watson, the company's Operations Manager. "I was blown away by the intensity of the [Cypress] program. It's an almost military atmosphere, with high expectations of success. That matches our work ethic. We take safety seriously."



Participants are preparing to set up a mock emergency response decontamination area in the training center.

Eighteen graduates went to work with Black & Veatch Construction, Inc., building a 3.5-mile underground transmission line beneath Oakland's busy streets. Also, through a partnership with Pacific Gas and Electric, graduates can receive pre-apprentice training designed to prepare them for jobs as linemen with the utility. Carl Artis, Shante Hooker and Jeffrey Hendrickson are among the recent graduates who entered the utility's PowerPathway program, designed to develop workers for careers in gas and electric operations. Combining environmental training with training in utilities can help utilities deploy sustainable approaches such as energy efficiency, a cost effective way to reduce greenhouse gas emissions and combat global climate change.



EPA Region 9 representative Nova Blazej addresses Cypress graduates who are now participating in PG&E's PowerPathway program for utility workers.

Benefits Extend Beyond Better Jobs

In addition to the environmental knowledge and hands-on skills at the heart of Cypress's program, Hendrickson says that one of the most important things he learned was how to be a leader. "We were often put together in different groups, forcing us to work with different people, identifying each other's strengths and demonstrating leadership in each different situation," he says. "I was impressed with the success we were able to achieve working together. We will take this teamwork and sense of being a leader into the workplace."

Another important benefit of job training programs like this one is the ability to fight crime, poverty and pollution at the same time. "Participants don't need to steal or commit crimes now because they've learned skills to earn a living," Shanks says. "We're taking a person who was underemployed, educating him and placing him in an apprenticeship program, with starting pay from \$18 to \$25 an hour. EPA's environmental job training program is one of the best things the Agency has ever done—to clean up the environment and challenge individuals to make better lives for themselves and their communities."

Superfund Site Cleanup Snapshots

Florida State College at Jacksonville, Florida

More than 100 graduates of Florida State College at Jacksonville's environmental job training program have found positions supporting cleanup efforts at the various Superfund ash sites in Jacksonville. One such graduate is Alonzo Terrell, who completed the job training program in 2011 and began working as a driver with ENTACT, removing contaminated ash from the Lonnie C. Miller Sr. Regional Park Superfund site. He's been with the company now for three years and, in between phases of the ash project work, has traveled to Illinois, Pennsylvania and Texas to lend a hand on other Superfund projects.

City of Richmond, California

Scottie Ifft was living in a homeless shelter before he enrolled in the City of Richmond's environmental job training program. After graduating, he and four other graduates were hired by Pacific States Environmental to conduct mold and asbestos abatement work at the Point Molate Naval Fuel Depot Superfund site.

Northwest Regional Workforce Investment Board, Connecticut

Graduates Katherine Brown and Jessie Rivera worked with seven other graduates of Northwest Regional Workforce Investment Board's environmental job training program at the Nova Dye & Print Corporation factory Superfund site in Waterbury, Connecticut. There they earned approximately \$40 an hour performing deconstruction and site remediation work on the property.



Program graduate Jessie Rivera worked at the Nova Dye & Print Corporation factory Superfund site, performing deconstruction and site remediation work on the property.

Other EPA Environmental Job Training Programs Delivering Superfund Site Cleanup Training:

- Alaska Forum, Inc., Alaska
- Arkansas Construction Education Foundation, Arkansas
- City of Camden, Arkansas
- City of Glens Falls, New York
- City of Milwaukee, Wisconsin
- City of Tacoma, Washington
- City of Texarkana, Texas
- City of Toledo, Ohio
- Groundwork Providence, Rhode Island
- Iowa Western Community College, Missouri
- Lewis and Clark County, Montana
- Limitless Vistas, Inc., Louisiana
- Los Angeles Conservation Corps, California
- Memphis Bioworks Foundation, Tennessee
- Merrimack Valley Workforce Investment Board, Massachusetts
- Metropolitan Energy Center, Missouri
- New Jersey Department of Environmental Protection, New Jersey
- Nye County, Nevada
- OAI, Inc. – Greencorps Chicago, Illinois
- Oregon Tradeswomen, Inc., Oregon
- Saint Paul Port Authority, Minnesota
- Santa Fe Community College, New Mexico
- Sitting Bull College, North Dakota
- Southeast Neighborhood Development, Inc., Indiana
- St. Nicks Alliance, New York
- The Center for Working Families, Inc., Georgia
- The Enterprise Center, Inc., Tennessee
- The Fortune Society, New York
- Zender Environmental Health and Research Group, Alaska

SOLID WASTE MANAGEMENT

Zender Environmental Health and Research Group Trains Workforce to Clean Up Landfills in Their Own Communities

Many rural communities in Alaska face health and environmental risks due to poor solid waste management at local dumpsites or landfills. Dumpsites are generally unlined, unfenced, uncovered and unsegregated, and many communities do not have a landfill operator or adequate equipment for consolidation or landfill grading. Nearly three-quarters of these dumpsites are within a mile of the towns they serve.

The U.S. Resource Conservation and Recovery Act governs the disposal of solid and hazardous waste to protect human health and the environment. Alaska is the only state that has three classifications of landfills under the act. Class 1 applies to large city landfills, which are subject to the same regulations as all other landfills in the United States. Class 2 applies to communities with populations of about 1,500 to 10,000. Class 3 applies to the communities Zender serves, which generally have populations of less than 1,000. Class 3 communities have significantly different standards they must abide in the disposal of solid waste. Generally, these communities are not required to line their landfills, they are permitted to openly burn waste in a container, and they are required to cover their waste only twice a year.

“Managing solid waste in these remote villages means you’re much more responsible for the community’s health than elsewhere,” says Lynn Zender, Executive Director of the Zender Environmental Health and Research Group. “If there is no one to properly manage and dispose of the waste, the public health risk and environmental damage can be substantial.”

Unlined sites often are adjacent to bodies of water, over half of which experience yearly flooding from spring snowmelt, as well as from fall and summer storms. Smoke and ash from openly burned, unsegregated, solid and hazardous waste settles in towns and surrounding areas. The proximity of these uncovered waste sites to local communities, together with

Core Training:

- Occupational Safety and Health Administration 40-Hour Hazardous Waste Operations and Emergency Response (OSHA 40-Hour HAZWOPER)
- Leaking Underground and Aboveground Storage Tank Removal

Supplemental Training:

- Solid Waste Management and Recycling
- Home Fuel Tank Inspection
- Confined Space Entry
- OSHA 10-Hour Construction Safety
- Rural Alaska Landfill Operation
- Freon Recovery—EPA Section 608 Universal Technician Certification
- Forklift Operation—OSHA Standard 29 CFR 1910.178
- First Aid and Cardiopulmonary Resuscitation (CPR)
- Water, Soil and Air Quality Sampling
- Climate Change and Emergency Response
- Oil Spill Response—State of Alaska Response Team
- Federal Emergency Management Agency 100- and 200-level National Incident Management System Courses

Graduates Trained: 61 since 2011

Graduates Employed: 57

Average Starting Hourly Wage: \$18.55

generally free access and absence of management, places residents at serious risk of exposure to contaminants and pathogens on- and offsite.

RACEJT Program Serves Remote Alaskan Communities

Zender's Rural Alaska Community Environmental Job Training (RACEJT) program serves remote communities with populations typically numbering less than 1,000 and more than 30 percent Alaska Native. These communities face significant environmental and economic challenges. For example, they are off the state road system and can be reached only by plane or chartered boat. The unemployment rate in some villages can be as high as 19 percent, and approximately 22 percent of residents live in poverty.



Zender trains local residents on how to properly manage solid waste in remote communities like Napakiak, Alaska.

Zender educates unemployed and severely underemployed Alaska Native training participants on the adverse health and welfare effects of poorly managed solid waste in their communities and trains participants in the methods needed to eliminate such effects. "Our graduates return home to start a waste management program," Zender says, "which leads not only to improved health but also to an improved economy because they have jobs in their communities."

The Mayor of New Stuyahok, Randy Hastings, wrote of the program, "It is very helpful to have knowledge about landfill issues and other hazardous and potentially dangerous issues, and about prevention measures to avoid them." RACEJT graduate Philip Christopher worked as a Landfill Operator for the City of New Stuyahok, following his graduation from the program in 2013.

Graduates receive course certifications qualifying them for positions as waste collectors, landfill operators, contaminated site workers, tank inspectors

"When our graduates return to their communities, they have the skills necessary to help limit the health risks posed by mismanaged landfills."

— Lynn Zender
Executive Director
Zender Environmental Health and Research Group

and recycling center managers. Employers include tribal and city governments, as well as EPA's tribal general assistance programs, which provide part-time jobs for graduates. Commercial projects that come into town when the summer season permits also provide jobs, including employment in road construction and housing projects managed by the U.S. Department of Housing and Urban Development.

Graduate Shares Environmental Lessons at Home

Joshua Melton graduated with the RACEJT class of 2014. Melton is President of the Tribal Council in Noorvik, Alaska, a village in the Northwest Arctic Borough, whose population of around 668 are 90 percent Iñupiat—an Inuit, Alaska Native people. Active in Tribal Council since 2005, his work keeps him mostly in town, and he does not want to leave the village to find work elsewhere. Although he gets a stipend for his work on the Tribal Council and in other local organizations, he mostly volunteers his time. He signed up for the Zender's job training program because he recognized his community's environmental health challenges and wanted to help.

Upon graduation from the RACEJT program, Melton became the Lead Landfill Operator in Noorvik, supervising a summer crew of 10 and earning \$19 per hour. Throughout the season, under Melton's leadership, the team was able to safely gather, separate and stage materials for backhaul or recycling. Using his refrigerant recovery certification, Melton removed Freon from discarded freezers and refrigerators. They inspected for water seepage and leakage, and cleaned the fencing around the landfill. They also collected trash in town for the site and ensured that the material was properly covered. In short, Melton and his team helped make their community a safer, healthier place to live.

Paul Anderson, a Geoinformation Manager with NANA Regional Corporation, Inc., assisted in inspecting the landfill during a routine visit that summer. "When I inspected the Noorvik landfill in August 2014, it was well managed and orderly," Anderson says. "Joshua leveraged his training well. Noorvik has a



Joshua Melton (left) and Charles Clayton III (center) participate in a spill response exercise with John Brown, the lead instructor from the Alaska Western Spill Response Team. The RACEJT program offers supplemental training on responding to oil spills and hazardous waste emergencies.

very organized, controlled system of waste collection, recycling and disposal, with clear, delineated boundaries around the site.”

Melton is educating his fellow citizens to be more aware of the impact climate change is having on their environment. Global warming is causing permafrost erosion, particularly along the edges of water bodies, causing villages to lose land infrastructure into the river. Warmer temperatures are also affecting the ice roads residents need for transportation during the winter, making travel less dependable and jeopardizing the flow of goods and services to remote villages. Because of increasing and sustained warmer temperatures throughout the Arctic, unlined landfills in Alaska Native villages that contain hazardous waste are more prone to leaching, and the offsite migration of contaminants into water bodies threatens local subsistence for rural Alaska Native residents, as well as the fish and wildlife in these fragile ecosystems. Through Zender’s training, graduates are also learning about climate adaptation, including methods for deterring wildlife from urbanized areas when food sources have been depleted. In Alaska, the loss of sea ice often drives animals, such as polar bears, into urban areas in search of food.

“We all have a responsibility to keep our environment clean and properly dispose of waste.”

— Joshua Melton
Program Graduate

Placing Graduates in Local Jobs

Another graduate of the program, Basil Lake, is from Hooper Bay, a Yup’ik Eskimo town of 1,200 on Alaska’s west coast. When he graduated in 2014, council and town leaders were so impressed with Lake’s new skills, they increased the wage they offered him to be a part-time landfill operator. That summer, he was able to increase his work hours by leading a hazardous materials backhaul effort—the largest effort of its kind from a remote Alaska Native village. Using the skills he learned in RACEJT, Lake and his crew, including two other RACEJT graduates, safely prepared and packaged electronic waste and lead-acid batteries, and sawed and consolidated bulky scrap metal to fill eight shipping vans. They also removed Freon from discarded freezers and refrigerators. Lake’s training also prepared him for coordinating and managing recycling services between Noorvik and Seattle, Washington.



Basil Lake uses the required specialized equipment to remove Freon from a refrigerator at a dumpsite in Hooper Bay.

Both Melton and Lake, like other graduates of the program, benefited from the opportunity to train for work they could conduct in their own villages, without having to leave to find work in urban centers.

Graduates are able to continue the practice of their subsistence lifestyles, while also participating in training under Zender’s environmental training program. Subsistence is critical and it is a key component of Alaska Natives’ lives. By remaining in their communities and securing employment with their Alaska Native villages, graduates are also able

to preserve their unique and fragile cultures, while furthering self-determination and village sovereignty by managing their own environmental waste and landfills and enforcing environmental regulations. Under EPA's environmental job training program, Zender has been able to customize its training so that participants can fill jobs available in the villages where they live. "Our goal has been to place graduates in a local job that facilitates their community's environmental health," Zender says. "Graduates who want to stay and work in their own communities now have a better opportunity to do so. That makes all the difference in their lives."

Northwest Regional Workforce Investment Board Grads Build Careers Through Deconstruction

Once considered the "Brass Capital of the World" for its numerous brassware plants, Waterbury, Connecticut, saw its industrial base erode in the 1960s and 1970s, when local factories that had concentrated on the production of war materials began to shut their doors. The 25,000 brass industry jobs available at the peak of World War II fell to one-fifth of that number by the late 1970s. Today, the city is addressing poverty and unemployment rates of 8 to 9 percent. The revitalization of abandoned industrial sites is improving the situation.

Addressing Industrial Contamination in Waterbury

Industry had a significant environmental impact on the city: Brass, copper and metal hydroxide sludge; PCBs; asbestos; lead; and other contaminants remain among the deserted facilities. Although the city has made great progress in cleaning up contaminated sites, there is much more work to do.

"We were our own worst enemy, and now we're cleaning it up," says Ray Sullivan, Manager of Workforce Programs at the Northwest Regional Workforce Investment Board (NRWIB). "But brownfields are magnets for employers, and they want to see job candidates with environmental certifications."

NRWIB's job training program results in sustainable employment opportunities in construction and demolition (C&D) recycling and deconstruction at brownfields and other contaminated sites.

Producing a Talented Workforce

NRWIB recruits, trains and places predominantly low-income minorities who are unemployed or

"I am incredibly proud of our Northwest Regional Workforce Investment Board, EPA's environmental job training program and their impact to provide the workforce to help clean up our community while providing job opportunities. We are a large city with one of the highest unemployment rates in Connecticut, yet our Workforce Investment Board has done an incredible job of turning that around and delivering results."

— Neil M. O'Leary
Mayor
City of Waterbury, Connecticut

underemployed residents of Waterbury. About 85 percent of its graduates were formerly incarcerated. The program has referred numerous graduates to jobs at the Waterbury Industrial Commons, a mile-long former brass foundry undergoing environmental remediation and revitalization. Last operated by the Chase Brass and Copper Company, the foundry employed 1,500 people before shutting down in 1975. A property management company rented office space at the facility until 2010 without investing much in revitalization. The Waterbury Development Corporation purchased the site in 2010 and has been collaborating with EPA, the U.S. Department of Defense, the Connecticut Department of Energy and Environmental Protection and the City of Waterbury to transform the property into a new, major industrial site to attract more manufacturing companies to Waterbury.



NRWIB graduates have helped salvage structural steel and concrete from abandoned buildings like this one at the Waterbury Industrial Commons.

Standard Demolition Services, Inc., has assisted in the revitalization. “We’ve employed numerous graduates of the NRWIB training program for years,” says Stephen Goldblum, Owner and CEO of Standard Demolition Services, Inc.

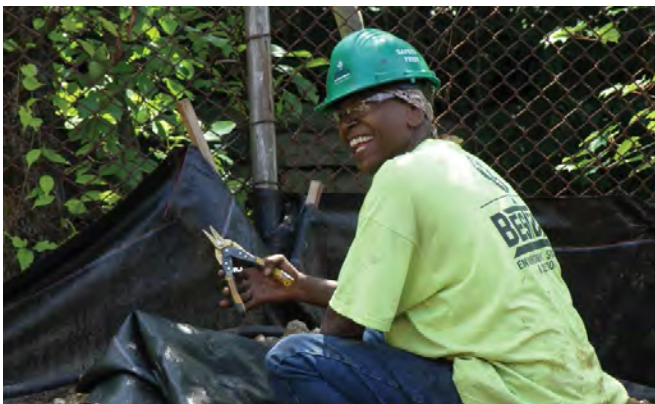
“The environmental job training program produces the qualified workforce we need.”

— Stephen Goldblum
Owner and CEO
Standard Demolition Services, Inc.

Deconstruction Clears the Way for Growth

Katherine Brown is one of many NRWIB graduates who has worked at the Waterbury Industrial Commons, earning about \$27 per hour to assist with C&D recycling and deconstruction by salvaging structural steel and concrete. One hundred percent of the concrete at the site was broken up, remediated where necessary and used as backfill and landfill on the existing property. Brown and other NRWIB graduates worked to collect, crush and haul the concrete for use around the site. The steel beams were recycled offsite.

“That experience taught me so much,” Brown says, “about work sites, about machines and the way that buildings are constructed and deconstructed, about the materials buildings are made of. It was tedious work; that crusher was operating all the time. But in the end, I was satisfied because I knew something better would be built in its place.”



Graduate Katherine Brown setting up a barrier between a work site and the Mad River to protect the river from emissions related to demolition work at the Nova Dye & Print Corporation factory, a Superfund site in Waterbury.

Core Training:

- Occupational Safety and Health Administration 40-Hour Hazardous Waste Operations and Emergency Response (OSHA 40-Hour HAZWOPER)
- OSHA 30-Hour Construction Safety
- Lead Renovation, Repair, Painting
- Leaking Underground Storage Tank Removal
- OSHA 7200 Bloodborne Pathogens Protection
- OSHA Hazard Communication
- Confined Space Entry
- Personal Protective Equipment and Respirators
- Lead Abatement Worker
- Asbestos Abatement Worker
- Resource Conservation and Recovery Act and Department of Transportation Hazardous and Non-Hazardous Waste Generation

Supplemental Training:

- Solar Panel Installation
- OSHA 10-Hour Construction Safety
- Environmental Engineering and Design/Phytoremediation
- Wastewater Treatment
- Building Analyst Training

Graduates Trained: 110 since 2009

Graduates Employed: 108

Average Starting Hourly Wage: \$17.50

“I’m so grateful I had the opportunity to participate in the program. It changed my life.”

— Katherine Brown
Program Graduate

Brown had been unemployed for two years prior to her training at NRWIB. She had worked for Echo Manufacturing for about 16 years as a Material Handler and a Supervisor before the company downsized in 2009 and she lost her job.

Now in her early 50s, Brown didn't hesitate to sign up when she heard about NRWIB's job training program. She had cared for her elderly mother and autistic brother for years and needed to find work.

Making Use of Dismantled Buildings

NRWIB also has placed graduates at a deconstruction project at the Cherry Street Industrial Park, a brownfield site with vacant buildings that is part of a larger facility that was developed in 1857 by the Waterbury Clock Company. C&D Services, LLC, a small company based in Wolcott, Connecticut, deconstructed the existing factory buildings, dismantled the building materials and recycled or reused them. More than 80 percent of the non-hazardous building materials were recycled, including granite, bluestone, timber and brick. Four NRWIB graduates earned between \$13 and \$15 an hour to collect and clean the brick, 100 trailer loads of which went to Waterbury contractors for sale in local markets. Developers are planning to build a local plumbing supply warehouse on the site, once it is completely cleared and remediated.

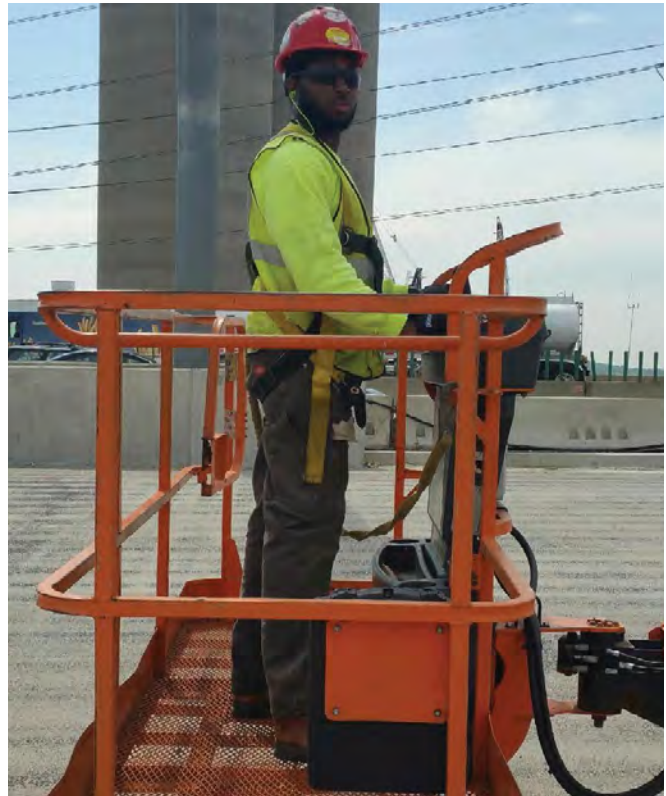


More than 80 percent of the non-hazardous building materials were recycled during a deconstruction project at the Cherry Street Industrial Park in Waterbury.

Under EPA's environmental job training program, NRWIB has expanded its course offerings to include deconstruction and solid waste management, renewable energy installation, spill response, environmental engineering and design, and wastewater treatment.

A Graduate Working in the Field

David Goodman graduated from both EPA's environmental job training program and solar panel installation training and is now an apprentice for the



David Goodman stands in a lift at a worksite near New Haven. The high number of brownfield sites in Connecticut has kept him busy with work since graduating from the training program in 2010.

Local 611 laborers union, making \$45 per hour in prevailing wages. Goodman grew up in Waterbury and lives there today with his girlfriend and their daughter. The training has helped him support his family.

After graduating from the environmental training, he spent three years working in C&D recycling, making about \$20 per hour. When he heard that NRWIB was offering solar installation training, he was curious. "Solar-generated power is the wave of the future," Goodman says. "I want to be a part of that."

He was also interested in furthering his education. "Now, I've got the solar installation skills on top of my other environmental training," he says. "The combination is helping me build a career in the union."

"NRWIB's training has made my life 1,000-percent better," he continues. "There's a lot of poverty in Waterbury, and a lot of people without a job. For me, these trainings have led to higher wages and more fulfilling work."

Support from NRWIB doesn't end the day of graduation. Sullivan and others stay in touch with graduates, notifying them when they should update certifications and take follow-up courses. "They don't just call you about jobs," Goodman says. "They call you to ask how you're doing—to see if you're all right. This is so much more than a job-placement program. It changes lives for the better."

Solid Waste Management Snapshots

Merrimack Valley Workforce Investment Board, Massachusetts

Jose Ayala and Richard Theberge were unemployed before completing the environmental job training program offered by the Merrimack Valley Workforce Investment Board in 2014. Shortly after graduating, Ayala was hired at \$13 an hour by Mainstream Global, an electronics recycling company. Ayala is an integral member of the reverse or “green” logistics team, which collects materials and channels them to the appropriate aftermarket entity for reuse, resale, remanufacturing or recycling. Theberge took a job making \$13 an hour as an Engineering Technician for Separation Technologists, where he repairs filtration systems and assists in maintaining and operating the wastewater treatment and chemical treatment equipment.

City of Oxnard, California

When the City of Oxnard recently took back control of its Materials Recovery Facility (MRF), it began providing solid waste management training through its EPA-funded environmental job training program to address the need for new support staff at the facility. Multiple trainees were employed by City Corps to conduct a waste characterization study at the MRF. Two of the graduates are now employed full time by MRF. Both of these graduates were formerly incarcerated, and one of them had participated in the California Gang Reduction, Intervention, and Prevention Aftercare program. This program provides reentry aftercare case management services, connecting youth to needed services and resources upon release from prison.



Oxnard job trainees employed by City Corps to conduct a waste characterization study at the MRF.

Other EPA Environmental Job Training Programs Delivering Solid Waste Management Training:

- Alaska Forum, Inc., Alaska
- Arc of Greater New Orleans, Louisiana
- Arkansas Construction Education Foundation, Arkansas
- City of Camden, Arkansas
- City of Durham, North Carolina
- City of Glens Falls, New York
- City of Milwaukee, Wisconsin
- City of Richmond, California
- City of Texarkana, Texas
- City of Toledo, Ohio
- Corporation to Develop Communities of Tampa, Inc., Florida
- Cypress Mandela Training Center, Inc., California
- Energy Coordinating Agency, Pennsylvania
- Florida State College at Jacksonville, Florida
- Groundwork Providence, Rhode Island
- Iowa Western Community College, Iowa
- Limitless Vistas, Inc., Louisiana
- Los Angeles Conservation Corps, California
- Memphis Bioworks Foundation, Tennessee
- Metropolitan Energy Center, Missouri
- New Jersey Department of Environmental Protection, New Jersey
- North Star Center for Human Development, Inc., Connecticut
- Nye County, Nevada
- OAI, Inc. – Greencorps Chicago, Illinois
- Pathways-VA, Inc., Virginia
- Saint Paul Port Authority, Minnesota
- Sitting Bull College, North Dakota
- Southeast Neighborhood Development, Inc., Indiana
- The Enterprise Center, Inc., Tennessee
- The Fortune Society, New York
- The Hunters Point Family, California
- The WorkPlace, Inc., Connecticut

WASTEWATER MANAGEMENT

Rose State College Creates a Pipeline for Careers in Wastewater Treatment Facility Operations

It takes rigorously trained, licensed operators on the job 24 hours a day, seven days a week to keep the country's 155,000 public water systems running smoothly and our drinking water safe. But that pool of experienced water treatment professionals is drying up.

"There's a severe shortage of operators at wastewater facilities," says Bill Clark, Environmental Coordinator at Rose State College in Oklahoma City, Oklahoma. "Plus, a lot of workers are aging and will be retiring soon."

Clark is referring to the baby boomers who constitute one-third of the water workforce. In retirement, they will take with them a vast amount of institutional knowledge. It poses a real challenge for water treatment employers in both the public and private sectors to find or train new workers to replace those who are leaving.

"Still, the high demand for these environmental jobs provides a tremendous opportunity for those looking for employment or a career change," Clark says.



Rose State College wastewater trainees during chlorine tank management training.

Core Training:

- Occupational Safety and Health Administration 40-Hour Hazardous Waste Operations and Emergency Response (OSHA 40-Hour HAZWOPER)
- Leaking Underground Storage Tank Removal

Supplemental Training:

- Water and Wastewater Operator
- Confined Space Entry
- OSHA Hazard Communication
- OSHA 7410 Excavation Hazards

Graduates Trained: 78 since 2011

Graduates Employed: 37

Average Starting Hourly Wage: \$17.22

Training Leads to Environmental Careers

The outlook is especially promising for those who take advantage of the new environmental job training program at the Oklahoma Environmental Training Center at Rose State College. With support from EPA's environmental job training grant program, the center is offering unemployed and underemployed local residents free training that leads to environmental careers in water and wastewater system operations, managing hazardous chemical supplies and hazardous waste cleanup. The program is helping employers across the state meet that demand, making it a win-win for participants and employers.

"Our graduates are highly sought after," Clark says. "One employer wants us to call his cell phone to set up interviews with participants as soon as they graduate!" Many graduates are moving from unemployment or low-paying jobs in retail and fast food service without benefits to higher paying jobs with benefits, paid vacations and retirement investment plans.

"We brought in specialized instructors, additional equipment for more hands-on training, and new text books and videos to enhance the training experience,"

Clark says. “With the additional funding from EPA, we were able to make the training more interesting.”

The expanded three-week program is delivering big rewards for its students too. Graduates of the program—men, women, single parents and veterans—are landing jobs with local employers like Veolia North America, Tinker Air Force Base and various municipalities, including Edmond, Bethany, Shawnee, Norman and Midwest City.

Kami Witt, a recent graduate who now works at the City of Bethany Water Treatment Plant, had been dissatisfied by her previous, low-paying jobs at a donut shop, a grocery store and a pizza parlor. “I wasn’t at all happy in food service or retail,” she says, “and having come from a very poor family growing up, I felt like I was trapped in an underemployment cycle I couldn’t get out of.”



Kami Witt making water line repairs for the City of Bethany Water Treatment Plant.

She wanted to build a career in a challenging, rewarding field of work but didn’t know where to start. Her father-in-law, a Wastewater Facility Operator, introduced her to the idea of an environmental career in water treatment.

So, at age 35, Witt enrolled in the environmental job training program at Rose State College, became certified in water and wastewater operation and discovered a newfound confidence in her ability to tackle math and science courses. Because she scored so high on her water and wastewater operation certification exam during the EPA-funded job training program, after graduation she was eligible to apply for a wastewater lab license on her own.

“The environmental job training program opened up a door to a fulfilling career.”

**— Kami Witt
Program Graduate**

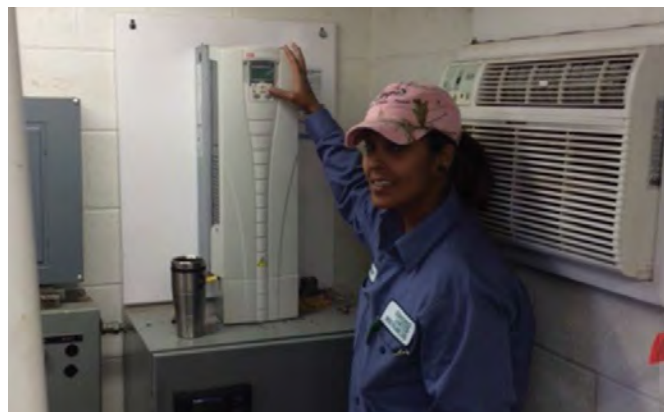
Witt was recently promoted to a full-time Water Treatment Operator by the City of Bethany, earning an extra \$250 per month over her initial entry-level pay. She monitors and adjusts the treatment plant’s chemicals, assists with well tests and keeps records for the Oklahoma Department of Environmental Quality, among other activities.

“I am so glad I had an opportunity to take those classes,” she says. “I’m performing a vitally important service to the community, and I’m also helping to protect the environment. I feel like I’ve found my niche and that wouldn’t have happened if those classes hadn’t been available to me.”

Graduate Thrives in New Water Treatment Career

Sheena Zahler, one of the first graduates of the program, echoes Witt’s proud sentiments: “The environmental job training courses at Rose State College gave me a sense of pride and confidence to operate in a job that I now see is a great and respected career choice.”

Zahler grew up near Guthrie, Oklahoma. After graduating from high school, she briefly attended the University of Central Oklahoma but felt she needed to take some time to develop a career plan. Over the next eight years, she worked a number of warehouse jobs but none that she wanted to develop into a long-term career. During one of her longer stints, Zahler worked at a warehouse operated by a beer distributor, but when new owners began changing procedures, she felt it was time to move on.



Graduate Sheena Zahler adjusts a variable frequency drive to ramp up rotations per minute on a water pump at Edmond Public Works.

Zahler remained unemployed for a little over a year, until her mother referred her to a custodial position at Edmond Public Works. She worked the night shift for nine months. “It was a tough job,” she says. “For the most part, I still wasn’t satisfied and knew I was capable of making a bigger impact in my employment for my community.”

She wanted to transition to a different, more challenging position to increase her pay and work during the day. A job opened up in the Water Resources Department, but it required a water and wastewater operation certification. That’s when she heard about Rose State’s environmental training program and enrolled.

Two years later, Zahler is on the fast track in her new career. After completing the program, she landed a job as a Water Well Technician, earning an additional 20 percent per hour. She was recently promoted to a Water Well Operator and received a 25-percent raise.

Meeting the Requirements of Local Employers

The Rose State program is creating a new pool of highly qualified water and wastewater professionals who meet the requirements of employers. “Our employees who went through EPA’s environmental job training program came equipped with more knowledge than we could have hoped for,” says Kris Neifing, Superintendent of Water Resources in Edmond.

“Rose State College’s environmental job training gave me valuable skills for my trade. I feel fully capable of my daily duties and problem solving. And I have a better understanding of the big picture in producing clean, potable water.”

— Sheena Zahler
Program Graduate

William Roach, who heads up operations at Veolia North America, agrees that the program has been a valuable resource for his company. “Those we have hired have all been far better prepared to enter the environmental field than previous new hires coming from a job placement service or off the street,” he says. “This helps ensure that these individuals are a good fit with Veolia and greatly increases their chances of advancement and longevity with our company.”

Roach sums up the value of the expanded job training program: “Rose State has done an excellent job of teaming with state, federal, nonprofit and private resources to develop a blend of opportunities for participants and employers alike.”



Graduates Larry Forsyth and James Whalen measure sludge depth in a water clarifier on the job at the Edmond Coffee Creek Wastewater Treatment Plant.

OAI, Inc., Partners With Greencorps to Manage Stormwater in the Windy City

The City of Chicago launched Greencorps Chicago in 1994 as a small community gardening program. Since then, Greencorps has grown to be a dynamic job training and city conservation program, enrolling more than 30 Chicago residents each year who earn a wage for their work on ecological improvement projects throughout the city and Cook County.

WRD Environmental, an ecological consulting firm, has been functioning as the City of Chicago’s managing partner for the Greencorps program since 2001. In 2006, OAI, Inc., a nonprofit workforce development organization, joined the partnership and has effectively used its EPA environmental job training program grants to expand its environmental training to fit the broader Greencorps program design.

Although the program is open to all Chicagoans, Greencorps recruits primarily from underserved populations, including formerly incarcerated individuals, minorities and veterans living in the west and south sides of the city. Candidates from these areas face chronic unemployment; have limited

work history, training and skills; and often have had involvement with the criminal justice system. The unemployment rate in these areas is more than 28 percent, and the poverty rate is nearly 35 percent. Minority residents there are also disproportionately affected by exposure to hazardous wastes, a residual effect of past industrial pollution and the recent increase in landfill waste. In fact, Chicago's South Side has the largest concentration of garbage landfills in the U.S. Midwest. An estimated 120 brownfield sites are in and around the program's target communities.

Stormwater Management

The management of stormwater is another critical issue in and around Chicago, which has seen an increase in urban flooding, and throughout Illinois. Urban communities growing to accommodate an increasing population are building more impervious surfaces, such as roads, roofs, parking lots, sidewalks and patios, which leads to increased stormwater runoff. The sewer and stormwater infrastructure built to manage runoff is aging and undersized in many cities, including Chicago. As a result, stormwater can overflow even after modest rainfall, flooding homes and neighborhoods, and polluting rivers and streams with contaminated runoff.

To address these issues, the Illinois Environmental Protection Agency launched the Illinois Clean Water Initiative in the fall of 2012. The initiative allocates \$2 billion for stormwater management and treatment projects and has created several thousand jobs in communities across Illinois. In addition, Chicago has launched a \$50 million green stormwater infrastructure strategy that is one of the largest voluntary investments in green infrastructure by a U.S. city.

Training That Meets Local Employment Demand

Both of these large-scale regional investments have significant employment growth projections for stormwater management, ecological restoration and green infrastructure installation and maintenance. Under EPA's environmental job training grant, Greencorps has been able to adjust its program to meet this demand. Greencorps participants receive training in environmental health and safety; environmental remediation, ecological restoration, horticulture, landscaping and wastewater treatment; and green infrastructure installation.

WRD Environmental employs Greencorps trainees through a staffing agency while they participate in the program. This entry-level employment allows the trainees to build their work history while they train for positions in the industry. Upon completion of the program, graduates can apply their learning

Core Training:

- Occupational Safety and Health 40-Hour Hazardous Waste Operations and Emergency Response (OSHA 40-Hour HAZWOPER)
- OSHA 10-Hour Construction Safety
- Leaking Underground Storage Tank Removal
- Confined Space Entry
- Green Infrastructure Installation
- Low-Impact Development (LID)
- Integrated Pest Management (IPM)
- Pesticide Application
- Ecosystem Restoration
- First Aid and Cardiopulmonary Resuscitation (CPR)
- Plant Identification
- Landscape Installation/Maintenance
- Hardscapes Installation
- Compost and Soil Sampling
- Urban Agriculture
- Chicago Wilderness Burn Certifications
- Introduction to Wildland Fires
- Urban Forestry

Graduates Trained: 283 since 2002

Graduates Employed: 251

Average Starting Hourly Wage: \$10.00

to complete landscaping, ecological restoration, environmental cleanup and community projects throughout Chicago.

Greencorps and its partners also help graduates secure jobs that offer higher wages and more responsibility, placing 80 to 85 percent of its graduates in these jobs over the last three years. Graduates have gone on to work for contractors involved in environmental remediation, mixed industrial and commercial corridor revitalization, new residential projects and green space and wetland restoration.

“Our training has historically focused on brownfield remediation, but now we can customize the program to better suit the local job market.”

— Mollie Dowling
Executive Director
OAI, Inc.

Wetland Restoration and Stormwater Projects

Greencorps graduates have conducted wetland restoration work for the Chicago Park District in Hegewisch Marsh and Big Marsh, both part of the Millennium Reserve. There, they identified and removed invasive species that choke waterways and can displace native wildlife, and installed native wetland plantings, including trees, shrubs and perennials. Greencorps prepares its trainees for this type of work, not only by teaching them how to identify invasive and native plants but also by introducing them to work sites in fairly remote places with challenging conditions like standing water. Trainees even learn what to pack for the day, like food, water and a change of clothes for the ride home.



Greencorps graduates helping restore the Hegewisch Marsh, a 130-acre wetland on the far Southeast Side of Chicago. The marsh is an ecologically valuable wetland, but it was also a dumping ground for big industry. This marsh contains four ecosystems—Wet Savannah, Wet Prairie, Forested Wetland and a Hemi Marsh. It is a critical coastal wetland, hydrologically connected to Lake Michigan. Twelve state-endangered bird species use the marsh. It is a nesting site for the endangered common moorhen. The marsh has good water quality capable of supporting aquatic life, and through this project, the quality of a vital watershed will be enhanced.

In the city, Greencorps graduates have installed rain gardens and permeable pavers at schools to help manage stormwater runoff. To prepare its trainees for work like this, the program teaches how to prepare, excavate and grade a site; install proper drainage; and select the right plants for the local soil. It also teaches techniques for installing hardscapes, including permeable paving.

In addition to the increasing number of stormwater projects, Greencorps has seen an upsurge in ecological restoration work in and around Chicago. In particular, the Forest Preserve District of Cook County, which is celebrating its centennial in 2015, is providing more work to its contractors to restore 30,000 acres of forest preserves to good ecological health and expand the preserves to 90,000 acres from the current 69,000. “Companies are looking for qualified individuals for those restoration and expansion projects, and they are coming to Greencorps to find them,” says Andy Johnson, Greencorps Program Manager at WRD Environmental.



Greencorps participants learn to operate chainsaws, chippers and brush cutters as part of their ecological restoration and natural resources training.

Graduates at Work in the Field

Greencorps graduate Rogers Christal works for a contractor that performs work on the Chicago Park District and Forest Preserve District of Cook County properties, where green infrastructure practices using vegetation, soil and natural processes are the preferred stormwater management strategy. Hired as a full-time foreman for an ecological restoration company in 2014, Christal loves working at park sites in Chicago and throughout Illinois. “Just seeing how people take interest in the parks and nature is very inspiring,” he says.

Before Greencorps, Christal worked intermittently as a laborer for a demolition company in Aurora, Illinois, from 2006 to 2008, gaining skills using power tools and heavy machinery for remediation and excavation. He then took some courses at Coyne College but did not graduate. He was unemployed when his mother’s friend told him about the Greencorps training program; he enrolled in 2010 and graduated in 2011.

A year later, he began to work for WRD Environmental, which later connected him to his current job with Pizzo & Associates, Ltd. Christal helps create, restore and steward natural areas and manage native, sustainable landscapes to enhance green spaces while retaining and treating rainwater on site.

“Through the Greencorps training, I’ve begun to fully realize my interest in the environment.”

— Rogers Christal
Program Graduate



Graduate Rogers Christal at the site of a prescribed burn. Prescribed burning is one of many land management methods used to facilitate the healthy plant cover that reduces stormwater runoff.

“I’m steadily gaining experience on bigger, more important ecological restoration projects,” Christal says. “Greencorps has motivated me to build a career in this industry. What I do allows other people to come out and enjoy nature.”

His work on prescribed burns every spring and fall also helps manage stormwater by facilitating the growth of healthy native plant cover. During their training, Greencorps participants learn how to safely maintain a prescribed fire, and most graduates earn a regionally recognized Burn Crew Member Certification from a partnering nonprofit, Chicago Wilderness.

Another Greencorps graduate, Abraham Harris, says the program helped him change his life. Soon after he graduated from the program in 2012, he began working for ENCAP, Inc., an ecological restoration company.

A native of the South Side of Chicago, Harris was looking for steady, full-time employment when his probation officer told him about the Greencorps program in 2011. “Before the training, it was a bad time for me,” Harris says. “I was unemployed, and having been incarcerated in the past, I was having trouble finding a job.”

When Harris came to Greencorps, he had minimal technical skills and limited work experience, and he lacked the confidence needed to become gainfully employed. But he made a commitment to make positive changes in his life. He attended training every day and worked hard to develop his technical and interpersonal skills and to earn various environmental certifications offered through the program. His hard work and dedication paid off.

Harris has been working for ENCAP for more than two years and performs ecological restoration work across four counties in Illinois and five states. He now has an Illinois Pesticide Applicator License that enables him to supervise others. Harris also serves as a motivational speaker for current Greencorps participants. Additionally, he has reached his personal goals of getting married and buying a home.



Graduate Abraham Harris at the site of a controlled burn.

Wastewater Management Snapshots

Limitless Vistas, Inc., Louisiana

Granville Guillory is one of more than 400 at-risk young adults that Limitless Vistas, Inc., has trained through its environmental job training program since the organization's inception in 2006. Guillory was just 20 years old when, after several personal hardships and dropping out of college, his aunt told him about Limitless Vistas. After completing the environmental job training program there and passing Louisiana's certification for wastewater operators, Guillory went to work full time for Veolia North America's wastewater facility in New Orleans, earning a starting wage of \$14.95 per hour. Guillory's duties include ensuring that furnaces are operating properly. "If things go wrong," he says, "it is my responsibility to help make them right before any serious damage to the furnace or an emission violation occurs." Thanks to his excellent performance as a State of Louisiana Class III Wastewater Plant Operator, Guillory will be traveling to Tokyo for six months to learn about a more efficient furnace that Veolia plans to incorporate into the company's U.S. operations. He's also giving back to the community by mentoring new Limitless Vistas participants, who stand to learn from his experiences. "They are able to see the bigger picture," Guillory says, "and strive harder to develop environmental careers."

City of Oxnard, California

The City of Oxnard tailored its EPA-funded environmental job training program to meet the increasing local demand for careers in wastewater management, water conservation and stormwater management in Low Impact Development (LID) areas. This has included installation of "Ocean-Friendly Gardens" that capture stormwater runoff. Training in these environmental fields is providing Oxnard graduates affected by environmental, economic and social challenges, including gang violence, with careers that offer upward mobility. Program graduate Miguel Sanchez was a troubled youth who had never held a steady job prior to the program and was looking for a new direction when he enrolled in Oxnard's environmental job training program. After graduating, Sanchez was hired by the City of Santa Barbara as a Water Distribution Operator, making \$19 per hour. For the first time in his life, Sanchez is hopeful and excited about his future.

Other EPA Environmental Job Training Programs Delivering Wastewater Management Training:

- Alaska Forum, Inc., Alaska
- City of Camden, Arkansas
- City of Durham, North Carolina
- City of Glens Falls, New York
- City of Milwaukee, Wisconsin
- City of Richmond, California
- City of Tacoma, Washington
- City of Texarkana, Texas
- City of Toledo, Ohio
- Civic Works Baltimore Center for Green Careers, Maryland
- Corporation to Develop Communities of Tampa, Inc., Florida
- Cypress Mandela Training Center, Inc., California
- Energy Coordinating Agency, Pennsylvania
- Florida State College at Jacksonville, Florida
- Groundwork Providence, Rhode Island
- Iowa Western Community College, Iowa
- Los Angeles Conservation Corps, California
- Memphis Bioworks Foundation, Tennessee
- Merrimack Valley Workforce Investment Board, Massachusetts
- Mo-Kan Regional Council, Missouri
- Mott Community College, Michigan
- North Star Center for Human Development, Inc., Connecticut
- Northwest Regional Workforce Investment Board, Connecticut
- Nye County, Nevada
- Oregon Tradeswomen, Inc., Oregon
- Saint Paul Port Authority, Minnesota
- St. Nicks Alliance, New York
- The Enterprise Center, Inc., Tennessee

EMERGENCY PLANNING AND RESPONSE

Florida State College at Jacksonville Trains Responders for the Next Big Disaster

Hurricanes, tropical storms, tornadoes, flooding, oil spills: Florida is no stranger to natural and manmade disasters. That is why, at Florida State College at Jacksonville, the educators' goal is to train more people to be certified responders for the next environmental emergency. "You just can't have enough people trained for emergency response when lives and livelihoods are threatened by the release of hazardous substances, or because of significant damage to the ecosystem," says Pamela M. Scherer, Program Manager at the college's Institute of Occupational Safety and Health.

Since 2009, Florida State College at Jacksonville has offered eligible participants, primarily unemployed and underemployed individuals in North Florida, free environmental job training. The program is designed to lead graduates to careers in emergency response, Superfund cleanup and brownfield site remediation, as well as other environmental and green industry jobs. By completing the 11-week program, graduates earn certifications in National Incident Management System (NIMS), disaster site worker and hazardous waste emergency response (40-hour HAZWOPER). Other training covers everything from environmental sampling to handling of lead and asbestos-containing materials to stormwater, erosion and sedimentation control.

"For employers," Scherer says, "the HAZWOPER and safety certifications seal the deal. One contractor told me that if he had one job candidate come in with a Master's Degree and another with our portfolio of certifications, he would hire our person, because by law, employees are required to have the certifications to work on contaminated sites."

Preparing for Disaster Response

A particularly successful part of the program, Scherer says, has been the disaster site worker and spill response training. Florida State College at Jacksonville has trained hundreds of workers who were deployed to the Gulf Coast to respond and clean up following

the BP Deepwater Horizon oil rig explosion in April 2010, many of whom advanced rapidly to site safety monitors and supervisors due to the level of knowledge gained from their training at Florida State College at Jacksonville.

Core Training:

- Occupational Safety and Health Administration 40-Hour Hazardous Waste Operations and Emergency Response (OSHA 40-Hour HAZWOPER)
- Florida Department of Environmental Protection's Stormwater, Erosion and Sedimentation Control Inspector
- OSHA Disaster Site Worker
- Environmental Sampling and Analysis
- OSHA 10-Hour Construction Safety
- OSHA 10-Hour Outreach Training Program for General Industry
- OSHA 10-Hour Outreach Training Program for Maritime Industry
- Federal Emergency Management Agency (FEMA) National Incident Management System IS-700.A Certificate
- FEMA Introduction to Incident Command System IS-100 Certificate
- U.S. Environmental Protection Agency (EPA) 24-Hour Hazardous Material Technician
- Collections and Wastewater Training
- Asbestos Abatement Worker
- Lead Renovation, Repair, Painting
- First Aid and Cardiopulmonary Resuscitation (CPR)
- OSHA 7200 Bloodborne Pathogens Protection

continued on next page

- Environmental Justice Overview
- Solid Waste Management and Recycling
- Superfund Site Cleanup and Innovative and Alternative Treatment Technologies
- Environmental Math and Chemical Safety
- Confined Space Entry
- Urban Agriculture
- Leaking Underground Storage Tank Removal

Graduates Trained: 325 since 2009

Graduates Employed: 302

Average Starting Hourly Wage: \$13.00

Shortly after the spill, Scherer noticed an advertisement posted by disaster response staffing agency Ameri-Force, which was looking for 20 people with HAZWOPER experience. “We had almost one whole class go,” she says. “A van showed up, collected our students and transported them to the Gulf coastline. The BP spill was a huge opportunity for our first, second and third classes.”

Lonnie Jones, an unemployed, former restaurant worker, was one of those graduates deployed to the Gulf Coast. When she signed up for the training, she was supporting herself and her two daughters on unemployment. After graduation, she was recruited by a staffing agency and later hired by Applied Environmental Health & Safety, Inc., as a Site Safety Inspector deployed to Panama City, Florida.

“My responsibilities were to watch over and maintain safety guidelines laid out by [OSHA] and BP,” Jones says. “I conducted job safety analyses and worked alongside the crew, cleaning up the beaches and in the warehouses. In essence, my job was to keep 50 to 150 men and women safe seven days a week for 12 to 14 hours a day.”

In addition to opening up new employment opportunities for her, the job training program helped her meet several financial goals, including paying off her vehicle and buying a home.

Have Certifications, Will Travel

During the training program’s intake process, Scherer and her colleagues ask if participants are willing to relocate or travel, which is a typical requirement in emergency response work. “The majority look forward to going elsewhere to work,” she says.

Ruben Rodriguez, a 2012 program graduate, is one of those willing road-trippers. Before signing up for the training, Rodriguez was an unemployed retail manager. After graduating, he quickly found work with SouthernCAT, Inc., a Florida-based emergency response contractor, supporting response to the 2010 Enbridge Oil Spill near Marshall, Michigan. The spill released an estimated 843,000 gallons of oil that flowed 35 miles downstream on the Kalamazoo River.



At the scene of a diesel spill on a highway in Jacksonville, Florida, Ruben Rodriguez is testing a soil sample, using a glass jar and a photoionization detector.

Rodriguez joined the crew as a deckhand but, within a few months, had become a boat captain himself, overseeing a crew of four, transporting cleanup materials, testing water and soil for contamination and ferrying scientists to and from the spill area. After Hurricane Sandy wreaked havoc on the New Jersey and New York coastlines in October 2012, Rodriguez, now a full-time employee with SouthernCAT, Inc., packed his bags and flew to Ocean City, New Jersey, to support the Federal Emergency Management Agency’s response efforts in the region. There he visited homes and businesses affected by the storm. “We would cut out and remove moisture-damaged plywood, sheetrock and insulation,” he says. “In hotels, we removed carpets and tore down walls. In movie theaters, we removed seats impacted by water. It was a heck of a storm. What I took from that experience was the courage people had after the storm to help each other out.”

More recently, Rodriguez, now with SWS Environmental, was dispatched to Iowa to work with U.S. Food and



While responding to an oil spill on the Kalamazoo River in Michigan in 2013, Ruben Rodriguez transported scientists to and from the impacted area. He also learned how to measure the water depth and turbidity of the river.

Drug Administration officials, responding to the avian flu outbreak. “I was with a group of 30 people in a chicken house with about 200,000 chickens, disposing of birds that died and monitoring those still alive to see how the disease was affecting them,” he says.

Rodriguez, a Jacksonville native, admits that life on the road and away from his family can be challenging, but the 50-year-old is passionate about his opportunities in the environmental field. “It’s amazing what these certifications can do,” he says. “They broaden what employers can use you for. The best thing is getting to know other companies and working with all these government agencies. You’re always meeting new people along the way.” And, taking advantage of these networking opportunities has paid off. Big time.

Case in point: Rodriguez has watched his wages more than double from \$25,000 a year after graduating from the environmental job training program in 2012 to \$65,000 in 2015. And he just received an offer for a new position with SWAT Consulting Inc., where he’ll head up his own emergency response team and make \$100,000 a year, with the potential to earn \$125,000 or more with overtime.

“You get this training and knowledge, and it only gets better. The possibilities are endless!”

**— Ruben Rodriguez
Program Graduate**

Expanding Opportunities for Success

Dennis Thomas, who was an underemployed Army veteran working just two days a week when he signed up for the training, also found work in the field of emergency response after completing the training. Thomas found contract work with Moran Environmental, where he was deployed to clean up fuel spills in Florida, Georgia and South Carolina. His experience included responding to spills from train derailments and highway incidents, as well as spills and tank overflows at refineries, industrial businesses and the Naval Air Station in Jacksonville. Today, he’s employed full time as an Environmental Technician, overseeing the safe cleaning and maintenance of fuel storage tanks.

Thomas expresses a debt of gratitude to the college’s environmental job training program, which, he says, “expanded my opportunities in the environmental industry and helped me jump the ladder. Now, I’m making \$50,000-plus a year.”



Ruben Rodriguez (left) and another employee are preparing to unload heavy equipment at the job site while responding to an oil spill on the Kalamazoo River in Michigan.

According to Scherer, EPA’s environmental job training program helps prepare local residents for a broad spectrum of environmental employment. “The bottom line is that we have more options as far as getting students jobs,” she says. Her program places many of the graduates interested in emergency response work with national and local employment agencies, including Aerotek, Environmental Staffing, and Environmental & Labor Solutions. In addition to emergency response and remediation work, graduates are securing career pathways as recycling technicians, industrial hygienists, and environmental health and safety inspectors.

“This is my chance to give my kids a better life,” Rodriguez says. “And, I owe it all to the staff at Florida State College at Jacksonville. It’s been a remarkable journey for me.”

The Fortune Society Preps Formerly Incarcerated Individuals for Careers in Disaster Site Cleanup

The United States leads the world in the number of people in jail or prison, with nearly 2.3 million men and women incarcerated as of 2013. In New York City, the nonprofit The Fortune Society is working to ensure that formerly incarcerated individuals have the skills and opportunities to become positive, contributing members of society. Today, thanks to The Fortune Society's efforts, many formerly incarcerated individuals are busy helping local communities rebuild in the wake of the devastation left behind by Hurricane Sandy in 2012 or are employed in other environmental jobs in and around the five boroughs.

Based in Long Island City, New York, The Fortune Society has a mission to support successful reentry from prison and to promote alternatives to incarceration. Focusing primarily on high-poverty neighborhoods, the organization serves approximately 4,500 men and women every year. Offering everything from temporary housing and substance abuse treatment to employment services and job training, The Fortune Society is a one-stop shop to assist clients in getting from the jail cell into the job market.



These Fortune Society participants, the first cohort in 2012, just completed the coursework necessary for receiving their HAZWOPER certifications.

Core Training:

- Overview of Environmental Science, Environmental Health and Safety
- Preparing Formerly Contaminated Sites for Urban Agriculture
- Superfund Site Cleanup and Innovative and Alternative Treatment Technologies
- Leaking Underground Storage Tank Removal
- Solid Waste Management Assessment and Cleanup

Supplemental Training:

- Occupational Safety and Health Administration 40-Hour Hazardous Waste Operations and Emergency Response (OSHA 40-Hour HAZWOPER)
- Global Hazard Communication
- OSHA 10-Hour Construction Safety
- Lead Renovation, Repair, Painting
- Confined Space Entry
- Disaster Site Worker
- Mold Remediation
- Bloodborne Pathogens Protection
- New York State Asbestos Handler

Graduates Trained: 154 since 2012

Graduates Employed: 119

Average Starting Hourly Wage: \$13.85

Laying a Foundation for Long-Term Employment

With support from EPA's environmental job training program, The Fortune Society created an intensive six-week, full-time program to prepare its participants for careers as community-oriented environmental technicians. "It's comprehensive," says Laura Senkevitch, Fortune's Manager of Training and Transitional Programs. "We screen people to align them with their interests. At the end, we get you a job."

The training includes 280 hours of instruction in 40-hour HAZWOPER, urban agriculture, lead abatement, asbestos abatement, innovative and alternative treatment technologies, leaking underground storage tank removal, solid waste management, brownfield remediation and disaster site worker. A total of one state and five federal certifications are offered through the program.



At the graduation ceremony in June 2014, Fortune's Laura Senkevitch congratulates Dexter Carter for successfully completing all of his certifications. Today, Carter is working as an Environmental Technician at Environmental Business Consultants.

“People opting for jobs in the environmental field can become invested with companies and work a long time there.”

— Laura Senkevitch
Manager of Training and Transitional Programs
The Fortune Society

“This type of training is ideal because it doesn't require years of education,” Senkevitch says. “A GED [General Educational Development credential] is all you need, so there's not a big barrier to entry, regardless of your background.”

Out of the Frying Pan, Into the Storm

That's what Kareem Murphy, a 35-year-old graduate of the training program, hopes to do. After years in the restaurant industry, periods of unemployment, and incarceration for possession of a controlled substance, he's eager to start something new. “I like cooking,” Murphy says. “But there's not a lot of money for all the stress placed upon you in that field.”

On October 29, 2012, the night Hurricane Sandy made landfall in New York City, Murphy and his roommate returned to their rental home in the Greenpoint neighborhood of Brooklyn to discover that their basement and first floor were flooded. “The bedrooms were on the second floor, so my clothes, my TV and my bed weren't damaged,” he says. “Everything else was lost. The shock of having a place to live one day and not the next was a very emotional thing for me to deal with.”

Murphy eventually found a new apartment, and after completing Fortune's training program in December 2014, he landed a three-month position with Rebuilding Together NYC, a nonprofit that provides home rehabilitation and modification services to low-income homeowners, including disaster site cleanup and recovery. After Hurricane Sandy, the organization was overwhelmed with requests from families with mold problems caused by the storm.

As an Onsite Technician, Murphy does demolition work and coordinates volunteers and companies that donate time and money to the program. He also works with inspectors when they visit the job sites and takes photographs before and after disaster site cleanup jobs.

“Most of my jobs are in Brooklyn and Rockaway,” Murphy says. “On my first day, the lady cried. Her home had been damaged during Hurricane Sandy. Her grandfather had built the house, and she was so happy that we did such a nice job for her. It's good to see that we're helping these people.”

Murphy already is looking ahead to what's next when his current position ends. “My ultimate goal is to get an undergraduate degree in environmental science,” he says. “I recently attended an orientation at the Mayor's Office of Environmental Remediation, meeting with project managers from different consulting companies. I'm hopeful to land a job that will help me take care of myself and my future family.”

Gaining Skills and Perspective

Jamel Dower, a 37-year-old father of three, is another graduate working on Hurricane Sandy recovery sites who's seen doors open for him after completing Fortune's training program. Previously, he was unemployed and “addicted to the street life,” he says. He completed his training in early 2015 and quickly landed a job as a laborer in concrete demolition for SNS Construction, where he's been working in Brooklyn and Sheepshead Bay on disaster site cleanup projects. In addition to the core training, Dower says he benefited from the additional certifications he received in parenting and healthy relationships.



Jamel Dower completed Fortune's training program in 2015 and now works for SNS Construction, cleaning up sites impacted by Hurricane Sandy.

But it's not just the certifications that graduates walk away with, says The Fortune Society's Senkevitch. "Graduates fully understand how their role fits into the bigger picture. They'll know how to spot mold and asbestos and how to remove it properly. And they'll also understand why we need to remove it and what happens when it's not removed.

Graduates go back to their neighborhoods with a more invested perspective, thinking, 'Maybe there's something I can do to help.'"

Dower agrees. "Everything in construction and demolition can have an impact on the environment and the community," he says. "I work near the water, and EPA comes by to check that no pollution is getting into the bay."

"All the certifications put me in a better position to be a better provider and a better father."

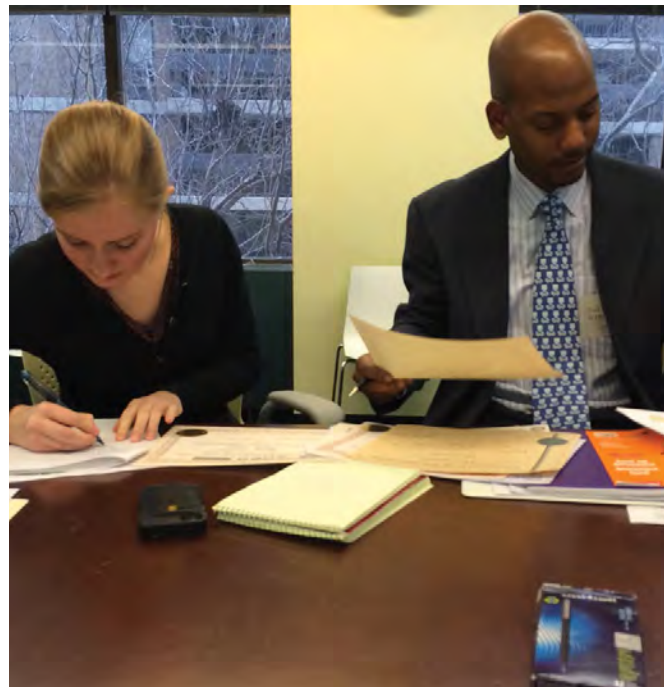
— Jamel Dower
Program Graduate

Opportunities Abound

In addition to emergency planning, preparedness and response, Fortune's graduates land jobs as environmental technicians and general laborers working at local brownfield sites. Some, including Khalil Harper, have even moved into Site Supervisor and Project Manager positions with construction companies and environmental consultants. Harper was unemployed and formerly incarcerated before signing up for The Fortune Society's environmental job training program. After graduating, Harper started as an on-the-job trainee at Langan, making \$11 an hour, working on the High Line brownfields revitalization project, which converted an unused rail corridor into an urban park. With a three-month probationary period under his belt, during which he learned about environmental site supervision, Harper was hired full time through the project's general contractor and promoted to Site Supervisor.

About 10 graduates have joined the Local 78 union, which represents asbestos, lead and hazardous waste handlers on Long Island, in New York City and in New Jersey.

"The Fortune Society prepares you to make money and makes you more employable," Murphy says. "And, it gives you opportunities. I feel like I'm giving back to my community."



Khalil Harper (right), a training program graduate, is mentoring with a project manager at the Mayor's Office of Environmental Remediation, which partners with Fortune through its BrownfieldWorks! program. This program helped connect Harper to a full-time position as a Safety Supervisor at Langan Engineering after graduation.

Emergency Planning and Response Snapshots

Pathways-VA, Inc., Virginia

Ishaan Mohmand was incarcerated at a regional jail when he entered the environmental job training program offered by Pathways. With two young daughters, Mohmand says, “I wanted to make a positive out of a negative, and Pathways helped me do just that.” After his release from jail in 2014, Mohmand was hired full time by Cardno, a global infrastructure and environmental services company, where he made \$14 an hour cleaning up a diesel spill caused by a train derailment near Lynchburg, Virginia. “The training was a life-changing experience,” he says, and it gave him a second chance to be the father his daughters deserve. “I’m now able to save for their college educations and cheer them on at their softball games,” Mohmand says. Now, he is on a pathway to a sustained career with Cardno.



St. Nick Alliance graduates at Ground Zero decontaminating trucks and hauling debris from the World Trade Center site.

St. Nicks Alliance, New York

Within 72 hours of the terrorist attacks at the World Trade Center site on September 11, 2001, Jessenia Rodriguez and more than 30 other St. Nicks Alliance job training graduates quickly went to work to assist in the response and cleanup efforts. Employed by Clean Harbors Environmental Services, these graduates began working 12 hours a day, seven days a week to provide environmental protection to workers at the site and to help extract the remains of those who lost their lives. Graduates staffed the decontamination zone for rescue workers, served as utility technicians and drove the vehicles transporting human remains from Ground Zero. For more than 10 months, Rodriguez and her fellow graduates assisted with the removal of

more than 1.5 million tons of debris. They also worked in conjunction with the U.S. Coast Guard to test for anthrax contamination at the nation’s largest federal mail-sorting facility in New York.

Graduates of St. Nicks Alliance’s EPA-funded environmental job training program continue to help restore hope and to breathe life back into disaster-affected communities. More than a dozen recent graduates, including Julian Green, secured jobs related to the recovery from Hurricane Sandy. Green was unemployed and living in a shelter when he applied to St. Nicks’ program. He graduated in 2013 and quickly found work cleaning up homes damaged or destroyed by Hurricane Sandy, including cleanup of the estimated 300,000 homes along the South Shore, the area hit hardest by Sandy, and where the majority of homes belong to low-income and working class families.

Northwest Regional Workforce Investment Board, Connecticut

Anthony Hicks was among a team of Northwest Regional Workforce Investment Board’s environmental job training graduates deployed to the Gulf Coast in the wake of the BP oil spill. One day during Hicks’ training, representatives from Aerotek stopped by to recruit workers to help respond to the oil spill. Hicks and his fellow graduates traveled along the Gulf coasts of Alabama, Florida, Louisiana and Mississippi for roughly two months, deploying oil blooms and teaching others how to wear protective gear like respirators.

Other EPA Environmental Job Training Programs Delivering Emergency Planning and Response Training:

- Alaska Forum, Inc., Alaska
- City of Camden, Arkansas
- City of Detroit, Michigan
- City of Milwaukee, Wisconsin
- City of Oxnard, California
- City of Richmond, California
- City of Tacoma, Washington
- Cypress Mandela Training Center, Inc., California
- Lewis and Clark County, Montana
- Limitless Vistas, Inc., Louisiana
- North Star Center for Human Development, Inc., Connecticut
- Sitting Bull College, North Dakota
- Zender Environmental Health and Research Group, Alaska

RENEWABLE ENERGY INSTALLATION

City of Richmond Trains Renewable Energy Workforce, Steers Grads Away From Crime

Like many urban communities, the City of Richmond, California, faces high unemployment, poverty and crime. Violent crime has been a significant problem since the mid-1980s. For more than 20 years, Richmond was ranked as one of the most dangerous cities in the nation, and the rates of violent crimes were far higher than the national averages.

To meet these challenges, the city launched RichmondBUILD as a violence-reduction program in 2007. This public-private partnership trains local residents, most of whom have been involved in or exposed to violence, for careers in the fast-growing, high-wage environmental and construction industries.

Providing a pathway to education and high-wage career opportunities reduces crime, but it's a challenging road. The "Heavenly Wall of Fame" that hangs at the RichmondBUILD training facility to honor graduates who have passed away, many due to gun violence, reminds passersby that more work is needed to build a safe, successful community.

Greening the Traditional Construction Industry

By coupling training in the trades, like carpentry, with environmental training, RichmondBUILD prepares its participants for a variety of careers and increases their likelihood of finding sustainable, long-term employment. Several other EPA environmental job training programs blend environmental training with training in the trades, including Cypress Mandela Training Center, Oregon Tradeswomen and Los Angeles Conservation Corps.

Core Training:

- Occupational Safety and Health Administration 40-Hour Hazardous Waste Operations and Emergency Response (OSHA 40-Hour HAZWOPER)
- Wastewater Treatment
- Solid Waste Management and Recycling
- Emergency Response
- Lead Abatement Worker
- Asbestos Abatement Worker
- Confined Space Entry
- Leaking Underground Storage Tank Removal
- Chemical Safety
- OSHA 10-Hour Outreach Training Program for General Industry

Supplemental Training:

- Hazardous Waste Management
- Solar Panel Installation
- Energy Efficiency—Home Performance and Weatherization
- Pre-Apprenticeship Carpentry*
- Forklift Logistics, Operation and Warehouse Training
- Extended Carpentry*
- Electrical Wiring and Theory for Basic Construction, Solar Installation and Lighting Retrofit*

Graduates Trained: 264 since 2009

Graduates Employed: 198

Average Starting Hourly Wage: \$16.00

**EPA does not fund this component of the program.*

More often, RichmondBUILD honors graduates at work in the field. To prepare for the work, participants first complete environmental health and safety certifications along with a core carpentry pre-apprenticeship track and then choose coursework in subjects like hazardous waste removal, solar panel installation and energy efficiency retrofitting.

Building a Renewable Energy Workforce

EPA's environmental job training program allows RichmondBUILD to prepare participants for work in the renewable energy field, as well as in the assessment, cleanup and reuse of brownfields and Superfund sites. Investments in renewable energy, in particular, are on the rise. "Under EPA's training grant," says Sal Vaca, Director of Employment and Training at RichmondBUILD, "our program has been able to support the solar investments that are a priority in California."

A new emphasis on generating renewable energy locally has created demand for workers who can help build utility-scale solar farms in the area. For example, Marin Clean Energy (MCE) is ramping up to begin its Solar One project, which will convert a 60-acre brownfield site within a petroleum refinery in Richmond into an electricity-generating installation with 80,000 solar panels. MCE has committed to hiring at least 50 percent of its workforce from the RichmondBUILD program. Approximately 30 graduates of the job training program are scheduled to start work on the Solar One project after it launches in February 2016.

"Together, we're reducing dependence on fossil fuels, helping our residents play an active role in environmental responsibility and setting a positive example for other communities to follow," says Greg Brehm, MCE Director of Power Resources.

Interest in renewable energy has also inspired some local residents to install solar panels on their



RichmondBUILD graduates helped install solar panels at the Baker Electric solar farm. The facility will use 85,000 solar panels to generate electricity that will feed directly into the Pacific Gas & Electric utility grid.

homes. Three RichmondBUILD graduates were hired by SolarCity to install panels on residential units in the area. Since graduating as part of cohort 25 in November 2014, Julius Guillebeau, Endy Varela and Victor Naives have had steady work as installers, earning \$15 per hour and building their resumes as skilled workers.

"Clean energy jobs are the future."

— Sal Vaca
Director of Employment and Training
City of Richmond, California

Custom Training Meets Employers' Needs

To prepare the workforce for environmental careers, RichmondBUILD works with local employers and trade unions to develop custom training. For example, Stion Corporation is developing custom training to prepare RichmondBUILD participants for the Solar One project. Stion, which manufactures solar panels, will train participants to install the panels. The hands-on training will use real equipment, including solar panels, solar tracking systems, grounding posts and connecting harnesses. After completing the training, the company plans to hire the graduates to work on the project.



RichmondBUILD participants complete a solar installation project.

Similarly, the International Brotherhood of Electrical Workers union helped program participants land jobs at Baker Electric's solar farm project in Pittsburg, California. Baker Electric hired about 70 union workers, including nine RichmondBUILD graduates, to build a utility-scale generating facility. "The relationships our graduates are building with local trade unions are key," says Vaca. "Utility-scale projects typically hire only union members. Getting graduates involved in the union is helping them land jobs."

Graduates Working in the Field

One graduate working on the Pittsburg project, Hugo Perez, was just 19 when he entered the RichmondBUILD program. Originally from Mexico, Perez grew up in a neighborhood where violent crime is prevalent among 18- to 25-year-olds. After graduating from high school, Perez was dissatisfied with his job at a local diner. He wanted to find work that would not only pay more but also lead to a good career. He discovered RichmondBUILD, and since graduating and working on the Pittsburg project, has nearly doubled the hourly wage he earned at the diner. Even better, he now knows he wants to pursue a career as an electrician and has applied to join the local electrician's union as an apprentice. "RichmondBUILD gave me more than just skills," says Perez. "It gave me focus, a plan. It set me on a path for achievement and gave me direction in life."



Graduates of RichmondBUILD report to work at a solar installation project in Pittsburg. Hugo Perez is second from the right, and Grace Obinyan is third from the left.

RichmondBUILD graduate Grace Obinyan also installs panels at the Pittsburg site. Obinyan came to the United States from Nigeria in 2013 and settled in Richmond, where she lives with her husband and four sons. Although she had studied business administration in Nigeria, she had been unemployed for nearly two years. Then she heard about RichmondBUILD's job-training program.

"Before, I didn't know how to handle a hammer. Now, I know how to use all the tools needed to install solar panels."

**— Grace Obinyan
Program Graduate**

RichmondBUILD helped Obinyan secure her first job in the United States as a solar installer with Baker Electric. On the job, she uses the environmental skills she learned in the program, including how to align the solar panels and secure them into place. She is mindful of environmental health and safety on the job, a lesson impressed upon participants in the RichmondBUILD program.

Revitalization of the Pittsburg site is almost completed, but Obinyan is already working with professional connections to secure her next job. She's looking forward to the start of the Solar One project, and her membership with the Local 302 electrician's union will help her stay employed over the long term.

"I know I can tap my connections at RichmondBUILD and the union to find more work," says Obinyan. "It's really mind blowing how much my opportunities for employment have changed since I graduated from the job training program."

New Jersey Department of Environmental Protection: Grads Shine in Solar Jobs

Camden, New Jersey, has experienced a long period of economic disinvestment, during which the city's largest employers have either left or relocated their manufacturing jobs, contributing to high poverty rates and environmental degradation. Several hundred known contaminated sites, including dumps, demolition yards and abandoned brownfields, dot the city.

But many land revitalization projects are now being designed and implemented in Camden, which are creating a demand for range of environmental professionals. Working with Camden County College, where the training is offered, the New Jersey Department of Environmental Protection designed an environmental workforce and job training program curriculum based on the needs and skill sets identified by Camden employers, project contractors and community partners.

Enabling Local Residents to Help Their Communities

The program trains unemployed or underemployed Camden residents for jobs that enable them to help their communities, in areas where jobs and environmental cleanup are needed most. "Camden is perfectly positioned for sustainable revitalization and beneficial brownfield reuse, including solar panel installation and green stormwater infrastructure," says Jaime Ewalt Gray, who designed and managed

the program for the New Jersey Department of Environmental Protection. “These graduates have the skills necessary to transform Camden and the region.”

Program participants are certified in solar panel installation and trained in environmental sampling and remediation, solid waste management and recycling, leaking underground storage tank removal, and innovative and alternative treatment technologies.



Program participants learn techniques for constructing a solar array on a roof deck rack and installing solar panels, modules and components.

“We are training unemployed and underemployed workers and helping them find environmental jobs, including jobs in the solar industry.”

— Joe Pranzatelli
Career Center Coordinator
Camden County College

Graduates Working in the Field

Two program graduates went on to work in solar sales and three found positions in solar installation. Graduate Anthony Lyles, who was unemployed when he enrolled in the training program, was hired to install solar panels on top of Lindenwold High School in Camden County. “I appreciated the range of subjects covered during the training and the insight it gave me into environmental work,” says Lyles. Today, Lyles continues to use his environmental training at a stormwater management company, whose clients are mostly major retailers with large parking lots. He inspects and maintains retention ponds, bioswales, storm drains and curbs, and ensures that any liquid falling from garbage compactors does not leak into stormwater drains.

A Passionate Advocate for Solar Power

Another graduate, Carolyn Contravo, got a job in solar sales estimation following graduation. Originally from Clementon, New Jersey, Contravo was raised by her single mother in a neighborhood beset by crime and drugs. “It was really hard to realize there was more to life than that,” Contravo says. She dropped

Core Training:

- Occupational Safety and Health Administration 40-Hour Hazardous Waste Operations and Emergency Response (OSHA 40-Hour HAZWOPER)
- Solar Panel Installation
- Solid Waste Management and Recycling
- Leaking Underground Storage Tank Removal
- Superfund Site Cleanup and Innovative and Alternative Treatment Technologies
- Indoor Air Testing
- Water and Soil Sampling
- Mold Remediation
- Environmental Cleanup

Graduates Trained: 72 since 2011

Graduates Employed: 52

Average Starting Hourly Wage: \$19.00

out of high school in 2009, but earned her GED credential later that year. The birth of her son in 2009 put her education on hold. Her welfare caseworkers presented several job training options, including the environmental program at Camden County College. She went to an informational seminar at the college, where the speaker described how unused space like a deserted parking lot or an abandoned building can be transformed into solar farms. “That really resonated with me,” Contravo says. “Growing up in Clementon, there were so many abandoned spaces that could be redeveloped in beneficial ways, including through the use of solar panels. I remember a half-burned shopping mall that stood empty for years. If someone had torn that down and replaced it with solar panels, it might have prevented the brownouts and other electricity problems we had in Clementon during the summer.”

“I wanted to go back to school and find a job, but I needed help.”

— Carolyn Contravo
Program Graduate

Contravo wondered why people were not using solar power more often and decided to enroll in the program to find out. Her caseworkers arranged for child care and transportation. During the training, she learned about different sources of energy and the advantages of using solar power. She also learned how to install solar panels on roofs in hands-on training she really enjoyed. “We learned how to climb up to a roof, measure and lay out the racks and install the panels,” she says.

After graduating from the program in December 2012, Contravo focused her job search on the solar industry and promoting the use of solar power. “Solar power doesn’t really get the attention it deserves,” she says. “It can make a big difference in a short period of time, stabilizing the grid with renewable energy, helping people save money on electricity, protecting the environment and adding value to a property.”



Graduate Carolyn Contravo attaching racks to a roof during her solar panel installation training. Contravo credits EPA’s environmental job training program for inspiring her interest in solar power—and for getting a job in that industry.

The Right Woman for the Job

Contravo was hired by RCL Enterprises in February 2013 as an Administrative Assistant and liaison who educated customers interested in having solar panels installed at their homes or businesses. She also coordinated with energy suppliers and contractors to plan installations. She occasionally consults with her father, who works in construction, on ways that he can incorporate solar installations on his projects. “Now I see the potential for solar installations everywhere,” Contravo says. “That has been the biggest impact of the training. It showed me the potential for improving communities like the one I grew up in.”

Renewable Energy Installation Snapshots

City of Milwaukee, Wisconsin

In 2013, Shawn Koerner, a 45-year-old, unemployed Milwaukeean, was losing hope that he’d ever find a job. Through the local media, Koerner heard about the Environmental Workforce Development and Job Training program run by the City of Milwaukee. After completing the training and walking away with certifications in lead abatement and asbestos abatement supervision, as well as training in energy efficiency, he was hired by Midwest Thermal Services, Inc., an environmental and industrial remediation company, as a Project Manager with a salary of \$40,000 a year. “The training allowed me to take my skills to the next level,” Koerner says. His work has included asbestos abatement and the installation of infrastructure for high-efficiency mechanical systems at Miller Brewing Company (now MillerCoors), a brewery headquartered in Milwaukee.

Other EPA Environmental Job Training Programs Delivering Renewable Energy/Alternative Energy Installation Training:

- Alaska Forum, Inc., Alaska
- Arc of Greater New Orleans, Louisiana
- City of Camden, Arkansas
- City of Tacoma, Washington
- Cypress Mandela Training Center, Inc., California
- Florida State College at Jacksonville, Florida
- Limitless Vistas, Inc., Louisiana
- Memphis Bioworks Foundation, Tennessee
- Merrimack Valley Workforce Investment Board, Massachusetts
- Metropolitan Energy Center, Missouri
- Northwest Regional Workforce Investment Board, Connecticut
- Nye County, Nevada
- Pathways-VA, Inc., Virginia
- Sitting Bull College, North Dakota
- St. Paul Port Authority, Minnesota
- The Fortune Society, New York

ENHANCED ENVIRONMENTAL HEALTH AND CHEMICAL SAFETY

Santa Fe Community College Builds a Local Environmental Workforce

The recent recession hit New Mexico hard, resulting in a loss of more than 40,000 jobs between 2007 and 2011. In addition, the economic downturn further exacerbated the state's problems associated with rising poverty and extreme income inequality, which rank as the worst in the nation.

Not even Santa Fe, a popular travel destination prized for its scenic beauty, rich history, cultural diversity and extraordinary concentration of arts, music and fine dining, could escape the pinch. Many of the city's minority neighborhoods and surrounding communities, including eight Native American pueblos, have broad pockets of unemployment and poverty, as well as disparities in educational attainment, stable employment opportunities and workforce preparedness training.

The cleanup of radioactive and hazardous contamination, caused primarily by past activities at national laboratories and in the mining industry, is increasing the demand for jobs in environmental health and safety and hazardous waste cleanup in the Santa Fe area. However, many of these positions are being filled by individuals outside of these communities or out of state because of the limited number of locally trained and qualified workers. Educators at Santa Fe Community College are working to change that.

Readying a Skilled Local Workforce

EPA's environmental job training program enabled the college to design a robust program and provide unemployed and underemployed New Mexicans with quality technical training and certifications that employers required but were not readily available in northern New Mexico.

Some employers are reluctant to hire older workers for a myriad of reasons. However, gaining these skills and certifications makes program graduates of all ages more attractive to environmental employers.

Core Training:

- Occupational Safety and Health Administration 40-Hour Hazardous Waste Operations and Emergency Response (OSHA 40-Hour HAZWOPER)
- Federal, State and Tribal Environmental Laws
- Environmental Site Assessment
- Superfund Site Cleanup and Innovative and Alternative Treatment Technologies
- Resource Conservation and Recovery Act
- Federal Emergency Management Agency National Incident Command System 700- and 800-Level Global Positioning System
- First Aid and Cardiopulmonary Resuscitation (CPR)

Supplemental Training:

- HAZWOPER Supervisor
- Environmental Site Investigation Methods
- New Mexico Water Regulations
- Leaking Underground Storage Tank Removal
- Solid Waste Management

Graduates Trained: 76 since 2011

Graduates Employed: 54

Average Starting Hourly Wage: \$16.40

“Our training participants range in age from 19 to 60, and many of them have been seeking jobs for months, and in some cases years, and they lack confidence,” says Janet Kerley, the program’s Project Manager and Principle Instructor. “In the training, we challenge them to perform. Graduates learn job skills and earn certifications that allow them to compete in a difficult job market and secure a wide range of public and private sector environmental jobs, including positions in environmental health and safety.”



Program trainees taking OSHA 40-hour HAZWOPER training.

Employers who have hired program graduates applaud the college’s approach and the relevance of the training.

Sean Pauly, who works for environmental staffing agency Aerotek, says, “Over the last several years, we have utilized and successfully placed several former students of this program. Every student from the program was offered the position they interviewed for and was brought on permanently with our client. Not only are they doing a great service for Aerotek but they are providing quality work for our clients.”

“It’s exciting to see Santa Fe Community College leverage their EPA grant funds to train local workers for well-paying environmental jobs. The college’s program trains workers on the importance of properly and safely performing this work, and its high job placement rate proves its effectiveness. Investments in job training programs like this help improve the health of our communities by putting unemployed and under-employed New Mexicans to work revitalizing our neighborhoods. I’ll continue to support funding to help clean up and redevelop contaminated sites and spur economic growth in our communities.”

— Tom Udall
U.S. Senator
New Mexico

Displaced Homemaker Launches Environmental Career

Monica Canaris completed the college’s environmental job training program and landed her first job through Aerotek in 2012, making \$17 per hour decommissioning and decontaminating a closed Intel semiconductor fabrication facility in Rio Rancho, New Mexico. “I put a teaching career on hold for 15 years to stay home and raise my sons,” she says. “Now divorced and older, I needed employable skills and a steady income. The training gave me direction, skills, confidence and a new career path. My sons are proud of me, and I am earning good money.”

Canaris has worked on several other high-profile projects, including a reclamation project dealing with unexploded ordnances at the Pueblo of Laguna site—a former World War II training area—and a project characterizing hazardous waste under Santa Fe’s advanced chemical transport program.

Her latest project is for Aerotek’s client, Sky City Communications. She’s helping to survey and assess the environmental health and safety of 33 landfills on Navajo Nation land in four states for the Bureau of Indian Affairs.

The impacts of the work on Canaris’ life go far beyond the perks of having a good job. “I’ve thought of myself as an environmentalist my entire life,” she says, “and I’m now working in a field where I am directly making a

difference in people's lives and in my community and getting paid well, which translates into being a happy person and finding my place in the world.”



Monica Canaris using a global positioning device to record the latitude and longitude coordinates of a solid waste site located on Navajo Nation land.

Like Mother, Like Son

Nathan Carnaris, Monica's son, also graduated from the environmental job training program in 2012. He had been under- or unemployed for three years, and with no long-term job prospects and mounting debt, Nathan hoped that the certifications offered by the college's environmental job training program would help him gain entry and build an environmental career.

Less than a month after graduating from Santa Fe Community College's job training program, Nathan was hired in a full-time position by Los Alamos Technical Associates at \$16 an hour to conduct environmental assessments in areas surrounding Los Alamos National Laboratory in north-central New Mexico. Founded during World War II, the laboratory

“Not only was Monica proficient at her assigned task, but she went above and beyond to make sure that we met deadlines and completed the project. Her knowledge with hazardous chemicals was above our expectation, and she was able to help our staff understand certain aspects of the project.”

— Client Manager
Sky City Communications

served as the research and development facility where the first nuclear weapon was created. The company later paid for Nathan's move to Columbus, Ohio, where he was promoted to Project Manager within two years, making \$50,000 per year with full benefits to oversee environmental assessment work in seven states.

From Unemployed to Overseer of the Environmental Health and Safety of 26 State Buildings

Thomas Gonzales was also able to reboot his career after completing Santa Fe Community College's environmental job training program. He had owned and operated a construction company in Santa Fe that employed 150 workers, but the housing market crash forced him to close his business in 2008. Mostly unemployed for five years, with only small jobs here and there, Gonzales went back to school to study sustainable technologies with the intention of starting a career in solar energy. It was during this time that Gonzales heard about the college's environmental job training program.

Gonzales graduated from the program in 2012 and a few months later accepted a job with the Facilities Management Division of New Mexico's General Services Department. He was hired as the Facilities Operations Supervisor—a new position created by the state to develop a hazardous waste and indoor air quality program and oversee the environmental health and safety for 26 state buildings on four campuses. Gonzales makes \$18 per hour and has a retirement plan, health care, annual paid time off, sick leave and other benefits, including paid training.

“The variety of training and certifications provided under the college's environmental job training grant prepared me to develop the first comprehensive environmental health and safety manual for the Facilities Management Division,” says Gonzales. The manual covers safety and environmental standards



Graduate Thomas Gonzales monitoring indoor air quality at a state government building in New Mexico.

required by OSHA and a testing program for radon, mold and lead in state-owned buildings.

Within a year, Gonzales was promoted to facilities operations manager and is earning nearly \$30 per hour now. He continues to oversee dozens of state-owned buildings, including the Governor’s residence in Santa Fe, and is in the process of developing a new facilities operations program and employing and training the division’s campus operators. Having been employed with the state for more than two years, Gonzales has become the source of information on environmental health and indoor air quality for fellow staff members.

“The Santa Fe Community College’s training aided me in my employment with the state and my career advancement. I acquired the knowledge that helped me stand out and made me a valued candidate in the hiring process.”

— Thomas Gonzales
Program Graduate

Designing Training Based on Local Markets Yield Jobs

Program graduates Jerry Lucero, Marc Bonem and Sara Lass also are building sustained careers in environmental and chemical safety with state agencies. Lucero is working full time, conducting safety briefings for the New Mexico Department of Transportation. Bonem was hired as the Solid Waste Enforcement Officer with the New Mexico Environment Department, and Lass is the sustainability coordinator for New Mexico’s prison system.

Several other graduates are working in the emergency response, and water and wastewater fields. Irina Repnikova, for example, is the Emergency Response Coordinator for the U.S. Embassy in Myanmar (Burma). Russell Daniels is a Water Harvest Specialist with Harvest H2O, and Willie Torres started his own company, developing sustainable biofuel water usage systems for homes in Puerto Rico. Brent Chavez is working for the Santa Clara Pueblo’s wastewater treatment facility.

“Santa Fe Community College’s innovative job training programs are providing opportunities for hard-working members of our community by ensuring they have the skills they need to get ahead. EPA’s environmental job training grant plays an important role in those efforts. Whether it’s for students preparing to enter the workforce for the first time or those going back to school to pursue a new career, [the college] works with industry partners to ensure that the curriculum reflects the knowledge and training students need and those employers are looking for. This collaborative effort has had tremendous success.”

— Ben Ray Luján
U.S. Representative
New Mexico

Northern Arizona University's Institute for Tribal Environmental Professionals Puts the Navajo Nation's Unemployed to Work Cleaning Up a Legacy of Uranium Mining on Tribal Lands

The Navajo Nation, whose borders lie within Arizona, New Mexico and Utah, occupies a mostly rural area just larger than West Virginia. The Navajo people face a number of challenges, including an unemployment rate near 50 percent, high poverty rates and lingering environmental impacts from past mining activities.

Approximately 4 million tons of uranium ore were mined between 1944 and 1986 for weapons manufacturing. By the late 1980s, mining operations ceased, leaving behind more than 500 documented abandoned radioactive mines, ponds and tailings piles, which have contaminated homes and drinking water sources with elevated levels of radiation.

Cleanup could take decades and cost billions to complete, but it also will bring hundreds of jobs to Navajo lands. Northern Arizona University's Institute for Tribal Environmental Professionals (ITEP) is making sure that the vast majority of those jobs go to the Navajo people, benefiting those historically affected by the negative legacy of environmental contamination.

Cleanup of Abandoned Uranium Mines Expected to Create Hundreds of Jobs

The U.S. Department of Justice reached a \$5.15 billion settlement agreement with Kerr-McGee Corporation in 2014, of which approximately \$985 million will be paid to EPA to fund the cleanup of approximately 50 high-priority abandoned uranium mines in and around the Navajo Nation. Additionally, the Navajo Nation will receive more than \$43 million to address radioactive waste left at the former Kerr-McGee uranium mill in Shiprock, New Mexico.

Core Training:

- Occupational Safety and Health Administration 40-Hour Hazardous Waste Operations and Emergency Response (OSHA 40-Hour HAZWOPER)
- OSHA 40-Hour Radiological Technician
- OSHA 30-Hour Construction Safety

Supplemental Training:

- Environmental Cleanup
- Hazardous Materials Handling
- Introduction to Federal and Tribal Environmental Regulations
- Cultural Responses to Hazardous Environments

Graduates Trained: 36 since 2015

Graduates Employed: 12

Average Starting Hourly Wage: \$12.00

Readying the Navajo for Jobs Close to Home

Cleaning up radiation and other contaminants left behind from uranium mining requires appropriate training and protective equipment, says Roberta Tohannie, the Job Training Program Coordinator for ITEP. EPA awarded ITEP a grant to train Navajo workers so that they would have the right credentials to secure well-paying and sustainable jobs in the cleanup of radioactive materials, Superfund and brownfields sites, as well as jobs in environmental justice advocacy and communications, solid waste management, and emergency response. Participants are being provided leading-edge environmental health and safety training to ensure that once in the workforce they know how to protect themselves from exposure to contamination.

ITEP coordinated with the Navajo Nation EPA and the contractors managing the assessment and cleanup of abandoned uranium mines to ensure that their program provided the training and certifications needed to secure employment.

“By preparing Navajo residents for well-paying jobs close to home and giving them an active role in restoring and protecting their communities for future generations, we’re not only improving their economic viability, we’re also empowering the Navajo to create a new legacy.”

**— Roberta Tohannie
Job Training Coordinator
Northern Arizona University’s Institute for Tribal
Environmental Professionals**

Most Navajo do not have the advanced chemical and hazardous safety training and credentials to work on high-priority sites and cannot afford the training required for these jobs. That’s where ITEP has played a critical role. All Navajo residents selected for ITEP’s training program were unemployed or underemployed. Many participants had to travel more than 100 miles one way to attend training. “Without the free training and leveraging of other critical resources, such as transportation to assist trainees in completing the program, graduates would not have been able to learn the specific job skills and acquire the qualifications necessary to enter this job market,” Tohannie says. “This type of training and additional resources would not have been possible without the grant funds from EPA and financial contributions from the Navajo Nation EPA and the Navajo Nation Department of Workforce Development.”



Program trainees taking soil samples at an abandoned uranium mine located on Navajo Nation land in New Mexico.

Volunteer Advocates for Cleaning Up Navajo Nation Lands

Sarana Riggs is a single mom and has spent most of her adult life as a volunteer grassroots activist, advocating for causes, including the cleanup of uranium contamination on Navajo lands. Although it was fulfilling work, it was unpaid, and Riggs knew she needed an education and a steady income to support her family. She was one semester away from completing a degree in the medical field when she was involved in a serious car accident that left her unable to complete the degree.

Unemployed and living on the Navajo reservation after leaving school, Riggs was excited when she came across ITEP’s environmental training program.

“Training opportunities close to the reservation are rare.”

**— Sarana Riggs
Program Graduate**

“The training was intense,” Riggs says, “and covered areas such as federal and tribal environmental regulations, hazardous materials handling, occupational safety guidelines and cultural responses to hazardous environments.”

Paid Liaison and Educator

Riggs graduated from ITEP’s environmental job training in 2014 and accepted a job with the Grand Canyon Trust, an environmental justice organization that assists the Navajo Nation and other tribes in the U.S. Southwest and other communities adversely affected by environmental and public health issues, including uranium contamination. Riggs is the liaison between the Grand Canyon Trust, the Navajo and other tribes, and she supports education and outreach efforts, including organizing meetings with top tribal officials.



Graduate Sarana Riggs on the job, educating Colorado River guides about the environmental and cultural challenges facing the Navajo Nation posed by unsustainable development, including the resurgence of uranium mining.

Riggs says the training led to her getting the job with Grand Canyon Trust. It opened a door for her to build upon her environmental justice activism and earn a steady paycheck, which has enabled her to pay off her student loans. Up next, she plans to pursue an environmental law degree once she completes her undergraduate degree in environmental studies at Fort Lewis College in Durango, Colorado.

“Sarana is a credentialed, talented and versatile professional. She has been an essential asset to the Grand Canyon Trust’s efforts to protect the natural beauty of the Grand Canyon, and Navajo and other tribal lands from a resurgence of uranium mining. Her efforts on both fronts attracted the attention of local and national media. Sarana was interviewed by the CBS affiliate in Flagstaff, Arizona, and photographed by the New York Times.”

— Roger Clark
Program Director
Grand Canyon Trust



Graduate Malia Green (front right) during OSHA 40-hour HAZWOPER training.

Uranium Cleanup by Navajo for Navajo

Tommy Charley, another ITEP graduate, says he found himself locked out of the opportunities to clean up his own lands because he lacked the right mix of training and credentials to break into the uranium cleanup market. “These jobs were being filled by people outside of the Navajo Nation,” he says.

“We’ve been the ones impacted for decades by the contamination, and now we were being shut out of the economic opportunities to clean up and restore our own communities. But this job training program is helping change that.”

— Tommy Charley
Program Graduate

Single Mom Builds New Career

Another recent graduate of ITEP’s environmental job training program is Malia Green, a member of the Navajo Nation who had been a stay-at-home mother of four special-needs children. Although Green managed to complete two years of college, after her marriage ended, she moved back to the reservation, where she has help looking after her children while seeking employment. But jobs of any sort on or near the reservation, let alone jobs providing a living wage, were hard to come by—until she completed ITEP’s training program.

“The training challenged me, especially the math,” Green says. “But it provided me with the skills and qualifications I needed to safely clean up uranium and other contaminated sites.” Furthermore, the national certifications were key to preparing her to secure a position with New World Environmental, where she now provides oversight and logistics support for the assessment of 161 contaminated housing sites in Arizona and New Mexico.

Green knows it’s important to keep her credentials updated, and she’s eager to give back to her community. She recently completed her refresher OSHA 40-hour HAZWOPER and radiological certifications, and she’s tutoring the next class of future graduates.

Charley completed ITEP’s environmental job training program in 2014 and is now employed full time by the engineering company CH2M HILL. He was hired as an intern, making \$13 an hour, to assist with soil sampling at an abandoned uranium mine. The company later employed him as a part-time environmental field technician, and he traveled to Evansville, Indiana, to conduct soil sampling for lead and arsenic at the Jacobsville Neighborhood Soil Contamination Superfund site. He also traveled to Lake Charles, Louisiana, to conduct sampling for asbestos, herbicides and pesticides on a 160-acre former chemical manufacturing brownfields complex near the Gulf Coast.

CH2M HILL later promoted Charley to a full-time position as Site Safety Coordinator at an abandoned uranium mine in Utah and Colorado. Now, he has a retirement account; health, dental and life insurance; and access to paid training and other benefits.



ITEP graduate and CH2M HILL employee Tommy Charley got his start in the environmental field conducting soil sampling at this abandoned uranium mine.

“Tribal elders consistently point to job training as a way to provide support to local communities, and CH2M HILL officials see ITEP’s training program doing just that. Tommy Charley was a great match to CH2M needs in that he had hazardous waste and radiation worker training and was enthusiastic about joining our New Mexico team. CH2M HILL got the added benefit of having someone knowledgeable about the Navajo culture and fluent in the Navajo language to assist on our project within the Navajo Nation.”

— Karen Jarocki
Operations Lead & Project Manager
CH2M HILL

ITEP’s training and this job have given him and his family the financial stability they’ve been looking for, and they are grateful. “I’m able to save money for the first time in a long time,” Charley says. His family is thrilled that he has a career with a great company, and Charley is happy that he has the opportunity to help protect Navajo lands for future generations.

Other program graduates are also working in abandoned mine lands and uranium cleanup jobs. Victor Lee is an Engineering Aid with the Navajo Abandoned Mine Lands program in Shiprock, New Mexico, and Tom Begay, Jr., is employed by Weston Solutions to conduct environmental site assessments on radioactive and other contaminated sites. Besides the need to clean up abandoned uranium mines, hundreds of Navajo homes were built with uranium-contaminated materials or have been contaminated by uranium and need to be remediated or demolished. ITEP and the Navajo Nation EPA are standing by to ensure that trained and credentialed Navajo residents are first in line for these jobs.



Graduates of Northern Arizona University's Institute for Tribal Environmental Professionals 2014 environmental job training program.

Enhanced Environmental Health and Chemical Safety Snapshots

St. Louis Community College, Missouri

Donald Partee, who was formerly incarcerated as a young man, graduated from St. Louis Community College's job training program and landed a job with Environmental Resources, Inc., in St. Louis, removing asbestos and mold. Later, Partee became a Project Manager with Maurice-Benjamin Company, supervising up to six workers. One signature project he's worked on involved the lead renovation, repair and painting of the Frank P. Blair School in St. Louis, which is listed on the National Register of Historic Places.

Zender Environmental Health and Research Group, Alaska

Frank Simpson had worked part time as a maintenance tech for the City of Port Heiden, but after completing Zender's environmental job training, Simpson was promoted to bulk fuel tank farm safety operator earning \$25 an hour.



Frank Simpson working as the Bulk Fuel Tank Farm Safety Operator for the City of Port Heiden.

Other EPA Environmental Job Training Programs Delivering Enhanced Environmental Health and Chemical Safety Training:

- Alaska Forum, Inc., Alaska
- Center for Working Families, Inc., Georgia
- City of Camden, Arkansas
- City of Detroit, Michigan
- City of Durham, North Carolina

- City of Glens Falls, New York
- City of Milwaukee, Wisconsin
- City of Oxnard, California
- City of Richmond, California
- City of Tacoma, Washington
- City of Texarkana, Texas
- City of Toledo, Ohio
- Civic Works Baltimore Center for Green Careers, Maryland
- Corporation to Develop Communities of Tampa, Inc., Florida
- Cypress Mandela Training Center, Inc., California
- Energy Coordinating Agency, Pennsylvania
- Enterprise Center, Inc., Tennessee
- Florida State College at Jacksonville, Florida
- Groundwork Providence, Rhode Island
- Hunters Point Family, California
- Iowa Western Community College, Iowa
- Lewis and Clark County, Montana
- Limitless Vistas, Inc., Louisiana
- Los Angeles Conservation Corps, California
- Memphis Bioworks Foundation, Tennessee
- Merrimack Valley Workforce Investment Board, Massachusetts
- Metropolitan Energy Center, Missouri
- Mo-Kan Regional Council, Missouri
- Mott Community College, Michigan
- North Star Center for Human Development, Inc., Connecticut
- Northwest Regional Workforce Investment Board, Connecticut
- OAI, Inc. — Greencorps Chicago, Illinois
- Oregon Tradeswomen, Inc., Oregon
- Pathways-VA, Inc., Virginia
- Rose State College, Oklahoma
- Sitting Bull College, North Dakota
- Southeast Neighborhood Development, Inc., Indiana
- Southern University at Shreveport, Louisiana
- St. Nicks Alliance, New York
- The Fortune Society, New York
- The WorkPlace, Connecticut

BROWNFIELDS REMEDIATION

Civic Works Grads Build Green Careers in Baltimore

In 1950, Baltimore was the sixth largest city in the country, home to 950,000 people and a thriving manufacturing industry. But a nationwide decline in this sector cost Baltimore more than 100,000 manufacturing jobs by 1995, or 75 percent of its industrial employment. This shift contributed to an economic decline that lingers today, with 8 percent of the city's population unemployed and nearly 24 percent living below the poverty level.

The drop in manufacturing also left a high concentration of abandoned properties and brownfields. The city has an estimated 1,000 brownfields, totaling 2,500 acres. As a result, the demand for environmental technicians is high, especially in lead and asbestos abatement, and environmental site assessment, inspection and sampling.

Breaking Down Barriers to Employment

The Civic Works Baltimore Center for Green Careers provides brownfields remediation training through its B'more Green program. "The program is making Baltimore's economy more equitable and sustainable by training residents for jobs in the environmental sector," says Gicelle Fundales, Director of Training and Production at Civic Works.

Participants in the program include local, unemployed and underemployed residents; single parents; previously incarcerated individuals; veterans; and dislocated workers. Since 2005, 43 percent of participants have been veterans with significant barriers to employment. Seventy percent of participants were formerly incarcerated or have a substantial history of arrest and conviction. "Most participants have had some interaction with the criminal justice system, often in part because they cannot find a job," says Fundales. "In some cases, folks arrive at the program literally right out of prison. Helping them establish stable careers reduces recidivism."

Building the Right Workforce

B'more Green ensures that local Baltimore companies that are engaged in brownfields cleanup and revitalization projects have access to a trained and ready workforce. "We look forward to working with B'more Green graduates," says Paul Hayden of

Core Training:

- Occupational Safety and Health Administration 40-Hour Hazardous Waste Operations and Emergency Response (OSHA 40-Hour HAZWOPER)
- Asbestos Abatement Supervisor
- Lead Abatement Worker
- Confined Space Entry
- Environmental Site Assessment
- Stormwater Management
- OSHA 7405 Fall Hazard Protection
- OSHA 7200 Bloodborne Pathogens Protection

Graduates Trained: 193 since 2011

Graduates Employed: 174

Average Starting Hourly Wage: \$13.68

Geo-Technology Associates, Inc. (GTA), a professional engineering firm providing land and property enhancement services. Hayden's firm partners with Civic Works by training program participants in environmental assessments. GTA's environmental division has been training B'more Green students for the last four years. "During our training session," he says, "we actively evaluate the students for employment and have not been disappointed. GTA believes this program provides well trained employees that are ready to begin their professional career with our firm."

GTA has hired six graduates as engineering technicians to work on remediation projects at several of Baltimore's largest brownfields sites, including Canton Crossing Retail, Union Wharf and Union Mill. These technicians assist in environmental site assessments; soil, ambient air and groundwater sampling; soil remediation; asbestos and lead-based paint surveys; and standard construction observation and testing work.

Supporting Participants With Case Management Services

To prepare participants for jobs, Civic Works provides case management services to help remove barriers to employment. It recently enhanced these services, hiring a full-time case manager to ensure that participants have a place to live, transportation, food and other basic necessities needed to make it to training each day and to obtain and keep a job. The organization says that because EPA's grant covers most of the technical coursework and certifications, Civic Works can use private grants to cover case management, as well as an additional 40 hours of life skills and job readiness training. "Civic Works can offer more comprehensive services thanks to the EPA's grant," Fundales says.

B'more Green graduate Lance Wolf knows first-hand the importance of effective case management. Wolf says, "The program is geared toward people who need direction. It teaches you how to think positively, which you might never have done before because you didn't have anything positive to think about."

Wolf grew up in a West Baltimore neighborhood that was known for drugs and gang-related violence. He and his sister lived with their mom, while their dad was mostly absent.

Despite these challenges, Wolf did well in school and entered the Navy in 2009, but he was discharged for medical reasons. "It was tough," he says. "There were many reasons why I wanted it to work out. Both of my grandfathers were in the military."



As a scientist in training at KCI Technologies, B'more Green graduate Lance Wolf conducts initial environmental assessments on vacant buildings marked for revitalization in Baltimore.

Returning home, he attempted to go to community college but did not follow through. After a couple of unsatisfying jobs in security and home services, Wolf discovered the B'more Green program through Train Baltimore and enrolled in November 2013. Wolf was 21 years old when he entered the program. Within a month of graduation, Wolf was hired as an Industrial Hygienist by KCI Technologies, Inc., which paid him 25 percent more per hour than his previous job, to assist in environmental site assessments.

Still with KCI, Wolf now earns \$21 per hour as a scientist in training and supervises a team of inspectors working on Baltimore City-owned vacant housing. He and his team conduct initial environmental assessments to determine whether the housing is contaminated and requires remediation. In the evenings, he takes courses at the Community College of Baltimore County, studying environmental science. He hopes to graduate with an Associate's Degree in 2016, and then continue his studies toward a Bachelor's Degree. Interested in environmental justice, he wants to study why some communities care less for their environmental surroundings than others.

"Everyone should have a healthy environment in which to live."

— Lance Wolf
Program Graduate

Graduate Starts Her Own Environmental Services Company

Another B'more Green graduate, Aisha Dorn, has long been aware of the environment around her. Dorn was raised in West Baltimore primarily by her grandmother, who was once a sharecropper and loves to garden. Dorn's mother tended a community garden with her siblings and taught Dorn how to grow vegetables in the backyard.

When she graduated from high school, she enrolled in Baltimore City Community College and planned to major in environmental science. The program was not fully established at that time, and the classes she needed to graduate were few and far between. "I just wasn't able to get out of the program what I expected," Dorn says.

In 2011, Dorn was working in retail for minimum wage when she heard about Civic Works. Its mission to help Baltimore City residents find jobs and opportunities to do more resonated strongly with her. Dorn enrolled in the B'more Green program, and for six weeks

attended training all day and then worked the late shift at the store. “I was really exhausted, working that much,” she says, “but I knew it would pay off.”



CEO of Lifeline Environmental and Civic Works graduate Aisha Dorn (right) at the White House speaking at a panel on workforce development.

Following graduation, she landed a job at FCC Environmental, a hydrocarbon recovery company, where she earned nearly twice the amount she had been making per hour in retail. There she used her training in confined space entry and hazardous waste handling to dispose of waste while cleaning narrow leaking underground storage tanks.

In 2012, she co-founded Lifeline Environmental, LLC, with her husband. The company offers asbestos; lead and mold remediation, and demolition services. Dorn knows exactly where to look for qualified environmental technicians for jobs: To date, she has hired seven B'more Green graduates.

In addition to creating local jobs, Lifeline Environmental recently started the Clean House Initiative to create healthier homes. The Clean House Initiative identifies vacant and dilapidated properties in Baltimore's underserved communities to combat environmental hazards like lead, asbestos and mold. The initiative also brings energy efficiency upgrades and clean power to these properties. Because of her company and experience with Civic Works, Dorn was invited to the White House to speak at a panel on workforce development, sharing her passion for investing in her community and revitalizing Baltimore neighborhoods.

“It is important to give back to Baltimore by helping local residents find jobs to rebuild neighborhoods and advance economic opportunities for all.”

— Aisha Dorn
Program Graduate
Co-founder, Lifeline Environmental, LLC

City of Tacoma Grads Leap Into Environmental Jobs

Located in western Washington on Commencement Bay, the City of Tacoma experienced population growth and increased industrial development in the late 19th and early 20th centuries, due partly to a flourishing maritime industry. In the late 1970s, much of the waterfront development closed or relocated, leaving many vacant sites and a legacy of soil and sediment contamination. Since then, efforts to clean up and revitalize these sites have created employment opportunities in the city, where employer surveys and labor market assessments have identified a demand for green occupations.



A program participant takes part in a confined space training exercise.

The city's environmental job training program recruits local, unemployed and underemployed residents; single parents; formerly incarcerated individuals; veterans; and dislocated workers. The program has focused on preparing graduates for environmental jobs at brownfield sites, such as those along Commencement Bay, the South Tacoma Way Industrial Area, census tracts in Pierce County with five or more former gas stations and other contaminated locations.

Training Leads to a Variety of Environmental Jobs

Since 2011, EPA's environmental job training program has enabled the City of Tacoma to provide training for environmental jobs beyond brownfield remediation—although brownfields remain its primary focus. For example, when program staff discovered that employers were increasingly looking for stormwater management skills, they developed training based on local, state and federal guidance, as well as best practices from private construction and environmental

firms. Participants learn how to develop, maintain and comply with stormwater management plans, and they earn an erosion and sediment control lead certification, which is often necessary to inspect stormwater permits at construction sites.

The program hosts a regular forum where employers can speak with graduates about their line of business and sometimes recruit graduates on the spot for jobs as environmental technicians, environmental laborers, hazardous material technicians, asbestos inspectors and green construction laborers.

A Veteran's Perspective

U.S. Navy veteran Andrew Shuckhart completed the city's environmental training and secured a job as a Regulatory Project Manager for the U.S. Army Corps of Engineers. "Adjusting to life outside the military can be difficult," Shuckhart says. "Training like this helps make veterans more marketable, not just because of the certifications but also because of the professional development. You learn how to write a resume, succeed in a job interview, and build a professional network."



Like other veterans, Andrew Shuckhart has built a successful career in environmental services, thanks to the training and support he received from the City of Tacoma.

Other Veterans Who Recently Graduated From the Program

U.S. Army veteran Joshua Whitney was wounded in battle during his service. During his transition out of the Army, he completed the City of Tacoma's environmental job training program and landed a job as a forklift driver, earning \$20 per hour with benefits.

U.S. Air Force veteran William Anderson completed the environmental job training program and earned a job as an analyst working for a contractor of Boeing.

Core Training:

- Occupational Safety and Health Administration 40-Hour Hazardous Waste Operations and Emergency Response (OSHA 40-Hour HAZWOPER)
- OSHA 10-Hour Construction Safety
- First Aid and Cardiopulmonary Resuscitation
- Confined Space Entry
- Mold Remediation
- Chemical Safety
- Leaking Underground Storage Tank Removal
- Environmental Site Assessment
- Stormwater Management
- Forklift Logistics, Operation and Warehouse Training

Supplemental Training:

- OSHA 10-Hour Outreach Training Program for Disaster Site Worker
- Certified Erosion and Sediment Control Lead
- Asbestos Abatement Worker
- Lead Renovation, Repair, Painting

Graduates Trained: 557 since 2000

Graduates Employed: 447

Average Starting Hourly Wage: \$14.54

Graduate Staffs Projects With Other Program Alumni

Another program graduate, Ricardo Loza, says he applies all his environmental certifications in his job at TCB Industrial, a staffing firm that specializes in placements at industrial facilities. As the Regional Director of Operations, Loza staffs projects in the environmental remediation, petroleum and construction industries. His environmental training gave him the knowledge and skills he needed to fill the position at TCB.

Loza had worked for years in retail management and the shipping industry before losing his job during the recession in 2008. He had been unemployed for nearly five years when he learned about the City of Tacoma's

environmental job training program during a visit to the city's Department of Health and Social Services, where he was applying for food stamps. "That was both my darkest and brightest day of the last several years," he says. "I stayed on the food stamps until I graduated the program. I was completely broke."

Loza landed the job at TCB less than a month after graduation in April 2013. He now helps staff projects at brownfields like the Duwamish Water Way, which was contaminated by decades of heavy commercial and industrial operations, such as metal manufacturing, container storage and shipping, marine construction, and fuel processing. Loza helped place the staff who remediated the soil by dredging the canals and banks, laying down core mat to cap contaminated sediments, and transforming more than a half mile of industrial waterfront back into natural shoreline.

Loza has represented TCB at all but one of the environmental training program's employer forums for graduating classes since his own graduation. He has placed five program graduates in permanent positions since joining TCB. Two are oil refinery technicians earning between \$18 and \$20 per hour to clean and safely maintain storage tanks in accordance with appropriate environmental procedures, and three are environmental services technicians earning \$20 to \$22 per hour to conduct a variety of tasks.

"The environmental job training makes [program graduates'] resumes really stand out."

— Ricardo Loza
Program Graduate

Although he works mainly in the office, Loza has relied on his environmental training during more than 300 hours of work he has performed for TCB in the field. For example, his HAZWOPER and underground storage tank removal certifications helped in a project to secure and remove a tank from the grounds of a local public school.

The Program Transforms Lives

Another program graduate, Kent Diede, saw his life similarly transformed by the training. Diede had worked in landscaping and sales and had taken college courses in law, horticulture and aerospace technology before falling on hard times about three years ago. Without work, Diede was forced to move into a homeless shelter. There he discovered the city's environmental job training program and for 16 weeks attended training while continuing to live in the shelter. He graduated from the program in September 2012.

Diede went to work for Advance Environmental, where he was paid \$40 per hour in prevailing wages to conduct asbestos and lead abatement work on projects throughout western Washington. Mike Menotti, who owns and operates Dirtek Disposal, LLC, asked Diede to consult on a project to remediate a private residence in Tacoma that had been condemned as a methamphetamine lab. "He knew about my brownfield hazardous waste cleanup training and asked for some information about removing asbestos and storage tanks from the house," says Diede. "We worked so well together he offered me a job!"



Graduate Kent Diede was homeless when he participated in the environmental job training program. Today, he's enjoying success in his work managing environmental projects.

At Dirtek, an earthworks infrastructure company, Diede manages environmental projects involving the excavation and transportation of soil and other inert organic material, including contaminated soils. The company has worked at brownfield sites, such as the Reichhold chemical plant, Burlington Northern Railroad station and Asarco copper smelting plant.

"Kent has been a tremendous asset in managing this business," says Menotti. "His unique skill set and the environmental education he received in the job training program are truly invaluable."

Diede has hired a number of program graduates for Dirtek projects, including a recent pool-construction project requiring the excavation of 4,000 cubic yards of soil at the Peoples Park in Tacoma. "I prefer to hire the city's environmental job training program graduates for projects like this," Diede says, "because you never know what you're going to find in a hole that deep. It's a safer bet to hire someone who has HAZWOPER certification and is trained to deal with underground storage tanks." He hired program graduates Ivan Rogers and Michael Cotton for the job, which pays more than \$40 per hour in prevailing wages.

Diede represented Dirtek at a city forum with graduates of the spring 2015 class, where he encouraged them to follow through with the goals they set for themselves during the program. “I told them, if I can transform my life as dramatically as I did by using this training, there’s no limit to what they can do, too.”

“In my experience, the City of Tacoma’s environmental job training program graduates are highly skilled professionals who we are grateful to add to the Dirtek team.”

— Mike Menotti
Owner & Operator
Dirtek Disposal, LLC

Brownfields Remediation Snapshots

Oregon Tradeswomen, Inc., Oregon

Deawendoe St. Martin began her journey with Oregon Tradeswomen in January 2013 at the age of 35 and as a mother of four children. St. Martin knew she was a hard worker and had a gift for fixing things, but the jobs she was working didn’t pay enough for her to support her children. She sought out Oregon Tradeswomen’s pre-apprenticeship training program because she wanted to find a lifelong career that would support her family. After graduating from the pre-apprenticeship program, St. Martin’s desire for learning continued. She signed up for the environmental track available at Oregon Tradeswomen to make herself even more marketable in the workforce. Through the environmental track, she obtained several important certifications that would allow her to obtain work in environmental remediation. Today, St. Martin works proudly for an excavation company as a union laborer. Through her hard work and dedication, she is now making a wage that enables her to comfortably support her family. When asked about her next goal in life, she says, “The sky’s the limit.”

Sitting Bull College, North Dakota

Patrick Two Bear, a Standing Rock Sioux tribal member, was jobless and had little hope of finding sustained work close to home because of high unemployment on the reservation. But Sitting Bull College’s environmental job training program changed that.

After graduating and acquiring certifications in lead, mold and asbestos abatement, OSHA 40-hour

HAZWOPER, and first aid and cardiopulmonary resuscitation (CPR) in the spring of 2013, Two Bear was hired by the Standing Rock Sioux Tribal EPA Program, earning \$12 an hour, to assess illegal dumpsites and to clean up brownfields on the reservation, including the Old Stockade Building, the last remaining building of Fort Yates, a former military fort established in 1863 and decommissioned in 1903. Once cleanup is complete, the Old Stockade Building will be restored to an historic site with a museum to hold artifacts significant to the tribe.

One certification that Patrick secured through the program proved invaluable both on and off the job: Patrick used his CPR training to save the life of an elderly woman who was having a heart attack at a local restaurant.

Sitting Bull College is a tribal college located on the Standing Rock Sioux Reservation in North Dakota. The reservation encompasses 2.4 million acres and is the sixth largest reservation in the United States. It is also one of the most economically distressed. Approximately half of the residents who live on the reservation live below the poverty level, and unemployment is more than 50 percent. There are an estimated 140 brownfields on the reservation, and illegal dumping sites containing hazardous substances and contaminants also impact the reservation.

ACKNOWLEDGMENTS

Whether cleaning up contaminated sites or starting careers in wastewater or stormwater management, emergency or disaster response, waste or materials management, chemical safety, renewable energy, or a host of other environmental careers, graduates of EPA's environmental job training programs across the country represent the vanguard of a growing, greener economy.

The range of environmental training and career opportunities available through EPA's environmental job training program would not be possible without the funding and support of other programs within the Agency. The following programs and partners have supported training opportunities that ultimately lift up individuals, improve lives for families, clean up neighborhoods, strengthen communities and protect the environment:

- **Office of Superfund Remediation and Technology Innovation**
- **Office of Emergency Management**
- **Office of Resource Conservation and Recovery**
- **Office of Underground Storage Tanks**
- **Office of Wastewater Management**
- **Office of Pollution Prevention and Toxics**
- **Office of Environmental Justice**
- **Center for Program Analysis**
- **EPA Pesticide Program**
- **EPA Urban Waters Program**
- **EPA Lead Program**
- **Innovation, Partnerships and Communication Office**
- **Hazardous Materials Training and Research Institute**

EPA's Office of Brownfields and Land Revitalization thanks EPA environmental job training program's grant recipients and graduates for sharing their inspiring stories. Without their contributions, this publication would have not been possible. We wish them continued success in their job training programs and careers.

Thank You!

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www.epa.gov/brownfields/types-brownfields-grant-funding#tab-6