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Our VISION:  
A Disaster Re-  
sistant University  
as a global model  
for other institu-  
tions of higher  
learning.

Our MISSION:  
To administer a  
campus-based com-  
prehensive emer-  
gency management  
program in part-  
nership with UW  
academic depart-  
ments, operating  
units, staff, admin-  
istration and neigh-  
boring jurisdictions  
in order to save  
lives, protect prop-  
erty and safeguard  
the environment.

# Disaster Digest

VOLUME IIII ISSUE 1V

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## Director's Corner

Steve Charvat, UWEM Director

I once heard a funny quote: “Change is inevitable – except from a vending machine.” It made me smile but think about how this resonates with what we do here at UW Emergency Management. Over the past 2 weeks, I recently gave another 4 tour of our university’s Emergency Operations Center (EOC). While we at UWEM give tours on a frequent and regular basis, I often forget how lucky we are to have such a valuable tool available to us on a 24/7 basis. Always ready to respond to unexpected events and crises – as well as for planned events such as campus VIP visits and now every home Husky football game – the EOC represent the true “heartbeat” our the UW’s disaster planning, response and recovery operations. Just over 2 years old, this center, located in the UW Tower complex, has certainly evolved since even 2011 when we first moved into the building. From our experimentation of various command and control software systems, to something as simple as the configuration of chairs and tables (and even the colors of the responder vests), your university’s EOC is constantly a “work-in-progress”. Like the continual threat and realities of natural and human-caused disasters, the EOC is an organic facility that evolves as the world around us continues to change. We are always making improvements in this center based on the results of actual activations, from lessons learned from drills and exercises to bringing back ideas of other Best Practices from other local partners such as Seattle Community College, Seattle University, the City of Seattle and most-recently, from our friends at the Port of Seattle. Someone once asked me when we will stop making changes in how the EOC looks and operates. An interesting question, by which I answered “NEVER!” And while it seems as if my staff and I have given tours and orientations of the EOC to nearly the entire campus, we know that there still are a number of UW faculty, staff (and most students) who have either never heard of the EOC nor know where it located. So, let this invitation stand: If you or your co-workers and organizations would like to get at a tour of the EOC, just call or email us at [disaster@uw.edu](mailto:disaster@uw.edu) and we would be happy to schedule one. With a busy fall/winter weather season about to arrive, I suspect that the dust will not have a chance to settle!



## Partner of the Quarter: Andrew Ward

The October – December University of Washington’s emergency management “Partner of the Quarter” was presented to Mr. Andrew (Andy) Ward on September 19<sup>th</sup> at a meeting of the UW’s Emergency Management Planning Committee. Andy was recognized for his continued, unwavering support of the UW’s overall all-hazards emergency planning and response programs. Andy is the longtime Business Continuity and Resumption Manager in UW-IT. He is the co-chair of the UW’s Crisis Communications Committee and a member of the EOC response cadre among a number of his other ‘collateral’ core duties in UW-IT. In fact, Andy’s work is so critical to the UW and the UWEM department, that many outside organizations and stakeholders often think he works for UWEM! It is due to the hard work, dedication and endless late hours and weekends of support, that the UW is considered a national leader in university emergency communications. His expertise in business continuity, coupled with his unique ability to solve complex and technical issues has been an asset to the entire UW. For that reason, we are proud to present Andy with this award.



## UWEM at Husky Stadium

On Saturday, August 31, UW Emergency Management assisted with emergency response at Husky Stadium at the inaugural football game for the newly renovated stadium. The weather was warm, the kick-off time was scheduled for later in the evening and the game was sold-out. All of these factors usually means a very busy game, in terms of emergency response by the police and fire/EMS professionals that are there to support public safety.

In the past, UWEM has been part of the command post. But with the new changes to the stadium, the new command post did not have room for an emergency manager, so working with the UW Police, UWEM did our best to assist where we could.

Some of the emergencies and duties our staff helped to support that day:

- Looking for multiple cases of lost children and a few cases of lost adults who had become disoriented in the stadium.
- Providing basic first aid to one fan who had too much alcohol and to another who had melted Sterno accidentally splashed in his eye.
- Assisting with customer service questions when approached by fans for assistance.
- Escorting emergency vehicles to and from a medical scene.
- Performing foot and vehicle patrols of the stadium and the parking lot and reporting any problems to the Command Post via radio

That football game had a reported total of 92 calls for medical assistance, 11 of which ended up being transported to the hospital. UWEM’s support of special events such as Husky Football is just one small part of the collaborative efforts that UWEM shares in with UWPD, EH&S and the Seattle Fire Department to help promote and maintain a safe environment for UW students, staff, faculty and visitors.



*Scott Preston,  
Tom Jenkins,  
Siri McLean,  
Darren Branum &  
Steve Charvat*



# Huskies Lead the Way!

Here in the Puget Sound, residents are used to being outdoors as often as possible. Rain or shine, our friends & neighbors can be seen riding bikes, gardening or kayaking out on the water. Occasionally, the weather takes a turn for the worse and can present a hazard to personal safety and property; remember Snowmageddon in January 2012?! The recent football game between the Seattle Seahawks and the San Francisco 49-ers is another example, this time dealing with the risk of lightning. Though we do not often get the attention of the Midwest’s “Tornado Alley” or the southern United States during Hurricane Season, the Pacific Northwest has its fair share of hazardous weather. With this in mind, **University of Washington** recently completed an annex to its “**All Hazards**” **Emergency Management Plan** to specifically address *Hazardous Weather Operations*. **Hazardous Weather**, as defined by university policy, is any environmental phenomena that have the potential to suspend day-to-day operations. This could be a tornado (they happen here too!), heavy snowfall with accumulation or freezing rain, or damaging winds that can pick up loose debris and wreak havoc with construction sites on campus. Developing this plan was one step in the process to earn recognition from the National Weather Service as being a *StormReady Community*; this is important when you consider that we are a city within a city, hosting 60,000+ students, staff, faculty and visitors each day when school is in session. UWEM also identified communications and coordination facilities, purchased and distributed **National Oceanographic and Atmospheric Administration (NOAA)**-certified weather radios to different public areas across campus, as well as highlighted our numerous academic & research activities that contribute towards public awareness of the natural environment. Huskies everywhere should not only feel safe, but a little bit of pride as well: **UW Seattle** is the first college or university within Washington state to be recognized as a “*StormReady Community*”, and is currently the *only* school within the **Pac-12** conference to accomplish this feat. To learn more about the different kinds of **Hazardous Weather** that **UW Seattle** prepares for, as well as *other* types of emergencies, check out our webpage at <http://huskyem.org>



Left to right: Steve Charvat UWEM, Tom Jenkins UWEM, Charles Kennedy Assoc. VP of Facilities Services, and Ted Buehner National Weather Service.

# UWEM Customer Service Survey Results

The biannual customer service survey results for UWEM – along with those from our sister departments of Facilities Services – were recently analyzed and distributed to each department. No surprise, UWEM's overall scores were very high, compared to the "industry norms" as well as our compared to our sister departments. UWEM staff spent countless hours going over the details of the independent survey and report. We brainstormed how to make improvements to meet our Vision and Mission. We broke up the results into 3 buckets, "the Good, the Bad and the Ugly". Striving to address deficiencies and areas for improvement in a constructive manner, we have begun to develop a number of corrective action plans to ensure that we always place our customers as the TOP PRIORITY in all that we do and strive to implement with a staff of just 3 and a limited budget. Results of the 10 questions were as follows:

1. UWEM delivers high-quality services: 97%
2. I have found UWEM staff to be courteous and professional: 97%
3. UWEM comes up with effective solutions to meet our needs: 89%
4. UWEM communicates effectively with me as a customer: 94%
5. Overall, I am satisfied with the services I receive from UWEM: 86%
6. Services offered by UWEM are cost-effective: 75%
7. UWEM's website is easy to use: 79%
8. I have found Husky Ready easy to use: 60%
9. I have been better informed about disasters and emergencies by UWEM outreach events such as the "Wheel of Misfortune": 57%
10. UWEM is a useful source of information and guidance for emergency preparedness: 89%

While we found the results of Q. 6 confusing as UWEM does not charge for any of our services (a rarity nowadays in the current fiscal situation), we did realize that we need to re-double our efforts in "refreshing" our website (Q. 7) Our Business, Academic and Research (BARC) program is working hard as to ensure that the UW customers realized and recognized that the HuskyReady online continuity program is both FREE to use and easy to get access to (Q.8). Finally, as part of our ongoing efforts to promote a vigorous personal and workplace disaster preparedness program, we will be attempting to get out to more campus events, fairs and meetings to ensure that our students, faculty, staff and visitors know that we are here for YOU, 24/7, to provide disaster preparedness, response and recovery services.



# Get Ready to ShakeOut!

With 6.8 million people living and working in Washington, a major earthquake could cause unprecedented devastation. What we do now, before a big earthquake, will determine what our lives will be like afterwards. With earthquakes an inevitable part of Washington's future, we must act quickly to ensure that disasters do not become catastrophes.

The Great Washington ShakeOut in October 2013 will involve hundreds of thousands of Washingtonians through a broad-based outreach program, media partnerships, and public advocacy by hundreds of partners. The drill will be held statewide annually on the third Thursday of October. The 2013 *Great Washington ShakeOut* earthquake drill will be at **10:17 a.m. on October 17**.

A key aspect of the Great ShakeOut is the integration of comprehensive science-based earthquake research and the lessons learned from decades of social science research about why people get prepared. The result is a "teachable moment" on par with having an actual earthquake (often followed by increased interest in getting ready for earthquakes). The Great ShakeOut creates the sense of urgency that is needed for people, organizations, and communities to get prepared, to practice what to do to be safe, and to learn what plans need to be improved.

Not just any drill will accomplish this; it needs to be big. It must inspire communities to come together. It must involve children at school and parents at work, prompting conversations at home. It must allow every organization, city, etc., to make it their own event.

The 2013 Great ShakeOut drill will be the largest preparedness event in U.S. history. All organizers ask is that participants at the minimum practice "drop, cover, and hold on" at the specified time. It is only a five-minute commitment for something that can save your life. For more information, visit [www.ShakeOut.org/washington](http://www.ShakeOut.org/washington).



*Siri McLean & Steve Charvat, UWEM  
Practicing Drop, Cover & Hold during 2012 Drill*

## HOW YOU CAN PARTICIPATE

*The University of Washington has registered as a state participant in this drill. However it is up each department to coordinate their own participation in this drill. Feel free to contact UW Emergency Management at [disaster@uw.edu](mailto:disaster@uw.edu) with questions or needing assistance.*

### Visit an Outreach Booth

- 10/1/13 11:00am - 2:00pm UW Tower Caf 
- 10/8/13 11:00am - 2:00pm Health Sciences Caf 
- 10/15/13 11:00am - 2:00pm The HUB
- 10/16/13 11:00 am- 2:00pm Suzzallo Library

### Plan Your Drill:

- Make the commitment in your department, school or home to have a "Drop, Cover and Hold On" drill at 10:17am on October 17.
- Download a Drill Broadcast recording from <http://www.shakeout.org/washington/drill/broadcast/>
- Discuss what you learned and make improvements.

### Get Prepared for Earthquakes:

- Do a "hazard hunt" for items that might fall during earthquakes and secure them.
- Create a personal disaster plan.
- Organize or refresh your emergency supply kits.
- Learn more about earthquake hazards: <http://www.washington.edu/emergency/hazards/earthquake>

Why is "Drop, Cover, and Hold On" important to practice? You may only have seconds to protect yourself in an earthquake before strong shaking knocks you down, or something falls on you. Practicing helps you be ready to react. Visit <http://www.shakeout.org/washington/dropcoverholdon/> to learn more.



# Some of My Favorite Preparedness Gadgets

I love gadgets. Being an emergency manager means that I **REALLY** love gadgets that help with emergency preparedness. Here's just a few that are among my favorites and why.

## Stoves

Having a **multi-fuel** stove is an incredibly useful piece of equipment. Besides the obvious ability to cook food, a stove can help boil water to make it safe to drink and for medical care. Hot water bottles can also be used to warm a sleeping bag or a hypothermic person.

### BioLite CampStove

A little on the pricey side (about \$125), but how cool is it to be able to use sticks and twigs to cook your dinner AND charge your cell phone?

### Volcano Cookstove

Around the same price as the BioLite Campstove, the Volcano Cookstove is on the larger/heavier side but is also highly versatile, allowing you to do everything from BBQ to a Dutch Oven, using briquettes, propane or just whatever is laying around.

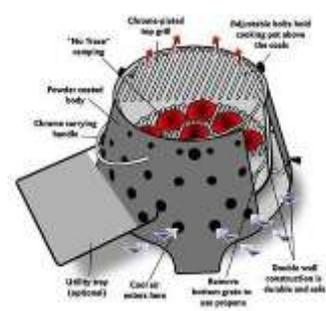
### Kelly Kettle

A little less cost than the two above, the Kelly Kettle is designed so that the water reservoir surrounds a chimney in the middle of the stove. The effect is that it can boil several ounces of water in just a few minutes and like the other stoves above, it can use just about anything for fuel.

### Gaffer Tape

Yep, I know duct tape is all the rage and I love it, too. I actually have books and movies on the stuff. However, duct tape just doesn't do all that well in real disaster environments that are dirty, wet, muddy, nasty places. Enter Gaffer Tape.

Gaffer tape uses synthetic petroleum based adhesives rather than a natural rubber based one, so it doesn't have the residue that duct tape can leave. Gaffer tape is sturdy cloth, so you can write on it easier than duct tape and tears cleaner than duct tape. Many people claim that it sticks better to wet items than duct tape does, too.



### Lighters & Fire Starters

The ability to create fire is part of what distinctly separates humans from every other animal on the planet. Having fire in a disaster situation is often critical to survival. I have multiple ways of creating fire in my own personal kit, but here I'll share just 2:



The trench lighter, so called because the concept was very popular with soldiers in WWI. The trench lighter is designed on a very simple concept with a reservoir of some kind of flammable liquid (any will do), a cotton or cotton-like wick and a tiny flint and steel striker. It's a hardy, highly adaptable lighter.



Flint and steel. This is one of the original grand-daddies of fire making technology. There are a lot of modern examples of flint and steel on the market. Shop around. The nice thing about flint and steel is that as long as you can find some kind of tinder, you can make fire. No lighter fluid required. No matches required.

A great idea for cheap tinder is to rub petroleum jelly into a cotton ball. Store them in baggies or an old plastic film canister. Take a tinder cotton ball and break open the middle. Use the flint and steel to shower sparks on to it and watch it burn for about 2 minutes.

### Blankets

I know space blankets are a big thing in the emergency preparedness world. The difficulty with them is that while they are better than nothing, they are limited in scope of application and they can actually make someone more cold and wet than before. Space blankets work by reflection of body heat and do not breathe at all. This means that they have no insulating value and will become wet with condensation on the inside after a few hours' use.

In an emergency, try using a synthetic polar fleece blanket under a heavy-duty space blanket. The fleece will keep you warm when wet and the space blanket will offer some limited wind and water protection over the fleece blanket. Also, try to get a space blanket that is more durable than the ultra-cheap Mylar ones.



### Can Opener



The Zombie Apocalypse has happened. You are fortunate enough to find yourself in a secure, large warehouse food store, with no zombies in sight and no one else you need to share with. There are pallets of canned food. You may have just found a post-apocalyptic Nirvana. Unfortunately, you don't have a can-opener.

Enter the humble and venerable P-38 can opener. Used in WWII by soldiers to open their food rations, the P-38 can opener (the plane was pretty neat, too, but not great for opening cans) is arguably the most popular invention the US Army has ever produced.

They can be had for less than \$1 and are light enough and small enough to keep on a keychain. Having a P-38 with you will ensure that you can make the most of your post-apocalypse warehouse Nirvana when the zombies finally attack.

### Conclusion

Obviously, there are a ton more gadgets out there that I could talk about, but time and the need for brevity force me to reign in my inner gadget geek. As you think about your own planning and develop an emergency kit, do some research and see what's out there that may just come in handy.

- Scott Preston, Business Continuity Manager UWEM

# The Time to Repair the Roof is While the Sun is Shining

J.F.K. once made the statement that the time to fix the roof is when the sun is shining. I've always interpreted this to mean that the time to prepare for a crisis or recover from a previous crisis is when you have a moment where you can catch your breath and figure out what needs to be done. Aesop pushed this same message with his classic story about the Ant and the Grasshopper. The Ant used Summer to prepare for Winter. We need to remember to do the same.

In the Seattle area, we can always count on a least one or two good storms in late Fall and Winter. Fall and Winter storms are usually the last thing on our minds when it's a beautiful, warm late-Summer day. Yet, these are the best times to think about how to prepare for the upcoming storm season. Here are some quick tips to get you started.

## **Start Small**

While 3 days' worth of supplies may not be sufficient to endure larger disasters, it may be reasonably sufficient for the small storms that are likely to occur that often result in localized power outage for up to 72 hours. Check out our recommended supplies list for a kit at our website at [http://www.washington.edu/emergency/prepare/disaster\\_kit](http://www.washington.edu/emergency/prepare/disaster_kit)

Plan to grow your kit to improve your resources- shoot for moving up to a 7 day or 10 day kit. Seem excessive? In the Winter 2006 Hanukkah Eve windstorm, some Puget Sound Area residents were without power for up to 12 days.

## **Customize Your Kit for You**

Even if you buy a great kit from a supplier, like PrepareSmart, that kit is generalized in nature. No matter what you buy, customize it for yourself with extra water, preferred foods and medications.

## **Don't Forget the Pets**

The loved ones in your family includes 4-footed family members, remember to prepare for them, too. <https://www.washington.edu/emergency/Who%20Depends%20on%20You>

## **Get Your Supplies in Order**

You can reference the above link for what to get. Once you have them, check them to confirm they are still accessible, not expired, etc. The worst time to learn your flashlight batteries are dead is in the middle of a power outage.

## **Special Needs**

Would a power outage present an extra challenging situation for you or someone in your home? Do you need insulin, a CPAP or some other medical device or medication on a daily basis? If so, you'll want to do some extra planning to ensure your medical needs are met. You can contact UWEM at [disaster@uw.edu](mailto:disaster@uw.edu) if you have specific questions or need assistance.

### **Get Your Vehicle Winterized**

Don't forget supplies in your vehicle. You can find some helpful ideas here: <http://www.washington.edu/emergency/files/documents/PrepareYourCar.pdf>

### **When the Storm is On Its Way**

If you begin to hear that a storm is approaching the area, remember some of these tips:

- Keep pets indoors as much as possible.
- Remove any items that are hanging just outside the home. High winds can make these hazardous.
- Pick up any debris that may get blown around.
- Secure any items (like patio table shades) that may get blown around.
- Know where and how to turn off your water, power and gas lines in case there is a problem with them such as burst water pipes freezing.
- Check your flashlights and radios for fresh batteries.
- Have a plan for your children or other loved ones who may be at school or in day-care if they are released early or you're delayed in getting home.

UWEM has a huge amount of information and tips on emergency planning at our website at [www.huskyem.org](http://www.huskyem.org). Our staff can also come out and speak with your unit or department about personal preparedness and even discuss how to better plan as an office to ensure continuity of your business, academic or research activities during a disaster. Just contact us at [disaster@uw.edu](mailto:disaster@uw.edu)



## Flash Flooding: Urban & Rural Dangers

The transition seasons (Autumn and Spring) often mark the beginning of “flood season” for the Pacific Northwest. While we are no strangers to rain, the falling of mature leaves and the debris caused by green shoots often pile up over storm drains or clog up the plumbing out of sight. When compounded with the fact that our heaviest precipitation often occurs when we can see variations between cool and mild weather, this presents a dire situation for the residents of Puget Sound. Residents of Seattle and other major urban areas west of the Cascades understand the importance of our storm water run-off remaining clean to preserve the habitat of our native animals, most notably our salmon and shellfish. With the diligent help of community volunteers, storm drains often remain clear but can easily be blocked within an hour of heavy rainfall. This causes what is known as “urban flooding,” which results in water damage to exteriors of buildings, leaks when water pools on flat roofs and can even lead to flood damage indoors if low-lying doorways or windows are not properly sealed. Closer to our nearby rivers, such as the Duwamish or Green Rivers, excessive rainfall can cause the water level to swell and breach the riverbanks, flooding homes and businesses. Due to the concentration of people and economic activity in cities, this can lead to property damages in the millions of dollars and threaten lives. Less-intensively developed regions like the mountains and eastern Washington do not escape the risk of flooding either. Agricultural crops can be damaged and ruined, small towns can experience significant flooding due to water being funneled through canyons & ravines and animals can be displaced closer to human habitats as they flee from the rising waters. While many homeowners and renters have insurance to protect against losses due to natural disasters, flood damage is often not covered under these policies and must be purchased separately. As we head into the fall, review your insurance policies to understand your coverage and keep your head above water!



# Landslides

Earlier this year, a large landslide damaged and threatened homes on Whidbey Island. The North Cascades Highway has closed twice in the last month because of mudslides. 65 hikers were trapped at the North Cascades National Park in August when the road out of the park washed out. Landslides happen when the natural stability of a slope is disturbed and can follow heavy rains, droughts, or earthquakes. Areas where wildfires have destroyed stabilizing vegetation are particularly at risk for landslides during and after heavily rains, as are areas where landslides have happened before. Washington has had a dry summer, wrought with wildfires, and as fall storms begin, everyone should be prepared for the possibility of a landslide. Protect yourself with the following tips:

- Learn if landslides have happened in your area previously by contacting the state Department of Natural Resources or your local county planning department.
- Educate yourself about area evacuation routes. Make sure your family has a personalized plan for what to do if you need to evacuate and make sure everyone knows how to contact one another in case people get separated.
- During storms or heavy rains, stay connected to local media via television, radio, or internet in case of emergency announcements by local officials.
- If you're out on the road during a storm, be alert. Watch for tilted trees or telephone poles, or for new holes or bare spots in the landscape.
- If a landslide is imminent, get out of the way. Head for high ground, or away from the direction of travel of the slide. Take shelter if possible to protect yourself from moving debris.
- After a slide, leave the area or stay away. Watch for and alert authorities about downed utility lines. Do not return to the area until officials say that it is safe to do so.

If you suspect that your home or property is particularly susceptible to landslides, consider speaking with a geotechnical expert about risk mitigation.



## Tips for Getting in Touch with Friends & Family After a Disaster Strikes

Disasters happen quickly and often without warning. Cell phone and land lines quickly become overwhelmed by the volume of calls going into and out of an area and calling to check on loved ones – or calling to let loved ones know your status – can be very difficult. Keep these tips in mind in case you ever find yourself in such a situation.

- Text instead of call. Even if you find that a call can get through, it's best to leave phone lines open for first responders, and text messages use less data and can often work their way through congested networks.
- Use a social network app like Facebook or Twitter to reach out to friends inside a disaster zone. If you're the one in the disaster zone, post to Facebook or Twitter letting people know your status. Ask them to spread the word among friends and family.
- If you're unable to access social networking apps because of a congested data connection, try to find a hardwired connection, as a cable internet hookup is better equipped to handle large traffic surges.
- If you find yourself in the affected area and think that friends or family may be trying – unsuccessfully – to reach you, see if you can reach your own voicemail. If you can, change your message so that when people try and fail to reach you, they'll hear your update when they're sent to your voicemail.
- Carry a spare phone battery or use a battery case to give yourself a power boost. Smartphones are notorious for needing to be charged after less than a day, and a phone that is constantly scanning for a signal will run out of juice within a few hours.
- If your battery does die, or if you're separated from your phone, you might still be able to access a landline. Keep your most important phone numbers memorized in case you can't access your phonebook.

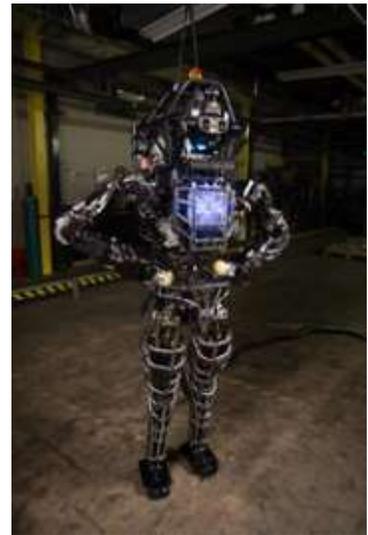


## The Future of Robots and Emergency Response

Hal. C-3PO. Andrew. Number 6. We think of robots as something out of science fiction, but some are seeing more immediate potential for their use in emergency situations thanks to recent advancements in robotic and hydraulic technologies. Crisis situations often require human intervention, sometimes in areas which are hostile to human life. Recent examples include the emergency at Japan's Fukushima nuclear power plant and the wildfires in Arizona that killed nineteen firefighters. The Pentagon and the Defense Advanced Research Projects Agency (DARPA) are hosting a programming contest that they hope will speed up development and production of robots that could prevent loss of human life in such situations. Atlas, a humanoid robot designed by DARPA, walks on two legs, weighs 330 pounds, and is made of aircraft grade aluminum and titanium. Six companies will be given Atlas robots and challenged to program them to perform a set of tasks. The robots will need to be able to climb into a vehicle, drive to a destination, get out of the vehicle, cross a rubble field, open a door, use a power tool, and turn a valve. The robots will be under remote human control, but data speeds available to contestants will vary during the 2014 contest. As a result, robots that have been programmed to function with more autonomy will stand a better chance of winning if the data connection linking the human to the robot slows down or drops completely.

Robot technology also has potential for use in search and rescue operations that might occur in unstable areas unsafe for humans or dogs. A UK research team has designed a robot called SCRATCHbot which is outfitted with plastic whiskers of varying lengths which act as sensors. The robot makes decisions about where and how to move based on the type of material it comes in contact with, and can identify various textures. Because of its use of sensory technology, SCRATCHbot can function in the dark or in areas with reduced visibility due to smoke or dust.

The prospective uses for these types of technologies are endless and could result in safer, more effective handling of natural and manmade disasters in future. ([NY Times Article](#))



## Mobile Technology Allows Seattle to “Find It, Fix It”

In today's increasingly-wired society, the ability to share information is more important than ever to citizens. Even better, being able to provide the right information to the right person or agency at the right time is seen as a new goal of community engagement. The **City of Seattle** prides itself in being at the vanguard of all things computer science-related, and it demonstrates this with a new mobile app for smartphones called “**Find It, Fix It.**” (<http://www.seattle.gov/customer-service-bureau/find-it-fix-it-mobile-app>) Available for the **iOS** and **Android** operating systems, this **free** app allows concerned residents to report abandoned cars, graffiti, and potholes or to ask questions directly of their city government. Requests for public service fixes are routed to the appropriate department, to expedite and streamline the amount of time between a problem being identified and it being resolved. This is the latest push in a city that has seen information technology improve the services provided to residents in other areas, such as **Seattle Department of Transportation's** “*Winter Weather*” webpage. (<http://www.seattle.gov/transportation/winterweather.htm>) The Emerald City is hoping that better ways of sharing information with its residents, visitors and employees will help to mitigate future risks that can degrade the quality and speed with which public service are rendered. The University of Washington also shares this sentiment, with public safety resources such as “**UW Alert**” and **Husky Night-Walk** program offered by **UWPD**. All of these free resources and many more are encouraged to be used by students, staff and faculty whether they find themselves on campus or out in the city.

# 7 Ways the Response to Devastating Earthquakes Has Changed

Article from *Emergency Management Magazine*

<http://www.emergencymgmt.com/disaster/7-Ways-Response-Loma-Prieta-Earthquake.html>

Most San Francisco Bay Area residents over 30 years old remember exactly where they were at 5:04 p.m. on Oct. 17, 1989, when the magnitude 6.9 Loma Prieta earthquake shook the region.

I certainly do. I was just getting ready to drive home to Palo Alto, a few miles from the editorial offices of InfoWorld, a technology publication in Menlo Park, where I worked. Our second-floor offices shook violently. The building seemed to twist and warp under the pressure. Bookshelves and desktops all emptied their contents into the aisles, but there were no injuries. Shaken up, I made my way home slowly through chaotic traffic and fallen debris. Others were not so lucky. The quake killed 63 people, injured 3,757 and left several thousand homeless. It proved to be both a major test of area emergency management and a wake-up call about the region's disaster preparedness efforts.

Today Bay Area residents live with the realization that another big quake is in their future. In 2007, earthquake scientists led by the U.S. Geological Survey estimated that there is a 63 percent probability of a magnitude 6.7 or greater earthquake in the Bay Area in the next 30 years.

So what has changed since 1989 in terms of response capabilities? If a major quake struck today, how would emergency management be different than it was 24 years ago? There have been many lessons learned cumulatively since Loma Prieta in terms of emergency response, said Rob Dudgeon, deputy director of the [San Francisco Department of Emergency Management](#) (DEM), where he leads the Division of Emergency Services. "Things didn't change all of a sudden in 1990," he said. "But if an earthquake happened today, everything about the response would be different."

Here are seven ways in which today's response promises to be different:

## 1. Modern Emergency Operations Center

One of the most obvious differences is that today, there is a seismically reinforced and modern emergency operations center. "The EOC during the Loma Prieta quake proved inadequate," Dudgeon said. Earlier this year, *Emergency Management* gave readers an inside look at the new EOC during the [Golden Guardian exercise](#) in May, during which agencies worked together on practicing for the response and recovery to a simulated magnitude 7.8 earthquake.

San Francisco now uses the WebEOC incident management tool for situational awareness and to help keep everyone on the same page. This year's functional exercise focused on carrying out policies, response and recovery for up to 48 hours after the earthquake hit. Representatives of the agencies participating in the exercise relied on both technology as well as face-to-face communication to help each other follow protocol.



## 2. Standardized Emergency Management System

Earthquake response in California has benefited not just from previous quakes, but also lessons learned during other types of emergencies. In response to problems experienced during the Oakland Hills fires in 1991, the California Legislature passed a law requiring a clear incident command system during emergencies. The standardized emergency management system provides for a five-level emergency response organization, and is intended to structure and facilitate the flow of emergency information and resources within and between the organizational levels.

“Now we have a unified command structure, so we have experts in charge of their areas and not the mayor making all the decisions,” said Dudgeon, who was working on an ambulance in Oakland during Loma Prieta. “How we deal with multiple casualty incidents is different and communications with hospital emergency rooms is better,” he added.

## 3. Use of Social Media and Mobile Devices

The San Francisco DEM has adopted several [social media channels](#) and continues to experiment with them during events. The city uses a text-based notification system, AlertSF, and Twitter. AlertSF sends alerts regarding emergencies disrupting vehicular and pedestrian traffic as well as citywide post-disaster information to registered wireless devices and email accounts. Registrants can also sign up to receive English-language automated information feeds and alerts targeted to specific areas of the city.

“We believe in the power of the crowd,” said Alicia Johnson, resilience and recovery manager at the San Francisco DEM. She oversees the development of the Resilient SF program and long-term community affairs and education. “We don’t know if systems such as Twitter will be up when we need them, but we plan as if they will,” she said. “We use them every day in planning events and in situations like the recent airplane crash. Although social media, just like traditional media, can be the source of incorrect information, the information passed on by social media tends to correct itself.”

## 4. Closer Ties with Community Organizations

A report published by National Academies Press and titled *Practical Lessons from the Loma Prieta Earthquake* was based on the 1993 proceedings of a symposium held in San Francisco.

It noted that pre-existing social problems such as homelessness, hunger and lack of health care are worsened immediately after a destructive earthquake. The report recommended that community agencies develop policies to address these issues and become more involved in emergency response.

In fact, the aftermath of Loma Prieta led directly to the creation of an umbrella group called [SF CARD](#) (Community Agencies Responding to Disaster), which connects nonprofit, faith-based and private organizations with the network and knowledge they need to continue providing critical services after a disaster. Vulnerable populations naturally turn to these organizations immediately following a disaster for housing, food and essential services.

“People who went through Loma Prieta saw the potential for a new way to help nonprofit organizations provide assistance, get involved in preparedness and make the city more resilient,” said Brian Whitlow, SF CARD’s executive director. “During Loma Prieta, there were people volunteering to help the Fire Department fight fires in the Marina District. Nonprofit organizations are working on ways to give those people tools to help. And SF CARD is the conduit between the DEM and those organizations.”

Dudgeon noted that after Loma Prieta, government agencies began to realize that they couldn’t do everything. Previously there had been less recognition of the role of community groups. “There was definitely a reluctance to engage in the past, even 10 years ago,” he said. “But now there is recognition that emergency response is not a total government show.”

## 7 Ways... Continued

“I give the DEM a lot of credit,” Whitlow said. “They have done a great job of reaching out and helping agencies prepare. We are an advocate and liaison in their EOC.”

The city also has a Neighborhood Emergency Response Team program of volunteers trained and supervised by the Fire Department. Other cities and towns now have Community Emergency Response Teams as well.



### 5. Drill, Baby, Drill

Another lesson from the *Practical Lessons* report was that organizations that had developed and tested realistic earthquake planning scenarios prior to the Loma Prieta earthquake were better prepared than those that had not.

The region seems to have taken this lesson to heart. The Bay Area Urban Areas Security Initiative (UASI), a regional effort to build core capabilities to respond to terrorism and natural disasters, has increased the number of drills in the region. In fiscal 2011-2012, the Bay Area UASI spent approximately \$3.3 million on training and exercises. According to UASI's reports, the region trained about 1,200 responders (as compared to approximately 500 responders in prior years) across a range of disciplines including emergency management, emergency medical services, firefighting, law enforcement and hazardous materials response.

In 2013, the annual Golden Guardian exercise involved a catastrophic earthquake in the Bay Area, with the goal of exercising and assessing emergency operations plans, policies and procedures for large-scale incidents at the local, regional and state levels.

### 6. Utility Infrastructure Coordination

More than 150,000 customers lost power during Loma Prieta. Today that figure would be closer to 500,000, because of the area's increasing population density. Although many of the types of utility infrastructure that would be impacted by an earthquake are similar today, the resiliency and level of communication between providers is different, said Don Boland, executive director of the California Utilities Emergency Association. He said the association brings together utilities to study interdependencies, expedite getting systems back up and running as quickly as possible, and prioritize what needs to be done — providing pumping stations with power before stoplights, for instance.

“Energy, telecom, water and gas are like four legs of a dining room table. Without all four, the table is going to collapse,” Boland said. “We act as the state EOC's utility arm. We hold mutual assistance compacts for all 41 power companies in the state, and are able to reach down to San Diego to help stand up resources if there is a 7.0 earthquake in San Francisco without waiting for any kind of damage assessment. The type of system we have for pulling resources from elsewhere did not exist during Loma Prieta. The utilities realize they are no longer silos and are working together.”

In San Francisco, a Lifelines Council is conducting an interdependencies study on infrastructure serving the city. The council seeks to:

- develop and improve collaboration in the city and across the region;
  - understand intersystem dependencies to enhance planning, restoration and reconstruction;
  - share information about recovery plans, projects and priorities; and
- establish coordination processes for lifeline restoration and recovery following a major disaster event.

## 7. Ongoing Efforts on Seismic Retrofitting and Land-Use Planning

Besides beefing up emergency response capabilities, the Bay Area is also doing a better job of understanding local earthquake hazards and addressing them before the next disaster. After Loma Prieta, San Francisco launched a 10-year-long study, called the [Community Action Plan for Seismic Safety](#) (CAPSS), to evaluate the city's risk from earthquakes. In late 2011, CAPSS developed into the Earthquake Safety Implementation Program, a 30-year workplan and timeline implementing the Community Action Plan.

“A lot of the recommendations and the work of CAPSS are drawn from lessons from what happened during Loma Prieta, as well as during large earthquakes in other cities, such as in Christchurch, New Zealand,” said Patrick Otellini, San Francisco's director of earthquake safety.

By the 20th anniversary of the Loma Prieta quake, the city and county of San Francisco had completed more than 180 seismic retrofits or total replacements of public facilities, ranging from small but critical pump stations and transmission mains to essential facilities like police and fire stations and the EOC.

The city also passed legislation that requires the evaluation and retrofit for “multi-unit soft-story buildings,” which are wood-frame structures containing five or more residential units, having two or more stories over a “soft” or “weak” story, and permitted for construction prior to 1978, Otellini said.

“We are working toward a more resilient city in terms of buildings and lifelines shored up so it will be easier to rebuild after an earthquake,” said Sarah Karlinsky, deputy director of SPUR, a nonprofit organization that works on a host of issues including disaster planning and regional land-use planning. “We have a variety of building types that are vulnerable, including these soft-story apartment structures that tilted during Loma Prieta.”

A 2013 SPUR report, called [On Solid Ground](#), argues that good land-use planning can prepare the Bay Area for a strong disaster recovery.

No one knows how well the region will respond the next time a quake occurs, but SF CARD's Whitlow believes the Bay Area is much more resilient today than it was in 1989. “The nonprofit organizations are embracing best practices in terms of working with emergency management, and groups like the Red Cross and United Way have really come together to work on drills. So we are not just talking about it, we are actually doing something.”

# Twitter Launches an Alert System for Emergencies

Twitter is rolling out a new feature that will allow users to get emergency information directly from vetted, credible organizations. The system, called [Twitter Alerts](#), will deliver tweets marked as an alert by approved organizations through the traditional timeline feed and via SMS to a user's cellphone. In addition, users who have the Twitter app for iPhone or Android will receive a push notification with the alert information.

The new system was announced on Wednesday, Sept. 25, and mimics a similar feature that helps Japanese users find emergency Twitter accounts during times of crisis.

The alerts feature is to be used for “warnings for imminent dangers, preventive instructions, evacuation directions, urgent safety alerts, information on access to essential resources, information on critical transit and utility outages, and crowd and misinformation management.” Twitter Alerts will be indicated by an orange bell, and approved accounts show the bell alongside the text: “In times of crisis, this account helps share critical information with Twitter Alerts. Be prepared.”

Participating U.S. organizations include the [American Red Cross](#), all 10 FEMA regions and the [Centers for Disease Control and Prevention](#), as well as state and local agencies such as the [Colorado Division of Homeland Security and Emergency Management](#).

According to Twitter, the feature is available to local, national and international organizations that “provide critical information to the general public.” Organizations that want to use the program can [request enrollment](#) via Twitter's site.

The Boston Police Department used Twitter to keep the public updated on its investigation and search for the marathon bombing suspects in April and will participate in the alerts program. “We're looking to Twitter Alerts as a means to help increase visibility and accessibility of reliable, official information. This will help us support the safety of our residents,” said Lindsay Crudele, Boston's community and social technology strategist, in Twitter's announcement.

Twitter users can subscribe to the new feature through an approved organization's alerts page (for example, [see FEMA's](#)).

<http://www.emergencymgmt.com/disaster/Twitter-Alert-System-Emergencies.html>





October: Fire Safety

When it comes to fire – *be smart!* If the fire is too big for you to handle, immediately get out of the house. Don't stop to gather anything or to do anything. Once you are outside, stay outside. Intense heat and toxic fumes can kill you.

November: Shelter in Place

Your house provides a good first-layer barrier against chemical airborne agents. Additional protection is achieved by tightly sealing one room of your home that you have pre-designated and prepared. A safe room is one that easily and quickly can be sealed to protect you from airborne agents, and that has a few supplies to get you through the hours that you will need to stay inside it. All doors and windows of that room will be sealed with plastic sheeting and tape, and dampened towels or cloths will be placed under the doors. You will probably need to stay inside several hours, but not several days. So, choose a room that can accommodate your needs for several hours. A master bedroom with an attached bathroom is ideal to give you access to the toilet and running water.

December: Home Hazard Hunt

All of Washington State has the potential of being impacted by a major earthquake. Earthquakes strike suddenly and without warning. When they occur, they cause the ground to undulate and shake, perhaps violently. Buildings – and their contents – are vulnerable to this rocking and rolling. Fortunately, experts teach how to secure homes to their foundations, and contents to wall studs.

*HELP WANTED! UW Emergency Management is always looking for volunteers to be trained and ready to work in the Emergency Operations Center (EOC) upon activation. If you are interested in learning more about this wonderful opportunity: please email: [disaster@uw.edu](mailto:disaster@uw.edu)*

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