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# Executive Summary

The WTP Strategic Plan is a living document that provides an overview of WTP’s vision, mission, and strategic priorities and objectives. Notably, the plan aligns with the NIEHS mission to promote healthier lives and is consistent with several themes and goals outlined in the [NIEHS strategic plan](https://www.niehs.nih.gov/about/strategicplan/index.cfm).[[1]](#footnote-2)

In summary, the WTP Strategic Plan:

* Summarizes the goals for each WTP program area: the Hazardous Waste Worker Training Program; the Environmental Career Worker Training Program; the HAZMAT Disaster Preparedness Training Program; the NIEHS/U.S. Department of Energy (DOE) Nuclear Worker Training Program; and the Small Business Innovation Research (SBIR) E-Learning for HAZMAT Program.
* Describes specific standards and requirements that are key tenets for WTP’s efforts. This includes the Occupational Safety and Health Administration (OSHA) requirements under 29 CFR 1910.120, Hazardous Waste Operations and Emergency Response (HAZWOPER). It also includes the [Minimum Criteria for Worker Health and Safety Training](https://tools.niehs.nih.gov/wetp/index.cfm?id=142) (Minimum Criteria) for HAZWOPER.
* Describes the role of contractors who support WTP via strategic planning, communication, and maintenance of the [National Clearinghouse for Worker Safety and Health Training](https://tools.niehs.nih.gov/wetp/) (Clearinghouse) website.
* Outlines the strategic themes and priorities for WTP from 2024 to 2029. There are three strategic themes, which have corresponding sub-themes and objectives. There is some overlap between the various objectives.

# Introduction

The National Institute of Environmental Health Sciences (NIEHS) [Worker Training Program](http://www.niehs.nih.gov/careers/hazmat/index.cfm) (WTP) uses evidence-based science to reduce risk of hazardous exposures and protect worker and public health through comprehensive, interactive training and education.

WTP was given the responsibility to initiate a training grants program under the Superfund Amendments and Reauthorization Act of 1986 (SARA). Since WTP’s inception in 1987, more than 5 million workers have received safety and health training. Training efforts reach workers in diverse occupations, spanning many sectors including federal, state, local, Tribal, private, and volunteer.

## Mission and Vision

WTP was established to prevent work-related harm by providing training programs for workers who handle hazardous materials (HAZMAT) or hazardous waste, as well as those who respond to disasters or emergencies. Over the years, WTP has expanded its reach to workers in many other industries, including those who are involved in health care, disaster response and cleanup, agriculture, manufacturing, and more. WTP is also committed to meeting the needs of workers and communities who are under-resourced, or experience disadvantages based on various health, socioeconomic, and environmental burdens.[[2]](#footnote-3)

WTP’s vision is two-fold: 1) empower workers to protect themselves, their colleagues, and communities from environmental and workplace hazards, and 2) develop strategic collaborations to promote a culture of workplace safety and equity.

Through the National Institutes of Health (NIH) extramural grants process, WTP awards cooperative agreements[[3]](#footnote-4) to [nonprofit organizations](https://www.niehs.nih.gov/careers/hazmat/awardees/index.cfm) (grant recipients) across the country. These grant recipients include a network of organizations that are tasked with providing high quality, peer-reviewed safety and health curricula, training, and education to workers who face risk of hazardous exposures on the job. This includes curricula and training focused on physical, chemical, biological, and psychosocial (mental health) hazards on the job.

## Programand FocusAreas

WTP-funded training activities fall under various program areas.[[4]](#footnote-5) A brief description of each program area is provided below.

**Hazardous Waste Worker Training Program (HWWTP)**

The [Hazardous Waste Worker Training Program](https://www.niehs.nih.gov/careers/hazmat/training_program_areas/hwwt/index.cfm) provides occupational safety and health training for workers who engage in hazardous waste removal, containment, or chemical emergency response. This program is the core component of WTP.

**Environmental Career Worker Training Program (ECWTP)**

The [Environmental Career Worker Training Program](https://www.niehs.nih.gov/careers/hazmat/training_program_areas/ecwtp/index.cfm) this program delivers training to increase opportunities for individuals from disadvantaged communities to obtain careers in environmental restoration, construction, hazardous waste removal, and emergency response.

**Hazmat Disaster Preparedness Training Program (HDPTP)**

The [HAZMAT Disaster Preparedness Training Program](https://www.niehs.nih.gov/careers/hazmat/training_program_areas/hdpt/index.cfm) supports the development and delivery of training for hazardous material and debris cleanup necessary after natural, technological and intentional incidents.[[5]](#footnote-6) Over the years, this program has evolved to meet the needs of workers and communities when preparing for and recovering from disaster incidents. This ensures that communities optimize their ability to care for the needs of people experiencing disadvantages, preserve life and property, and recover to a new normal.

**Infectious Disease and Biological Hazards Training**

The [Infectious Disease and Biological Hazards Training](https://www.niehs.nih.gov/careers/hazmat/training_program_areas/ebola/index.cfm) develops and delivers infection control practices and hazard recognition training for workers in health care and non-health care settings who may be at risk of exposure to or transmission of infectious diseases, such as COVID, Ebola, Zika, and influenza.5

**NIEHS/U.S. Department of Energy (DOE) Nuclear Worker Training Program**

The [NIEHS/DOE Nuclear Worker Training Program](https://www.niehs.nih.gov/careers/hazmat/training_program_areas/doe/index.cfm) focuses on training workers engaged in environmental restoration, waste treatment, and emergency response activities at sites in the [U.S. Department of Energy (DOE) nuclear weapons complex](https://www.energy.gov/em/cleanup-sites). An interagency agreement with DOE funds awards for this program.

**Small Business Innovation Research (SBIR) E-Learning for HAZMAT Program**

The [Small Business Innovation Research (SBIR) E-Learning for HAZMAT Program](https://www.niehs.nih.gov/careers/hazmat/training_program_areas/att/index.cfm) provides grants to develop innovative e-learning products and technologies that are used for health and safety training. Technology-enhanced training products, such as those that use virtual reality, can help workers safely assess, respond to, and protect themselves and others from harmful exposures on the job. These products support the health, safety, and resiliency training of emergency responders, skilled support personnel, and workers involved in the cleanup, removal, or containment of hazardous or infectious materials.

# Significance of HAZWOPER and Other Federal Regulations

The SARA (1986) established the requirement for OSHA to develop and promulgate two standards applicable to hazardous waste operations and responses to hazardous materials incidents.

The first standard, 29 CFR 1910.120 HAZWOPER,[[6]](#footnote-7) required a standard for the protection of workers engaged in hazardous waste operations; hazardous waste treatment, storage, and disposal activities (TSD); and emergency responses to hazardous materials incidents without regard to location. The second standard, also required by SARA, was promulgated by the U.S. Environmental Protection Agency at 40 CFR 311 to provide coverage for public workers otherwise exempt from coverage under the Occupational Safety and Health Act, 1970.

The HAZWOPER standard is unique in that it is based on a proactive approach to worker and public health protection. Each of the three categories of operations the standard addresses (hazardous waste cleanup, TSD, and emergency response) are hazardous and complex. Because hazardous exposures are difficult to predict before workers are engaged in the labor, workers must be protected until actual exposures can be adequately determined, and protective measures established. Consequently, the worker training provisions in the standard are rigorous and contain: pre-job core training requirements that include knowledge, skill and ability elements; site-specific training; a minimum of three days actual field experience under the direct supervision of a trained, experienced supervisor; and annual refresher training. With respect to public health protection, the standard has extensive requirements regarding hazardous materials and substance containment; decontamination requirements that apply to workers and equipment to prevent the transfer of hazardous materials into the public environment; and hazardous waste transportation requirements.

Engagement in operations covered by the HAZWOPER standard often includes potential exposures to additional hazards for which specific standards and training requirements apply. Some examples include asbestos, lead, confined spaces, and demolition operations. WTP grant recipients continue to develop training curricula and programs (known as HAZWOPER-supporting) for these, as appropriate, for their target audiences and constituencies.

OSHA published a Notice of Proposed Rulemaking for a standard to certify training programs but has never finalized action on that standard. As a result, no current federal standard exists specific to requirements for certification of the extensive training requirements established in the worker protection standard. OSHA amended the HAZWOPER standard to add the non-mandatory Appendix E that provides guidelines for training providers and the training program curriculum. Appendix E is based on the NIEHS WTP Minimum Criteria for 29 CFR 1910.120 training providers and the training curriculum, which was developed at a national technical consensus workshop in 1990.

# Minimum Criteria

WTP grant recipients are required to follow guidance outlined in the [Minimum Criteria for Worker Health and Safety Training](https://tools.niehs.nih.gov/wetp/index.cfm?id=142) (Minimum Criteria) for HAZWOPER to deliver training. This document serves as the core criteria for all WTP grants and training program areas.

The origin of the Minimum Criteria can be traced back to 1990. The first WTP grant recipients worked together to come to a consensus on requirements for the design, quality control, and guidelines of their training programs. The original Minimum Criteria document became the non-mandatory Appendix E, Training Curriculum Guidelines, in the HAZWOPER standard.

The Minimum Criteria emphasizes the principles of adult education, establishes minimum criteria for designing training programs, establishes quality control requirements for training programs, and provides generic guidelines for training curriculum. The Minimum Criteria has helped WTP establish national benchmarks for high quality worker safety and health training in collaboration with various stakeholders and communities. As a result, the program is a national model of effective health and safety training and evaluation.

# Contract Support and the National Clearinghouse

The [National Clearinghouse for Worker Safety and Health Training](https://tools.niehs.nih.gov/wetp/) (Clearinghouse) provides support to WTP staff and grant recipients. Led by [MDB, Inc.](https://www.michaeldbaker.com/) for more than 20 years, the Clearinghouse is an essential partner in managing projects and bridging connections between WTP staff, grant recipients, and interested stakeholders.

The Clearinghouse supports strategic planning efforts, communication, and operations; provides logistical support for workshops, webinars, and conferences; creates training materials and program reports; and more for WTP staff and grant recipients. A few examples of key roles that the National Clearinghouse has in supporting WTP’s efforts are described below.

## Strategic Planning and the Operational Matrix

The [WTP operational matrix](https://tools.niehs.nih.gov/wetp/public/hasl_get_blob.cfm?ID=13401), developed in 2012, is a living document that provides a straightforward structure for planning and implementing programmatic activities. The initial purpose of the operational matrix was to guide the activities of the Clearinghouse, but it has since evolved into a convenient guide for program-wide activities across WTP staff, the Clearinghouse team, and grant recipients. The operational matrix maps and corresponds to clearly defined outcomes in the WTP logic model. The matrix also depicts the roles of WTP staff, the Clearinghouse team, and grant recipients.

*A major reason for WTP’s effectiveness is that it operates as a collaborative ecosystem of WTP staff, grantees, and the Clearinghouse. Creating and nurturing this interactive environment is necessary for the program to function and make progress towards its goals. The strategy of inclusion and outreach facilitates this collaboration, resulting in additional contributions from grant recipients, stronger partnerships, and increased reach of program and grant recipient efforts.*

Annually, WTP and Clearinghouse staff collaboratively review and revise the operational matrix to optimize resources, align strategic priorities, and highlight partner relationships while focusing on annual goals. Clearinghouse staff present critical operational matrix changes at grant recipient meetings and WTP Advisory Board meetings to ensure buy-in and alignment.

## Workshops and Webinars

The Clearinghouse facilitates webinars and technical workshops for WTP, grant recipients, and partner agencies/organizations. The technical workshops – held twice yearly in the spring and fall – encourage collaboration among grant recipients on contemporary safety and health topics. The COVID-19 pandemic called for new strategies, like webinars, to share and disseminate important information to grant recipients and stakeholders. The Clearinghouse supports WTP staff by organizing webinars to share programmatic updates with grant recipients or new resources with interested stakeholders.

The Clearinghouse also helps WTP staff organize and facilitate the Trainers’ Exchange, which is held once during each five-year grant cycle. This is an event for trainers to gather and share training best practices through a series of participatory workshops.

## Clearinghouse Website

Another key aspect of contract support for WTP is maintenance of the [Clearinghouse website](https://tools.niehs.nih.gov/wetp/) – a comprehensive, organized repository of worker safety and health resources. The Clearinghouse website stores key documents, reports, and materials (e.g., training tools, templates, and printable booklets for all-hazards incidents) that WTP grant recipients can use and adapt for their target audiences. Several resources are available on the Clearinghouse website focused on natural disasters, such as hurricanes and wildfires, and infectious diseases, like COVID-19. These are available at no cost to the public.

The Clearinghouse website allows the sharing of health and safety information with grant recipients, workers, and the public. One example is the [Material Upload and Search Tool for Infectious Disease](https://tools.niehs.nih.gov/wetp/mustid/index.cfm) (MUSTID), a searchable portal that provides easy access to resources on infectious disease and worker safety. The [disaster app](https://tools.niehs.nih.gov/wetp/disasterapp/) is another tool which allows easy, mobile access to WTP’s disaster preparedness training tools. Another example is the online [curricula catalog](https://tools.niehs.nih.gov/wetp/index.cfm?id=603), which provides access to training curricula developed by grant recipients. Browsers can search the curricula catalog by program area, grant recipient/training provider, course category, and course language.

# Strategic Themes, Priorities, and Objectives

The following section outlines strategic themes, priorities, and objectives for WTP from 2024 to 2029. Table 1 in the Appendix shows how well the strategic themes and their corresponding priorities align with the WTP’s [operational matrix](https://tools.niehs.nih.gov/wetp/public/hasl_get_blob.cfm?ID=13401).

## Theme 1. Worker Health and Safety Training and Education

### Instructor and Trainer Development

Health and safety trainers are the backbone of WTP. A longtime goal of the program is to build, develop, and diversify its cadre of trainers. Several focused initiatives help achieve this goal, including mentorship, instructor development programs, and trainers’ exchanges.

It is critical that WTP grant recipients develop mentorship opportunities for seasoned trainers and new trainers to share their skills with one another, because each of them has something to offer and gain from the other. This is especially important as the existing cadre of trainers ages out (i.e., shifts into retirement).

Grant recipients are encouraged to lead and facilitate instructor development programs. This can be done through focused meetings, conferences, or one-on-one mentorship opportunities. Whether done formally or informally, the goal is to provide a space for the exchange of ideas and lessons to cultivate the next generation of instructors, or trainers and ensure existing instructors are staying up to date on the latest science, technology and training techniques.

The WTP Trainers’ Exchange, held once during each five-year grant cycle, provides an opportunity for trainers and program administrators to share training best practices through a series of participatory workshops. Trainers with health and safety experience and from various cultural backgrounds attend the event. As WTP continues its focus on equity, trainers need to understand and relate to the cultural and language needs of target audiences, especially those who are historically disenfranchised or underserved. The Trainers’ Exchange provides an opportunity for trainers to enhance their teaching methods and learn how to create more effective and empowering training modules. The Trainers’ Exchange also provides an opportunity for trainers to meet the requirement for continuing education as listed in the [Minimum Criteria](https://tools.niehs.nih.gov/wetp/index.cfm?id=142).

***Objectives:***

* Build and maintain a diverse cadre of trainers within WTP’s network.
* Manage the expansion of a national network of trainers with diverse skills driven by a common training doctrine.
* Provide infrastructure and resources to support instructor development programs.
* Provide opportunities for trainers to build their skills, learn new topics, and adopt new training approaches.

### Interactive Training

WTP incorporates interactive training activities to meet the learning needs of diverse audiences. Interactive activities include hands-on training, small group discussions, and other exercises to promote the application of knowledge and skills learned. These activities are incorporated based on the course topic, course location, and student certification needs. For example, training course participants utilize hands-on training to practice the selection, donning, and doffing of personal protective equipment. In general, interactive activities allow participants to critically think about workplace hazards, risk assessment, and mitigation strategies. These exercises involve plausible, real-world scenarios that are customized for specific industries.

***Objectives:***

* Incorporate interactive training activities to build technical and soft skills.[[7]](#footnote-8)
* Develop new interactive training activities to accommodate worker/trainee needs and perspectives.
* Integrate new tools or technologies to enhance interactive training activities.
* Disseminate and share interactive training activities among WTP grant recipients.

### Worker Empowerment

Health and safety training empowers workers with knowledge and skills that can be used to protect themselves and their colleagues. Workers are also empowered to share information with their peers and communities, raise safety concerns with their employers, and contribute to the implementation of new workplace procedures. This enables workers to emerge as natural leaders as they help direct and focus efforts to improve workplace safety culture.

WTP grant recipients have documented how [worker trainers](https://pubmed.ncbi.nlm.nih.gov/34092830/) are important peer resources in the workplace. Worker trainers serve as the go-to experts for their peers on questions related to health and safety, thereby contributing to a safer, healthier work environment.

***Objectives:***

* Empower trainees to share the knowledge they have gained with their employers and peers.
* Encourage the development of trainers and leaders within the workplace who are committed to health and safety, and have the skills to take action to improve workplace safety culture and systems.

### Workforce Development and Job Training

Environmental Career Worker Training Program and how it impacts the individual by providing individual growth, safer workplace, policy, and sustainable communities. 

Many industries face a shortage of trained and experienced workers, thereby increasing the risk of occupational injuries and fatalities. These issues call for [workforce development strategies](https://tools.niehs.nih.gov/wetp/events.cfm?id=2629) to educate, train, and empower workers to ensure that they have the support and skills needed for work in high-risk, high-demand occupations.

WTP continues to adapt training programs to meet ongoing needs for workforce development and job skills training. For example, the program uses apprenticeships and other training models to help employers meet their current and future workforce needs, all while sustaining a competitive edge for economic growth in their respective industries. Additionally, WTP has the foresight to address emerging issues and demonstrates a commitment to social and economic justice for workers and their communities. These qualities set WTP apart from other programs.

The ECWTP is a great example of WTP’s [commitment to environmental justice](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10191422/) and providing underserved individuals with a pathway for sustainable careers. As a [participant in the White House Justice40 Initiative](https://www.hhs.gov/about/news/2022/06/24/hhs-announces-programs-to-join-president-bidens-justice40-initiative.html), the ECWTP shows promise as a model for other training programs to follow in reaching and impacting lives. Many WTP grant recipients, even those without an ECWTP grant, have been working to integrate the core components of the ECWTP (e.g., life skills training, social support networks, and mentorship) into their training programs.

Ongoing investments in alternative and renewable energy systems offer opportunities for workforce development to meet this growing need and mitigate the hazards such opportunities present. Several grant recipients are working (or exploring opportunities) with partner organizations to fill jobs in emerging sectors, such as solar panel installation and charging station installation (for electric vehicles).

***Objectives:***

* Support registered apprenticeships and other model programs that help individuals, especially those from underserved and underemployed communities, obtain jobs in the environmental and construction industries.
* Recruit and train young workers in construction, environmental cleanup, waste treatment, and green industries.
* Ensure that training aligns with the technical and professional requirements of the respective fields.
* Focus on strengthening job creation and retention.
* Encourage integration of core components of ECWTP in other training programs.
* Strengthen the links between workers, their workplaces, and surrounding communities.
* Invite contractors, employers, and community leaders to participate in program advisory board meetings and increase the number of organizational employees who contribute to the boards of community organizations.
* Explore workforce development and employer partnerships in new sectors, such as alternative energy sources, which will provide new opportunities for occupational and environmental safety and health training.

### Health and Safety in Disaster Preparedness, Response, and Recovery

WTP plays a key role in the National Response Plan and Framework through the [Worker Safety and Health Annex](https://www.fema.gov/sites/default/files/2020-07/fema_nrf_support-annex_worker-safety.pdf#:~:text=This%20annex%20provides%20supplemental%20assistance%20to%20Federal%20departments,it%20does%20not%20address%20public%20health%20and%20safety.). The U.S. Department of Health and Human Services has recognized WTP’s critical work as an essential member of the National Disaster Recovery Framework for protecting workers who contribute to national response and recovery activities.

***WTP’s Role in National Response Activities***

WTP may be activated by OSHA under the National Response Framework, Worker Safety Health Annex to provide:

* Training technical assistance such as instructional staff, curriculum development experts, subject-matter experts, and professional staff.
* Safety training to worker target populations with respect to the nature and location of the incident and the particular hazards.
* Assistance and support in the development and delivery of site- specific health and safety training through appropriately qualified WTP awardee instructional staff.
* Assistance such as respirator fit-testing and distribution of Personal Protective Equipment (PPE).

WTP [develops and delivers training](https://tools.niehs.nih.gov/wetp/public/hasl_get_blob.cfm?ID=13301) for workers involved in response, recovery, and cleanup following natural disasters, chemical or biological terrorist attacks, infectious disease outbreaks, and other hazardous incidents. Climate change has resulted in more frequent and severe natural disasters like hurricanes, wildfires, and flooding. As a result, WTP focuses on [preparing workers for the impacts of climate change](https://www.niehs.nih.gov/news/events/pastmtg/hazmat/2022/Spring_Meeting/index.cfm) and related disasters.

As a member of the National Response Team, WTP provides health and safety training under the National Contingency Plan, the federal government’s plan for responding to oil spills and hazardous substance releases.

WTP’s cadre of trainers are a national resource for providing health and safety education to prepare cleanup workers and responders to perform their duties following disasters. Health and safety training provides workers responding to disasters or emergencies with the critical information necessary to protect themselves, their coworkers, and communities. However, when WTP grant recipients respond to incidents, they often find that many of the workers already at the disaster site have not been provided the training or equipment necessary to effectively protect themselves.

To ensure that grant recipients have the necessary protocols and strategies in place when activated for incident response, WTP uses the [Emergency Support Activation Plan](https://tools.niehs.nih.gov/wetp/public/hasl_get_blob.cfm?ID=10602) (ESAP). The ESAP provides guidance and recommendations to help WTP grant recipients and trainers better prepare their personnel and families prior to, during, and after disaster response deployment.

WTP grant recipients are allowed to use/repurpose their NIEHS funds to respond to disasters and emergencies as needed. Additional funding opportunities are made possible through Congressional supplemental appropriations.[[8]](#footnote-9) Program staff also encourage grant recipients to seek additional funding opportunities through other agencies and organizations.

WTP staff continue to pursue interagency partnerships for disaster preparedness and response efforts with agencies like the U.S. Environmental Protection Agency (EPA) and the Federal Emergency Management Agency (FEMA). Recently, WTP and National Clearinghouse staff supported the White House Environmental Justice Interagency Council, Environmental Justice and Natural Disasters Committee with gathering input from stakeholders across the nation on how to better address natural disaster preparedness, response, recovery, as well as associated COVID-19 implications, in disadvantaged communities.

***Objectives:***

* Advocate for the health and safety of emergency responders, skilled support personnel, volunteers, and communities by actively participating in all phases of the national response to disasters.

***Recommended Training for Workers Engaged in Response Operations***

* **General training** for disaster site workers should be given in advance of a worker’s deployment to a disaster site (preparedness training) or prior to actual deployment (pre-deployment training) at a disaster site.
* **Site-specific training** includes an overview of conditions specific to the worksite where the employee will be deployed.
* **Task specific training** includes items such as hazard communication, personal protective equipment (PPE), use of tools, safety at elevations, etc. Training that is mandated by various agencies, such as OSHA, EPA, U.S. Coast Guard, Department of Transportation, etc., should be provided in accordance with those agencies’ standards or guidelines.
* **Pre-deployment and pre-job briefings** are conducted on a daily basis by the worker’s immediate supervisor to cover the day’s work plan.

Definitions for site specific, task specific and pre-deployment/pre-job briefings are from OSHA’s ***Hurricane Katrina Worker Health and Safety Plan, October 2005***.

* Continue working with local, state, and federal agencies to promote the hiring of pre-trained/qualified workers for future all-hazards incident response and recovery.
* Advocate for cleanup and recovery worker safety and health in the public forum, including for day laborers and other immigrant workers who are a large part of this workforce.
* Become more integrated in response efforts with other agencies (e.g., FEMA, EPA).
* Train and deploy specialized emergency response trainers (SERTs) to communities impacted by disasters.
* Explore opportunities to expand collaborations with training constituencies at the local, state, and federal levels after the initial disaster recovery funding is depleted.
* Determine a way to obtain resources to train immigrant workers and other at-risk populations in future all-hazards incident response and recovery.
* Pursue interagency outreach and partnerships with agencies and embrace opportunities for stakeholder engagement in disadvantaged communities impacted by disasters.
* Continue working to reach meaningful partnership agreements with other federal agencies to ensure coordination of training to protect responders, and recovery and cleanup workers in all-hazards incidents.

### Health and Safety at DOE Facilities

In 1992, NIEHS established an interagency agreement with the [U.S. Department of Energy (DOE) Office of Environmental Management](https://www.energy.gov/em/office-environmental-management) (EM) to prepare and equip workers with proper training to [address hazards within and around U.S. DOE sites](https://www.princeton.edu/~ota/disk1/1993/9326/9326.PDF), particularly those related to the nation’s Cold War environmental legacy. This agreement was authorized by Section 3131 of the National Defense Authorization Act of 1992, establishing what is now known as the NIEHS/DOE Nuclear Worker Training Program. The goal of the NIEHS/DOE Nuclear Worker Training Program is to provide high-quality training to workers supporting the [mission of DOE](https://www.energy.gov/mission) to ensure they are prepared to work safely in hazardous environments.

Key aspects of success for the NIEHS/DOE Nuclear Worker Training Program are [integrated safety management systems](https://tools.niehs.nih.gov/wetp/public/hasl_get_blob.cfm?ID=11026) and a focus on safety culture. Both DOE and WTP prioritize a safety-conscious work environment. To accomplish this, workers need to be informed about hazards, as well as their rights. Workers also need to be invited to spaces where they can openly raise safety issues or concerns without fear of retaliation. Another key aspect of success is the DOE National Training Center’s [Health and Safety Training Reciprocity Program](https://www.directives.doe.gov/directives-documents/300-series/0364.1-APolicy). This program establishes a policy for reciprocity of employee health and safety training across all DOE sites and facilities. This eliminates the need for redundant training, improves mobilization, and increases the efficiency and effectiveness of DOE operations while meeting federal health and safety requirements.

According to a recent Government Accountability Office [report](https://www.gao.gov/products/gao-22-104662), the DOE EM manages radioactive and hazardous waste cleanup program across 16 sites using both capital asset projects and operations activities, and will spend more than $392 billion before the nation’s nuclear weapons complex is cleaned up. These types of projects highlight the need for WTP’s critical work to ensure the safety and health of workers who oversee and contribute to these cleanup efforts.

***Objectives:***

* Ensure workers receive quality, fundamental safety and health training for their assigned activities.
* Ensure workers at DOE facilities get the site-specific health and safety training needed.
* Foster a positive safety culture among workers new to the DOE complex.
* Assist in improving training of subcontractor personnel who often go without safety and health training.
* Improve collaboration with DOE organizations, including the DOE National Training Center, the Energy Facility Contractor Group, and the Labor Training Work Group, to target training topics based on lessons learned reports and assessment activities*.*

## Theme 2. Adaptability and Innovation

### Adaptability to All Hazards

Although WTP was first conceived to provide training for workers cleaning up Superfund sites and performing Resource Conservation and Recovery Act (RCRA) removal actions, the [evolving landscape of hazardous threats](https://www.niehs.nih.gov/news/events/pastmtg/hazmat/2022/Fall_Meeting/index.cfm) demands that the program be flexible to accommodate the needs of workers and their communities.

WTP’s approach considers all hazards – this includes hazards that are known (identified) and unknown (not yet identified). Regardless of the circumstances, it is essential that workers have the knowledge to protect themselves and the communities in which they are working, and that knowledge is shared through HAZWOPER and HAZWOPER-supporting training.

WTP emphasizes caution before allowing workers into areas with unknown hazards. WTP grant recipients actively apply the precautionary principle.[[9]](#footnote-10) This [principle is an approach to risk management](https://eur-lex.europa.eu/EN/legal-content/glossary/precautionary-principle.html), where, if it is possible that a given policy or action might cause harm to the public or the environment and if there is still no scientific agreement on the issue, the policy or action in question should not be carried out. In other words, the precautionary principle asserts that the burden of proof for potentially harmful actions by industry or government rests on the assurance of safety and that when there are threats of serious damage, [scientific uncertainty must be resolved in favor of prevention](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1446778/).

WTP grant recipients continue to apply their expertise and lessons learned to emerging hazards. For example, emergency responders and fire fighters have shared health and safety concerns regarding materials used in the construction of new, modernized homes. Similarly, the increase in electric vehicles that are operated by lithium-ion batteries are also a concern because they may overheat, short-circuit, or explode in certain conditions. These issues call for improved understanding of the science and risks, as well as continual application of the precautionary principle to protect workers and the public.

WTP also focuses on addressing the mental and psychosocial hazards that workers face on the job. For example, WTP grant recipients provide resiliency training to help workers identify and navigate stressful conditions. Grant recipients also respond to issues surrounding substance use and recovery. While these issues are beyond the scope of HAZWOPER, they are also crucial to ensure the total health and well-being of workers.[[10]](#footnote-11)

Adaptability is one of the many benefits of the cooperative agreement mechanism for WTP grant recipients. With this mechanism, NIEHS and WTP staff work closely with grant recipients to support and provide recipients with an infrastructure to address emerging health and safety issues across their target audiences. Infectious diseases like Ebola virus and coronavirus disease 2019 (COVID-19) called for [adaptable strategies](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9012162/) to ensure the health and safety of workers. Despite the restrictions brought on by the COVID-19 pandemic, WTP grant recipients quickly pivoted to delivering nearly all training programs in a virtual environment, while maintaining high quality and engaging content for learners. This quick pivot was made possible by leveraging supplemental funds (COVID-19 Appropriations), along with tools and resources from the National Clearinghouse for Worker Safety and Health Training.

***Objectives:***

* Remain flexible based on evolving landscape of HAZMAT threats in the workplace, as well as issues related to climate change, infectious disease, and mental health.
* Leverage the lessons learned from prior disasters and emergencies to respond to future threats.
* Use an all-hazards approach to provide workers with the knowledge and skills necessary to prevent serious injury and reduce the threat of serious illness for themselves, their coworkers, and those in their community.
* Meet the emerging threats of issues such as climate change, alternative energy sources, new technologies introduced into commerce (e.g., lithium-ion batteries), and identify opportunities for worker training and education.
* Develop better understanding of the science and implications of new materials and technologies, and prepare for any potential all-hazards incidents.
* Monitor and respond to changes that are occurring in the assessment and remediation phases of Superfund work. New cleanups occur with a focus on more sustainable assessment, remediation, and construction practices. The program must continue to assess training needs in these areas and remain aware of the core program areas of HAZMAT training and all-hazards emergency response to successfully manage the legacy of current and emerging materials and technologies.
* Conduct assessments and engage with target audiences to determine training gaps and needs for specific hazards.
* Use and adapt training curricula that are available through the National Clearinghouse website.

### Innovative Training Technologies

Proper training can mean the difference between life and death for workers who handle hazardous materials or respond to manmade or natural disasters. Although training for workers has traditionally taken place in physical classrooms, recent technological advances have facilitated more accessible and interactive training through electronic platforms. Technology-enhanced training products can help workers safely assess, respond to, and protect themselves and others from harmful exposures on the job.

Conversations in the late 1990s led to the establishment of the [Small Business Innovation Research (SBIR) E-Learning for HAZMAT Program](https://www.niehs.nih.gov/careers/assets/docs/wtp_sbir_factsheet_2023_508.pdf).[[11]](#footnote-12) Through this program, small businesses are awarded grants to develop innovative health and safety training applications or technologies. SBIR grant recipients have developed methods to deliver training to workers through the development and use of online and web-based learning, mobile applications, video games, virtual reality, and immersive learning systems.

The use of technology-enhanced training products helps WTP grant recipients and trainers remain adaptable. For example, these products provide instructors with the tools to deliver training during disasters or public health emergencies, such as COVID-19.

***Objectives:***

* Create technology-driven products that will support high quality health and safety training for hazardous materials workers, emergency responders, and skilled support personnel.
* Monitor the development of technology-enhanced training methods and integrate developments into appropriate curricula.
* Increase visibility of SBIR grant recipients’ efforts and success stories.
* Integrate the expertise and perspectives of SBIR grant recipients into workforce development training initiatives, especially those focused on adoption of artificial intelligence.
* Encourage continual innovation to develop technologies that will support training for new and emerging hazards.
* Improve communication and encourage partnership opportunities between SBIR grant recipients and other WTP (training) grant recipients.

### Continuity, Sustainability, and Institutional Knowledge

Turnover in key personnel at the institute or grant recipient level (principal investigators, program managers, and trainers), leads to gaps in institutional knowledge and experience. Therefore, the transfer of program history and institutional knowledge to future leaders is critical for the continuity and viability of the WTP.

As a program, WTP is committed to succession planning to ensure that individuals who are new to the WTP network both understand and appreciate the program’s rich history. Mentorship is one method that longtime principal investigators, program managers, and trainers can use to coach and prepare the next generation of staff. Mentorship does not have to be limited to individuals within one grant recipient/organization; there is even more value added when cross-mentorship and training happens between two or more grant recipients and organizations.

WTP is also committed to documenting events and program-wide initiatives in various media formats, including videos, infographics, reports, success stories, and peer-reviewed articles. All of these are helpful resources and tools that can be passed along to the next generation of WTP leaders. Many of these resources are available on the WTP and Clearinghouse websites.

***Objectives:***

* Capture and document program history to share with the next generation of leaders in the WTP network. This includes leaders at the institute, grant recipient organizations, training partner organizations, and beyond.
* Promote a culture of networking, succession planning, and mentorship within the WTP network. This is key to ensure the continual development and success of principal investigators, program coordinators, evaluators, and trainers.
* Develop materials that can be easily adapted and used for the onboarding and orientation of new leaders in the WTP network.

## Theme 3. Outreach and Communication

### Diversity, Accessibility, and Environmental Justice

As a program, WTP includes essential elements of diversity, equity, inclusion, and accessibility in its processes and materials, and operationalizes them in all initiatives.[[12]](#footnote-13) WTP also adapts its outreach and training approaches to ensure that workers, especially those from historically disenfranchised or disproportionately impacted communities, have access to critical training and educational resources. The program considers education, access, language, and other socio-cultural factors to ensure that training and education initiatives are accessible and appropriate to meet the needs of target populations. As such, WTP provides resources that have simplified terms to reach various adult reading/education levels and in multiple languages ([language justice](https://www.apha.org/policies-and-advocacy/public-health-policy-statements/policy-database/2018/01/18/ensuring-language-justice)).

WTP staff encourage that the development of training curricula and resources align with the [Centers for Disease Control and Prevention (CDC) Health Equity Guiding Principles for Inclusive Communication](https://www.cdc.gov/healthcommunication/HealthEquityGuidingPrinciples.pdf). WTP also follows CDC’s principles of health equity and literacy, which are key priorities when addressing [social determinants of health](https://www.cdc.gov/about/sdoh/index.html).

As part of its commitment to equity, WTP also focuses on reaching workers and communities that face environmental justice issues. Many low-income and disproportionately impacted communities face hazardous environmental conditions; therefore, they face disproportionate health burdens in the places they live and work. The federal government is aiming to address many of these issues through several Executive Orders, including [Advancing Racial Equity and Support for Underserved Communities through the Federal Government](https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/20/executive-order-advancing-racial-equity-and-support-for-underserved-communities-through-the-federal-government/) (EO 13985), [Tackling the Climate Crisis at Home and Abroad](https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/27/executive-order-on-tackling-the-climate-crisis-at-home-and-abroad/) (EO 14008), [Revitalizing Our Nation’s Commitment to Environmental Justice for All](https://www.whitehouse.gov/briefing-room/presidential-actions/2023/04/21/executive-order-on-revitalizing-our-nations-commitment-to-environmental-justice-for-all/) (EO 14096), and others.

***Objectives:***

* Encourage diversity, equity, inclusion, and accessibility across all training programs and curricula. WTP actively supports a worker’s right to know and strives to achieve cultural and equitable competencies that align with the needs of workers and communities.
* Train workers and communities that face occupational and environmental health disparities.

### Partnerships

WTP promotes collaboration with unions, community-based organizations, volunteer organizations, contractors, local and state agencies, and other federal agencies to meet its vision, mission, and goals. Longstanding partnerships enable WTP to flourish and expand the capacity of training and education efforts, which help ensure the program’s sustainability.

[Partnerships](https://www.niehs.nih.gov/news/events/pastmtg/hazmat/2021/Fall_Meeting/index.cfm) – whether at the federal, state, or local level – are critical for the reach and expansion of WTP’s network. When done effectively, partnerships are mutually beneficial, and they produce positive outcomes for grant recipients, trainees, and their communities.

WTP collaborates with several DOE entities, including the National Training Center, as well as communities surrounding cleanup sites. Recently, WTP partnered with CDC’s National Institute for Occupational Safety and Health (NIOSH) to promote recovery friendly workplace initiatives. The [Recovery Friendly Workplace Landscape Analysis report](https://tools.niehs.nih.gov/wetp/public/hasl_get_blob.cfm?ID=14183&file_name=WTP_RFW_Report_072423_508.pdf) (2023) documents the results of a nationwide analysis of organizations in 31 states that are working to prevent substance use disorder and support recovery in employment.

***Objectives:***

* Seek and encourage collaborations with organizations that share the common goal of protecting workers and their communities.
* Seek and encourage collaborations with organizations and experts who play a role in protecting workers affected by workplace stress and trauma, both physical and mental.
* Pursue partnerships with organizations and agencies that represent historically under-resourced and Tribal communities.
* Foster opportunities for collaboration among WTP grant recipients, including those organizations with SBIR grants.
* Be strategic about partnerships for technical meetings, Trainers’ Exchanges, webinars, and other events.

### Evaluate, Measure, and Share Success

Evaluation is an essential component of WTP and is necessary to assess the effectiveness of a training program. WTP’s rich history of program evaluation and related goals are documented in the report, [History of Evaluation and Future Directions for the NIEHS Worker Training Program](https://tools.niehs.nih.gov/wetp/public/hasl_get_blob.cfm?ID=14041). The report summarizes the numerous workshops that WTP has hosted on the topic of evaluation, and shares various best practices and recommendations for grant recipients to consider when evaluating their programs.

As the WTP network continues to grow and expand its reach, program staff and grant recipients must prioritize evaluation. Program staff are working with NIEHS leadership and other representatives in unions and academia to evaluate the overall impacts and effectiveness of WTP training program areas. Many grant recipient organizations work with third-party evaluators/teams who bring an unbiased perspective when assessing the impact of training programs.

WTP is also dedicated to sharing its successes, and educating federal agencies, academia, nonprofit organizations, and the public about its national training efforts.

Program staff and grant recipients are actively involved in national conferences, inter-agency working groups, and professional organizations. These platforms create opportunities to raise awareness about WTP’s long history and success in health and safety training.

Program staff are responsible for sharing WTP updates with NIH and NIEHS leadership, and reporting data for Congressional briefings and justifications. Grant recipients are responsible for sharing their annual progress reports, which include training metrics (e.g., number of workers trained, courses delivered, etc.) and success stories from their programs.

By working with the Clearinghouse, program staff and grant recipients have an opportunity to communicate with the public more broadly and share WTP successes via the Clearinghouse website, the WTP weekly news brief, conferences (national and regional), reports, peer-reviewed articles, and other platforms. The WTP Communication Plan, developed by MDB in 2023, will prove to be a useful guide for development and dissemination of WTP products moving forward.

***Objectives:***

* Establish common evaluation measures using the WTP logic model.
* Promote grant recipients’ involvement in the WTP Evaluation Community of Practice.
* Focus on evaluation within all WTP training program areas.
* Explore and document how WTP efforts translate to economic returns on investment.
* Invite the expertise of third-party evaluators to measure the impact of training programs.
* Leverage opportunities to publish news articles, reports, state profiles, and peer-reviewed articles about WTP successes.
* Leverage opportunities for training needs assessment, resource sharing, and evaluations across multiple grant recipients.
* Focus on attending conferences, webinars, and other events to represent the WTP network.
* Document trainee success stories to show the dynamic impact of WTP at the individual and community levels.
* Abide by NIH and NIEHS grant reporting requirements. This includes the submission of interim, annual, and final Research Performance Progress Reports (RPPRs) (at the institute level). It also includes submission of annual progress reports and supplemental data in the Data Management System (at the programmatic level).
* Track and document the use of supplemental appropriations and how they influence training efforts on a national level, especially for appropriations related to disasters or emergencies.

# Appendix

## Table 1: In Progress

|  |  |
| --- | --- |
| **Strategic Themes** | **Alignment with Operational Matrix Goals and Sub-goals** |
| **Theme 1: Adaptability and Innovation** | * Goal 1. Improved safety culture in the workplace.   + Goal 1a. Increased worker empowerment.   + Goal 1b. Trained workers who can identify workplace hazards.   + Goal 1c. Trained workers who understand how to take action.   + Goal 1d. Safer company practices and policies. * Goal 2. Reduced morbidity and mortality.   + Goal 2a. Improved policies and regulations/improved enforcement of health and safety practice/policy/regulation. * Goal 3. Reduced occupational health disparities/increased protection and remediation of communities.   + Goal 3b. Increase grantee knowledge base. * Goal 4. A sustainable program based in science and that incorporates current technologies and promotes innovation in all aspects of its mission.   + Goal 4b. Use of current technologies in training.   + Goal 4c. Promotion of innovation through research and grants.   + Goal 4d. Science-based activities. |
| **Theme 2: Worker Health and Safety Training and Education** | * Goal 1. Improved safety culture in the workplace.   + Goal 1a. Increased worker empowerment.   + Goal 1b. Trained workers who can identify workplace hazards.   + Goal 1c. Trained workers who understand how to take action.   + Goal 1d. Safer company practices and policies. * Goal 2. Reduced morbidity and mortality.   + Goal 2a. Improved policies and regulations/improved enforcement of health and safety practice/policy/regulation. * Goal 3. Reduced occupational health disparities/increased protection and remediation of communities.   + Goal 3a. Increased job opportunities/increased links between workers, workplace, and communities.   + Goal 3b. Increased grant recipient knowledge base.   + Goal 3c. Improved capacities to effectively train, evaluate, communicate, collaborate, build/sustain partnerships, and accomplish WTP goals. * Goal 4. A sustainable program based in science and that incorporates current technologies and promotes innovation in all aspects of its mission.   + Goal 4c. Promotion of innovation through research and grants. |
| **Theme 3: Outreach and Communication** | * Goal 1. Improved safety culture in the workplace.   + Goal 1a. Increased worker empowerment.   + Goal 1b. Trained workers who can identify workplace hazards.   + Goal 1c. Trained workers who understand how to take action.   + Goal 1d. Safer company practices and policies. * Goal 2. Reduced morbidity and mortality.   + Goal 2a. Improved policies and regulations/improved enforcement of health and safety practice/policy/regulation. * Goal 3. Reduced occupational health disparities/increased protection and remediation of communities.   + Goal 3a. Increased job opportunities/increased links between workers, workplace, and communities.   + Goal 3c. Improved capacities to effectively train, evaluate, communicate, collaborate, build/sustain partnerships, and accomplish WTP goals. * Goal 4. A sustainable program based in science and that incorporates current technologies and promotes innovation in all aspects of its mission. * Goal 4a. Appropriate levels of funding. * Goal 4c. Promotion of innovation through research and grants. * Goal 4d. Science-based activities. |

1. The NIEHS Strategic Plan for 2024 to 2028 is underway. Several themes from the previous strategic plan, like outreach, communication, engagement, evidence-based prevention, and environmental justice, will likely carry over into the new plan. All of these themes (and more) are aligned with those mentioned in the WTP Strategic Plan. [↑](#footnote-ref-2)
2. WTP delivers training to workers who face the risk of injury or illness due to exposure to hazardous work environments. Training is delivered to workers across many occupational sectors. Workers are extensions of their local communities, many of whom face various socioeconomic, health, and environmental burdens. This is why WTP’s reach goes beyond the workplace. Read more on the [About WTP page](https://www.niehs.nih.gov/careers/hazmat/about_wetp). [↑](#footnote-ref-3)
3. A cooperative agreement allows substantial involvement between the Federal agency or pass-through entity and the grant award recipient. This makes the WTP unique amongst all other NIEHS programs. Read more on the [WTP Funding Opportunities page](https://www.niehs.nih.gov/careers/hazmat/funding). [↑](#footnote-ref-4)
4. All WTP program areas include activities funded through cooperative agreements except for the Small Business Innovation Research (SBIR) E-Learning for HAZMAT Program. The SBIR E-Learning for HAZMAT Program includes activities funded through grant awards for domestic small businesses. [↑](#footnote-ref-5)
5. WTP has received multiple special appropriations for disasters and emergencies over the years. This includes (but is not limited to): Hurricane Katrina (2005), Deepwater Horizon Oil Spill (2010), Superstorm Sandy (2012), Ebola virus disease (2014), COVID-19 (2020), and the Consolidated Appropriations Act (2023). Following the COVID-19 pandemic, the topic of infectious disease and biological hazards became integrated into regular training. [↑](#footnote-ref-6)
6. The standard 29 CFR 1910.120 HAZWOPER was promulgated on March 6, 1989, at 54 FR 9317, as amended at 55 FR 14073 on April 13, 1990, and 56 FR 15832 on April 18, 1991. [↑](#footnote-ref-7)
7. [Soft skills](https://www.dol.gov/agencies/odep/publications/fact-sheets/soft-skills-the-competitive-edge#:~:text=These%20skills%20include%3A%201%20Professionalism%20or%20work%20ethic,collaboration%20skills%204%20Critical%20thinking%20or%20problem-solving%20skills) are interpersonal abilities, such as communication and problem solving, that allow individuals to interact with others in a professional setting. [↑](#footnote-ref-8)
8. WTP has received special appropriations for disasters and emergencies over the years. This includes (but is not limited to): Hurricane Katrina (2005), Deepwater Horizon Oil Spill (2010), Superstorm Sandy (2012), Ebola virus disease (2014), COVID-19 (2020), and the Consolidated Appropriations Act (2023). [↑](#footnote-ref-9)
9. [Precautionary principle](https://www.gdrc.org/u-gov/precaution-2.html): When an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause-and-effect relationships are not fully established scientifically. [↑](#footnote-ref-10)
10. WTP embraces principles outlined in the [NIOSH Total Worker Health Program](https://www.cdc.gov/niosh/twh/default.html), which seeks to improve the well-being of the U.S. workforce by protecting their safety and enhancing their health and productivity. [↑](#footnote-ref-11)
11. The broader National Institutes of Health (NIH) SBIR program was established under the Small Business Innovation Development Act of 1982 (P.L. 97-219) with the purpose of strengthening the role of innovative small business concerns in federally funded research and development. The SBIR program has been reauthorized and extended multiple times since its creation. The SBIR E-Learning for HAZMAT Program is an outgrowth of the broader NIH SBIR but is more geared to the training needs of WTP grant recipients. WTP staff began having conversations to establish an initiative focused on electronic learning (e-learning), or technology-enhanced products, in 1997. [↑](#footnote-ref-12)
12. The advancement of equity is a key aspect of the U.S. Department of Health and Human Services (HHS). More on the HHS Equity Action Plan can be found here: <https://www.hhs.gov/equity/index.html> [↑](#footnote-ref-13)