

Andrew Phelps

Director, Oregon Military Department, Office of Emergency Management

STATEMENT FOR THE RECORD

Submitted to the House Transportation and Infrastructure Subcommittee on Economic
Development, Public Buildings, and Emergency Management

United States House of Representatives

*“Building a 21st Century Infrastructure for America: Mitigating Damage and Recovering
Quickly From Disasters”*

April 27, 2017

Introduction

Thank you Chairman Barletta, Ranking Member Johnson, and members of the Subcommittee for holding this hearing today. My name is Andrew Phelps, and I am the director of the Oregon Office of Emergency Management. I am pleased to provide testimony on the important role hazard mitigation plays in Oregon, the role it is expected to play as we brace for the inevitable Cascadia Subduction Zone earthquake, and the impact federal mitigation and other grant funds have had on these efforts.

Throughout my career in emergency management, I have come to accept we cannot eliminate every hazard. What compels me to do the work that I and my colleagues in the great state of Oregon do every day is the belief that the role of an emergency manager is to keep those hazards from becoming disasters. Through collaborative partnerships among community groups, non-profits, the private sector, cities, counties, tribal, state, and federal government Oregon has spent millions of dollars on often innovative mitigation projects that have, in turn, saved tens of millions of dollars in disaster damages and an incalculable number of lives. I hope to illuminate the importance of mitigation since it seldom makes headlines and consequently it not as exciting to talk disasters.

Mitigation in Oregon

Oregon is an incredibly diverse state with a rugged coastline, agricultural valleys, urban areas, alpine mountains, temperate rainforest, and high deserts. In addition to the human-caused hazards facing Oregon, the hazard profile outlined in our state hazards mitigation plan is equally diverse, including:

-) Coastal Hazards
-) Droughts
-) Dust Storms
-) Earthquakes
-) Floods
-) Landslides
-) Tsunamis
-) Volcanoes
-) Wildfires
-) Windstorms
-) Winter Storms

Our most frequent hazard in Oregon is wildfire, and our most costly hazard is flood. Some hazards impact in Oregon go unnoticed because they are handled at the local level and never warrant requests for assistance. Other hazards can overwhelm local and even state capabilities requiring federal assistance to effectively respond and recover. Even so, Oregon has received federal emergency assistance relating to most of the hazards listed above.

One specific hazard rises above the rest in terms of planning efforts and potential impacts: the Cascadia Subduction Zone. This fault, which runs from northern California to British Columbia, has historically shown the capacity to generate 9.0 magnitude quakes resulting in 5 minutes of shaking followed almost immediately by tsunami waves reaching 50 to 100 feet in height. A 9.0 quake could also produce dozens of aftershocks, some reaching 7.0 or 8.0 in magnitude.

Mitigating against a hazard like this is daunting. In fact, the United States has not experienced an earthquake of this size in its written history. Oregon is currently taking steps – some imperceptible, others very visible – toward reducing the impact this hazard will have on the Pacific Northwest, the country, and the world.

The Oregon Resilience Plan

In 2013, Oregon released the Oregon Resilience Plan. The goal was to create a plan that reviews policy options, summarizes relevant reports and studies by state agencies, and makes recommendations on policy direction to protect lives and keep commerce flowing before and after a Cascadia earthquake and tsunami. The plan clearly articulates the risks associated with Cascadia and proposes dozens of recommendations over a 50-year period to reduce the impact of this event.

The Plan is based on the premise that a 9.0 quake could cause 10,000 casualties, over \$30 billion in direct economic losses, some parts of Oregon to be without electricity for six months, and the hardest hit areas to be without drinking water and wastewater utilities for up to three years.

Part of the Plan outlines preparedness recommendations. For example, Oregon recently became the first state in the country to change standard preparedness messaging from the typical 72-hours of emergency supplies recommendation to encouraging Oregonians to be prepared to be self-sufficient following a disaster for at least two weeks based upon a recommendation from the Plan. Most recommendations, however, fall clearly into the mitigation mission area. These recommendations include:

-) Seismically upgrading lifeline transportation routes into and out of major business centers statewide by 2030
-) Developing a seismic rating system for new buildings to incentivize construction of buildings more resilient than building code compliance requires and to communicate seismic risk to the public
-) Requiring all water and wastewater agencies to complete a seismic risk assessment and mitigation plan as part of periodic updates to facility plans

Federal Mitigation Grant Funds in Oregon

Oregon has a long history of leveraging federal mitigation funds, regardless of the program or hazard, to reduce the impact of when the ground moves, the water flows, or the wind blows. Programs like the Pre-Disaster Mitigation Grant Program (PDM), Hazard Mitigation Grant Program (HMGP), Flood Mitigation Grant Program (FMA) and others have all been used to reduce the vulnerability of lives, property, the economy, and the environment to naturally-occurring and human caused hazards.

Disaster Recovery Mitigation Funds (406 Mitigation)

In February 2016, Oregon received what we believe will be our second largest federal disaster declaration on record, Major Disaster Declaration DR-4258, for a unique, consecutive series of severe winter weather, flooding, and landslides that had occurred the previous December. FEMA

selected Oregon to pilot a re-engineered public assistance program that came with more FEMA staff than would be expected on a \$40 million dollar disaster. Some of the additional staff included mitigation specialists who worked with local, tribal, and state mitigation staff to conduct thorough reviews of each of the nearly 200 permanent repair public assistance projects. They looked for opportunities to include mitigation that permanent repair work. To date, 66% of all permanent repair work associated with DR-4258 will have 406 mitigation work tied to it. This is an incredibly high percentage nationally and record-setting for a disaster in Oregon. The federal share of this mitigation work was nearly \$700,000. The estimated benefit of that work was \$10 million, far exceeding the often-cited 3:1 benefit ratio. Our mitigation staff in Oregon and those we work with at FEMA Region 10 have a passion for the work they do, and with each disaster they make it a point to touch base with previous beneficiaries of mitigation work to see how that work fared in more recent emergencies or disasters. This, helps to inform smart practices allowing the entire state to benefit from an assessment of mitigation project efficacy in real-world conditions. It is our hope that FEMA continues to advocate for 406 mitigation inclusion on permanent repairs, post-disaster, wherever feasible. When a Public Assistance disaster is declared, FEMA sends teams of PA specialists to the state to assist with disaster paperwork. A similar approach to HMGP would likely facilitate the identification of mitigation projects earlier in the process and expedite approvals, which can sometimes be lengthy.

Since one of Oregon's largest federal disaster declarations, DR-1733, which occurred in 2007 the City of Vernonia in Columbia County, Oregon has leveraged \$23 million dollars in HMGP and Flood Mitigation Assistance, as well as millions of dollars in Public Assistance mitigation funds, and local and state dollars to reduce that community's ongoing flood risk. In December 2015, same region experienced a similar rains event to the 2007 storm, but little damage occurred in Vernonia. The Vernonia city administrator attributed the minimal damage in large part to the mitigation efforts of the previous eight years.

Pre-Disaster Mitigation Grants (PDM) and Flood Mitigation Assistance Grants (FMA)

In 2015, Oregon received more than \$500,000 through the PDM grant program to fund a public-private partnership between the City of Portland and a Portland-based non-profit, Enhabit, to provide financial assistance to seismically retrofit homes owned predominantly by lower-income earners. It is the goal of the project to retrofit single-family homes by securing the framing to the foundation for up to 150 homes through this grant, with half of the costs coming from the PDM grant and the other half from the homeowners. If successful, future Oregon PDM funding requests will likely include expansions of this program.

In Oregon, FMA is used primarily to acquire and demolish or acquire and relocate properties that are considered "repetitive loss" or "severely repetitive loss" properties. Over \$17 million dollars was spent as a result of a FMA award from 2009 to relocate the entire Vernonia School Campus (K-12) out of the floodplain in Vernonia. The school campus had a long history of very serious, repetitive flooding going back more than 100 years prior to the acquisition and relocation project proposed under FMA 2009. With the federal funding awarded through FMA and significant other financial resources, the Vernonia School District constructed a new school campus in Vernonia well above the 500-year flood elevation. The new school campus opened in September

2012 for the school year. Final site restoration at the former schools' campus continued into early September 2014 when all disturbed ground was hydro-seeded to fulfill the converted Spencer Park function, and a historical monument was installed to mark the original site of the school campus and inform residents of flood hazard. This school has not been impacted by flooding, despite historic rain in recent years, since the campus relocation.

Oregon currently has at least one project in our state impacted by the administrative hold FEMA has placed on FY16 PDM and FMA grants while awaiting additional guidance from the administration. The Cow Creek Band of Umpqua Tribe of Indians had received, signed, and returned their PDM award documentation before being notified of the nationwide administrative hold. This grant award is needed for the Tribe's to update their hazard mitigation plan. If the hold is not released soon, the lack of the grant could cause the tribe to be determined ineligible to receive HMGP disaster funds following future disasters until their plan is updated and approved. This could create a disastrous cycle of repetitive losses due to unmitigated hazards if delays in funding plan development and updates are allowed to continue, especially when the delay is entirely outside of the grantee's control and is, instead, placed there by FEMA.

Hazard Mitigation Grant Program (HMGP)

Oregon prides itself on our low rate of de-obligating un-spent Hazard Mitigation Grant Program awards. Historically, very few HMGP dollars, if any, are reverted back to FEMA following disasters. Oregon's approach to prioritizing HMGP-eligible projects and ensuring a long list of applicants is a large part of that success. Oregon uses a statewide Interagency Hazard Mitigation Team (IHMT) comprised of multiple state agencies that not only maintains the state hazard mitigation plan, but also assists in prioritizing projects to receive HMGP and other dollars. While HMGP funds are typically able to fund projects statewide, Oregon first focuses those funds on the impacted jurisdictions from the disaster declaration that led to the HMGP award. Emphasis is also placed on mitigating the specific hazards that caused the HMGP-awarding disaster. Once eligible projects meeting those criteria are exhausted the IHMT considers project applications from other parts of the state to mitigate against other hazards.

In collaboration with our local and tribal partners, Oregon has leveraged PDM and HMGP dollars with local match requirements of up to 25% to develop or revise dozens of hazard mitigation plans through the University of Oregon's Community Service Center's Oregon Partnership for Disaster Resilience (OPDR) and with support from the Oregon Department of Land Conservation and Development. The practical and technical expertise housed within the OPDR allows lessons learned and smart practices to be applied to mitigation planning and project efforts statewide.

2015 Management Assistance Grant (FMAG) HMGP Pilot

Late in 2015, FEMA announced catastrophic wildfires receiving Fire Management Assistance Grant (FMAG) declarations would also receive HMGP funds up to \$441,000 per FMAG fire for states like Oregon with enhanced-status state mitigation plans. The award of HMGP funds following FMAG fires was the proverbial double-edged sword. Although there had been calls for years to tie mitigation funds to catastrophic wildfires, these unexpected awards (six for Oregon

totaling more than \$2.6 million) initially overwhelmed Oregon's small mitigation program staff. Since Oregon does not typically receive HMGP funds for wildfire-related disasters, and the requirements for this pilot project were very specific to wildfire mitigation, Oregon did not have a go-to list of eligible projects causing delays from the onset. However, our FEMA Region 10 partners allowed us to continue working with applicants until we reached the point where we are today: each dollar of the FMAG HMGP money has been tied to a wildfire mitigation project, pending approval by FEMA.

Some of those projects include:

-) Expanding the Douglas Forest Protection Association wildfire camera network allowing quicker identification and precision location of wildfire starts in southwestern Oregon
-) The purchase and installation of stream gauges to provide earlier warning of potential floods due to water run-off from burn-scarred, hydrophobic soil areas
-) Emergency generators for rural fire stations to allow continued operations during wildfires when grid power may be impacted

Oregon recommends a further expansion of HMGP funds tied to catastrophic wildfires, like FMAG-declared fires. We see them annually in the western United States and have begun to see them more frequently in other parts of the country. I would also ask that FEMA work with other federal agencies such as the United States Department of Agriculture, United States Forest Service, and Bureau of Land Management to identify more consistent approaches to mitigating wildfires and rehabilitating burn scars. One frustration experienced in Oregon is the inconsistency in burned area rehabilitation efforts based almost exclusively on funding stream. Federal agencies rehabilitating burned federal land had much greater latitude to use non-native plants, for example, to restore a burned hillside and reduce erosion and run-off, where similar projects using FMAG HMGP dollars were limited to native plants and more rigorous environmental reviews. Again, despite some initial challenges, this pilot was very successful in Oregon. Although a similar pilot was not funded in 2016, I remain hopeful it will be funded through future appropriations.

Other important federal grants that are used for mitigation through public education and outreach:

-) National Tsunami Hazard Mitigation Program (NTHMP): In 2016, Oregon used NTHMP funds to develop and implement a project called the "Oregon Blue Line" project that allowed the physical placement of a blue stripe, similar to white stripes seen at crosswalks, to signify the safety zone for tsunami evacuations. Although "blue lines" can be seen in other parts of the world to denote tsunami evacuation zones, this was the first such effort in the United States. This grant funded Blue Lines in four Oregon communities: Florence, Reedsport, Coos Bay, and Gold Beach. I am hopeful that additional funding will be available to bring this initiative to more communities along Oregon's coast. NTHMP funding is authorized through the Tsunami Warning and Education Reauthorization Act (TWERA). Oregon strongly advocates continued future reauthorizations of the TWERA to support vital tsunami research, education, and outreach initiatives.

- J) National Earthquake Hazards Reduction Program (NEHRP): In 2013, the Oregon Office of Emergency Management partnered with Dark Horse Comics in Milwaukie, Oregon, to produce a comic book educating the public about the risks associated with the Cascadia Subduction Zone. This book, “Without Warning: Earthquake,” tells the story of an Oregon teen who reunites with her family following a Cascadia quake. In 2016, Oregon used NTHMP funds to create a second book in partnership with Dark Horse, “Without Warning: Tsunami.” This story chronicles a mother/daughter camping trip on the Oregon coast when an earthquake and resulting tsunami strike. The duo stays safe and helps others in danger. This unique public/private partnership with Dark Horse Comics has resulted in creative platforms that help emergency managers in Oregon connect with our communities in a unique, innovative, and entertaining way.

- J) Homeland Security Grant Program (HSGP) and the Emergency Management Performance Grant Program (EMPG): Both of these programs have been used to create effective public information, messaging, training, and outreach initiatives. Cuts of 25% to these grants have been identified in the President’s recently released budget blueprint, and new non-federal match requirements may be enacted. These cuts would severely impact emergency management program capability, capacity, and staffing levels to engage in the cost-effective mitigation work we are discussing today.

Other initiatives, like a fully funded earthquake early warning system along the entire west coast of the United States, could provide a tremendous return on investment towards mitigating the impacts of earthquakes, especially when combined with robust public education and outreach initiatives. The U.S. Geological Survey (USGS) along with a coalition of state and university partners is developing and testing an earthquake early warning (EEW) system called ShakeAlert for the west coast. Long term funding must be secured before the system can begin sending general public notifications, however, some limited pilot projects are active and more are being developed.

Oregon’s Seismic Rehabilitation Grant Program

In 2009, Oregon introduced the state-funded Seismic Rehabilitation Grant Program, aimed at providing up to \$1.5 million to schools and emergency service facilities such as hospitals, 9-1-1 and emergency operations centers, and fire and police stations to seismically retrofit these critical facilities. The program mandates that schools receiving these funds be retrofitted to, at a minimum, Life Safety standards, meaning that a building may be damaged beyond repair during an earthquake but people will be able to safely exit the building. Emergency service facilities must be retrofitted to the Immediate Occupancy standard meaning that not only will the building remain standing after an earthquake but emergency services will be able to continue to operate and provide services. Oregon uses the standards defined by the American Society for Civil Engineers.

Last week, Governor Kate Brown announced that 100 schools and 47 emergency service facilities have collectively been awarded \$153.5 million in state funds for FY 15-17. Since 2009, this program has awarded \$108 million to 118 school and emergency service facilities across Oregon.

FEMA's proposed Disaster Deductible and Mitigation

FEMA's recently released Supplemental Advance Notice of Proposed Rulemaking outlining FEMA's efforts to reduce the cost of disasters to the federal government while encouraging mitigation and other hazard- and risk-reducing initiatives has been reviewed by myself, my staff, and many emergency managers throughout Oregon. Our comments have been provided to FEMA and generally align with the comments provided by the National Emergency Management Association, of which Oregon is a member. All levels of government should consider strategies to reduce the overall impact and costs of disasters. The primary concerns that the emergency management community in Oregon has expressed about the deductible, as described to this point, are the increased administrative burden for states to document their deductible credits and, if necessary, make appeals to what is expected to be an annual process. Oregon is also concerned about the inability to consider local mitigation efforts and expenditures towards the deductible. Throughout this testimony I have highlighted many projects, some utilizing federal grant funds, to mitigate against Oregon's hazard profile. Dozens more mitigation projects happen throughout Oregon each year, often at the local level, which bears responsibility for much of the infrastructure being improved, and we believe those efforts should be taken into account when a state "buys down" its deductible. The deductible concept proposes states can reduce their deductible through eligible, state-funded mitigation work, with every dollar of mitigation work buying down three dollars of a state's deductible. For Oregon, this would mean documenting approximately \$8 million in eligible mitigation costs once our maximum deductible of \$24 million is reached. With state-funded initiatives like the Seismic Rehabilitation Grant Program, we believe Oregon would have little difficulty buying down our entire deductible without reducing federal disaster response and recovery costs.

If FEMA decides to move forward with this concept, I would ask that FEMA use a "soft launch" to run concurrently with the present threshold model for perhaps three years and assess what the actual savings would be over that three-year stretch (as well as state and federal costs to manage this process), before deciding whether or not this radical shift in managing disasters will achieve the stated goal of lowering disaster recovery costs.

Conclusion

Visit any region, state, tribe, county, parish or community and you'll see hazard mitigation happening. It may be building or land use codes, it may be storm water management, it may be defensible space for wildfire, or it may be public education and outreach.

In Oregon, our focus is on the threat of Cascadia and the devastating subduction earthquake and subsequent tsunamis and aftershocks that the fault will produce, quite probably in my lifetime, if not in my career. Cascadia is not just an Oregon concern. It isn't just a Pacific Northwest concern. It is a national, and even international concern. My introduction to emergency management was standing on my roof in the east village of Manhattan a few minutes before 9 am on September 11, 2001, watching as one of the World Trade Center towers burned and a commercial airliner slammed into the other tower and explode in a fireball out of the other side. Until that time, I don't think I had even taken a first aid class. That moment changed me, as it

changed so many of us in so many different ways. I wanted to never experience something like that again and began working towards a career aimed at preventing disasters. I make it a point to regularly review the 9/11 Commission Report, and one chapter always jumps out at me. Chapter 8. “The System was Blinking Red.”

Mr. Chairman, members of the subcommittee, when it comes to Cascadia, the system is blinking red. Cascadia is not a “no-notice” event. We have notice. It’s coming. Like tornadoes and hurricanes, we cannot engineer our way out of these hazards occurring. But we can armor up our infrastructure, take personal actions to prepare, and provide our citizens with the tools they need to educate themselves about a threat and be alerted when one is imminent. In addition to the efforts shared today to reduce the impacts of floods, fires, and storms, Oregon is doing what we can to mitigate against the threat of Cascadia, but we need help if we are going to prevent it from being a disaster of the magnitude predicted.

I thank you for the opportunity to testify before you today.