



## Lessons on State Resilience and Vulnerability to Complex Disasters

### Overview

Over the past two years of the COVID-19 pandemic, many states have faced hurricanes, floods, extreme heat events, destructive wildfires, as well as other natural disasters and homeland security threats that test the resiliency of state agencies and the communities they serve. To learn more about state efforts, ASTHO and the Environmental Council of the States (ECOS), in coordination with the EPA's Office of Research and Development, hosted two listening sessions in January 2022 on resilience and vulnerability to complex disasters or environmental events with multiple interacting impacts.

The sessions focused on how state environmental and health agencies can prevent and mitigate environmental pollution and related public health impacts from disaster events (e.g., natural disasters and extreme weather, wildfire events, environmental contamination, chemical spills), especially during COVID-19 response and recovery.

Listening Session 1 focused on best practices in planning for complex disasters. Listening Session 2 focused on best practices in implementing policies and practices during and after complex disasters. This summary document highlights lessons learned and offers a path forward for states and co-regulators.

### Planning

#### Keynotes

In his keynote, Kelly Cook, deputy director of critical infrastructure division at the Texas Commission on Environmental Quality, discussed Texas' lessons learned for planning for hurricanes, noting that while disaster response never goes according to plan, it is critical to learn from each event and to improve plans for the future. Documenting lessons learned from prior events is helpful for preparing a response to future disasters.

Many agencies face coordination challenges as a single disaster may impact multiple states. Outlining which agency does which work will eliminate overlap, stretch resources, and increase efficiency. Texas has a [National Disaster Operational Workgroup](#) that works across several agencies to help them coordinate efforts and develop standardized procedures.

The workgroup also created a database of relevant documents (e.g., maps, field data sheets) that anyone can update or refer to when responding to a disaster. In addition, the workgroup conducts disaster preparedness activities each year and responds under unified command. Each year, Texas hosts a hurricane exercise in which at least five agencies are deployed into the field as if responding to a real

disaster. These teams conduct daily planning, evaluate targets, assess environmental factors, and ensure appropriate internal coordination.

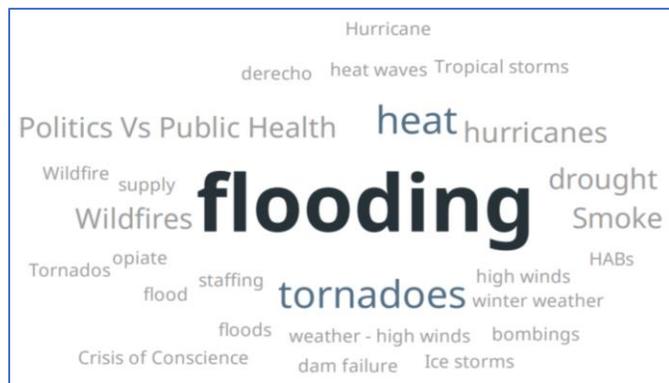
In her keynote speech, Gabriela Goldfarb, environmental public health section manager of the Public Health Division at the Oregon Health Authority, shared Oregon’s experiences with disasters. She referenced heat, smoke, and wildfire events, including peak 2020 Labor Day weekend wildfires that blanketed the entire state with smoke during the COVID-19 pandemic surge.

Goldfarb noted that planning to lead with equity, as well as building trust with community organizations to reach systemically marginalized communities ahead of disasters, can help reduce health disparities. Goldfarb also spoke to the need to develop trust with state agency partners ahead of disasters. This can lead to better inclusion of health considerations and better communication between agencies.

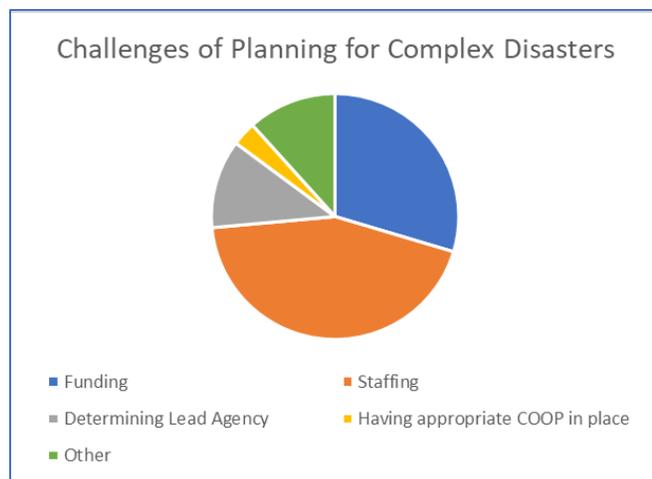
### Themes

Some key takeaways from the listening session include:

- Establishing partnerships is key to planning for complex disasters.** State environmental and health agencies can partner with other state and federal agencies, emergency preparedness and response groups, and private sector groups and industries who help with planning processes (e.g., Nebraska Preparedness Partnership, Adapt Alaska). Partnering with local governments and other community groups is also crucial to clear, concise communication. Overall, states stressed that identifying partners ahead of time is as important as planning. Since there is often turnover in governmental agencies, regular check-ins are helpful.



**Figure 1: Types of disasters states faced most during the COVID-19 pandemic.**



**Figure 2: Challenges states face in planning for complex disasters.<sup>1</sup>**

<sup>1</sup> “Other” category responses include turnaround times for important communication documents and community partnerships and access to assistance among disproportionately, vulnerable, and/or at-risk populations.

***Spotlight:** Texas uses the mobile database tool Response Manager so all partners involved in an emergency response can upload field data sheets. This helps with centralizing communication across multiple collaborators during a disaster response.*

- **Applying lessons learned from the COVID-19 pandemic to other disasters.** Systemically under resourced communities are disproportionately impacted by disasters, because they lack the fundamental infrastructure necessary to withstand crises, due to a history of disinvestment. States noted that disparities exacerbated during the pandemic have resulted in an increased equity focus and present an opportunity through infrastructure investment to bounce back better. Participants also discussed how the pandemic has taught them valuable lessons about personnel safety, including the benefit of ensuring proper PPE for responding staff in the field, the possible inclusion of a medical team to support field staff, daily health checks to ensure that response staff are healthy enough to work, and updating infectious disease protocols for large shelters to allow for better quarantine.

***Spotlight:** In Maine, coordination and partnerships with other agencies strengthened as a result of COVID. For example, their public health epidemiologist worked with emergency preparedness groups and other agencies like the Department of Transportation, hospitals, local emergency response, municipalities, and others to bolster their response efforts and bring health equity concerns to the forefront.*

- **Filling gaps now to better prepare for future complex disasters.** States identified some activities they can do now to prepare for disasters such as collecting PPE and other supplies; connecting with more community-based organizations to build relationships on the ground before a disaster strikes; and participating in thought exercises on how to identify potential political hurdles before they arise and impact agency response to action plans.

***Spotlight:** Virginia is working with a local university to develop community engagement plans and templates that will help them better connect with community-based organizations earlier and more often— not just during a disaster response.*

## Implementation Complex Disasters

### Keynotes

In her keynote, Mia Mansfield, director of climate adaptation and resilience at the Massachusetts Executive Office of Energy and Environmental Affairs, described Massachusetts' hazard mitigation and climate adaptation plan, implemented through an interagency task force, that has helped the state respond to complex disasters. This includes the use of climate change vulnerability mapping tools and a municipal vulnerability preparedness program that has funded projects to enhance community resilience to current and future projected climate impacts.

Sundée Winder, public health executive director of the Bureau of Community Preparedness at the Office of Public Health Louisiana Department of Health, noted in her keynote that Louisiana, while facing many hurricanes including during the COVID-19 pandemic, has focused on emergency response and recovery. This includes making sure the state has enough supplies and emergency vehicles, setting up specialty shelters and hotlines, monitoring water systems, and performing vector control measures. Partnering with the emergency management agencies is critical to their response efforts.

### Themes

Some key takeaways from the listening session include the following:

- **Identifying roadblocks to implementing resiliency plans is a first step to overcoming the challenges.** This includes establishing climate resiliency frameworks, finding funding for monitoring systemically under resourced communities, and engaging with other agencies and groups when there is not a disaster, so communication is clear during response to a disaster.

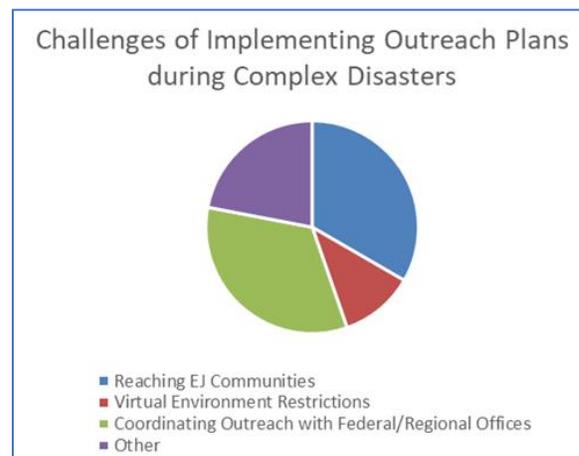


Figure 3: Challenges states face when implementing outreach plans for complex disasters.<sup>2</sup>

**Spotlight:** Texas conducts a yearly communication exercise to practice information flow between agencies and identify barriers. The state also performs an annual hurricane exercise in which its workgroup deploys five agencies (up to 200 people) to simulate field engagement as if responding to a real hurricane, including conducting daily planning, evaluating targets, and forming teams.

- **Utilizing tools for responding to complex disasters can help implement resiliency plans.** This may include using tools for addressing disaster debris, setting up centralized databases to minimize confusion among agencies and first responders, mapping, testing messages, and offering trainings for local health departments tailored to county environments.

**Spotlight:** California uses tools such as EnviroScreen and the Healthy Places Index to aid with outreach and support to communities that may be overburdened and at high risk for impacts during a disaster. These tools aid with both planning and response efforts, including where to do targeted message testing.

<sup>2</sup> "Other" category included timely approval by leadership, staff availability due to illness, and getting used to new technology for virtual meetings.

- **Partnering with other stakeholders is key to implementing resiliency plans.** Much like in planning from disasters, participants noted that partnering with other agencies, states, federal partners, local communities, businesses, and others is important when responding to disasters and implementing resiliency plans. States stressed the value of engaging with communities to ensure all populations are helped during a disaster event.

***Spotlight:** Iowa has several interagency partnerships that work to address preparedness and response. The [Iowa Silver Jackets Program](#), staffed by several state and federal agencies, provides a formal and consistent strategy for an interagency approach to planning and implementing measures to reduce the risks associated with flooding and other natural hazards in the state. [Safeguard Iowa](#) is a private and public sector partnership that works during disasters to better coordinate the safety operations sector, as well as during non-disaster times to ensure continuous coordination and planning for future events.*

## Summary and Moving Forward

Since the beginning of the COVID-19 pandemic, states have faced several natural disasters and homeland security threats that test the resiliency of state agencies and the communities they serve. Bringing state environmental and health agencies together to harness collective expertise, leverage shared resources, and collaborate across administrative and geographic borders will help communities bounce back from adversity and increase resiliency.

A key theme that emerged from these listening sessions is that partnering with and collaborating across all government levels and with local community groups is critical to effectively plan for complex disasters and implement resiliency plans. ASTHO, ECOS, and EPA can help conduct more national level and/or regional level discussions so states can learn about different implementation strategies, even as they face different disasters. States noted the value of bringing together public health and environmental agencies and would like to see more joint meetings to promote agency alignment, cross-state sharing, and best practices for equity and resilience.

