



National Institute of
Environmental Health Sciences
Worker Training Program

Fall 2022 Workshop Report

EXAMINING the
CHANGING LANDSCAPE
of HAZWOPER TRAINING



Table of Contents

3	Executive Summary	
3	How Did We Get Here and Where Are We Going?	
6	Recognizing Emerging Hazards	
	Accidental Releases	6
	Battery Technology	6
	Natural Disasters	6
	Improperly Stored Chemicals.....	7
	Chemical, Biological, Radiological and Nuclear Terrorism	7
7	Responding to the Changing Landscape of HAZWOPER Training	
	Heat Stress.....	7
	Infectious Disease.....	8
	Oil Spill Response	9
	Batteries	10
	Shipping Hazardous Materials	10
11	Embracing Strategic Partnerships	
	Partnership with the Occupational Safety and Health Administration.....	11
	Partnerships with Local Agencies and Organizations to Reach Diverse Audiences.....	11
	CLEAN Carwash Worker Center	11
	Four Rivers Nuclear Partnership	12
	LA Conservation Corps and the Kane County Sheriff's Department	13
	Tribal Organizations and Entities.....	13
14	Addressing Training Challenges	
	New Ways to Deliver Refresher Courses	14
	Dealing with Competition from Other Training Providers.....	15
	Small Businesses and Associations	15
16	Demonstrating the Value of HAZWOPER Refresher Training	
17	Using HAZWOPER Training for Workforce Development	
18	Conclusion	

Executive Summary

On October 20 and 21, 2022, The National Institute of Environmental Health Sciences (NIEHS) [Worker Training Program \(WTP\)](#) hosted a hybrid workshop, [Examining the Changing Landscape of HAZWOPER Training](#). The workshop provided an opportunity for program staff, grantee organizations, and partners to engage in discussions about hazardous waste operations and emergency response (HAZWOPER) training and how it has evolved over the years.

Speakers and workshop participants shared stories about the history of WTP and HAZWOPER training, current and emerging challenges, and successes. They also shared the importance of embracing lessons learned from the past to prepare for emerging HAZWOPER concerns in the future.

More information about the agenda and presentations can be found on the workshop website. A recording of the entire workshop is also available online.

The following are key components of the workshop featured in this report:

- Revisit the mission of WTP and how it continues to be an important program as various emergencies arise.
- Understand emerging hazards and how they are being addressed by WTP.
- Highlight training that benefits the most vulnerable workers and where needs are still unmet.
- Emphasize the value of partnerships for HAZWOPER training.
- Look to the future of HAZWOPER training and consider ideas for updating the [WTP Strategic Plan](#).

How Did We Get Here and Where Are We Going?

Mitchel Rosen, Ph.D., of the [Atlantic Center for Occupational Health and Safety Training](#), shared a comprehensive history of WTP.

WTP made its first grant awards in 1986. Rosen has been a part of WTP since 1988 and he hopes to inspire others to find ways to capture and share WTP's rich history with new grantees, trainers, and partners. Rosen said as representatives of grantee organizations retire, this leaves the potential for gaps in historical knowledge and storytelling capabilities.

Rosen recommended the book, [Environmental Unions: Labor and the Superfund](#), which describes the history of WTP, the struggles overcome, and the partnerships developed – all of which have aided in making WTP the effective and innovative program it is today.

WTP was established as part of the Superfund Amendments and Reauthorization Act (SARA) of 1986, Section 126(g)¹ and the program has evolved over time to meet the growing needs of hazardous waste and emergency response workers.



Superfund site (Photo courtesy of Wikimedia Commons)

¹ Federal Register Volume 51 Issue 244 (December 19, 1986) Pages 45556-45557 <https://www.govinfo.gov/content/pkg/FR-1986-12-19/pdf/FR-1986-12-19.pdf>



An essential component of [WTP history](#) started in 1990 when program administrators started conducting site visits. Program administrators also began making recommendations to emphasize program evaluation and quality control, which remain priorities today. WTP also began to recognize the need to engage underrepresented workers and employers.

By 1991, WTP started to look at how workers can best protect themselves and their communities. Community engagement became paramount.

In 1994, WTP initiated the trainers' exchange, which is an event that allows trainers from grantee organizations to gather and share practical guidance to improve delivery of training courses and programs.

Building a cadre of trainers and forming strategic partnerships was critical following disasters such as the World Trade Center terrorist attacks (2001) and Hurricanes Katrina (2005) and Sandy (2012).

Historically, some threats that have helped shape WTP to be what it is today include:

- In 2001, terrorism became more of a concern as well as the mental health of first responders. No one could forget images of fire fighters and other responders crying at Ground Zero.
- In 2005, Hurricane Katrina highlighted the real threat of natural and manmade disasters as well as the

advantage of programs like the [Environmental Career Worker Training Program](#), engaging local communities in safe community cleanup.

- In 2008, WTP started looking at climate change as a critical issue for workers and specifically, how workers can protect themselves from climate-related workplace hazards.
- In 2012, Hurricane Sandy highlighted the importance of partnerships and engaging volunteers. Volunteers are not considered workers, but are often the first ones on site. They are desperately in need of training.
- In 2014, with the emergence of Ebola, WTP established the [Ebola Biosafety and Infectious Disease Response Training Program](#). Lessons learned from Ebola and other infectious diseases [built WTP's capacity to respond](#) to COVID-19 in early 2020.

As new threats emerge, WTP continues to adopt new training approaches. WTP grantees offer in-person training, virtual and hybrid formats, and provide training booklets, webinars, and asynchronous programs. "The methodology that we use is less important than the messages that we provide in the training," Rosen said.

WTP Director [Sharon Beard](#) shared more about the valuable work that grantees are focusing on today. WTP is especially [strong in partnerships](#) and grassroots relationships. Grantees and trainers have their ears to the ground and understand emerging issues on worksites and

in communities; therefore, they are informed about the training needs that exist for their target audiences.

Training courses cover several topics, including but not limited to:

- **Hazardous waste and materials:** Meant for workers who engage in activities related to hazardous materials and waste generation, removal, containment, and transportation.
- **Emergency response and disaster recovery:** Meant for workers who handle response, recovery and cleanup from emergencies and disasters with hazards such as chemicals, mold, toxic metals, or unidentified hazardous materials.
- **Confined space:** Meant for workers who may encounter confined spaces in their work (where dangers exist for entry, exit, and air quality) or would enter an OSHA-regulated permit required confined space.
- **Construction and equipment safety:** Meant for the health and safety of construction workers and heavy equipment operators involved in hazardous material deconstruction, demolition and cleanup.
- **Train-the-trainer and trainer development:** Meant for workers to learn adult education principles, classroom management, specific curriculum and facilitator guides, and other skills to become a trainer.

“With new technology, comes new threats,” said Beard. “WTP must stay vigilant in updating trainings to reflect the known and unknown hazards that emerge.”

Beard said that WTP should continue developing partnerships with new employers and grassroots organizations to expand its reach and bring the right skill sets to the program. Additionally, WTP should rely on evidence-based science to better understand emerging hazards.

Addressing emerging hazards and concerns will continue to be a priority for WTP in the future. For example, climate change, violence, and poverty, are major concerns for immigrants. The increase in migration throughout the U.S. demonstrates the need for health and safety training and support for immigrants and other underserved

populations. Arturo Archila of the [Steelworkers Charitable and Educational Organization \(SCEO\)/The Labor Institute](#) said this also emphasizes the need for trainings in multiple languages.

WTP maintains its commitment to environmental justice and workforce development. As a pilot program for the White House [Justice40 Initiative](#), opportunities offered through the Environmental Career Worker Training Program are paramount for underserved communities.

Furthermore, COVID-19, opioids, and mental health continue to threaten the health and safety of workers and the communities they live in. WTP will continue to promote training tools on infectious disease, synthetic opioids and substance use disorders, and mental health resiliency.

WTP has the responsibility to keep workers safe with or without regulations in place. Rosen challenged workshop participants to think about what it means to be a model program. He said that training programs should be innovative, dynamic, empowering, and participatory. Furthermore, programs should focus on the guiding principles noted in the [WTP Minimum Criteria](#), including evaluation and continuous process improvement.



Department of Energy (DOE) site workers learning to identify hazardous situations and take appropriate actions to protect themselves, fellow workers, and the environment (Photo courtesy of DOE)

Recognizing Emerging Hazards

Christina Baxter, Ph.D., of [Emergency Response TIPS, LLC](#), presented a comprehensive summary of emerging hazards for WTP grantees and trainers to be aware of today.

Baxter challenged workshop participants to remember that responders are not just law enforcement and other emergency personnel, but also trade workers.

Baxter asked participants to consider:

- Changing training environments to best provide experiential training.
- Offering training beyond the current laws and regulations to make sure workers have the tools they need to respond to emerging hazards.
- Taking time to understand the needs of the population being trained to best adapt training to that specific community.

Accidental Releases

These releases may happen following transportation incidents, garbage truck fires, facility releases, product transfer incidents, university laboratories and pool chemical accidents. For example, hotel workers are often at risk of chlorine gas incidents with indoor pools. These workers need the training to safely respond.

Battery Technology

The change in battery technology over the last ten years has been unprecedented and requires new skills to manage batteries safely. Sanitation workers may unknowingly be transporting batteries that could be crushed and catch fire. If their truck catches fire, do they know how to respond? Does the local fire department know how to respond, given the rapidly

changing technology in batteries? Who else is trained in the community? These are questions that need to be answered in responding to each potential incident related to new technologies.



Garbage truck (Photo courtesy of Wikimedia Commons)

Additionally, battery operated vehicles like the Tesla are posing new threats. Emergency responders need to know how to respond to electric vehicles in natural disasters (emerged in water) and what to do if an electric vehicle catches on fire, particularly in a confined space like a parking garage.



Tesla (Photo courtesy of Wikimedia Commons)

Natural Disasters

During Hurricane Harvey, the high-water levels caused more of a problem than the hurricane itself. In Crosby, Texas, for example, organic peroxide materials were stored in a facility within separate buildings to keep

them cold. But as the water rose, workers removed electrical panels. The water continued to rise resulting in a detonation of organic peroxides because the cooling system failed in the reefer trucks. In this situation, most people responding to the incident were unaware of the hazards. This example emphasizes the importance of forming local emergency planning committees and sharing evacuation routes.

Improperly Stored Chemicals

Improperly stored chemicals pose another hazard for workers. These chemicals are often found in illicit laboratories, which may include chemical warfare agents, biological agents, and drugs. As an example, Baxter shared one encounter with a small methamphetamine lab located in a janitor's closet in a federal building.

Chemical, Biological, Radiological and Nuclear Terrorism

Thanks to technology and transportation, particles that were once only available in one small part of the world are now available all over the world. The biggest issue pertaining to toxins today is the sale and use of illegal nicotine. Consumers can purchase nicotine in quantities much greater than the lethal limits.

Health and safety implications must be considered as resources are invested in new technologies and access to dangerous chemicals increases.

Responding to the Changing Landscape of HAZWOPER Training

Speakers from WTP grantee organizations shared more about their experiences with emerging hazards and responding to the changing landscape of HAZWOPER training.

Heat Stress

Heat is the leading weather-related killer and is becoming even more dangerous.² Charles Austin with the [International Brotherhood of Teamsters](#) (IBT), spoke about the heat-related hazards that transportation, waste collection and rail workers face.

As an example, Austin highlighted the working conditions that UPS drivers face. These workers are in and out of their delivery truck up to 130 times per day. Air conditioning in trucks is often ineffective. Recently, a UPS driver sent Austin a photo of a thermometer placed in the back of a truck that read 161 degrees Fahrenheit. Between 2015 and 2021, UPS reported 117 heat-related incidents to OSHA.

² Environmental Protection Agency. (n.d.). Climate Change Indicators: Heat-Related Deaths. EPA. Retrieved December 22, 2022, from <https://www.epa.gov/climate-indicators/climate-change-indicators-heat-related-deaths>



Back of UPS truck (Photo courtesy of Charles Austin, IBT)

To combat these and other heat-related hazards for workers, IBT uses different methods to share information with their members, including:

- A 2-hour training program as well as in person and self-paced options.
- A fact sheet.
- A QR Code to quickly be directed to the IBT website for information.
- A [tool](#) to sample work/rest and water consumption to direct workers how much rest and water they need based on the heat index.

IBT also developed multiple tools to track heat throughout the country and working conditions of truck drivers. This data can help to inform policy.

Heat is not only dangerous for workers on the job, but it can also impose a barrier while providing safety training. Chad Geelhood with the [Western Region Universities Consortium](#) (WRUC), presented strategies they have used to modify 40-hour HAZWOPER training activities during high-heat events.

In Arizona, heat is a major obstacle when scheduling training, particularly from May to August because of the high average temperatures. Safety training is interactive and includes activities such as decontamination procedures, air and waste sampling exercises, and other activities that generally require an outdoor setting.

Geelhood presented adjustments that WRUC utilizes to adapt to the heat and keep trainees safe. WRUC has opted for indoor options such as labs or open classrooms when the outdoor conditions are too hot. Training times have been adjusted so that outdoor activities are not conducted during the hottest times of the day. WRUC also purchased tents for shade and cooling equipment.

Infectious Disease

Janelle Rios, principal investigator for the [Prevention, Preparedness, and Response \(P2R\) Consortium](#), discussed how P2R used the [hierarchy of controls](#) (Figure 1) to prevent the spread of infectious diseases during a recent 40-hour HAZWOPER course.

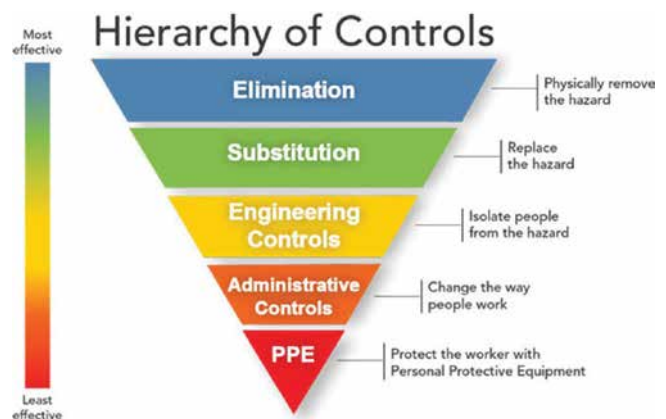


Figure 1 National Institute of Occupational Safety and Health Hierarchy of Controls (Photo courtesy of Wikimedia Commons)

Before the course, participants received agendas with details about the training program and communication about control measures that would be put in place to protect them. The control measures included:

- Asking participants to not come to class if they felt ill, were exposed to someone ill, or suspected to be ill (Elimination).
- Disinfecting surfaces and informing participants of the products used to do so; increasing spacing in the classroom (Engineering controls).
- Moving certain sessions online; creating smaller teams and limiting cross team interactions; and encouraging hand washing and use of hand sanitizers (Administrative Controls).
- Training participants how to use, reuse, clean, disinfect, and discard personal protective equipment (PPE).

Rios was pleased to report that there were no known viral transmissions upon moving all 40-hour HAZWOPER training courses to an in-person environment– she credited this success to the intentional use of the hierarchy of controls. Additionally, the P2R Consortium was eventually able to completely resume in-person training.

Implementing these measures of control, however, includes challenges. Rios shared how demanding the process was for the course instructors. For example, instructors had to disinfect all surfaces and often had trouble finding the appropriate disinfectants to use.

Oil Spill Response

Kirk Laffin with the Community College Consortium for Health and Safety Training/National [Partnership for Environmental Technology Education](#) (CCCHST/PETE) shared their organization’s efforts to train fishing fleets in Alaska to be first responders to oil spills from pipelines or vessels.

On March 24, 1989, the Exxon Valdez oil spill occurred when a ship ran into a reef dumping 11 million gallons of crude oil. The spill is considered the largest oil spill in U.S. history.

The Exxon Valdez oil spill left significant human health, ecological, and economic impacts. It impacted approximately 150 miles of shoreline and took nearly three years to clean up. Four people died during cleanup efforts; it also killed 250,000 species of seabirds, 3,000 otters, 250 bald eagles, and 22 killer whales. The spill also caused an economic collapse for salmon and herring fisheries.

The Exxon Valdez oil spill led to the Oil Spill Recovery Act of 1990. As part of the legislation, the Alyeska Pipeline Company (Alyeska) created Ship Escort/Response Vessel System Fishing Vessel Program (SERVS) which requires prevention and contingency plans to prevent future spills. SERVS must have the equipment and personnel to recover 300,000 barrels of oil in 72 hours.

Since 1998, Prince William Sound Community College (PWSCC), a subgrantee of CCCHST/PETE in Valdez, Alaska, has assisted the SERVS Fishing vessel annual oil spill training for the fishing fleet. Training courses include Incident Command, OSHA 10, HAZWOPER, Confined Space, and COVID Protocol, and Ship Sanitation, among many others.



Alaska fishing boat (Photo courtesy of Wikimedia Commons)

CCCHST/PETE provides support for PWSCC through faculty training, trainer outreach, and training supplies.

In 2022, PWSCC and Alyeska trained 1,800 crew members from more than 420 fishing vessels. Training

was conducted indoors or on water. Some training was converted online due to COVID. Training is usually offered between March and May each year.

In case of a spill, commercial fishing is suspended so a fishing fleet can assume the role of first responders. Once trained, fishing vessels and crews are able to support cleanup efforts in many ways including but not limited to: containing and collecting spilled oil, maintaining and repairing equipment, assessing damage, providing floating housing for marine work crews, and providing communications equipment.

Batteries

Jamie Burgess with the [International Association of Fire Fighters](#) shared more about the hazards that lithium-ion (LI) batteries pose to fire fighters.

According to the International Association of Fire and Rescue Services, the number of LI battery related fires have increased five-fold in only six years.³ LI batteries burn hotter, faster, and longer than legacy fuels. More water is required to extinguish LI battery car fires than fuel-based car fires. These fires are prone to reignition hours or days after the initial event and they can ignite violent chemical reactions.

Burgess said this is particularly dangerous in confined spaces. As more electric/rechargeable vehicles are introduced to the market, more fires will occur. The fire service has not been able to keep up with the rapid rise of LI battery source fires.

LI battery fires are not limited to vehicles. New materials used to construct homes also pose a threat to fire fighters when responding to house fires. Additionally, smaller devices within homes, including cell phones, headphones, watches, and e-scooters can pose threats when on fire.

³ Large increase in lithium battery related fires over the last 6 years. CTIF. Retrieved March 6, 2023, from <https://www.ctif.org/news/large-increase-lithium-battery-related-fires-over-last-6-years>



Vehicle charging station (Photo courtesy of Wikimedia Commons)

Gases present during LI battery fires include hydrogen, fluoride, carbon dioxide, dimethyl carbonate, ethane, ethylene, and methane. With the adoption of LI batteries, more fire fighters are getting diagnosed with cancer due to inhalation of these gases and fumes. Burgess emphasized the need for training and resources to protect fire fighters and other workers from these hazards.

Shipping Hazardous Materials

Brian Abbott with [AVSEC, LLC](#) shared more about the safety concerns that should be considered when transporting produce and pharmaceuticals. Abbott highlighted best practices for model trainers on this topic, such as:

- Know the audience you are training - one size does not fit all.
- Understand the changing landscape of the local area in which the HAZWOPER training will be presented.
- Use an hour of training time to address the hazardous materials' demographics unique to the training site.

When delivering training, trainers should raise awareness about the different chemicals used to cool produce and pharmaceuticals. For example, gel packs are often used for cooling fruits and vehicles- which is considered a [class 9 material](#). Packages can contain lithium batteries, which as noted previously, can be dangerous in case of fire or water submersion.

Embracing Strategic Partnerships

Partnership with the Occupational Safety and Health Administration

[James Frederick](#), deputy assistant secretary of labor for [Occupational Safety and Health Administration](#) (OSHA), opened a conversation with meeting participants about shared concerns between OSHA and WTP. Frederick spent 25 years in the Health, Safety and Environment Department of the United Steelworkers Union (USW), a WTP grantee organization, so he is intimately familiar with WTP.

Frederick said that approximately 15 workers die on the job each day. This statistic motivates him to show up to work every day.



Frederick shared the keynote address during WTP's fall 2022 workshop and provided regulatory insights about HAZWOPER work. (Photo courtesy of Sharon Beard)

He is inspired to bring new energy to OSHA, including hiring 393 new staff members in FY 2022. Frederick also spoke to the importance of ensuring that OSHA staff reflect the diverse communities served.

In the spirit of collaborative learning, Frederick asked workshop participants what issues they would like to hear about. Responding to feedback, Frederick spoke about how OSHA is addressing climate change and COVID-19 and how the agency plans to update its vision to ensure better enforcement of violations.

A major takeaway from Frederick's presentation was the importance of setting priorities and working collaboratively, especially due to OSHA's limited resources. The partnership between OSHA and WTP is extremely important. Beard and workshop participants shared their gratitude for the partnership with Frederick and OSHA.

Frederick understands the importance and the challenge of WTP's work. "There is a lot of work to do, and we are the ones to do it," he said.

Partnerships with Local Agencies and Organizations to Reach Diverse Audiences

WTP has evolved through outreach and engagement with new and diverse audiences. This engagement is possible by way of partnerships with local agencies and organizations. This was highlighted in presentations from speakers who represent four different groups: Carwashers⁴; Radiological Technician Workers; LA Conservation Corps and a local sheriff's department; and American Indians and Alaskan Natives.

CLEAN Carwash Worker Center

Lizbeth Diaz with [WRUC](#) discussed their partnership with the [CLEAN Carwash Worker Center](#) to deliver HAZWOPER training for carwashers. Diaz said there are 1,984 carwash establishments with 25,243 full time employees⁵

-
- 4 Note: Carwashers in LA call themselves "carwasheros" and "carwasheras," so the X is gender inclusive.
 - 5 The number of carwashxs only includes full-time workers, not part-timers, tip workers, or workers at businesses registered as other than primarily a car wash, such as gas stations.

in California and 791 establishments with 9,447 full time employees in Los Angeles.

Carwasherxs face many hazards on the job, including:

- Chemical hazards: multiple sizes and types, there is very little training or information available on use and disposal of chemicals.
- Biological hazards: Carwasherxs are often cleaning vomit, blood, etc., from cars.
- Confined spaces: Carwasherxs sometimes clean sludge from water reclamation pits.



Top: Hand car wash (Photo courtesy of Lizbeth Diaz, WRUC) **Bottom:** Confined space (Photo courtesy of Lizbeth Diaz, WRUC)

The CLEAN Carwash Worker Center leads outreach and advocacy efforts around job safety, workplace hazards, wage and hour laws, environmental protection, and community health initiatives in Southern California. The CLEAN Carwash Worker Center offers a 24-hour hazardous waste operations course for Carwasherxs. The content of the course is condensed from traditional HAZWOPER training and is tailored to the carwash industry. The training also introduces green chemicals to workers, so carwasherxs can become environmental stewards.

Due to COVID-19, the training is primarily conducted online, offered over a six-week period, twice a week and at night. All sessions are recorded so the carwasherxs don't miss trainings when circumstances intervene. Trainers provide follow-up information to online viewers, so all can learn the material and gain certification.

Four Rivers Nuclear Partnership

Ashlee Fitch, principal investigator for the [United Steelworkers Tony Mazzocchi Center \(USW TMC\)](#) spoke about their growing relationship with the [Four Rivers Nuclear Partnership](#) to both support community development through job opportunities and to fulfill a need to recruit Radiological Technician Workers (RTW).

Fitch described RTW training in Paducah, Kentucky, a training founded around the industry of uranium enrichment for nuclear weapons. As weapons-building slowed, the program transitioned to cleanup and reindustrialization of contaminated sites.

Fitch said that RTWs are hard to retain. To counter this challenge, the USW TMC sought to collaborate with the Four Rivers Nuclear Partnership and shared their [plan to train and retain workers](#). Fitch highlighted that part of their mission was to benefit the community through environmental cleanup and creating local jobs for residents. With the buy-in from Four Rivers Nuclear Partnership, recruitment for the training improved. In the most recent class of trainees, there were 20 candidates

for the 240-hour class. Once the candidates passed this class, they were immediately eligible for work. Eighteen of the candidates graduated and also have 40-hour HAZWOPER certification.

The program was so successful, in continued collaboration with the Four Rivers Nuclear Partnership, USW TMC is looking to expand and fill other jobs needed in the community with local community members.



Trainees in Ohio are welcomed by Tony Mazzocchi Center staff (Photo courtesy of USW Tony Mazzocchi Center)

LA Conservation Corps and the Kane County Sheriff's Department

Trish Davies with [Opportunity, Advancement, Innovation in Workforce Development](#) (OAI, Inc.) discussed their work in partnership with the [Los Angeles \(LA\) Conservation Corps](#) and [Kane County \(Illinois\) Sheriff's Department](#).

Based in Chicago, Illinois, OAI's mission is to deliver training that leads to safe, meaningful employment while helping companies and communities to thrive. OAI has expanded their outreach to reach new communities in various locations, especially during COVID-19. Davies said, internally, their staff are always asking the questions: "Who do we serve and who else should we be serving? What do we offer and what should we be doing?"

The LA Conservation Corps recruits underserved youth and young adults and emphasizes conservation and local-benefit projects. OAI offers online training to LA Conservation Corps members; training topics include urban forestry, community beautification, recycling and zero waste, wildfire prevention and recovery, and food security. The training builds job skills and facilitates positive social connections for trainees.

In partnership with the Kane County Sherriff's Department, OAI is offering training to incarcerated individuals to prepare them for workforce re-entry upon release. For this audience, OAI offers courses that cover food handling, parenting, mental health, business planning, OSHA 10- and 30-hour General Industry and forklift training. So far, the program is showing a reduction in justice-involved recidivism. Davies said others have shown interest in the training courses, which are now being offered to local homeless shelters and individuals involved in the court system.

OAI is also offering Spanish-language training for interested participants. One of the first Spanish language training classes filled within hours of opening. OAI staff hope to grow this initiative more in the future, and also include more gender diversity, young adults, and inmates re-entering the community.

Tribal Organizations and Entities

Roy Stover with the [Alabama Fire College Workplace Safety Training](#) (AFC WST) shared best practices for building relationships with and training American Indian and Alaska Native communities. Stover has been involved with training tribal and Alaska Native communities across the country since 2003; therefore, he is very well versed in the gaps and challenges that exist with delivering HAZWOPER and other training to these communities.

One challenge in reaching tribal communities is the small population that is accessible and servable for training. Tribal communities are often located in remote locations.

AFC WST ships a travel kit to remote locations to ensure that on-site training is more manageable.

A training class may not be feasible with only one or two participants, so AFC WST tries to recruit and train as many individuals from each tribe in related fields. Trainees often include tribal workers with jobs in housing services, environmental service, health care, emergency response, and casinos. Trainees are eager to learn and appreciative of the opportunity.

AFC WST also provides train-the-trainer programs – this helps develop more trainers in tribal communities and builds local capacity to disseminate health and safety information.

Stover said sometimes it is difficult finding and establishing the right contact person within a tribe. He said communication and relationship-building is key to continue offering training to tribal communities.

AFC WST continues to seek new partnerships to build and maintain their presence in tribal communities. To build these partnerships, AFC WST will attend national and regional conferences hosted by the Native American Fish and Wildlife Society to network with participants. Recently, AFC WST hired a Native American staff member which they hope will enhance outreach and engagement.



Workers donning fall prevention equipment (Photo courtesy of Wikimedia Commons)

Addressing Training Challenges

Additional health and safety training approaches are necessary to address emerging health and safety concerns for the hazardous waste workforce. Workers face occupational hazards associated with emerging industries and technologies, and workers and communities face risks as the consequences of climate change become more severe.

Workshop participants broke into smaller groups to highlight successes and discuss and brainstorm around challenges faced by WTP grantees.

New Ways to Deliver Refresher Courses

The COVID-19 pandemic highlighted new ways for refresher courses to be delivered.

In one break out session, workshop participants noted how virtual training has helped grantees reach a wider audience. While in person, hands on activities are agreed to be the most effective, some activities such as “escape rooms” (or problem solving simulations that produce a natural learning experience) and utilizing photos in a Zoom format can be effective too.

Participants highlighted the importance of trainers adapting training to the worksite and the worker population to make sure the training is relevant.

One trainer has started offering small modules that participants can choose from, further tailoring the training to the audience. Modules include:

- Site worker refresher
- Risk management
- Personal protective equipment (gloves, chemical clothing, respirators)
- Opioids

Trainers adapt the times training is offered to accommodate participants. For example, in large cities, offering night and weekend training helps those who cannot get out of work during the day for training.

Grantees expressed the challenge of working with bureaucratic training partners which diminishes outreach, retention of participants, and attendance.

Workshop participants spoke of ways they are incorporating Diversity, Equity, and Inclusion in their refresher training such as utilizing trainers who speak the local language as much as possible. Workshop participants also expressed the need to use more diverse images and videos in course materials reflecting racial, gender, age and body-type diversity.

Dealing with Competition from Other Training Providers

One issue that emerged in a needs assessment with WTP grantee organizations was competition between WTP and other training providers.

Workshop participants noted the importance of interagency relationships in combating the challenge of competition; however, they expressed that those relationships may be diminishing recently.

Workshop participants noted the greatest competition coming from the OSHA Training Institute (OTI) Education Centers. OTI Education Centers are a national network of nonprofit organizations authorized by OSHA to deliver occupational safety and health training to private and public sector workers, supervisors, and employers. Another issue is the lack of qualified trainers who speak multiple languages serving as WTP trainers. For example, with an influx of migrant workers in NYC, many workers want to be trained to meet minimum requirements, but there are not enough OSHA authorized trainers who can train in Spanish or other Indigenous languages. Workshop participants proposed a working group to develop a policy around these issues to help with this situation and present it to OSHA and NIEHS leadership.

Small Businesses and Associations

Leveraging relationships with small businesses helps WTP grantees better integrate in the local community and reach workers who need training. Workshop participants shared their best practices in engaging with small businesses.

Relationship building is key when engaging with small businesses. One way to initiate a relationship is by holding a simple awareness training, which is a first step in the door and can lead to more fruitful engagement. For example, after forming trust through a 1-hour awareness training, the grantee may now be known as a trusted provider to offer a 40-hour HAZMAT training. Another way to initiate relationships is by attending job or trade fairs, or by getting involved with local small business associations and the local chamber of commerce.

Workshop participants also discussed the need to train all involved in the training administration, including support staff, to be well versed in the program and able to market the program. Every engagement is a chance to share about the program and potentially bring in new participants. For example, when an assistant answers the phone, they should be prepared to answer questions and start engagement right from that initial interaction.



Worker on a forklift (photo courtesy of Sustainable Workplace Alliance)

Demonstrating the Value of HAZWOPER Refresher Training

One key strength of WTP is its emphasis on evaluation and reflection. Demonstrating this commitment, Megan Rockafellow Baldoni, Ph.D., of the [Atlantic Center for Occupational Health and Safety Training](#) shared results from a recent study, [The Long-Timers: Insight from Trainees with Years of HAZMAT Training and Experience](#). The goal of the study was to assess the impact of the hazardous materials worker training on trainees who attend yearly refresher training with WTP programs over multiple years, and to assess the change in workplace practices over time.

The survey was a collaboration between four grantee organizations:

- The Atlantic Center for Occupational Health and Safety Training at the Rutgers School of Public Health;
- The Midwest Consortium at the University of Minnesota;
- The Western Region Universities Consortium (WRUC) at University of California, Los Angeles; and
- The New England Consortium (TNEC) at the University of Massachusetts Lowell.

Forty-nine trainees completed the survey. The survey results highlight the value of the training for trainees who return for refresher courses year after year. Overall, results showed that respondents' top motivations to return to refresher courses annually were:

- Protecting themselves from hazards.
- Learning about new and emerging hazards.
- Preparing for emergencies.
- Meeting OSHA requirements.

- The effective and engaging instructors.
- To maintain their certification.
- Trainer-trainee and trainee-instructor relationships.

When asked about the impact of training, 75% or more respondents shared that the training:

- Had been applied to behavior at home or in the community.
- Helped them understand what resources are available if there are problems.
- Changed work behaviors.
- Changed work behaviors of others at the workplace.

The survey also indicated that the training increased worker empowerment. As noted by one survey respondent: "Your life is worth more than a job."



Workers in protective clothing (Photo courtesy of Wikimedia Commons)



Firefighting protective equipment (Photo courtesy of International Association of Fire Fighters)

Using HAZWOPER Training for Workforce Development

Another value added by the WTP program is workforce development.

Mary Vogel, executive director of [Building Pathways](#) Boston, a subgrantee of [CPWR](#), described the Building Pathways apprenticeship readiness model for workforce development. The mission of Building Pathways is to recruit and advance diverse workers in the union building trades, including women, people of color, and other underserved groups. Building Pathways integrates a supply and demand strategy which creates a pipeline of diverse workers (supply) and promotes policies and practices that create employment and advancement opportunities for diverse workers (demand).

In Massachusetts, women and people of color are underrepresented in construction apprenticeship programs. These programs can lead to careers in construction, which are considered family sustaining careers. Access to these careers can help disenfranchised groups attain economic mobility.

Building Pathways uses a pre-apprenticeship model to prepare individuals for entry into a registered apprenticeship program. Of the 456 participants in the Building Pathways program, 90% have been women and/or Black, Indigenous or people of color (BIPOC).

Building Pathways promotes the career possibilities for women and BIPOC through different outreach efforts such as:

- “Tradeswomen Tuesdays,” an online networking event to learn about opportunities for women in the union building trades.
- “MA Girls in Trades,” a collaboration between Career Technical Education Schools, Unions and Contractors, which encourages women in Vocational High Schools to pursue careers in the building trades.



Beard (far left) met pre-apprenticeship trainees during her site visit to the Building Pathways headquarters. She was accompanied by Mary Vogel (far right). The trainees were scheduled to graduate from the program in December 2022. (Photo courtesy of Allison Weingarten)

Bill Nash principal investigator for the [CCCHST/PETE](#) discussed their partnership with the nonprofit organization [PathStone Corporation](#) to reach vulnerable and underserved populations in Puerto Rico.

CCCHST/PETE trainers empower PathStone representatives to provide worker safety and health trainings. As a result of this partnership:

- Four PathStone employees are now trained as trainers.
- 79 employees have taken the OSHA 10 course.
- 31 employees, one community leader and four municipal employees have undertaken the Disaster Site Worker Course.
- And two PathStone employees are now authorized instructors in the OSHA General Industry/OSHA Construction course.

To help reach workers in remote areas, PathStone sends a bus to remote communities to provide trainees with access to the classes.



Conclusion

With a changing workforce and grantee community, the workshop was timely. Workshop participants learned about the history of WTP and shared information on the current hazards and training methodology.

Workshop participants shared insightful ideas on how to update and improve the WTP strategic plan, which outlines the mission and goal-oriented objectives of the program. Participants shared the strengths of the WTP including utilizing peer trainers, empowering workers to speak out when working conditions are unsafe, and identifying and elevating leaders through training. Key elements of WTP are the collaborative relationships between grantees, access to thousands of organized resources in the [National Clearinghouse for Worker Safety and Health Training](#) website, and a culture of training above and beyond current safety standards.

A key concern highlighted by workshop participants included attrition partly due to an aging workforce and the subsequent loss of institutional knowledge. Participants called for hands-on training to be maintained as much as possible, while acknowledging that the workforce is increasingly relying on virtual platforms.

WTP is motivated by the renewed commitment to partnership and collaboration with OSHA. Workshop participants emphasized the importance of building partnerships, particularly with grassroots organizations, to increase the reach of the program.

Mental health was addressed as a vital issue to continue incorporating in training courses to meet the needs of training populations.

Participants agreed that including language about diversity, equity, inclusion and accessibility is paramount in revising the WTP Strategic plan. Language justice and cultural awareness must be incorporated in training. Everyone involved in WTP should approach their work by questioning how social determinants of health impact trainees and the communities they come from. Why can some access training and not others?

These ideas and more will be included in the updated version of the WTP strategic plan.

WTP continues to share information on emerging hazards and offer training to protect vulnerable and at-risk workers. This workshop showcased how WTP grantees are connected to local communities and workers who are in need of safety and health information.



National Institute of
Environmental Health Sciences
Worker Training Program

This publication was made possible by contract number 47QRAA20D0028, task order number 75N96020F00102 from the National Institute of Environmental Health Sciences (NIEHS), NIH.

April 2023