

*The Red Folder contains excerpts from the Preparedness Guide for RVM Residents (in preparation), and is intended to provide a brief summary of actions to take for emergency and disaster preparedness. The documents are produced by the Residents' Preparedness Group (RPG), in cooperation with the Residents Council and RVM. RPG is solely responsible for the contents, which are advisory in nature. Readers are urged to utilize personal judgment and discretion in applying the information.*

## Prepare!...Why?...for What?

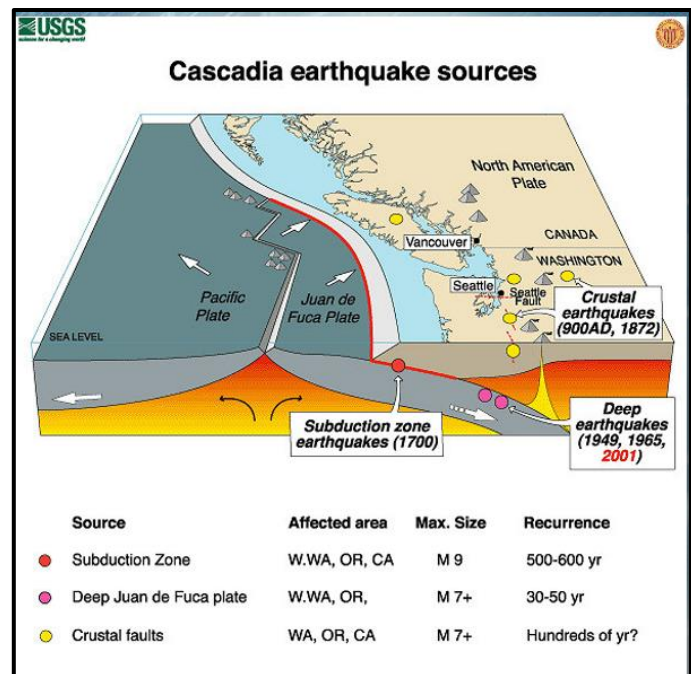
The Rogue Valley is a great place to live – beautiful scenery, recreational opportunities cultural activities, good medical care – but like everywhere else, it has its share of hazards. Jackson County evaluates the risks and hazards as shown in table PS-1.

**Table PS-1 Hazard and Vulnerability Assessment Summary**

| Hazard                      | Maximum |               |        |             | Total Threat Score | Hazard Rank | Hazard Tiers |
|-----------------------------|---------|---------------|--------|-------------|--------------------|-------------|--------------|
|                             | History | Vulnerability | Threat | Probability |                    |             |              |
| Earthquake (Cascadia)       | 2       | 50            | 100    | 70          | 222                | #1          | Top Tier     |
| Emerging Infectious Disease | 12      | 50            | 100    | 49          | 211                | #2          |              |
| Wildfire                    | 20      | 35            | 60     | 70          | 185                | #3          |              |
| Winter Storm                | 20      | 30            | 60     | 70          | 180                | #4          |              |
| Flood                       | 20      | 20            | 60     | 70          | 170                | #5          | Middle Tier  |
| Drought                     | 20      | 30            | 50     | 63          | 163                | #6          |              |
| Windstorm                   | 20      | 20            | 50     | 70          | 160                | #7          |              |
| Landslide                   | 10      | 15            | 30     | 70          | 125                | #8          |              |
| Earthquake (Crustal)        | 2       | 25            | 50     | 21          | 98                 | #9          | Bottom Tier  |
| Volcano                     | 2       | 5             | 50     | 7           | 64                 | #10         |              |

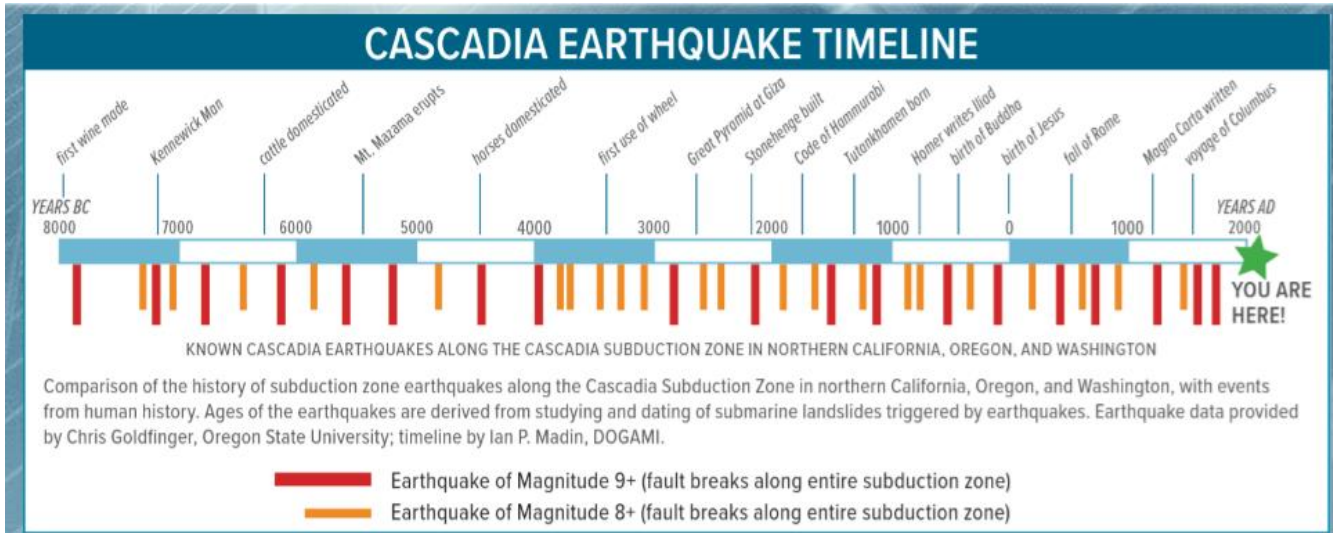
Source: Jackson County NHMP Steering Committee, 2017

We're going to focus on number one – the Cascadia Earthquake. Not only is it the biggest threat all by itself, but it is also a cause of other listed threats – earthquakes start fires, cause landslides and floods, and set the stage for epidemics. To be prepared for a big earthquake is to be prepared for just about anything. And the Cascadia subduction zone is nothing if not the source of big – or very big – or extremely big earthquakes. The subduction zone is an area along the coast of the Pacific NW, where the earth's crust at the bottom of the Pacific Ocean is being forced under the crust supporting continental North America. That takes a lot of energy and crustal plates are sticky things, so when they hang up and then release...BANG! A big earthquake.



Or actually, BANGBANGBANG, because this isn't your local California earthquake. This will inflict heavy to moderate damage on an area of close to 100,000 square mile that contains 12 million people. It will be M 8-9.2 at the source and 6-7 in the interior valley—and it will go on for 2-4 **minutes**. For comparison, the Loma Prieta earthquake in 1989 that damaged the Monterey and San Francisco Bay areas was M 6.9, and lasted 15 **seconds**. The Cascadia is worthy of preparation – but how likely is it?

As it turns out, geologists have been busily reconstructing the history of earthquakes in the Pacific NW, with the results shown in the figure below.



***On average, something happens every 300-350 years, and the last one was in 1700 – 320 years ago. Estimates are that in the next 50 years, the chances of a great earthquake affecting Northern California to Southern British Columbia is 17%, and the chance of a large earthquake affecting Southern Oregon and Northern California is 37%.***

Medford is on the eastern edge of the geographic region expected to have “moderate” damage. However, all of the access routes, including the I-5 corridor, cross mountainous terrain, where bridge and highway collapse, landslides, and treefalls (aided by winter storms or summer wildfires) are likely to isolate the Rogue Valley. And although our location may not be as devastated as the coast (tsunami) or Portland and the Willamette Valley (built on sediment), that means that we are not likely to have the highest priority for relief efforts.

Some people argue that they don't expect to live long enough to worry about that. Possibly true, but living out your waning days as a refugee in the aftermath of a mega-earthquake is probably not the ideal end of life that most of us would envision. There is a saying among emergency managers: “The difference between an emergency and a disaster is that in an emergency, you can call 911 and somebody will come.” That unquestionably puts the Cascadia earthquake squarely in the disaster category. What is questionable is how well we will do at insuring that we will be in the disaster survivor category.

## Prepare!...How?

The State of Oregon has evaluated probable earthquake impacts and produced some estimates of recovery times. As can be seen from the box at the right, survivors would face weeks to months without most of the physical, social and economic infrastructure that supports our normal lives. Further, experience with hurricanes, floods, and wildfires shows us that rescue and relief efforts may take days to get organized and start operating effectively – even when there has been advance warning. We should expect to be completely reliant on ourselves and our immediate neighbors for days to a week or more.

Estimated\* recovery times,

Valley locations

\*(State of Oregon)

Electricity 1-3 months

Water 1-12 months

Sewers 1-12 months

Highways 6-12 months (partial)

Medical Facilities 18 months

Police/Fire stations 2-4 months

**At RVM:** Of the 900-1000 residents, a substantial number are dependent on others, and of those considered “independent,” many have limitations such that minimally looking after themselves is the most that could be hoped for in an emergency. Even the most robust of us are physically and mentally well past the prime of life. As a community, we may have more education and experience than most, but we are certainly not the “average” for which most of the emergency preparedness instructions are written. In particular, we have a much higher proportion of vulnerable people, and a lower fraction of potential rescuers or caregivers.

RVM employees are a skilled and dedicated group, and many are trained in emergency operations. The administration has arranged for some backup stocks of food, water, and other supplies, plus emergency generators, fuel, and other equipment. However, none of these can supply anything close to normal functioning, can be counted on to last more than 2 weeks without replenishment, or can be guaranteed to escape damage in an earthquake. Staff availability is even more critical. Many employees have homes and families to look after or live far from RVM, and depending on the time and severity of the disaster, there could be fewer than a dozen generally available staff members on campus to deal with a damaged physical plant and up to 1000 residents.

**Responses:** There are two basic responses in case of an emergency – stay where you are (shelter in place) or go away (evacuate). We have to be prepared for either one; in the case of a nearby or rapidly advancing fire, prompt evacuation is essential. On the other hand, if there is widespread earthquake damage but most of the RVM buildings remain habitable, “shelter in place” is the safest decision.

If we “shelter in place” we can probably continue to live in our (damaged) homes with our possessions, but without electricity, heat, running water, or any other municipal services. In this case, our possessions need to include some things that we don't normally think about.

On the other hand, if we evacuate we need to be able to take with us at least a few items that may be essential to either immediate survival or longer term recovery – and we need to be able to do it quickly.

In either case, we have to recognize important differences – between the able-bodied and the handicapped, and between those in cottages and those in high-rises.

**Steps to Preparedness:** Step 1 is to abandon any illusions about being taken care of. If there is emergency power to the kitchen and enough Dining Services people permanently on site, then RVM may be able serve meals for a couple of weeks – at one location, with no delivery or transport. If there are enough workers available, it may be possible to organize a sanitation patrol that picks up plastic bags of everything you can't flush down the toilet any more, and takes them away to bury somewhere else. But it's pretty clear that if we assume those things will happen, and they don't, life will be very, very miserable.

Step 2 is to work through the following list, using the more specific information provided on the following pages.

- Neighbors – get to know them, and make plans for mutual aid.
- Drinking water – recommended, a gallon per person per day for two weeks, and don't forget Fido or Fluffy. If you don't have room, get as much as you can fit in.
- Food, and a plan for making sure it's edible when you need it. Again, two weeks worth.
- Light sources (and spare batteries).
- Warmth – bedding, clothes, sleeping bag.
- Sanitation – plastic bags, TP, bleach, toiletries.
- Medicines for an extra month.
- Prepare a “go-bag” for each person to take basic essentials in a quick evacuation.

Sound challenging? The other sheets in this folder provide detailed lists of items, possible sources, and a procedure for negotiating the process of preparation. Beyond this, other help is available.

The Residents' Preparedness Group promotes Emergency and Disaster Preparedness by offering information, advice, and assistance. Email your question or request to [rpgrvm@gmail.com](mailto:rpgrvm@gmail.com). Additional information can be downloaded from [https://www.dropbox.com/sh/j4o6a93qkbh8y1w/AACfMoKd\\_MyH9L1JWTE\\_nFYTQa?dl=0](https://www.dropbox.com/sh/j4o6a93qkbh8y1w/AACfMoKd_MyH9L1JWTE_nFYTQa?dl=0)

## DISASTER SUPPLIES KIT CHECKLIST

**PLAN FOR TWO TYPES OF EVENTS: WHEN YOU MUST LEAVE YOUR HOME AT MOMENT'S NOTICE AND WHEN YOU MUST SHELTER IN PLACE FOR AN EXTENDED TIME WITHOUT ESSENTIAL SERVICES.**

**TOOLS & SUPPLIES:** Consider types of situations you may need items for and plan accordingly. Remember to practice your emergency preparedness plan once you've developed it.

- Fire extinguisher
- NOAA hand-crank radio
- Flashlight with additional batteries
- Cash; \$200 *in one dollar increments recommended*
- Extra keys; home, vehicle, etc
- Emergency shelter; tent, etc
- Shut-off tool for gas, water, etc
- Local maps, Compass, GPS unit
- Duct tape
- Rope 50-100' nylon
- Signal flares
- Waterproof matches
- Paper, pen and / or pencil
- Whistle
- Work gloves
- N-95 particulate mask

**FIRST AID KIT:** Individuals and families should have one first aid kit in their home and in their vehicles. If you purchase a pre-prepared kit open the kit and explore the contents to understand use.

- |   |  |
|---|--|
| <input type="checkbox"/> Non-latex medical gloves                 | <input type="checkbox"/> Tourniquet            |
| <input type="checkbox"/> Assorted sized sterile adhesive bandages | <input type="checkbox"/> Hot & Cold compresses |
| <input type="checkbox"/> 4-inch sterile gauze pads                | <input type="checkbox"/> Ace bandages          |
| <input type="checkbox"/> Hypo allergenic adhesive tape            | <input type="checkbox"/> Safety-razor blade    |
| <input type="checkbox"/> Antiseptic spray / towelettes            | <input type="checkbox"/> Triangular bandages   |
| <input type="checkbox"/> Scissors                                 | <input type="checkbox"/> Thermometer           |
| <input type="checkbox"/> Tweezers                                 | <input type="checkbox"/> Cleaning agent        |
| <input type="checkbox"/> Mylar emergency blanket                  | <input type="checkbox"/> Lubricant             |
| <input type="checkbox"/> Wire splint                              | <input type="checkbox"/> Safety pins           |
|   | <input type="checkbox"/> Eye dropper           |

**MEDICATIONS:** Prescription and non-prescription; have a back-up of prescription medication along with a photo copy of the order from your doctor and various over-the-counter medications that may be needed.

- |  |  |
|--|--|
| <input type="checkbox"/> Pain reliever (asprin or acetaminophen) | <input type="checkbox"/> Emetic (induces vomiting)       |
| <input type="checkbox"/> Anti-inflammatory (motrin, etc)         | <input type="checkbox"/> Activated Charcoal              |
| <input type="checkbox"/> Antacid                                 | <input type="checkbox"/> Rubbing alcohol                 |
| <input type="checkbox"/> Laxative                                | <input type="checkbox"/> Antiseptic or hydrogen peroxide |
| <input type="checkbox"/> Anti-diarrhea                           |  |



**FOOD:** Choose foods that you will enjoy during times of stress. Options include canned, dried, dehydrated, etc. You can also purchase ready to eat meals and other survivalist foods on-line.

- High-energy: nuts and nut butters, trail mix, etc
- Stress foods: chocolate, candy, even gum, etc
- Milk: powdered or canned
- Meat: smoked or dried (jerky), etc
- Soups: bouillon cubes, dehydrated, etc
- Vitamins, etc
- Can opener – non-electric

**WATER:** One gallon of water per person per day. Additional water for pets and hygiene recommended.

**SANITATION:**

- Consider personal hygiene needs such as: toothbrush and toothpaste, floss, deodorant, etc
- Toilet paper, towelettes, wipes, etc
- Plastic bucket with lid and garbage bags
- Chlorine bleach / disinfectant with a dropper for measurement
- Feminine hygiene products

**CLOTHING / BEDDING:**

- Sturdy work boots or other close-toed shoe
- Weather related items: rain gear, sunscreen, sunglasses, warm hat & gloves, etc
- Complete change of clothes and bedding
- Bedding to include needs at a shelter location or otherwise

**DOCUMENTS:** Have a copy of necessary critical documents in your disaster supplies kit including:

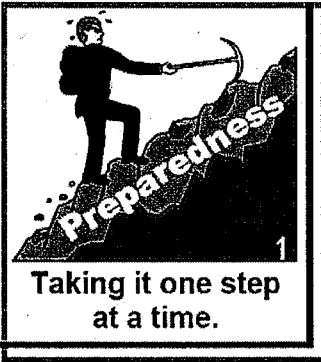
- Insurance policies; Vehicle, Homeowner, rental policy and / or deeds
- Family Records: wills, birth, marriage, and death certificates, passports, and social security cards
- Copies of prescription medications and other medical devices
- Bank and credit card account numbers
- Inventory of household goods
- Important telephone numbers

**SPECIAL NEEDS:** Consider games for children, books and playing cards for for family to pass the time, dentures, eye glasses, diapers, formula, etc.

**PETS:** Because your pets are part of your family too; whether domestic or farm, they need you.

- Registration, medication and vaccination records
- A picture of your pet (with you preferably)
- Food, water and dishes
- Transport carrier, bed, toys, other accessories, etc





# PREPAREDNESS CALENDAR

## Family Disaster Supplies and Preparedness Activities

- This calendar is intended as a tool to help you prepare for disasters before they happen.
- After you purchase an item or complete an activity, check the box next to it.

|  |   |  |
|--|---|--|
| <b>MONTH 1</b>   | <b>Purchase:</b><br><input type="checkbox"/> Water - 3 gallons per person and pets<br><input type="checkbox"/> Hand-operated can opener<br><input type="checkbox"/> Instant drinks (coffee, tea, powdered soft drinks)<br><input type="checkbox"/> 2 flashlights with extra batteries   | <b>Activities:</b><br><input type="checkbox"/> Make your family disaster preparedness plan*<br><input type="checkbox"/> Inventory disaster supplies already on hand, especially camping gear<br><input type="checkbox"/> If you fill your own water containers, mark them with the date filled<br><input type="checkbox"/> Date water/food containers if they are not dated<br><input type="checkbox"/> Conduct a home hazard hunt*                        |
| <b>MONTH 2</b>   | <b>Purchase:</b><br><input type="checkbox"/> Canned meat, stew, or pasta meal - 5 per person<br><input type="checkbox"/> Feminine hygiene supplies<br><input type="checkbox"/> Videotape<br><input type="checkbox"/> Family-size first aid kit  | <b>Activities:</b><br><input type="checkbox"/> Change battery and test smoke detector (purchase and install a detector if you don't have one)<br><input type="checkbox"/> Videotape your home, including contents, for insurance purposes. Store the tape with friends or family who live out of town.   |
| <b>MONTH 3</b>   | <b>Purchase:</b><br><input type="checkbox"/> Canned fruit - 3 cans per person<br><input type="checkbox"/> Any foods for special dietary needs (enough for 3 days)<br><input type="checkbox"/> 2 rolls of toilet paper per person<br><input type="checkbox"/> Crescent wrench(es) (or utility shutoff tools)   | <b>Activities:</b><br><input type="checkbox"/> Conduct a home fire drill<br><input type="checkbox"/> Check with your child's day care or school to find out about their disaster plans<br><input type="checkbox"/> Locate gas meter and water shutoff points and attach/store wrench or shutoff tool near them<br><input type="checkbox"/> Establish an out-of-state contact to call in case of emergency  |
| <p><i>Your supplies may be stored together in one large container, such as a garbage can on wheels, or several small ones. Food items could be kept on a specific shelf in the pantry.</i></p> |   |  |
| <b>MONTH 4</b>   | <b>Purchase:</b><br><input type="checkbox"/> Canned vegetables - 4 per person<br><input type="checkbox"/> Extra baby bottles, formula, and diapers, if needed<br><input type="checkbox"/> Extra pet supplies; food, collar, leash<br><input type="checkbox"/> Large storage container(s) for preparedness supplies  | <b>Activities:</b><br><input type="checkbox"/> Place a sturdy pair of shoes and a flashlight under your bed so that they will be handy during an emergency<br><input type="checkbox"/> Place a supply of necessary medicine(s) in storage container and date the medicine(s) if not already indicated on its label<br><input type="checkbox"/> Start putting supplies in storage container(s) and include blankets or sleeping bags for each family member |
| <b>MONTH 5</b>   | <b>Purchase:</b><br><input type="checkbox"/> Canned, ready-to-eat soup - 2 per person<br><input type="checkbox"/> Liquid dish soap<br><input type="checkbox"/> Plain liquid bleach<br><input type="checkbox"/> Portable am/fm radio (extra batteries)<br><input type="checkbox"/> Anti-bacterial liquid hand soap<br><input type="checkbox"/> Disposable hand wipes | <b>Activities:</b><br><input type="checkbox"/> Make photocopies of important papers and put in the storage container<br><input type="checkbox"/> Talk with neighbors to find out who may have skills or training that would be beneficial after a disaster (i.e., first aid, child care, amateur radio, tree removal, small engine repair, heavy equipment operations, wilderness survival, light rescue, carpentry)                                       |

**\*Contact your local Emergency Management Office for more information on this activity**

**Examples of Food Items:**

- Select based on your family's preferences
- Pick low-salt, water-packed varieties when possible

|             |  |
|-------------|--|
| Canned Meat | tuna, chicken, raviolis, chili, stew, Spam™, corned beef, etc. |
| Vegetables  | green beans, corn, peas, beets, baked beans, carrots, etc.     |
| Fruit       | pears, applesauce, mandarin oranges, pineapple, etc.           |

|                 |   |  |
|-----------------|---|--|
| <b>MONTH 6</b>  | <p><b>Purchase:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Quick-energy snacks (granola bars, raisins, peanut butter)</li> <li><input type="checkbox"/> 6 rolls of paper towels</li> <li><input type="checkbox"/> 3 boxes of facial tissue</li> <li><input type="checkbox"/> Sunscreen</li> <li><input type="checkbox"/> Anti-diarrhea medicine</li> <li><input type="checkbox"/> Latex gloves, 6 pairs, (to be put with the first aid kit)</li> </ul> | <p><b>Activities:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Check to see if your stored water has expired and needs to be replaced. (Replace every 6 months if you filled your own containers. Store-bought water will have an expiration date on the container.)</li> <li><input type="checkbox"/> Put an extra pair of eyeglasses in the supply container</li> <li><input type="checkbox"/> Store a roll of quarters with the emergency supplies and locate the pay phone nearest to your home</li> <li><input type="checkbox"/> Find out about your workplace disaster plans</li> </ul> |
| <b>MONTH 7</b>  | <p><b>Purchase:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Whistle</li> <li><input type="checkbox"/> ABC fire extinguisher</li> <li><input type="checkbox"/> 1 large can of juice per person</li> <li><input type="checkbox"/> Adult and children vitamins</li> <li><input type="checkbox"/> A pair of pliers and/or vise grips</li> </ul>   | <p><b>Activities:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Take a first aid/CPR class</li> <li><input type="checkbox"/> Identify neighbors who might need help in an emergency, including those with limited mobility or health problems and children who might be alone</li> <li><input type="checkbox"/> Show family members where, when and how to shut off the utilities</li> </ul>   |
| <b>MONTH 8</b>  | <p><b>Purchase:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Box of crackers or graham crackers</li> <li><input type="checkbox"/> Dry cereal</li> <li><input type="checkbox"/> "Child proof" latches or other fasteners for cabinet doors and drawers</li> <li><input type="checkbox"/> 1 box of large, heavy-duty garbage bags</li> <li><input type="checkbox"/> Camping or utility knife</li> </ul>  | <p><b>Activities:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Secure shelves, cabinets, and drawers to prevent them from falling and/or opening during earthquakes</li> <li><input type="checkbox"/> Meet with neighbors to inventory expensive equipment that could be shared in the event of an emergency, such as chain saws, chippers/shredders, utility trailers, snow blowers, and 4-wheel drive vehicles</li> </ul>   |
| <b>MONTH 9</b>  | <p><b>Purchase:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Extra batteries for flashlights, radio, and hearing aids (if needed)</li> <li><input type="checkbox"/> Heavy rope</li> <li><input type="checkbox"/> Duct tape</li> <li><input type="checkbox"/> Crowbar</li> </ul>  | <p><b>Activities:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Make a small preparedness kit for your car. Include food, water, blanket, small first aid kit, a list of important phone numbers, and quarters for pay phones.</li> <li><input type="checkbox"/> Secure water heater to wall studs (if not already done)</li> </ul>  |
| <b>MONTH 10</b> | <p><b>Purchase:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Hammer and assorted nails</li> <li><input type="checkbox"/> Screw drivers and assorted wood screws</li> <li><input type="checkbox"/> Heavy duty plastic tarps or sheets of visquine</li> <li><input type="checkbox"/> Extra toothbrush per person and toothpaste</li> </ul>   | <p><b>Activities:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Make arrangements to have someone help your children if you're at work when an emergency occurs</li> <li><input type="checkbox"/> Conduct an earthquake drill at home</li> <li><input type="checkbox"/> Replace necessary medicines as required by expiration dates</li> </ul>   |
| <b>MONTH 11</b> | <p><b>Purchase:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Package of paper plates</li> <li><input type="checkbox"/> Package of napkins</li> <li><input type="checkbox"/> Package of eating utensils</li> <li><input type="checkbox"/> Package of paper cups</li> <li><input type="checkbox"/> Masking tape</li> <li><input type="checkbox"/> Kitchen-size garbage bags (1 box)</li> </ul>   | <p><b>Activities:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Make arrangements to have someone to take care of your pets if you are at work when an emergency occurs</li> <li><input type="checkbox"/> Exchange work, home, and emergency contact phone numbers with neighbors for use during an emergency</li> <li><input type="checkbox"/> Start a Neighborhood Watch Program if none exists</li> </ul>   |
| <b>MONTH 12</b> | <p><b>Purchase:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Heavy work gloves</li> <li><input type="checkbox"/> Box of disposable dust masks</li> <li><input type="checkbox"/> Safety goggles</li> <li><input type="checkbox"/> Antiseptic</li> <li><input type="checkbox"/> Sewing kit</li> </ul>  | <p><b>Activities:</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Check to see if your stored water has expired and needs to be replaced. (Replace every 6 months if you filled your own containers. Store-bought water will have an expiration date on the container.)</li> <li><input type="checkbox"/> Check the dates on stored food and replace as needed</li> </ul>  |



# Southern Oregon Mail-Tribune

## When the Big One hits

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Sunday, September 17th 2017 by Damian Mann

Much of downtown Medford could become a pile of rubble if a massive Cascadia subduction zone earthquake unleashes its fury on Southern Oregon. Historic Main Street, where it intersects with Central and Riverside avenues, would shake for up to five minutes, releasing the energy equivalent of multiple hydrogen bombs from two tectonic plates grinding and slipping along a 600-mile stretch in the Pacific Ocean. City officials have identified 192 buildings in or near the downtown that are constructed of unreinforced masonry, which means facades could fall on sidewalks and roadways, or the building could just collapse entirely if it hasn't been seismically retrofitted.

The danger from these downtown buildings is just the beginning. The valley likely would see blocked roads, no power, no running water, failed sewer systems and largely be cut off from the rest of the world. Nearby Jacksonville also has a downtown filled with historic buildings, which likely would collapse, endangering people both inside and outside as debris rains down on the street.

The last time the 600-mile-long Cascadia subduction zone unleashed its power was on Jan. 26, 1700, and experts say that according to the historical record, we're about due for another one. Scientists have been monitoring the subduction zone for more than 20 years, and they know it's active, but whether it's going to release tomorrow or decades from now is open for debate. "There's a bomb with a fuse on it, but we don't know how long the fuse is," said Chris Goldfinger, a leading seismology and subduction zone expert at Oregon State University.

The subduction zone is an area where the North American plate and the Pacific plate collide, moving a few inches each year in opposite directions. The Pacific plate is moving to the northwest, and the North American plate is moving southwest. An earthquake there could release 10 times the energy of the Loma Prieta quake that rocked the Bay Area in 1989, killing 63 people, injuring more than 3,000 and causing an estimated \$7.4 billion in direct damage. The power of a subduction zone quake may register a magnitude 9 near the epicenter at the coast and possibly an 8 by the time it reaches the valley. The destructive force of this impending quake has come into focus for geologists and for emergency service providers, who are ratcheting up plans to alert the public to be prepared for an unprecedented disaster.

Chris Goldfinger, a geology professor at Oregon State University, said the good news for Medford area residents is that they will have about one minute of less intense shaking before the real force of the quake is felt. This one minute should give most people the time to either dive under a desk in a building designed to withstand a quake or allow people to leave an unreinforced masonry building and find a spot where no debris might fall down. Because the Rogue Valley is so far from the epicenter, the sharp, jackhammer motions shouldn't as much of a problem here.

Goldfinger said his mother lived in the Bay Area when the Loma Prieta quake hit. "My mom lived at the epicenter," he said. "She was at the sink doing dishes near a 500-pound woodstove. The next thing, she and the woodstove were in the living room and the shelves rolled over." His mother didn't suffer any major injuries.

Goldfinger said the subduction zone quake shouldn't knock you off your feet as much as the one his mom experienced. "It will not take you by surprise," he said. "You'll have a little bit of time to decide what to do." In downtown Medford, he said people should be aware that they need to find a safe place that isn't near any structures that might collapse, or where chunks of masonry could fall off. "You should have in mind a response plan," he said.

Many local residents might wonder what to expect if a subduction zone quake hit off the coast of Oregon. Goldfinger actually rode out a subduction zone quake in Tohoku, Japan, in 2011, and he said the movement such a quake generates is predictable but still devastating.

For the first minute, it will send out smaller intensity pressure waves, or p-waves, which should make it somewhat easier for many residents to find a safe place to ride out the four-minute roller coaster of shear waves, or s-waves. The s-waves are the part of the quake that causes the most damage. In Goldfinger's office in Corvallis, it is unreinforced masonry, and he plans to walk out of the building to a spot that's safe. "We've got 100 people in the office, and we should all be able to get out in a minute," he said.

While there is plenty of generic advice on what to do if an earthquake strikes, Goldfinger said you need to quickly size up your situation and determine whether you need to evacuate a building or just dive under a desk for cover.

Many Medford area residents likely are not prepared for an earthquake, but Marino Rossi is. He works in an unreinforced masonry building that also houses Howie's on Front restaurant and bar. He's got two weeks' worth of water and food at home as well as other provisions, such as multiple propane tanks for cooking, and he's prepared to exit his office building or take more extreme steps to flee to safety. "If everything is crumbling, I'd probably go out the window into Howie's patio," he said.

Rossi is also a broker at Henselman Realty and Management LLC, which specializes in leasing downtown buildings, many of which are made out of unreinforced masonry. Some of the buildings he handles, including the Sparta at the corner of Main Street and Riverside, have been retrofitted with steel bracing and other improvements to keep it standing in a quake so people can safely leave the building.

City Hall also has been reinforced seismically, but only to the extent that it will stay standing so that workers can get out of the building. City officials don't expect the building to be so damaged by a Cascadia quake that it would have to be rebuilt. The Medford City Council recently expressed an interest in getting grants to help stabilize downtown buildings so they are safer, an expensive proposition. Rossi said many of the owners he represents are concerned about tenant safety and have expressed interest in applying for the grants through the city.

When the shaking stops, the disaster is far from over. Water and food supplies might be limited, so experts recommend having at least two weeks' worth on hand. Larry Masterman, emergency management coordinator for Medford, said when Japan had its subduction zone quake, it was better prepared than most countries. "Even as robust as Japan standards are, they got clobbered," he said. In Japan, 22,000 people lost their lives and 300,000 buildings were destroyed. Six years later, critical buildings such as hospitals are just being completed and 30 percent of the residents who were displaced still live in temporary housing.

In this valley, residents should be prepared to go weeks or months without power, and cellphones may work only as long as emergency generators keep running. As a result, Masterman suggested residents devise a plan for family members to meet at a designated place after a quake. If markets reopen, expect residents to deplete shelves quickly. Also, because internet service might be knocked out, many stores likely would take only cash. Residents who need medications could find their supplies cut off.

With so many services in jeopardy, the state is developing various resilience plans, anticipating coastal areas could be isolated for 12 to 18 months. Medford's only link to the outside world might be the airport, if it's still operational, which could limit the amount of supplies being brought in for an area with a population of about 200,000. Coastal areas might receive shipments only via the sea because roads could be impassable. Masterman said east and west Medford could see the viaduct and bridges over Bear Creek collapse. Since the hospitals are on the east side, that will be a problem for west Medford residents. Driving around town might be difficult, so bikes may become one of the best temporary ways to get around. "Cargo bikes are going to be gold, or bikes with trailers," he said.

Masterman suggested residents obtain a filter used by hikers and back-country campers that can make various sources of water fit for human consumption. In a pinch, residents can run creek water through a coffee filter and add a bit of chlorine bleach and let it sit for a while to kill off bacteria. When you drink the water, it should have a slight taste of chlorine.

During the Loma Prieta quake, power was disrupted for three days, said Masterman, who worked in the Bay Area at the time. There was no water for firefighters, buildings swayed like dancers and the power plant wouldn't start up. Buildings crumbled, and power poles and trees fell over. Two sections of the Cypress freeway and a portion of the Bay Bridge collapsed in Oakland, and in San Francisco, the upper decks of the Central and the Embarcadero freeways collapsed.

For the Medford area, a subduction zone quake could result in even more damage. "Imagine 10 times that magnitude in a place with less resources," Masterman said. "It's going to be a scary time."