Volume 5, Issue 2, Summer 2022

FEMA

Resilience
National Preparedness Directorate
National Training and Education Division

Training Partners Program

TPP Times

In This Issue

Welcome to the Summer 2022 issue of the TPP Times. In this issue, we focus on climate change and its impact on the emergency management landscape.

FEMA's 2022-2026 Strategic Plan makes climate resilience a priority, and we interview Paul Fericelli, the new senior climate advisor, about his role and how FEMA is working to increase climate literacy in the emergency management sphere.

We also feature the National Disaster Preparedness Training Center at the University of Hawaii, and how they're working to address climate change in their training and research.

We also focus on new National Incident Management System (NIMS) resources. And in our Section 508 Quarterly column we take a detailed look at the color contrast standards.

We welcome your input on the TPP Times, including comments, questions and information you want to share with other training partners. Email your feedback to TPPTimes@fema.dhs.gov.

FEMA Aims to Lead the Whole Community in Climate Resilience, Establishing a Climate Office

Houma, LA – Members of a FEMA Disaster Survivor Assistance crew walk door to door to help residents of Houma apply for assistance after Hurricane Ida. Photo by Julie Joseph, FEMA. A category 4 storm, Ida was just one of the 20 disasters last year that caused more than $1 billion in damage.

Climate change is one of the most significant threats facing the nation, causing more frequent and more powerful natural disasters. Last year in the U.S. there were 20 climate disasters with more than $1 billion in losses, according to the National Oceanic and Atmospheric Administration's National Centers for Environmental Information. Those 20 disasters also caused 688 fatalities, more than double the previous year's total.

To address this threat, FEMA has made climate resilience a part of its 2022-2026 Strategic Plan, setting the goal to "lead whole of community in climate resilience." Paul Fericelli, senior climate advisor, has recently joined FEMA to guide the incorporation of climate considerations into policy and support the establishment of a climate office. "It is fascinating to join FEMA right now," Fericelli said. "Climate change is the greatest challenge facing emergency management right now and it will continue to be for the next decades."

The Resilience climate office will serve as a facilitator, making connections across FEMA to bring more visibility to climate change efforts across the government and within FEMA. "I want to highlight that FEMA is part of the whole [of] government approach that the Biden-Harris administration has put in place for climate change," Fericelli said. "Success does not happen in isolation. I know the emergency management community is full of passionate professionals that help people before, during and after disasters. Our communities need us more than ever because climate change is resulting in events with greater intensity and destruction. As we increase our knowledge in climate literacy, we will better anticipate risk and be better prepared for the emergencies we know and those we have yet to know."

As a part of his role, Fericelli is working to create a baseline of knowledge—a common understanding within FEMA—and to increase climate literacy. "Climate literacy," he said, "is the understanding of our influence on the climate and the climate's influence on us and the society we live in." Increased climate literacy will "allow us to anticipate risk caused by climate change, empower risk-informed decision making, and help us build a more resilient nation."

"One gap that I am looking to fill is the baseline information all emergency managers should know about climate," Fericelli said. "A unified understanding of climate change and FEMA's role about climate and its impacts will allow us to be advocates for resilience and adaptation."

FEMA has put in place resources and specific strategies that will make it easier for stakeholders to understand and address risk. The FEMA Resources for Climate Resilience is intended to help partners navigate climate change information and programs. It provides an overview of who can apply, examples of programs in action, and helpful tools

for learning more. It also spotlights areas where equity can be prioritized.

The National Risk Index is an online mapping tool that identifies communities most at risk to 18 different natural hazards and allows planners to see where demographics intersect with risk. FEMA has also put in place updates to the Building Codes Toolkit for Building Owners and Occupants, including tools for understanding local codes and how to improve buildings. Updates were also made to the FEMA Hazard Mitigation Assistance Grants to ensure that funds reach the most underserved communities.

FEMA has also recently launched its nature-based website to help communities design and build nature-based solutions. Nature-based solutions are, according to the site, "sustainable planning, design, environmental management and engineering practices that weave natural features or processes into the built environment to promote adaptation and resilience."

"Success does not happen in isolation. As we increase our knowledge in climate literacy, we will better anticipate risk and be better prepared for the emergencies we know and those we have

Fericelli recognized the importance of training as a vehicle for change. "To really augment the knowledge on climate literacy, we need to use all vehicles to transfer that knowledge, [and] develop new knowledge and identify new ideas and needs. Investing in training is very important." NTED supports the development of climate-focused training through the Training Partners Program. For example, the National Domestic Preparedness Consortium at the University of Hawaii specifically focuses on climate change and nature-based solutions for hazard mitigation [see the article below for more on their work].

In addition to training offered through NTED, FEMA has launched, through the National Exercise Program, a series of tabletop exercises to allow communities to understand their risk and take action. The first climate exercise was held recently. "Having 200 participants really brought out an opportunity to build meaningful partnerships to increase climate resilience," Fericelli said.

For localities that want to conduct their own climate-focused exercises, FEMA provides one-stop-shop resources such as the Long-Term Community Resilience Exercise Resource Guide. It includes a dictionary of terms, tools and templates for planning and conducting climate focused exercises, and resources that speak about funding opportunities, risk assessment tools, and further training.

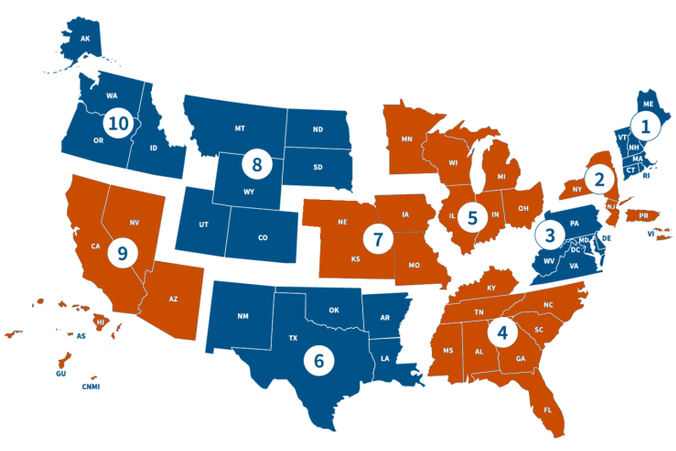
Climate change will continue to cause more frequent, more intense, and more destructive natural disasters, and FEMA is ready to lead the effort to increase resilience across the nation. ◆

University of Hawaii Looks for Innovative Solutions to Climate-Focused Training

Executive Order (EO) 14008 entitled, "Tackling the Climate Crisis at Home and Abroad," was signed by President Biden on January 27, 2021, which requires the Secretary of Homeland Security to "consider the implications of climate change in the Arctic, along our nation's borders, and to National Critical Functions." The executive order recognizes the threat of climate change and the roles of government, private and nongovernment sectors in responding to increasing incidents resulting from weather and climate events. More importantly, this executive order comes on the heels of the National Disaster Preparedness Training Center (NDPTC) at the University of Hawaii's 15-plus years of training first responders and other stakeholders to effectively respond to increasing weather and climate events. NDPTC is recognized as one of the primary providers of emergency management training specifically focused on climate change and nature-based solutions for hazard mitigation.

The NDPTC, which is a member of the National Domestic Preparedness Consortium, is "authorized by Congress to develop and deliver training courses that focus on natural hazards, coastal communities, and islands and territories," said Dr. Karl Kim, who has served as the NDPTC's executive director since 2007. According to Dr. Kim, these regions of the country are most impacted by climate and extreme weather events.

Since 2010, NDPTC has delivered thousands of emergency management courses covering various topics to thousands of participants in all regions of the United States. The weather and climate related courses that garnered the most participation were winter weather hazards, tsunami, tornado, hurricane, flooding, community resilience, climate adaptation, damage assessment, and courses specific to community leaders and caregivers. The FEMA regions with the greatest participation were 2, 4, 5, 7, and 9, which collectively have the nation's largest coastal communities, and islands and territories.



The FEMA regions with the greatest participation in NDPTC course deliveries are shown in orange, regions 2, 4, 5, 7, and 9.

The NDPTC target audience is primarily first responder and emergency managers. Its courses have focused on specific hazards (tsunami, tornado, hurricane, flooding), technology (social media, drones, communication systems, etc.), and vulnerable populations (seniors, senior caregivers, etc.). In addition, urban planning courses are offered to assist public health, community planning, and other agencies engaged in disaster mitigation to improve zoning, building codes, engineering, architecture, and landscape architecture to increase resilience against weather and climate events.

Currently, NDPTC is nearing completion of a Nature Based Solutions (NbS) for Mitigating Hazards course and planning for and mitigating social vulnerabilities course, according to Melissa Blum, Instructional Systems Designer at NDPTC. NbS involves working with nature to address societal challenges, and actions to protect, sustainably manage, and restore natural or modified ecosystems, that address societal challenges effectively and adaptively, while simultaneously providing human well-being and biodiversity benefits. More importantly, NbS are actions that underpin biodiversity and are designed and implemented with the full engagement of local communities and stakeholders. NDPTC NbS courses are developed in partnerships with stakeholders such as NOAA, Army Corps of Engineers, U.S. Department of Transportation, and others that are very interested in nature-based solutions. The goal is to integrate tools such as reforestation, mangrove enhancements in coastal areas, storm water drainage, and other types of mitigation in land use planning. "We just published a paper on using vetiver as a nature-based solution for a hillside stabilization process," Dr. Kim said. Vetiver, a perennial bunchgrass, has been found to have an extensive root system that is effective at holding back the soil. In addition, there are other tools and systems being introduced, such as porous pavements and improved systems that are more tolerant to flooding or extreme events.

There are two training gaps that NDPTC intends to help fill. The first is improved hazard mitigation, which is essential to improving disaster response by reducing the communities' vulnerabilities to weather and climate events, especially around coastal communities. For example, NDPTC is currently working with the U.S. Department of Transportation to implement and test several nature-based solutions across the country. This requires collecting studies and data to demonstrate the utility of these solutions and their cost-effectiveness. The benefits of green infrastructure and nature-based solutions include improving environmental quality and reducing stressors associated with urban development. NDPTC's research has and continues to demonstrate that nature-based systems are found to be considerably resilient to harmful events such as hurricanes and flooding as well as technological hazards.

The second gap that NDPTC is trying to close is managing uncertainty. Climate change and other hazards and threats are increasingly complex. For example, Dr. Kim said, there are challenges associated with variability of events as well as the connection between climate and specific hazards and threats and stressors that are likely to result from climate change. "Thinking of who is harmed by these events and then effectively responding to protect and mitigate and adapt to these events is really critical. And rather than just responding, what are the types of mitigations and adaptations that we need to work on in terms of development," he said. The challenge is moving toward a greater focus on mitigation and recovery, rather than response. It is important to determine how infrastructure and systems can be built better and more resilient following a catastrophic disaster.◆

NIMS/ICS Training News & Notes

NIMS and Climate Change

Since 2017, when the United States responded to hurricanes Harvey, Irma and Maria along with record-breaking wildfires in the West, all of which occurred in quick succession and sometimes overwhelmed federal, state, local and territorial resources, we have continued to experience more devastating disasters attributed to climate change. These disaster events, and others that subsequently followed (Camp Fire, east of Chico, California; hurricanes Florence and Michael; Missouri River and North Central flooding and Tropical Storm Imelda) underscored the increasingly serious economic and societal impacts from weather and climate events. Consequently, emergency management agencies at all levels of government are increasingly concerned with how best to prepare for and respond to these continuing and unprecedented weather and climate events.

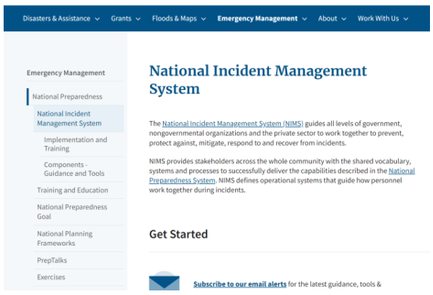
An important aspect of preparedness and response is integrating the National Incident Management System (NIMS) fundamentals and key components in emergency management training, education and exercises. As the nation's standard for managing all hazards incidents, NIMS has a considerable role to play in managing weather and climate events. For example, in most emergency management courses that focus on disaster or incident response, the command and coordination component of NIMS is usually described in the course content as well as in the exercises and activities such as imagined or real-world events or scenarios. These courses underscore the challenges associated with scaling NIMS to specific incidents, and the role of the Incident Command System (ICS) in Resource Management, Command and Coordination, Communication, and Information Management.

During the development of new courses or recertification of existing courses there are enormous opportunities to integrate NIMS by including the review of lessons learned from previous incident management challenges to complex, weather and climate related events. For example, the course content, activities and exercises could focus on disaster response situations that precipitate command-and-control failures, and how best to overcome them. In responding to tornados, hurricanes, severe flooding and wildfires, there are

many agencies and stakeholders involved. As such, effective coordination, communications, information and resource management, and command and control of the incident are critically important to successful outcomes. The focus on improving our response to weather and climate events offers opportunities for NTED training partners to contribute to our nation's preparedness and response posture by integrating NIMS in course content. ◆

NIMS Alerts

NIMS Alerts provide important information on NIMS. Subscribe to FEMA's email alerts to receive the latest guidance, tools and resources. FEMA's National Integration Center recently released the following:



- **NIMS Alert 05-22:** FEMA Releases Architect Resource Typing Document for Final Publication
- **NIMS Alert 07-22:** FEMA Releases National Qualification System Chemical Operations Support Specialist
- **NIMS Alert 09-22:** NIMS Fire Management and Suppression Resource Typing Documents for Final Publication

More information about NIMS can be found online, including up-to-date guidance, information on implementation and training, and tools and resources.

NTED Course Updates: New and Recertified

New

- AWR-400-W: Radiological Dispersal Device (RDD) Response Guidance: Planning for the First 100 Minutes

Recertified

- AWR-148-W: Crisis Management for School-Based Incidents: Partnering Rural Law Enforcement Personnel, First Responders & Local School Systems
- AWR-187-W: Terrorism & WMD Awareness in the Workplace
- AWR-209-W: Working with the Media: A Course for Rural First Responders
- MGT-383: Emergency Operations Plans for Rural Jurisdictions
- PER-229: Introduction to Computer-Aided Management of Emergency Operations (CAMEO) Suite

Retired

- MGT-464: Addressing Gaps in Housing Disaster Recovery
- PER-229-1: Introduction to Computer-Aided Management of Emergency Operations (CAMEO) Suite, Train-the-Trainer
- PER-229-2: Introduction to Computer-Aided Management of Emergency Operations (CAMEO) Suite, Indirect

Section 508 Quarterly

Understanding Color Contrast Standards

Color contrast standards ensure that there is enough contrast between text and its background to be easily readable by all users. For many standards, including color contrast, Section 508 incorporates the criteria of the Web Content Accessibility Guidelines (WCAG). WCAG's Success Criterion 1.4.3 Contrast (Minimum) lays out the following:

> *The visual presentation of text and images of text has a contrast ratio of at least 4.5:1, except for the following:*
>
> ***Large Text***
>
> *Large-scale text and images of large-scale text have a contrast ratio of at least 3:1.*
>
> ***Incidental***
>
> *Text or images of text that are part of an inactive user interface component, that are pure decoration, that are not visible to anyone, or that are part of a picture that contains significant other visual content, have no contrast requirement.*
>
> ***Logotypes***
>
> *Text that is part of a logo or brand name has no contrast requirement.*

The standard defines a baseline contrast ratio, which is a measurement of the luminance of the text compared to the luminance of the text's background. Essentially, there needs to be enough of a difference between the text and its background for the text to be readable. For regular text, that ratio is 4.5 to 1. For reference, the black-on-white text you're reading now has a 21:1 color contrast ratio, while this text is right at the 4.5:1 threshold.

Color contrast can be easily tested using the freely available Colour Contrast Analyser from the Paciello Group.
Because it is easier to read text that is larger and wider, the standards include an exception for larger text, which is defined as normal text at 18pt or greater, or bold text at 14pt or greater. Large text is only required to have a contrast ratio of 3:1. This gives content authors greater flexibility when designing a layout.

These standards also apply to text within images, as long as that text is meant to be read as text. Also, keep in mind that the relative size of an image's text may change when it's placed on a page. For example, a PowerPoint slide may use text that is 18pt, but when that slide is placed on the page of an Instructor's Guide as a thumbnail, the text will be scaled down and will likely no longer be 18pt.

The next exception to the standard is for text that is defined as "incidental." Incidental text carries a few different definitions in the standard, so let's look at each one.

The first part of the exception covers "text or images of

text that are part of an inactive user interface component." A user interface component is something that the user would understand as a control for some kind of function: a button, for example. If a button were inactive, it would not be included in the standard. This does not include active controls that are highlighted when they receive focus (either from mouseover or keyboard). The text on those controls would need to meet color contrast standards in both of its states.

The next definition of incidental text is text that is decorative. This would be text that has no meaning and is serving a strictly aesthetic purpose. The WCAG standards define text as decorative if "the words can be rearranged or substituted without changing their purpose."

Text that is invisible to all users also does not need to conform to the standards. This would be rare.

The final part of the incidental exception is text that is "part of a picture that contains significant other visual content." An example of this could be a photograph that includes a sign in the background or writing on the side of a vehicle. If the image can be understood without that text, then the text is incidental and would not be required to meet the standard.

The final exception is for logos, which are not required to meet the color contrast standards.

Contrast is something that effects all users, and while the color contrast standards are designed specifically for users with impaired vision, meeting those standards is beneficial for everyone—it's good universal design.

More information about color contrast standards can be found here. ◆

Want the latest? Get monthly news and updates

The Higher Education (HiEd) Program publishes a monthly newsletter covering a wide variety of topics and updates from the Higher Education community. To sign up for the HiEd newsletter go to Signup for FEMA Email Updates (govdelivery.com). An archive of past issues is available online at the FEMA Emergency Management Education Newsletter Archive.

Questions, comments or story ideas for the *TPP Times*? Email TPPTimes@fema.dhs.gov

Disclaimer: Please note that the federal government provides links and informational data on various emergency management and first responder community resources and events and does not endorse any non-federal events, entities, organizations, services or products. Please let us know about other events and services for individual and community preparedness that could be included in future newsletters by contacting TPPTimes@fema.dhs.gov.

www.firstrespondertraining.gov