



# PENINSULA EMERGENCY PREPAREDNESS GUIDE

## ISSUE 2: LET'S GET PERSONAL

This publication aims to properly educate and prepare individuals of Clallam and Jefferson counties for short-term emergencies resulting from disasters that interrupt supplies and services by providing a comprehensive insight into personal preparedness planning.





Content for this publication has been provided by Clallam County Fire District 3

## PENINSULA EMERGENCY PREPAREDNESS GUIDE

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# Introduction to personal preparedness

BY JIM BUCK, FORMER STATE REPRESENTATIVE, AND BLAINE ZECHENELLY, CLALLAM COUNTY FIRE DISTRICT 3 DISASTER PLANNER

This is the second in a series of preparedness guides created jointly with Clallam County Fire District 3 and the *Peninsula Daily News*. Our first guide focused on the threat of a Cascadia Subduction Zone (CSZ) Earthquake, expected impacts of the quake on Clallam and Jefferson counties and how community response teams plan to address potential issues.

While this was an excellent introduction to the impending challenges a Cascadia subduction event presents the community at large, we didn't go into much detail on how you can take action to prepare yourself and your family.

This is where the second issue of the Peninsula Emergency Preparedness Guide, "Let's Get Personal," picks up. This edition focuses on the personal

side of preparing for emergencies that is critical for your well-being during disasters.

It is important to realize that your preparation efforts are not just for a CSZ event.

Most people don't take emergency preparedness seriously for various reasons, but the reality is that living on the Olympic Peninsula puts you at great risk in the event of an earthquake, tsunami, wildfire or severe weather event.

With each of these hazards, it's not a question of "if" they will happen, but "when" they are likely to and how bad they will be.

It is your duty to yourself and your community to make sure you are personally prepared for the consequences of any kind of disaster that is likely to result in severe damage to the community as a whole.

For a copy of last year's guide, go to [bit.ly/PDN2018PEPG](http://bit.ly/PDN2018PEPG).

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## Emergency Preparedness at Olympic Medical Center

Olympic Medical Center works with a multitude of community, state and federal agencies to ensure our hospital and clinics are prepared to provide a timely and coordinated response in the event of a disaster or local emergency.

Our leadership, providers and staff participate in disaster planning and training so that we're as ready as we can be. We encourage you and your family to do the same.



# WHY DO I NEED TO PREPARE?

Disasters can occur when vulnerable communities are exposed to hazards



HAZARD



EXPOSURE



RISK

Hazards are natural events that can cause problems when they overlap with communities to cause loss, damage or death.

On the Olympic Peninsula, there are four basic categories of hazards that pose significant threat to the community.

These hazards include earthquakes, wildland/urban interface fires (wildfires), tsunamis and severe weather events.

Risk is the threat to vulnerable assets (people and the built environment) from exposure to hazards. It addresses the potential for damages, losses and casualties. In other words, risk measures the danger of hazards to our communities. The right combination of circumstances can turn a hazard into a disastrous or even catastrophic emergency.

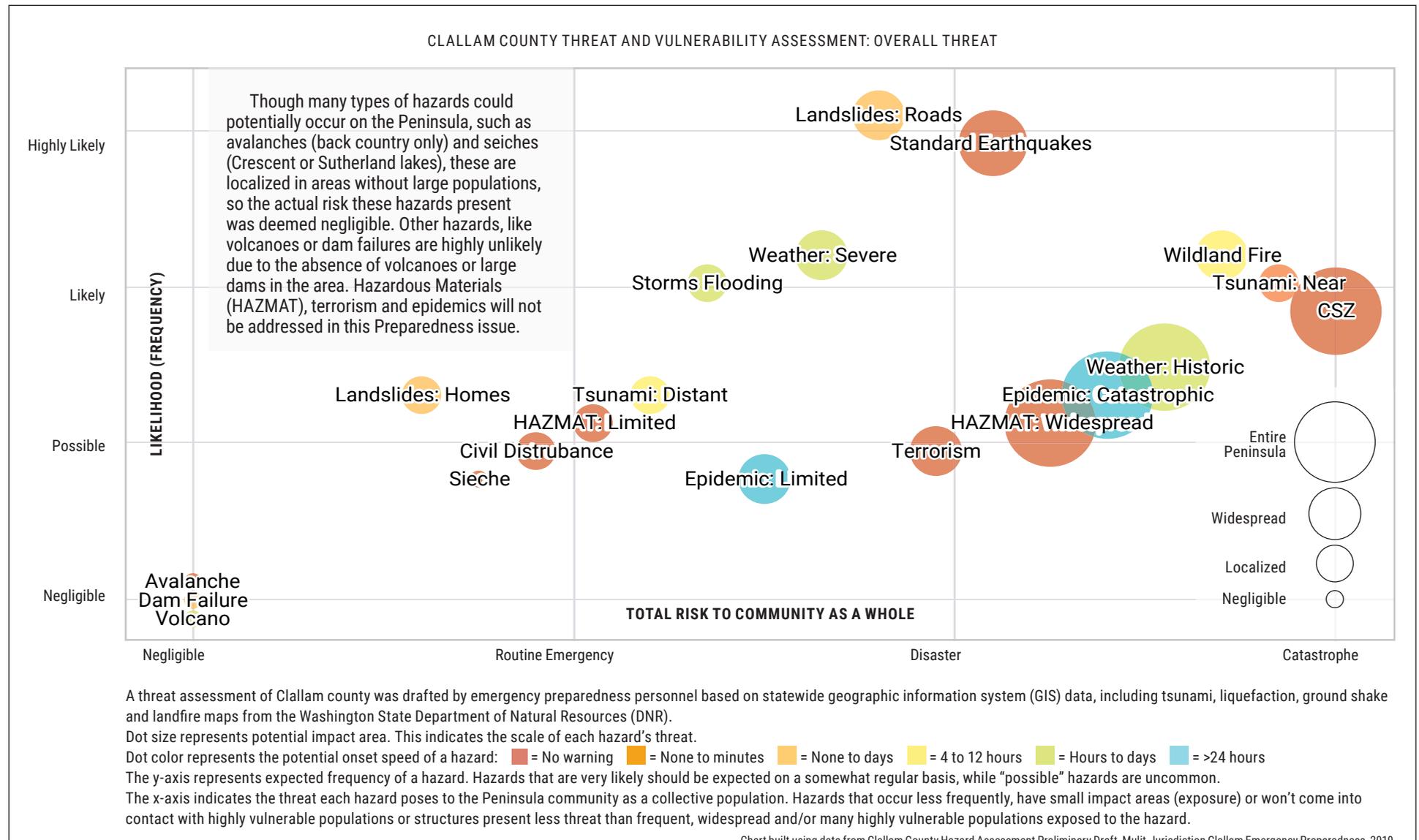
For example, wildfires have a strong base potential

for destruction and are fairly common in certain areas of the Peninsula, but risk to homes only happens if they are built where the wildfires are.

Further, risk to these homes can be mitigated by proper clearing of land around the homes, regular watering of landscaping, use of fire-resistant building materials and other fire-safety measures.

Severity of threat from each hazard is estimated using several factors: destructive potential of the hazard, whether communities are located where they can be exposed to a hazard event, vulnerability of the exposed communities, how often the hazard is expected to occur and how much warning people will have beforehand.

Being personally prepared will ensure that when a hazard becomes a disaster, you are not powerless to help yourself and those you care about.



# WHAT CAN I PREPARE FOR?

Prioritize your efforts based on potential hazards your home might encounter

The location of each water tank, power substation, communications tower, road or any other service structure determines its potential risk of being faced with any given hazard. This also is true of your home.

In a Clallam County-wide assessment, emergency preparedness leaders took the time to determine how much threat Peninsula utility and infrastructure service buildings were under based on their exposure to common hazards. Then the vulnerability of each building was analyzed for each threat, taking into consideration multiple factors.

These assessments include only the service facilities themselves — not routing infrastructure — such as pipes and cables.

The results of the study provided officials with a starting point for reducing risk throughout the Peninsula. In addition, the project gives people a “road map” to which communities are at greatest risk for localized damages and service interruptions.

Earthquakes are clearly anticipated to have the greatest impact on the community’s infrastructure. This is mostly due to the scale and severity of quakes — they are the only kind of hazard that will always impact the entire community — no town will be left untouched. However, depending on where you live, any of the other hazards may be a threat to you.

Earthquakes present the largest single threat to the Peninsula infrastructure; half of structures required to supply power, water, sewer and other

services are deemed at “very high” risk from a destructive earthquake (not to mention pipes and power grids).

The Dungeness River delta area north of Sequim is primarily on an alluvial plain, so the soil is loose, and it’s a low, flat area. These factors mean that, in the event of a Cascadia Subduction Zone (CSZ) earthquake, liquefaction will magnify shaking, and much of the area will be flooded by the ensuing tsunami.

The tsunami wave after a CSZ earthquake will hit all of downtown Port Angeles (which is below the expected crest height of the CSZ tsunami).

For more information on predicting tsunami height, see “Tsunami” on Page 21.

Tsunamis pose localized coastal risks. Fortunately, about 80 percent of utility facilities are not at risk of damage sufficient to interrupt services.

Risk from wildfires is greatest in the urban population centers immediately east of the Elwha River, in the rain shadow.

Port Angeles and Joyce each have large areas that are subject to landslides, but not near homes.

Overall, floods and landslides were found to have limited risk to Peninsula communities, mostly impacting roads instead of homes and other infrastructure, so they will not be directly addressed in this guide. (If landslides threaten your home, refer to [bit.ly/WashingtonEPG](http://bit.ly/WashingtonEPG) for detailed instructions.)

## CLALLAM COUNTY THREAT AND VULNERABILITY ASSESSMENT

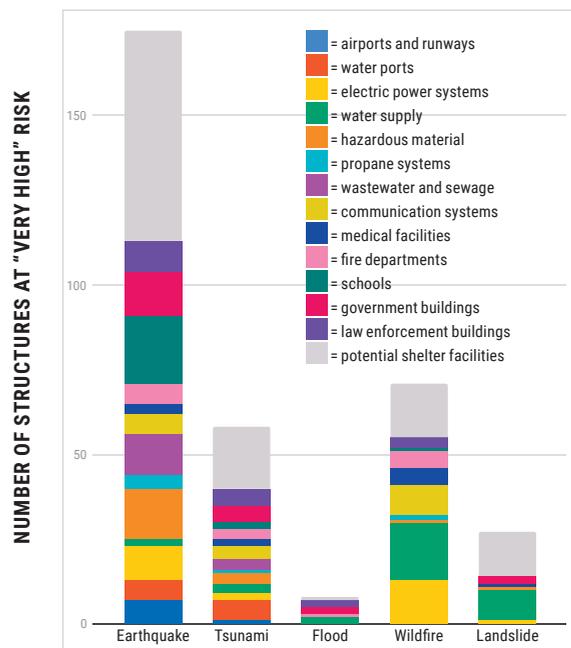
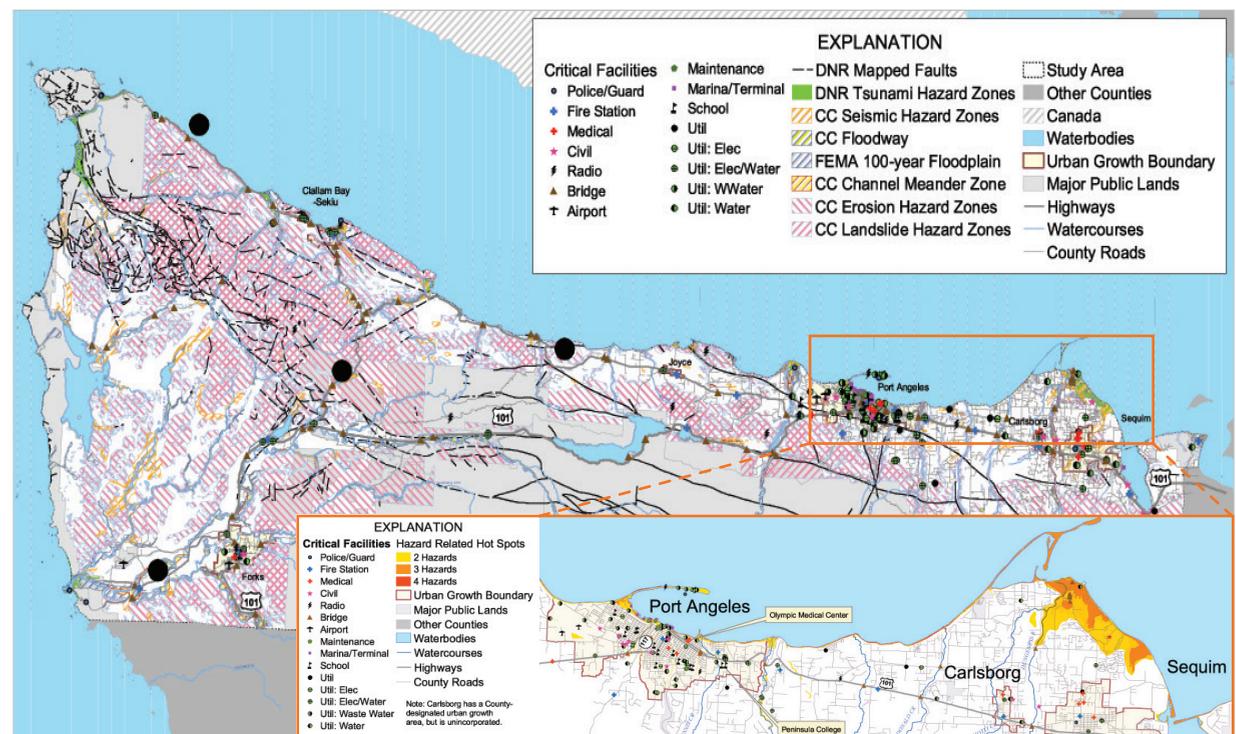


Chart built using data from Clallam County Hazard Assessment Preliminary Draft, Multi-Jurisdiction Clallam Emergency Preparedness, 2019

This chart shows the total number of infrastructure buildings at “very high” risk of receiving sufficient damage to interrupt services. Assessed risks are to buildings (not pipes, lines or other connecting elements). Facilities were evaluated by members of the Clallam County Emergency Management Department using location, construction, soil-site class, liquefaction, flood, landslide, tsunami and wildland fire maps from DNR.

## HAZARD MITIGATION PLAN: CRITICAL FACILITIES



Map from Hazard Mitigation Plan Preliminary Draft, Prepared by GeoEngineers, Inc. for Clallam County et al., November 2003

This map identifies multiple hazard zones in Clallam County: faults, tsunamis, seismic, floodways, 100-year floodplain, erosion and landslides. Threat from tsunamis exists primarily on low coastal areas — which also have liquefaction zones — in Port Angeles and Dungeness Valley. This means destruction of utility facilities in the overlapping areas will be significant.

The tsunami hazard zone was updated to 2019 predictions (from 20 feet to 40 feet). This adds several hundred homes to the zone near Sequim. This map represents much of the baseline data used to create the Clallam County Threat and Vulnerability Assessment. It presents a scientifically plausible, unified “ground truth” that maximizes detailed hazard planning.

Not addressed in the Clallam County Risk Assessment, though pervasive throughout the Peninsula, is the risk of extreme weather.

Wind, snow and heavy rains routinely knock down trees, damage homes, block roads and take out power lines.

Hood Canal gets a wind tunnel effect that intensifies potential damage from storms that come up the I-5 corridor. Port Angeles and Sequim occasionally get special storms that sweep in from Canada (cold landmass storms), which are responsible for high winds and sometimes significant snow levels.

Persistent rains on slopes without vegetation and in soft soils can initiate landslides that wash out roads. These conditions are especially common in areas prone to wildfires.

Recent events proved that residents need to be prepared for sudden loss of transportation infrastructure and power outages during storms.

During the historic snow storm in early February, 9-1-1 calls often came in for individuals who lived up long, hilly driveways. You ordinarily would have driven to the door of the home, but with the snow, you faced a rescue situation where four-wheel drive ambulances were required to reach people. In some cases, they had to be hand-carried to meet the ambulance.

It is worth noting that most ambulances in Clallam are two-wheel drive, and Eastern Clallam has only four four-wheel drive ambulances. This slowed one-hour rescue calls to up to four hours.

Regardless of which hazards your home is at risk for, you will likely face a wide variety of challenges in the event of a community-wide disaster.

#### Challenges of natural disasters

For the purposes of being personally prepared, utilities and services can be grouped into the challenges that going without them will present. Earthquakes, tsunamis, wildfires and severe weather share many of the same challenges, but tend to vary in size and severity of impact.

Short- or long-term, the challenges hazards present will at least inconvenience you, if not threaten your life:

- various health hazards  
*depends on disaster*
- road closures  
*supply chain interruption, "where you are is where you stay"*
- power outages  
*food storage and preparation, electric heat unavailable, adds stress and hassle to daily life*
- shelter damage or destruction  
*may not be able to shelter in place, physical injury potential, may lose access to stockpiles and supplies*
- contaminated or interrupted water supply  
*three days to live without water, clean water essential for disease prevention and hygiene*
- limited communication  
*may add to chaos, impedes reconnecting with loved ones, adds psychological stress*

All of these hazards have the potential to interrupt daily life, some catastrophically.

The best way to protect yourself and people you care about is to prepare beforehand. Learn the challenges of each disaster and how you can protect yourself and your home from harm.



EARTHQUAKES



TSUNAMIS



WILDFIRES



SEVERE WEATHER

FAMILY OWNED • FRIENDLY SERVICE • COMPETITIVE PRICES

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CARRY PISTOLS ON THE PENINSULA

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pre·par·ed·ness

prə'per(ə)dnas/  
noun

1. a state of readiness, especially for war.

Firearms. Rescue. Emergency. Disaster. Supplies.

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# Earthquakes

Western Washington has one of the highest earthquake hazard ratings in the nation.

An earthquake is a sudden and violent shaking of the ground, sometimes causing great destruction. An earthquake often triggers hazard events, including ground shaking, landslides, liquefaction (the strength and stiffness of the soil is reduced, causing it to behave like a liquid) and tsunamis. The level of destruction is relative to the size of an earthquake, measured using magnitude.

Earthquakes near the Peninsula are a result of movements within the earth's crust, usually along fault lines (cracks in the crust). Deeper cracks tend to cause bigger quakes. As a result, fault lines are the best indicator of where earthquakes can be expected to occur.

Shock waves tend to move perpendicular to the fault line, so tremors from a fault running east to west will be felt farthest away to the north and south of the epicenter. This is part of why Peninsula residents will likely not feel quakes that occur on the Olympia Fault; it's too far away and pointed the wrong direction. Conversely, an earthquake on the South Whidbey Island Fault will be felt at almost full strength on the Peninsula.

According to Pacific Northwest Seismic Network (PNSN), there is a 43 to 63 percent chance of an 8.0 to 9+ magnitude earthquake in the next 50 years from the Cascadia Subduction Zone (CSZ) Fault.

Although destruction from the potential CSZ event garners a lot of attention, smaller earthquakes occur regularly and can still destroy buildings, roads and other infrastructure. The most recent earthquake on the Peninsula was a 4.1 magnitude Nov. 19, 2018, at 3:09 a.m. in the middle of Olympic National Park, 29 miles south of Port Angeles.

Any earthquake over 7.0 magnitude is considered destructive. A large portion of the Peninsula infrastructure will suffer in the event of such an earthquake, including airports, facilities housing hazardous waste, propane sources and schools. Roads also will be severely impacted, which will interfere with emergency response times.

At least half of all sewer, communication, medical, fire, government and law service facilities are expected to survive. Water and electricity sources may suffer very little damage, but many of the water facilities (if they don't rupture) require power to work. Water pipes will likely break, making delivery of water a problem.

Wells may become unusable due to cracked casings, water table changes or loss of power.

Immediate safety hazards during an earthquake are from falling objects and getting trapped in any collapsed structures. There also are several secondary disaster risks, such as fires, tsunamis and landslides.

In the long-term, potential contamination and epidemic hazards resulting from broken sewage lines and a lack of clean water are possible in an earthquake scenario.

When the CSZ earthquake happens, estimates for re-establishing basic supply lines range from 30 days to six months, and extensive damage will have occurred to most local infrastructure.

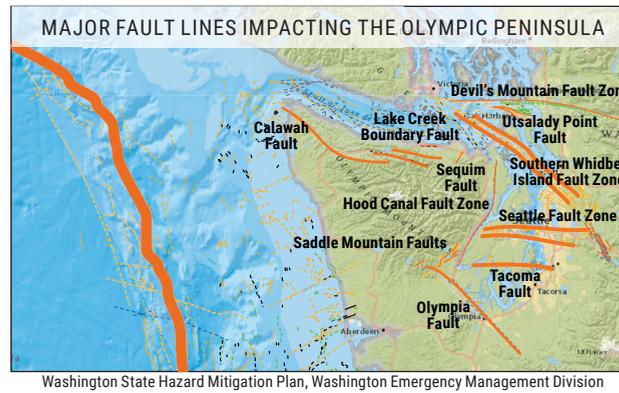
Sources: Centers for Disease Control and Prevention (CDC), PNSN, U.S. Geological Survey (USGS), Washington State Department of Natural Resources (DNR)

## PREDICTING EVENTS

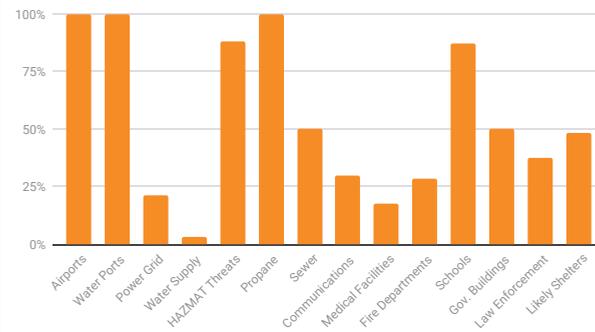
For the last 10,000 years, major earthquakes from the CSZ fault have occurred every 100 to 1,000 years. This number usually gets averaged to show that an 8+ magnitude earthquake happens approximately every 200 years, but it's not that consistent.

The last break along the entire CSZ fault line happened on Jan. 26, 1700, resulting in an earthquake that scientists estimate was between 8.0 and 9.0 magnitude. If we use the full range of historic recurrences, 300 years since the last full-fault event means the next one could happen today or in 700 years.

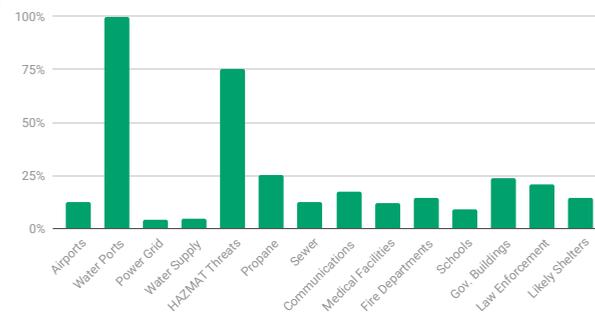
Statistics use probability to predict events, but anyone who has ever done the "flip a coin 100 times" math assignment knows this means something with a 50 percent chance could, on a flip-by-flip basis, happen several times in a row. Translated to our 50 percent chance of an earthquake in the next 50 years, there really isn't a fool-proof way to know whether we're going to see the next serious quake (or not) on any given day. The best thing you can do is make sure you're prepared before we lose the next coin toss.



PERCENTAGE OF INFRASTRUCTURE FACILITIES AT "VERY HIGH" RISK FROM DESTRUCTIVE (6+ MAG) EARTHQUAKE



PERCENTAGE OF INFRASTRUCTURE FACILITIES AT RISK FROM <40' TSUNAMI (AS IS LIKELY IN A CSZ EARTHQUAKE)



# Tsunamis

Routine tsunamis, the kind caused by events from far across the Pacific Ocean, do not present much overall threat to Olympic communities.

Tsunamis, also known as seismic sea waves, are a series of enormous waves created by an underwater disturbance, such as an earthquake, landslide, volcanic eruption or meteorite.

Due to steep shorelines on the Peninsula, even major tsunamis generated by nearby events like the CSZ quake, will impact a limited area of land in most towns.

Routine tsunamis only raise the sea level a couple feet — if the CSZ earthquake happens, the resulting tsunami wave will likely be around 30 feet tall in the Strait of Juan de Fuca, plus or minus factors relating to tide, distance from the coast and other environmental factors.

For a thorough discussion of tsunami height calculations and why a precise measurement isn't available, read "Tsunami wave height" by Jim Buck on Page 21.

The Washington coast has a strong history of setting global tsunami records, but the Peninsula has not seen any big tsunamis since the Cascadia earthquake on Jan. 26, 1700.

The Clallam County Threat Assessment indicates that few utility facilities are at direct risk from a tsunami. Hazardous material (HAZMAT) risk buildings are the exception. These are buildings that contain chemicals, fuel or any other substance that could cause harm to the community if the housing for these materials were damaged.

Risk from tsunamis on the Peninsula is highly limited by steep coastlines. With the exception of certain locations in the Dungeness Valley and Port Townsend, the waves expected from the CSZ tsunami will only go inland a short way.

In Port Angeles, Second Street is a good boundary for "guaranteed" tsunami safety (with the caveat that it's impossible to know the precise height of the waves before the event happens).

Tsunamis are one of the high casualty catastrophes — many people drown or get crushed by objects being pushed ahead of voluminous walls of water. Traumatic injuries also are a primary concern.

Injuries, such as broken limbs and head injuries, are caused by the physical impact of people being washed into debris such as houses, trees and other stationary items.

As the water recedes, the strong suction of debris being pulled into large populated areas can further cause injuries and undermine buildings and services.

After the rescue of survivors, the primary public health concerns are clean drinking water, food, shelter and medical care for injuries.

Long-term, flood waters can pose health risks such as contaminated water and food supplies. Loss of shelter leaves people vulnerable to insect exposure, cold, heat and other environmental hazards.

Think about the places you routinely spend time. If you work in a tsunami zone, have an evacuation plan memorized so you don't waste time getting to safety.

Recovery from tsunamis varies significantly and depends on the extent of the damage.

Sources: Centers for Disease Control and Prevention (CDC), National Oceanic and Atmospheric Administration (NOAA), Washington Emergency Management Division

## Wildfires

Communities on the Olympic Peninsula are often dispersed among the forests and wild areas, with frequently low population densities. As a result, fires along the Wildland-Urban Interface (WUI), areas where homes are built near or among lands prone to wildland fire, are becoming more frequent.

The WUI is a set of conditions that exist in nearly every community that make suburban populations vulnerable: the amount, type and distribution of vegetation; the flammability of the structures (homes, businesses, outbuildings, decks and fences) in the area and their proximity to fire-prone vegetation and other combustible structures; weather patterns and general climate conditions; topography (features of the land); hydrology (amount of water); average lot size and road construction.

This guide uses the term “wildfire” to represent a WUI fire.

The heat map at right shows the average interval of fire events on the Peninsula. A large number of residents — in the population centers in the rain shadow directly east of the Elwha River — are at risk of wildfires approximately every 50 to 200 years.

The Beaver Fire in 1985 was the largest fire since the Olympic National Park was established in 1938. It burned 1,170 acres and was ignited by an illegal campfire.

In the last 40 years, more wildfires on the Peninsula were started by humans than lightning; it is important that campers responsibly manage their fires to mitigate destruction to the community.

For Clallam County infrastructure facilities, little threat is present from wildfires. Most service types only have around 25 percent of facilities at any risk from wildfires. Communications services are most threatened by wildfires.

The primary health concern from wildfires is from smoke inhalation, which extends far beyond the physical fire, posing numerous risks to large portions of the community. This would include at-risk individuals, such as pregnant women, children, babies and people with respiratory issues.

Burns are a secondary concern because only individuals fighting the fire or who refuse to evacuate when instructed tend to be close enough for burns to occur.

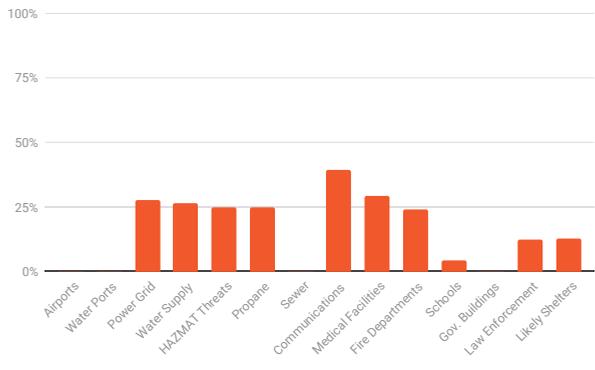
Due to the highly toxic nature of wildfires, long- and short-term air quality problems occur. Because smoke from these fires contain a mix of gases, fine particles from burning vegetation, building materials and/or household chemicals, normal dust masks are not sufficient to protect your lungs.

Routine wildfires take a lot of effort to put out, but their localized nature allows emergency services to respond promptly, and it’s usually possible to control them.

Large wildfires, like those that happen every 500 years and are part of the life cycle of a healthy forest, are a different scenario. These tend to spread uncontrollably and cause significant damage to entire communities before emergency services manage to subdue them or they go out naturally. In these instances, recovery can be prolonged and expensive.

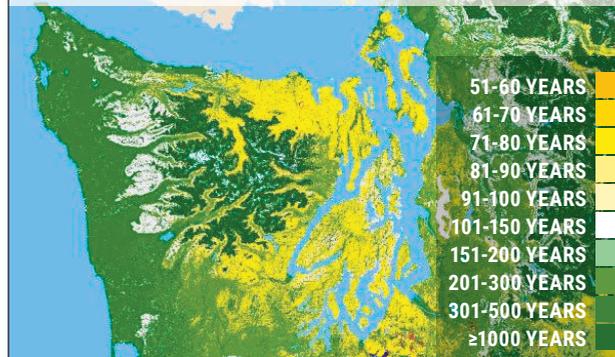
Sources: Centers for Disease Control and Prevention (CDC), National Oceanic and Atmospheric Administration (NOAA), National Park Service, Washington Emergency Management Division

## PERCENTAGE OF INFRASTRUCTURE FACILITIES AT RISK FROM WILDLAND/URBAN INTERFACE FIRE (WUI)



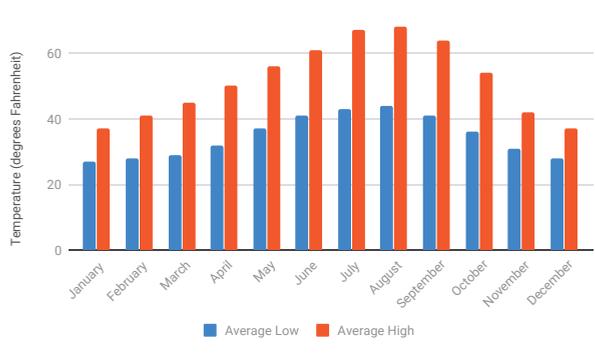
Clallam County Hazard Assessment Preliminary Draft, Clallam Emergency Preparedness

## WILDFIRE RECURRENCE INTERVAL (FREQUENCY)



Washington State Hazard Mitigation Plan, Washington Emergency Management Division

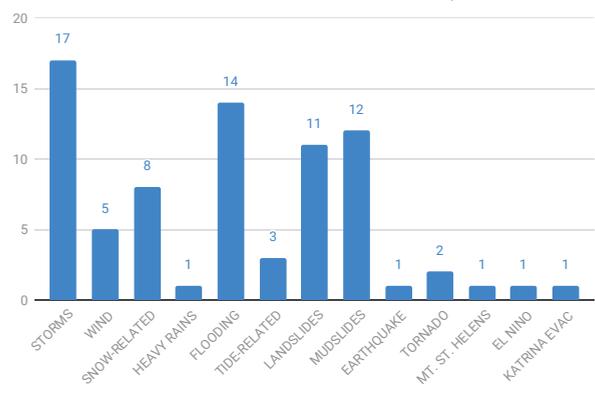
## MONTHLY AVERAGE DAILY TEMPERATURES IN SEQUIM



Graph made using data from National Oceanic and Atmospheric Administration (NOAA)

## FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) DISASTER DECLARATIONS DUE TO WEATHER SINCE 1953

(23 total; multiple hazards per event; excluded disasters: 1 Mount St. Helens, 1 earthquake; no disaster-level fires on the Peninsula since 1953)



Graph made using data from Disaster Declarations for Clallam and Jefferson counties, FEMA

## Severe Weather

Weather on the Peninsula is sporadic and unpredictable, often differing greatly from other parts of the state.

Severe weather is any aspect of the weather that poses risks to life, property or requires the intervention of authorities.

The Olympic Peninsula contains many microclimates within a small area and is prone to wind, rain and snow storms.

This is primarily due to a convergence of several factors, including the rain shadow effect on the east and increased rain from southwestern storms on the western slope of the mountains and the proximity of the Pacific ocean and the Strait of Juan de Fuca (cooler in summer, warmer in winter).

In general, populated areas of the Peninsula have hospitable weather. Residents don’t have to worry about tornados, hurricanes or dust storms.

On occasion, hurricane-force winds will occur on Hood Canal and in communities in the foothills. Lightning storms will come down out of the mountains rarely. Blizzards, snow and ice storms will blow in from Canada. Though this area is used to a lot of rain, precipitation routinely falls in flood-worthy quantities.

Temperatures on the Peninsula are consistent, with summer daily highs usually in the 70s (Fahrenheit, lowland populated areas) and winter daily lows in the 30s.

In the last 10 years, six disasters have been declared as a result of severe weather. Since 1953, 23 disasters have been declared in Clallam and Jefferson counties, mostly caused by floods and storms, including winter storms. Mudslides have been involved in 12 of the disaster declarations.

Winds have not caused disaster-level damage very often from a historic standpoint (five times). However, recent events demonstrate that reality doesn’t always care about probabilities and precedents.

Port Angeles experienced winds that cost an estimated \$400,000 in cleanup for public agencies, according to Jamye Wisecup, Clallam County emergency management coordinator. The winds also damaged several homes and knocked out power to most houses for at least 24 hours (more remote homes went without power for a week or longer) on Dec. 14, 2018. Damage was sufficient enough to declare a state of emergency.

The kind of severe weather pervasive on the Peninsula tends to topple trees, wash out roads and cause localized flooding and property damages. Due to its remote location, power and supply chains are interrupted for more than 8 hours on a somewhat regular basis.

Health hazards from severe storms mostly pertain to exposure, risks of drowning and blunt force trauma; the threat is frequently to structures and services, rather than people.

Disasters caused by weather are frequently routine. Peninsula communities are resilient and people frequently help one another during times of hardship, recognizing that a healthy community benefits everyone in the area.

Sources: Federal Emergency Management Agency (FEMA), NOAA, Washington Emergency Management Division

# WHY WON'T EMERGENCY SERVICES BE ENOUGH?

Be self-reliant in community-wide disasters to improve your survival odds

Did you lose power during the most recent wind storm? Did you get snowed in during the unprecedented snowfall just last February? If you didn't have any emergency preparedness supplies, enduring these challenges was probably much more difficult than it needed to be.

In a recent poll of *Peninsula Daily News* readers, 92 percent said they believe it is important to be prepared for disasters, even if they never happen — yet 42 percent of respondents have not prepared to the extent they would prefer.

The majority (57 percent) of under-prepared individuals said they couldn't prepare because of insufficient resources (time and/or money), but just over a third (36 percent) were unsure how to prepare (participants were allowed to select multiple responses).

This guide is designed to help with both problems. Advice has been tailored to be as realistic about costs as possible. By providing simple, thorough information and instructions, this resource aims to remove one more hurdle of personal preparation efforts.

Regardless of why you have not yet been able to prepare, prediction models and past statistics support the wisdom of staying prepared for potential disasters; emergency services on the Peninsula are not sufficient to meet community-wide disasters like the hazards described in the previous section.

Even if the event isn't as dramatic as a 9+ magnitude earthquake or a 40-foot tsunami, ordinary earthquakes, storms and wildfires commonly cause temporary road closures and can interrupt power, communications and medical and emergency services.

Peninsula residents rely on U.S. Highway 101

for transportation of food, consumer goods, building supplies, medications and fuel, plus community water source treatment. If a community-wide disaster occurs, non-life-threatening problems can take at least 12 hours for a response. Even life safety can take up to three days or more in severe circumstances, as in a major earthquake.

In poll responses, several individuals said they were stuck at home without power and/or water for three to seven days during the last storm.

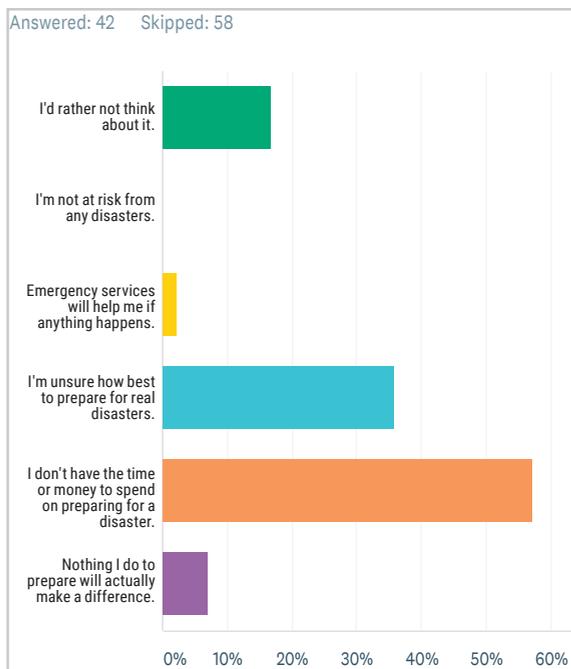
In Clallam County, any serious disaster will overwhelm authorities; there is only one emergency responder for every 180 people (local, state and federal law enforcement, fire, EMS) and only one-third of them are on duty at any moment. That means there will only be one responder on duty for every 540 people in Clallam county when a disaster hits.

If roads are compromised, mutual aid from other areas cannot reach us easily and internal resources can't be shifted to where they're needed. Practically everything needed to fix damages and work around missing utilities will be sold out quickly with no ability to resupply, like snow shovels and anti-ice products during the recent snowstorm.

In such situations, aside from being personally prepared, relying on your neighbors and working with localized efforts is the best way to help yourself.

Despite these cautions, if you have a life-threatening emergency during a disaster, you should still call 9-1-1 (assuming communications are working). Even if services are overwhelmed, it's important to notify authorities so resources can be responsibly allocated.

## IF YOU HAVE NOT PREPARED, WHY HAVEN'T YOU?



## TARGET RESPONSE AND RECOVERY TIMEFRAMES FOR EMERGENCY PERSONAL

<ul style="list-style-type: none"> <li>Initial Notification</li> <li>Emergency Declarations</li> <li>Activate OERS</li> <li>Succession/Authorities</li> </ul>	<ul style="list-style-type: none"> <li>Life Safety Missions</li> <li>Search and Rescue</li> <li>Medical Care</li> <li>Scene Stabilization</li> <li>Emergency Communications</li> </ul>	<ul style="list-style-type: none"> <li>Establish Contact with Affected Area</li> <li>Establish Lifeline Routes</li> <li>Assess Impacts/Damage</li> </ul>	<ul style="list-style-type: none"> <li>Establish Shelters</li> <li>Transport Displaced People</li> <li>Vulnerable Populations</li> <li>Medical Care at Shelters</li> <li>Mass Feeding</li> <li>Animal Care</li> </ul>	<ul style="list-style-type: none"> <li>Initiate Resource Requests</li> <li>Establish State Staging Areas</li> <li>Locate/Receive Supplies</li> <li>Points of Distribution</li> </ul>	<ul style="list-style-type: none"> <li>Identify Critical Service Outages</li> <li>Prioritize Emergency Repairs</li> <li>Contingency Plans</li> <li>Emergency Contracting</li> <li>DMORT Operations</li> </ul>	<ul style="list-style-type: none"> <li>Mobilize Heavy Equipment and Personnel</li> <li>Clear debris</li> <li>Repair Essential Systems</li> <li>JIC Operations</li> </ul>	<ul style="list-style-type: none"> <li>Receive Deferral Resources</li> <li>Expedite Out-of-Area Utility Repair Crews</li> <li>Volunteers and Donated Goods</li> <li>Track Federal Assets and Activation Levels</li> </ul>	<ul style="list-style-type: none"> <li>Community Planning Needs</li> <li>Identify Recovery Priorities</li> <li>Begin Restoring Community Services</li> <li>Identify Human Services Needs</li> <li>Begin Restoring Critical Systems</li> </ul>
←		Local Efforts		Outside Reliance		→		
<b>Notification, Activation and Authorities</b>	<b>Life Safety</b>	<b>Damage Assessment</b>	<b>Mass Care and Sheltering</b>	<b>Logistics and Resource Management</b>	<b>Planning and Prioritization</b>	<b>Emergency Repairs</b>	<b>Outside Assistance</b>	<b>Begin Recovery</b>
(0 - 30 min.)	(0 - 72 hours)	(1 - 72 hours)	(6 hours - 30+ days)	(12 hours - 30+ days)	(18 hours - 7 days)	(20 hours - 7 days)	(1 - 30+ days)	(8 - 180+ days)

This chart shows the goal response time for each phase of emergency response.

Source: Oregon Office of Emergency Management

# HOW DO I PREPARE?

## Follow these basic steps

- Know how to respond to each kind of hazard.

*Some advice has changed over the years. Even if you think you know, give it a quick scan; you'll probably see at least one new thing.*

- Prepare your home.

*Home adjustments and maintenance can be done beforehand for earthquakes, wildfires and winter weather. Specific recommendations can be found online in Washington's Preparedness Guide at [bit.ly/WashingtonEPG](http://bit.ly/WashingtonEPG)*

- Be self-reliant.

*Gather and store enough supplies for you, your family and pets for at least seven days. If you can (or slowly over time), increase your supplies to 30 days; response timelines show Peninsula residents should not discount the possibility of 30 days' isolation in severe disasters.*

- Join Map Your Neighborhood (MYN).

*Map Your Neighborhood advocates community relationships as the best resource in an emergency and has a 90-minute course to get people started. We challenge you to learn about three of your neighbors and write down their names, phone numbers, pets (and names), special needs and discuss emergency preparedness options. Give them your info, too. Agree to check on one another if a disaster occurs. More info on Page 18.*

- Expand your skills.

*Learn CPR/First Aid.*

*Join a Community Emergency Response Team (CERT), Volunteer in Police Service (VIPS), Search and Rescue or Community Policing team or other emergency-related education programs.*

*Get licensed and become a member of Amateur Radio Emergency Services (ARES).*

*Become a volunteer firefighter.*

# SURVIVING THE FIRST 3 MINUTES

## Memorize what you should do in each disaster scenario

### EARTHQUAKE

**Inside: DROP to the ground; take COVER by getting under a sturdy piece of furniture; and HOLD ON until the shaking stops.**

- If there isn't a table or desk near you, cover your face and head with your arms and crouch in an inside corner of the building.
- Do not use a doorway unless you know it is a load-bearing doorway and it is close to you. Many inside doorways are lightly constructed and do not offer protection.
- Do not exit a building during the shaking. Most injuries occur when people attempt to move to a different location inside the building or try to leave.

**Outside: Do not go inside. Move away from buildings, streetlights and utility wires.**

- Once in the open, stay put until the shaking stops. The greatest danger exists directly outside buildings, at exits and alongside exterior walls.

**If you are in a moving vehicle during an earthquake, stop as quickly as safety permits and stay in the vehicle.**

- Once the shaking stops, proceed carefully. Significant shaking is likely to damage roads, bridges and ramps. Many roads on the Peninsula rely on concrete culverts; many may collapse.

**If you are trapped under debris, do not light a match, move around or kick up dust.**

- Cover your mouth with a handkerchief or clothing. Tap on a pipe or wall so rescuers can locate you. Use a whistle if you have one. Shout only as a last resort. Shouting can cause you to inhale dangerous amounts of dust.

### TSUNAMI

**As soon as the shaking stops, get to high ground as quickly as you can.**

- Prepare to have to walk. *Expect roads and bridges to be damaged.*
- Do not take time to grab any belongings. *You cannot outrun a tsunami. Your only chance is leaving the shore before the first wave arrives.*
- If your home is in a tsunami zone, consider stocking supplies somewhere (like in a storage unit or a friend's home) you can get to easily from your home or place of work if bridges have been knocked out. *You won't have time to save preparedness supplies.*
- Have an evacuation plan for each place you routinely spend time that is near a tsunami zone. *This will help you act fast despite fear and shock.*

**FEEL a strong earthquake; SEE a sudden change in water level; HEAR a strange roar: RUN.**

- Do not wait for an official evacuation notice. *Quakes are evacuation-worthy if it is strong enough to knock down people or buildings or lasts longer than 20 seconds.*
- Do not return to low ground until you are told it's safe. *Tsunamis are a series of waves, not just one, and the first wave is not necessarily the largest. It may take eight hours to a few days for large waves to stop, and they can be up to an hour apart.*



Sources: CDC, Washington Emergency Management Division

## WILDFIRES

**If you're advised to evacuate, then do so immediately.**

- Wear protective clothing.
- Lock your home.
- Tell someone you left and where you are going.
- Choose a safe route away from fire hazards.  
*Watch for changes in the speed and direction of fire and smoke.*
- When a wildfire occurs, watch for news or health warnings about smoke.  
*Pay attention to local air quality reports and the US Air Quality Index, available online at [airnow.gov](http://airnow.gov).*

**While on foot:**

- Stay calm.
- Go to an area clear of vegetation.  
*A ditch or depression on level ground if possible.*
- Lie face down, cover up your body.  
*Wool blankets are best, but any natural material better than nothing.*

- Do not try to outrun a wildfire.  
*Fires move as fast as 20 mph.*
- Use your cellphone to advise officials — call 911.

**If you are told to stay indoors:**

- Stay indoors and keep your indoor air clean.
- Keep windows and doors closed.  
*If you have drafts, consider sealing them off.*
- Use an air filter.  
*Follow the manufacturer's instructions on filter replacement and where to place the device.*
- Do not add to indoor pollution.  
*Avoid anything that burns and don't vacuum or smoke.*
- Do not rely on dust masks for protection.  
*Paper "comfort" or "dust" masks commonly found at hardware stores trap only large particles, such as sawdust. These masks will not protect your lungs from smoke. More information on Page 15.*

## SEVERE WEATHER

**During a storm: Stay inside and shelter in an interior room, hallway, closet or cellar.**

- Avoid using electrical appliances.
- Stay tuned to the radio or other media for warnings, updates and advice.
- If outdoors: Seek immediate shelter.
- If driving: Turn on your hazard lights and pull over away from trees, power lines, drains and waterways.

**During flooding: Find safe shelter right away.**

- Do not walk, swim or drive through flood waters.  
*Just six inches of moving water can knock you down, and one foot of moving water can sweep your vehicle away.*
- Evacuate if told to do so.  
*If you have your preparedness kit ready, you are more likely to get to safety.*
- If you cannot escape the flood, get to the highest point you can, like a second story.

Sources: CDC, Washington Emergency Management Division



**Jim Rogers**  
Owner

# Doc Neeley's Guns

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## BEING PREPARED FOR POWER OUTAGES

Following are some tips for planning ahead for a power outage:

- Have an emergency charging option for your mobile devices. If you use your car to re-charge devices, do NOT keep the car running in a garage, or partially enclosed space, this can lead to carbon monoxide poisoning.
- Know where the manual release lever of your electric garage door opener is located and how to operate it.
- Purchase ice or freeze water-filled plastic containers to help keep food cold during a temporary power outage.
- Only use flashlights (LED bulbs provide the best light and longest life) for emergency lighting - candles can cause fires.
- Keep refrigerator and freezer doors closed. An unopened refrigerator will keep food cold for about 4 hours. A full freezer will keep the temperature for about 48 hours.
- Only use portable generators away from your home, NEVER run inside a home or garage, or connect it to your home's electrical system.
- *If you rely on anything that is battery-operated or power dependent like a medical device, you should determine a back-up plan.*



For more information visit:  
[www.clallampud.net/outages/](http://www.clallampud.net/outages/)

# MANAGING THE NEXT 3 HOURS

Pack this pull-out guide with your emergency kit so you know the next steps to safety

## EVACUATION PLANS

Develop plans and procedures for each hazard:

- Choose a safe place for your family to meet.
- Identify multiple evacuation routes.
- Prepare relocation site maps with directions.

*Primary relocation:* \_\_\_\_\_

*Address:* \_\_\_\_\_

*Phone:* \_\_\_\_\_

*Secondary relocation:* \_\_\_\_\_

*Address:* \_\_\_\_\_

*Phone:* \_\_\_\_\_

## UNDER-THE-BED BAG

These are the minimum emergency items you will need, especially if the disaster occurs while you're in bed. Don't turn on lights if you think there is damage to the electrical system.

- sturdy shoes
- light-weight clothing
- flashlight
- whistle
- leather work gloves
- N95/P100 Mask
- copies of documents
- this pull-out guide

Place all items inside a zipper seal bag and tie under your bed so you can find it immediately.

## Check the situation; assess dangers; act based on life and safety priorities.

- Use flashlights if you suspect damage. *Do not light matches or turn on electrical switches.*
- Provide first aid for anyone who needs it. *Call 9-1-1 for serious injuries.*
- Check water, gas and electric lines for damage. *If any are damaged, shut off the valves/breakers.*
- Find a safe place to shelter. *Depending on the nature and degree of the disaster, this may not be your home. Have one or two backup locations already planned, like a friend's house or public building you know will be open.*
- Turn on the radio. *Do not use your phone unless it is an emergency.*
- Clean up spilled medicines, leaks, gasoline and other flammable liquids immediately. *Store any clean-up rags outside in a well ventilated area.*
- Be prepared for slow responses from outside help. *Any serious disaster will overwhelm emergency personnel. Fix what you can in the meantime.*

## If you smell gas or suspect a leak:

- Open all the windows and doors.
- Shut off the main gas valve.
- Leave immediately.
- Report it to the authorities. *Use your cellphone or a neighbor's phone.*

## If you were in bed:

- Grab your under-the-bed emergency bag. *Dress in sturdy shoes and protective clothing.*

## Remember to:

- Confine or secure your pets. *Even well-behaved pets will run away in disasters.*
- Check on your neighbors, especially elderly or disabled persons.
- Make sure you have an adequate water supply in case service is cut off. *Assuming you don't already have a stock of water.*
- If you have to evacuate, remind everyone to grab their personal disaster kits. *It's easier to manage at a shelter or friend's house with your own stuff. If you have critical medicines or other special needs, this could be life-saving.*

## FIRST AID

You don't want to get caught without these basic items for injuries. You could save a life!

- sterile 4" adhesive bandages
- sterile 4" x 4" gauze pads
- 4" rolled gauze bandages
- large triangular bandages
- butterfly bandages
- adhesive tape
- scissors and tweezers
- moist towelettes
- bar soap
- latex gloves
- insect repellent
- sunscreen
- aspirin
- non-aspirin pain reliever
- antacid
- anti-diarrhea medication
- hydrogen peroxide to disinfect wounds
- antibiotic ointment to dress wounds
- safety pins
- needle & thread
- plastic bags
- sanitary pads
- instant cold packs
- pocket knife
- splinting materials

*Location:* \_\_\_\_\_

*Kit Appearance:* \_\_\_\_\_

## IMPORTANT DOCUMENTS

Have copies of important documents available during an emergency. Have access to necessary documents for completing application forms. This will help reduce delay and frustration. Store copies, not the originals, of each document.

- Gather property insurance papers. *home, auto, boat, etc.*
- Gather health insurance papers. *medical provider, dental provider, life (do not resuscitate, extended disability, etc.)*
- Take pictures of all your medication bottles. *pharmacies can give meds out if they have this*
- Gather financial papers *(bank, investment, retirement, etc.)*
- Gather wills, powers of attorney and estate papers
- Take photos or video of all valuables as documentation for insurance claims.

Store these copies and photos in a safe deposit box or in a zip-close bag in your Personal Disaster Kit. You also can save copies on a USB drive. Make one for yourself and your out-of-area contact.

*Location:* \_\_\_\_\_

*Package Appearance:* \_\_\_\_\_

## SHELTER SUPPLIES

Once critical items are taken care of, you will want to start cleanup. Make sure to use your sign.

- battery-operated AM radio, extra batteries
- flashlight
- simple can opener
- fire extinguisher
- toilet paper and wet wipes/towelettes
- paper cups, plates and plastic utensils
- “OK”/“HELP” sign
- liquid soap
- plastic sheeting (roll)
- duct tape/rope
- crow bar/hammer
- utility shut-off tool(s)
- caution tape
- heavy kitchen gloves
- heavy trash bags

Location: \_\_\_\_\_

Container Appearance: \_\_\_\_\_

## PERSONAL DISASTER KIT

You should prepare an emergency kit with at least a three-day supply of necessary items for each member of your family. Family members should be able to carry their own kit, so keep the kit light and manageable in case you must evacuate on foot. Be sure to include special items for personal needs.

- Maps showing safe routes and assembly areas.
- Nonperishable food. Choose whole grain cereals, nuts, energy bars and food with high liquid content. Avoid food that makes you thirsty.
- Water and a water purification kit or small filter.
- Cooking, eating utensils and simple can opener.
- Mini first-aid kit, prescriptions and contacts and/or glasses.

- Plastic bags for water storage and waste.
- Personal hygiene items: soap, toilet paper, hand sanitizer/towelettes, feminine products, regular or dry shampoo, towel, washcloth, toothbrush, toothpaste, etc.
- Sturdy shoes, extra clothes, gloves, hat, rain gear and sunglasses.
- Mylar blanket, sleeping bag and tent.
- Portable radio, head lamp/flashlight and extra batteries.
- Cellphone and charger and/or solar charger.
- Pocket knife, whistle, matches, duct tape and leather/latex gloves.
- Copies of important personal documents, contact numbers and photos of script bottles.

### Choosing a Respirator

Respirators certified by NIOSH will say “NIOSH Approved” and may have a certification number. However, NIOSH only certifies respirators against specific hazards.

A certification does not mean a respirator will protect against all hazards. NIOSH-certified respirators are supplied with approval labels that identify the hazards that the respirator is approved to protect against.

When buying a respirator, check the approval label to be sure that it has been certified against the hazards you want protection against. According to the Centers for Disease Control and Prevention (CDC), wildfire smoke requires an N95 or P100 respirator.

- What protection does the mask provide?
- Is there more than one size?
- How many times can it be used?

### NIOSH RESPIRATOR FILTER CLASSES

NIOSH classifies the filtering media in respirators based on its resistance to oil and its particle filtering efficiency. The resistance to oil is designated as “N”, “R”, or “P”. Particle filtering efficiency is designated “95”, “99”, or “99.97”.



**NOT RESISTANT TO OIL**

**N95, N99, N100**  
Filters at least 95%, 99%, or 99.97% of airborne particles

**SOMEWHAT RESISTANT TO OIL**

**R95, R99, R100**  
Filters at least 95%, 99%, or 99.97% of airborne particles

**STRONGLY RESISTANT TO OIL/OIL PROOF**

**P95, P99, P100**  
Filters at least 95%, 99%, or 99.97% of airborne particles

#### OILS

When products containing oil (like fuel, lubricating or hydraulic oils, solvents, paints, and pesticides) are sprayed or used in processes producing aerosols or droplets, the oil component may become airborne.

## Turning off utilities

When disaster strikes, it often affects one or more utility systems in our homes, so it is important you know how to turn off utilities at your home or business and when to do so.

Pre-planning and fast actions can save both lives and property. Larry Morris, safety manager of Public Utility District No 1 of Clallam County, strongly recommends the “Map Your Neighborhood” program done by the emergency management personnel (see Page 18).

**Learn these things before a disaster strikes!**

### ELECTRICITY

- Locate your main electrical panel and learn how to turn the electrical system power off.
- Make sure your breaker panel or fuse box is properly labeled so you know which switches cut power where.
- If a generator is used as a backup power supply, follow the manufacturer’s instructions (include a copy in your emergency kit) and connect lights and appliances directly to the generator – not the electrical system.
- House-wide generators must be inspected by a utility and state electrical inspector.
- For your safety, always shut off all the individual circuits before shutting off the main circuit breaker.
- If your house has fuses instead of breakers, keep extra fuses on hand in case one blows during an emergency. Never replace a fuse with one of higher amperage.

**Remember to stay a minimum of 30 feet away from downed power lines**

- Do not assume they are “dead.” Just because they are down, it doesn’t mean they are safe! Downed lines are deadly.

### WATER

- Learn how to turn off the water supply and clearly label the water shutoff valve, typically found adjacent to the home, near the hot water heater or at the water meter (usually near the street).
- Test the valve; ensure it can be fully turned off.
- Shut off the main valve, not individual valves throughout your home, to prevent contamination of the water and plumbing.
- It is wise to keep water off until you hear from the authorities that it is safe for drinking.

### SEWER

- Make sure the system is functioning as designed. This will keep the community water supplies safe from pathogens that could seep into the water table.
- To maintain the integrity of your septic system during a power outage, restrict the amount of water you put down the drain.  
*(Keep in mind – systems that use an electrical pump to force graywater into the drain field may fill up and back up into your home during prolonged power outages).*
- If your sewer or septic system is not safe to use, adopt the twin bucket system, explained on Page 25.

**If a special tool is needed to turn off a utility service, include it in your emergency toolbox.**

Turn off utilities when:

- Your home is flooding.
- You suspect gas is leaking, like after an earthquake.
- You have to evacuate for a wildfire.
- Refer to [bit.ly/WashingtonEPG](http://bit.ly/WashingtonEPG) for instructions.

# ENDURING THE NEXT 7 DAYS

Prepare thoroughly so you are safe and comfortable until normal services resume

## EVACUATION KIT

Emergency evacuations happen fast. Make sure you have necessary travel and shelter items consolidated, organized and in containers that are easy to move and handle, like roller totes or sturdy/handled bags.

- water and water purification methods for one week (enough for you and your family)  
*Find information about how much water you will need on Page 25, plus water purification methods on Page 22.*
- food for one week (for total family members)  
*One-week disaster meal plan on Page 26.*
- personal disaster kits for each person  
*List available on Page 15.*
- power-free kitchen items (at right)
- portable shelter items (at right)
- cash and/or traveler's checks, including change
- car kit  
*List on Page 17.*
- basic tools, such as pliers, flares and wrenches
- shelter items  
*Available on Page 15.*
- full first aid kit  
*Find on Page 14.*

*If you're a camper, many of these items are similar to what you might already have on hand. Try finding a way to make your camping gear do double duty, but make sure items are always restocked after recreational trips.*

Notes:

## PORTABLE SHELTER ITEMS

*Also known as camping gear. If you have to shelter away from your home, there is no guarantee a building will be available for you and your family. It's not easy to live out of a car, so having some basic supplies will make your life a lot easier while you wait for things return to normal.*

- tent(s) that will house the entire family  
*It's easier to find good locations for a few smaller tents than one big one. They also increase privacy.  
Tents with a rainfly/inner screen tent combo are excellent for fighting condensation.*
- extra stakes
- tarps and long ropes  
*for setting up covered cooking and seating areas, ground cloths under tents covering firewood and/or equipment*
- thermal bed rolls
- high quality sleeping bags  
*Temperatures drop at night, even in summer.*
- pillows
- wool blankets  
*Great for an extra level of protection between you and the ground and/or cold, damp air.*
- LED solar lanterns with method for hanging
- waterproof windbreaker with hood
- firestarter kit with matches in sealed container
- towels
- "Foxhole" shovel and toilet paper  
*for digging temporary latrines, if needed*

Location:

Appearance Notes:

## MOBILITY IMPAIRMENTS

- If you use a power wheelchair, have a lightweight manual chair available as backup.
- Show others how to operate your wheelchair.
- Purchase an extra battery for a power wheelchair or other battery-operated medical or assistive technology devices.
- Keep extra batteries on a trickle charger at all times.
- Consider keeping a patch kit or can of sealant for flat tires or an extra inner tube if the wheelchair/scooter is not puncture proof.
- Keep an extra cane or walker.
- If you use a seat cushion and must evacuate without your wheelchair, take it with you.

Location:

Appearance Notes:

## POWER-FREE KITCHEN

- high-quality cooler
- gallon water bottles (not milk jugs, preferably square in shape) filled with water and kept in your freezer

**Keep both your fridge and freezer mostly full to provide more cooling power when electricity goes out. If you don't need that much food, use nonperishable items from your pantry with high liquid contents and jugs filled with drinking water to take up space. The jugs will double as an excellent backup for clean water if your water supply is interrupted.**

- propane, camp stove, barbeque or grated fire pit and cast iron cooking items  
*with enough fuel to last a week*
- cooking utensils for open fire, including roasting sticks, oven mits, tongs and spatula
- popup table and seating
- garbage bags and water-free cleaning items
- seasonings (don't forget salt)
- staple goods (oil, butter, sugar, etc.)

Kit Notes:

## ENTERTAINMENT ITEMS

*Adults need recreation and a mental break in emergencies, especially for extended disaster that might occur on the Peninsula. Pick items that don't have a lot of little pieces (or substitute travel versions). Make sure to give yourself options that don't take much mental effort, since you will likely be exhausted, but still in need of a break.*

*Here are some suggestions:*

- deck of cards
- drawing supplies
- board games that take a lot of time and are enjoyable for the entire family
- entertainment media device (such as a small laptop) with backup batteries and solar charger  
*solid-state removable hard drives are small and can store hundreds of movies and shows*
- books or digital reader device with backup power options and charge cable
- sudoku, crossword or other time-consuming mental puzzle book
- sports items like a frisbee, football, baseball and gloves, etc. that don't need a large, level or paved surface

Kit Notes:

## SPECIALIZED NEEDS

### BABIES AND TODDLERS

Anyone who has had kids knows infants are hard to travel with under the best of circumstances.

- diaper changing items for one week  
*Consider including reusable cloth diaper items, in case the emergency lasts longer than expected and you run out of disposables.*
- items for teething
- food or breastfeeding items  
*Baby food pouches are more convenient than jars. Don't pack anything glass.*
- sippy cup
- identifying documents with allergies, medical conditions, name, birth date, recent photo, birthmarks and distinguishing features
- portable playpen and favorite toy(s)  
*stimulating, quiet toys are best.*
- blankets and other comfort items
- battery-operated nightlight

Location: \_\_\_\_\_

Kit Appearance: \_\_\_\_\_

### CHILDREN

Kids have a hard time adjusting to the instability and uncertainty of emergencies, especially when they see their parents stressed out.

- handheld electronic devices loaded with movies and games
- sheets and twine or a small pop-up tent  
*to decrease visual stimulation in a busy room or to provide instant privacy*
- headphones to decrease auditory distractions
- familiar music
- comfort snacks
- toys

Location: \_\_\_\_\_

Kit Appearance: \_\_\_\_\_

### Don't forget your pets.

In an emergency, your animals will need many of the same things you do: food, water, shelter, comfort and grooming items. Use the list provided on Page 20 for itemized assistance with preparing for animals.

Once you have gathered and packaged your pet supplies, write down where you stored it and what to look for (identifying markings of the container/bag). This will save time during a hectic evacuation or when you're disoriented or tired.

Location: \_\_\_\_\_

Kit Appearance: \_\_\_\_\_

## EAT SAFE FOOD

If your power goes out and you don't have a backup generator, keep your fridge and freezer closed.

In general, keep food grouped together to improve the time they will stay cold.

If you have one, transfer items to a high quality cooler and pack with ice jugs.

After a flood or power outage, some food may not be safe to eat and must be thrown out. More info on food expiration and storage on Page 23.

Throw out perishable food (such as meat, fish, eggs, milk and leftovers) in your refrigerator when the power has been off for 4 or more hours. Food in the freezer may keep up to two days. Thawed frozen food that still contains ice crystals can be refrozen or cooked. If not, throw it away.

Do the following with food and containers that may have had contact with flood or stormwater:

- Throw out these foods:
  - » Food with unusual odor, color or texture
  - » Cans or containers that are bulging, open or dented
  - » Food not in waterproof containers or cans
  - » Food canned at home
  - » Food packed in cardboard (juice/milk/formula)
  - » Food in containers with screw caps, snap lids, crimped caps, twist caps, flip- and snap-tops.

Clean and sanitize things that touch food in a four-step process:

1. Wash with soap and clean water.
2. Rinse with clean water.
3. Sanitize by immersing for 1 minute in a solution of 1 cup of chlorine bleach in 5 gallons of clean water.
4. Allow to air dry.

## MEDICAL CONCERNS

- At least a weeklong supply of prescription medicines, along with a list of all medications, dosage and any allergies.
- If you're on dialysis or are diabetic, see Page 24 for special instructions.
- Bring backup eye glasses.
- List of the style and serial number of medical devices. Include special instructions for operating your equipment if needed.  
*Copy user manuals and store in sealed plastic.*
- Copies of insurance and Medicare cards.  
*Also put in sealed plastic bag.*
- Contact info for doctors, relatives or friends who should be notified if something happens.

Location: \_\_\_\_\_

Kit Appearance: \_\_\_\_\_

## SANITATION

If your sewer or septic pipes are potentially cracked or broken do not use your toilets. Instead, adopt the "Twin Bucket" system. Instructions for how this method works are on Page 25.

- three 5-gallon buckets (potentially more)  
*Tight-fitting or gasket lids help with storage and smell issues.*
- trash/plastic bags
- a toilet seat and screened cover for one bucket  
*Adapt a regular one buy a camping toilet seat or use cheap pipe insulation or a pool noodle.*
- carbon-based material  
*such as sawdust, shredded paper, bark chips, mulch, dry leaves, grass clippings, peat moss or coir fiber.*

Location: \_\_\_\_\_

Appearance Notes: \_\_\_\_\_

## ACCESSIBILITY NEEDS

- Keep a Braille or deaf-blind communicating device in your emergency kit.
- For those who are deaf or hard of hearing, keep a weather radio with text display and a flashing alert, plus extra hearing-aid batteries, a text telephone (TTY) and extra pens and paper.
- For those with speech impairments, if you make use of an augmentative communications device or other assistive tech, plan how you will evacuate with the devices or how you will replace the equipment if lost or destroyed.
- Keep model information, where the equipment came from (Medicaid, private insurance, etc.), and plan how you will communicate with others if your equipment is not working.
- Include laminated cards with phrases and pictograms.

Location: \_\_\_\_\_

Appearance Notes: \_\_\_\_\_

## CAR KIT

- sharp pocket knife
- wool blankets
- and sharpener
- small first aid kit
- scissors
- another copy of personal documents
- sewing kit
- snack bars and water
- zipper ties and rope
- extra change of clothes and shoes
- car tool set
- maps

# EMERGENCY CONTACTS

Do your homework to make life easier during an emergency event

## FIRE & RESCUE

CLALLAM COUNTY FIRE DISTRICT 3  
**For questions regarding insert materials or for group presentations, contact us.**

- Office: 323 N. Fifth St., Sequim
- Contacts:  
 Dan Orr, 360-683-4242, ext. 114, [dorr@ccfd3.org](mailto:dorr@ccfd3.org)  
 Blaine Zechenelly, [bzechenelly@ccfd3.org](mailto:bzechenelly@ccfd3.org)

COMMUNITY EMERGENCY RESPONSE TEAM (CERT) AND MAP YOUR NEIGHBORHOOD (MYN)  
 For Eastern Clallam County, Joyce, Gardiner and West Discovery Bay

- Contact:  
 Cindy Zechenelly, [czechenelly@ccfd3.org](mailto:czechenelly@ccfd3.org)

## CLALLAM COUNTY

CLALLAM COUNTY EMERGENCY MANAGEMENT (CEM)

- 223 E. Fourth St., Suite 12, Port Angeles
- [clallam.net/emergencymanagement](http://clallam.net/emergencymanagement)
- [ccem@co.clallam.wa.us](mailto:ccem@co.clallam.wa.us)  
 Ron Cameron, 360-417-2544  
[rcameron@co.clallam.wa.us](mailto:rcameron@co.clallam.wa.us)  
 Jamye Wisecup, 360-417-2483  
[jwisecup@co.clallam.wa.us](mailto:jwisecup@co.clallam.wa.us)

Community Emergency Response Team (CERT)  
 For Western Clallam County (except Joyce) and Port Angeles, west of Deer Park

- Contact:  
 Jamye Wisecup, 360-417-2483  
[jwisecup@co.clallam.wa.us](mailto:jwisecup@co.clallam.wa.us)

Map Your Neighborhood (MYN)

- Contact:  
 Ann Chastain, 360-417-2483  
[achastain@co.clallam.wa.us](mailto:achastain@co.clallam.wa.us)

## OUT-OF-AREA CONTACT

After a disaster, everyone should send a text message or call your out-of-area contact and report in. Let them know where and how you are; they will let other family members know when they check in.

Sending a text message uses less band-width than calling, therefore you may have a better chance of getting through to your contact person and other family members.

Name: \_\_\_\_\_

City: \_\_\_\_\_

Phone: \_\_\_\_\_

Email: \_\_\_\_\_

Facebook Profile: \_\_\_\_\_

## UTILITY SERVICES

Poison Control: 1-800-222-1222

Electric Company: \_\_\_\_\_

Propane Company: \_\_\_\_\_

Police (non-emergency): \_\_\_\_\_

Fire (non-emergency): \_\_\_\_\_

Emergency Radio: KSQM 91.5 FM (E. Clallam)  
KONP 101.7 FM/101.3 FM/1450 AM (Clallam)

## JEFFERSON COUNTY

JEFFERSON COUNTY DEPARTMENT OF EMERGENCY MANAGEMENT  
 CERT and MYN for Jefferson (except Gardiner and West Discovery Bay)

- Office: 81 Elkins Road, Port Hadlock
- Phone: 360-385-9368
- Email: [jcdem@co.jefferson.wa.us](mailto:jcdem@co.jefferson.wa.us)
- Contact  
 Willie Bence, 360-344-9729  
[wbence@co.jefferson.wa.us](mailto:wbence@co.jefferson.wa.us)  
[jcdem@co.jefferson.wa.us](mailto:jcdem@co.jefferson.wa.us)  
[co.jefferson.wa.us/950/Dept-of-Emergency-Management](http://co.jefferson.wa.us/950/Dept-of-Emergency-Management)

## DAYCARE/SCHOOL

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_

Email: \_\_\_\_\_

## FAMILY WORK

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_

Email: \_\_\_\_\_

## CLOSEST RELATIVE

This should be a relative who lives nearest to you.

Name: \_\_\_\_\_

City: \_\_\_\_\_

Phone: \_\_\_\_\_

Email: \_\_\_\_\_

## MEDICAL/DOCTOR

Name: \_\_\_\_\_

Phone: \_\_\_\_\_

Other: \_\_\_\_\_

## INSURANCE AGENT NUMBERS

Home/Rental: \_\_\_\_\_

Car: \_\_\_\_\_

Medical: \_\_\_\_\_

Other: \_\_\_\_\_

## JOYCE PREPAREDNESS

JOYCE EMERGENCY PLANNING AND PREPAREDNESS (JEPP)

- Website: [jeppgroup.org](http://jeppgroup.org)
- Social Media Page: [facebook.com/JEPPgroup](https://www.facebook.com/JEPPgroup)
- Contact:  
 Jim Buck, 360-808-2105, [buckdj@olypen.org](mailto:buckdj@olypen.org)

# EMERGENCY DISCUSSION TOPICS

Learn more about special circumstances to be considered when you prepare for a disaster

## Pet Identification and Records

If you're separated from your pets, have printed documents ready in a sealable folder or zip-close bag:

- Pre-made flyers

- Pictures of each animal, including identifying markings
- Pictures of your pet(s) with family members
- Microchip information
- Veterinary information
- Contact and emergency contact information

- Vaccination or titer records
- Copies of city/county license registrations

*"Preparing for Pets" provided by Vicki Swann, owner of Fido Foodie and Canine Connected in Port Angeles.*

*Visit [fidofoodie.com](http://fidofoodie.com) to learn more.*

## Preparing for pets

### Animals also will need supplies

Last December's wind storm and the recent snowfall have made it clear Peninsula residents need to plan ahead.

The following guideline can help you provide for your pets in a disaster situation. Keep in mind you may not be able to shelter in place.

Use a buddy system. Pair up with a friend or neighbor or two and agree to support each other in case of an emergency where you find yourself separated from your animals. Familiarize yourself with their animals, any special needs and the location of their emergency supplies.

Approach this project creatively, and you may find you're better prepared for yourself, as well.

- Store your supplies in a lidded bin on wheels.
- Rotate prescriptions, food and water, and check other supplies for freshness.

### First Aid

Group the following items in labeled watertight containers or zip-close bags:

- First Aid/Tools
  - » 30-day supply of prescriptions
  - » Benadryl or apis mellifica for stings
  - » styptic powder/stick to stop bleeding
  - » antibiotic cream
  - » saline eye wash
  - » ear cleaner
  - » various sizes gauze
  - » cotton square
  - » elastic bandage
  - » bandage tape
  - » antiseptic wipes or moist towelettes
  - » cotton swabs
  - » nail clippers
  - » blunt nose scissors
  - » tweezers
  - » thermometer
  - » disposable gloves
  - » heat/cold packs

### Shelter and Daily Needs

Animals will feel the stress you're feeling and will need the same comforts you need.

- » harness or collar
- » tags with name and phone address
- » 6-foot leash
- » collapsible bowls
- » brush
- » toys
- » poo bags and/or kitty litter
- » towels/blankets
- » folding crate
- » small flashlight or head lamp
- » note-taking materials
- » extra zip-close bags
- » scentless castile soap
- » baking soda, vinegar, scrub sponge
- » glow necklaces for night visibility

### Food & Water for 2+ weeks

- Water
  - Pets need clean water, too. A good general guideline for dogs is one-half to one ounce per pound: one-quarter to one-half gallon for a 65-pound dog.*
- Canned food
  - Remember the can opener, reusable lids and spoons.*
- Dehydrated meals (normal kibbles)
  - Amazing shelf life without refrigeration, take less space, won't turn rancid. Remember extra bottled water.*
- Canned broth, sardines, tuna
  - To temp the stressed or picky eater*

## Talking to kids about disasters

It is imperative that you speak with your child before a disaster strikes. They, just like an adult, need to know what to expect, how to react and how to manage through the crisis.

During and especially after a disaster, your child will look to you to help them cope.

Know what to say to your child at the time of disaster:

Ask your child what they've already heard about a specific disaster (wildfires, tsunamis, earthquakes, etc.).

Share basic information, not graphic details.

Keep young children away from repetitive graphic images and sounds on TV, the radio and online.

Consider recording the news for older children so you can preview the contents and watch it with them.

Here are a few simple steps to help prepare your child for any disaster:

- Prepare children without overly alarming them unnecessarily. Use a calm voice. Explain how your family has prepared for events.
- Include the likelihood of events. Reassure them that by working together and staying calm, your family will be safe.
- Reassure them you are prepared as a family. If you have pets, it might help to mention that even the pets have backup supplies.
- Determine who your out-of-town contact will be. Decide who to contact after a disaster strikes and have your child memorize their contact information.
- Give your child a backpack for "their" stuff, like a blanket or toy, then add permanent info to the bag.

Have a family plan. This needs to be fairly comprehensive but broken down into simple items for children. Planning should include identification of hazards in the home, obtaining a first aid kit and CPR skills, establishing sufficient water and food supplies, storing emergency supplies, developing an evacuation plan and preparing for disaster at work and school. Practice, modify and maintain the plan.

Make sure to keep kids up to date. Pin a copy of the current guide in a visible family spot.

Agree on a meeting location in case you cannot get home. Discuss when it's appropriate to use the alternate and how to communicate where you are.

How do you get there? Make it a point to walk and drive alternative routes to the chosen location with your child. With walking, especially, your child is more likely to remember the route.

For young kids, play a game with your child. Ask them to point out landmarks and make up stories about them. You could even take pen and paper and make a "treasure map." Put the map and a copy of contact information sheet in their personal disaster kit, inside a waterproof bag or sleeve.

For older kids, have them record the route on a printed map and mark local emergency contact locations and names, as well.

More at [aap.org/disasters](http://aap.org/disasters) and [healthychildren.org](http://healthychildren.org).

# Tsunami wave height

## Why we can't predict how high it will be

BY JIM BUCK, FORMER STATE REPRESENTATIVE

*Note: Throughout this discussion, each wave and tide level is marked with a number (#) to show its corresponding point on the chart.*

Every time I present my program about the Cascadia Subduction Zone Earthquake and ensuing tsunami, someone demands to know how high the tsunami will be. Sometimes, when I can't answer the question, people get upset. After working on this emergency for 10 years, I now know why we can't tell you. Here is why.

The 2500-year L1 scenario, used by the Washington State Department of Natural Resources Division of Geology and Earth Resources, is considered the "worst-case" event used for calculating impacts of the Cascadia Subduction Zone (CSZ) tsunami. This scenario predicts the tsunami will be approximately 40 feet at the Washington Coast, around the Kalaloch area.

Common sense may conclude that if the wave is 40 feet there, it will be 40 feet everywhere. But that is not necessarily so. In fact, tsunami wave height can

vary significantly within a short distance.

Off-shore bottom conditions can increase or decrease the height of the wave. The shape of stream valleys and the direction the wave hits the shore can funnel the water into amazingly higher waves. The height of the normal tide when the tsunami hits and the influence of weather conditions also plays a role.

The L1 scenario indicates a 29-foot wave (at zero tide) is possible in the Strait of Juan de Fuca — a wave in the Strait will be 75 percent of that seen on the ocean beaches — assuming a baseline wave height of 30 about feet for Port Angeles (1).

However, tsunami wave height measures the crest of the wave only and should be added to the water level at the time the wave hits, not considered an absolute measurement.

Let's take an example from the 2016 tide table for Port Angeles. The table shows there is a minus 2.3 foot low tide (-2.3) at 8:57 a.m. on July 4, 2016 (2). Assuming the 30-foot tsunami hits at this time, the minus tide will lower the crest of the tsunami by 2.3 feet, yielding a 27.7-foot wave (3).

However, on July 5, 2016, at 2:37 a.m., 18 hours later at the same place in the City of Port Angeles, the same tide table shows a plus 7.3-foot high tide (4). Assuming the 30-foot tsunami hits at this time, the plus tide will raise the crest by 7.3 feet, yielding a 37.3-foot wave (5).

The same predicted tsunami height yields a 9.6-foot

difference in water level over a period of 18 hours, due only to the tide we normally would expect.

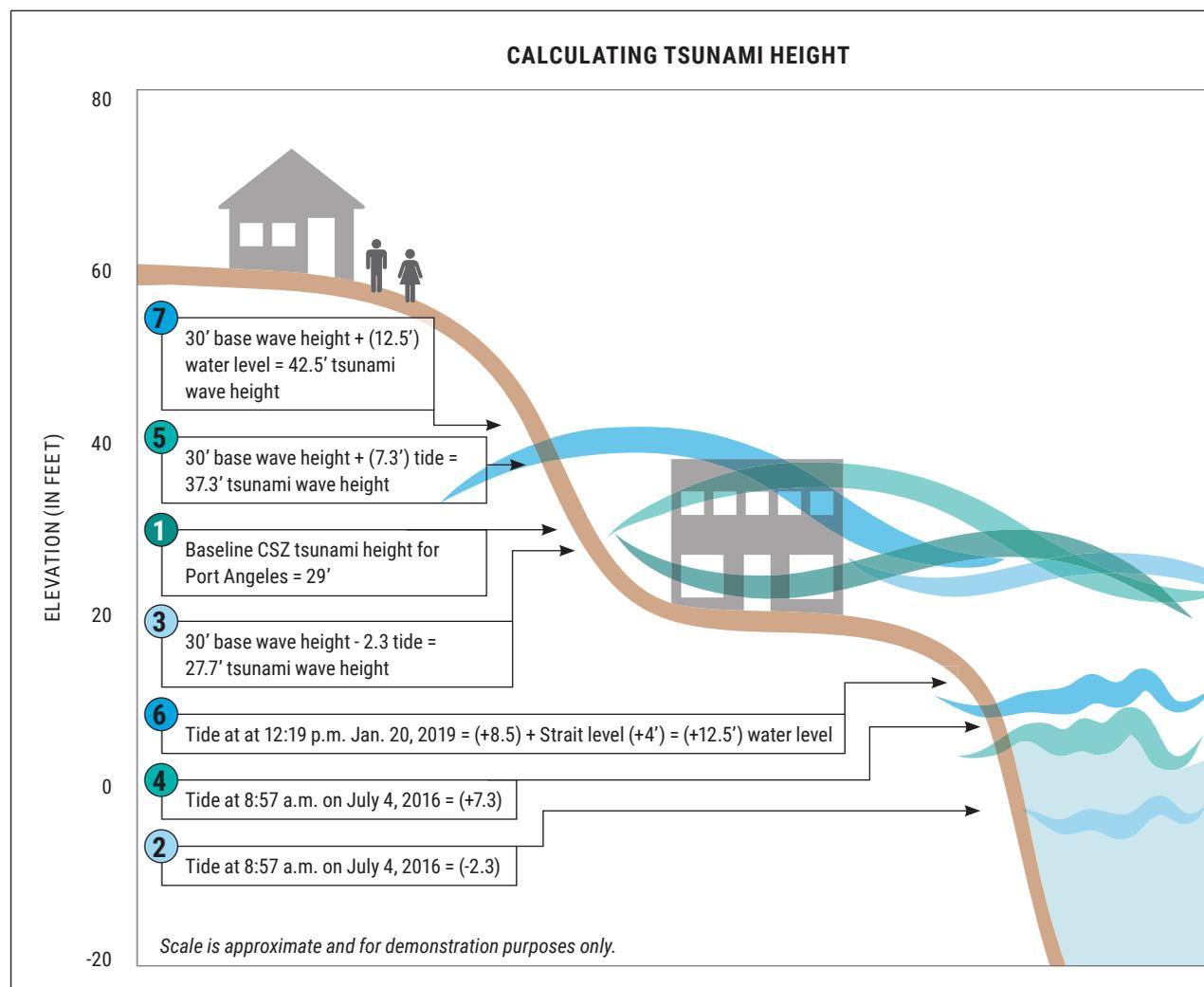
Now, let's assume we are looking at the same Port Angeles tide table for Jan. 20, 2019, at 12:19 p.m. and the tide is +8.5. Plus, the water level in the Strait is 4 feet above normal and a northeast wind is blowing that holds water in the harbor. A coastal flood warning is in effect. The tsunami arrives and we have 30 feet of water coming into a confined Port Angeles Harbor, where the tide is already 12.5 feet higher than the average sea level (6). It is coming at 60 mph.

Suddenly, the 30 foot tsunami is 42.5 feet high (7). If you and your friends evacuated to 40 feet, you might be standing in 2.5 feet of water. (Hopefully, you're still standing; six inches of water can knock you down).

Scientists can predict how much water might be coming from a tsunami, but the wave adds to the depth of the water already there. Since sea level in the Strait varies on a minute-by-minute basis, they can't predict the ultimate height of the tsunami without knowing the day, time, location and weather when the wave arrives.

The best option is to get to ground you know will stay dry, regardless of tide. This is not a time to expect precise calculations. Go to high ground and live.

Tsunamis are a series of waves, not just one; it may take 36 hours for the seas to calm down before it is safe to go back to the shore. Be prepared to shelter where you are for at least that time.



## ARE YOU AT RISK FROM THE CSZ TSUNAMI?

The Pacific Ocean areas of Clallam and Jefferson counties will have only about 15 minutes to evacuate after the CSZ, leaving only 10 minutes after the shaking (expected to last 4 to 5 minutes) stops. Strait of Juan de Fuca residents east of the Elwha River should have almost an hour to get to high ground. That may seem like a lot of time, but remember that you'll probably have to walk, as significant damage to roads and bridges is expected in the event of a catastrophic earthquake.

In Port Angeles, if you can get to Second Street, you will probably be safe. Most of Sequim will be untouched by the tsunami, but people out in the Dungeness delta area should evacuate toward high ground (50 feet or above) as fast as possible. In both Port Angeles and Sequim, expect significant road damage in the tsunami risk zones, because of the liquefaction zones caused by loose, silty soil. These areas have geologic attributes that will intensify damage from the quake beforehand.

Port Townsend has a few small areas that are at risk for tsunami damage on the eastern shores, but by the time the tsunami gets into the Puget Sound, water levels should diminish quickly.

New research shows even parts of Puget Sound may be at risk, such as in the hook of Hood Canal and Tacoma. In these scenarios, the waves run down the long narrow formations of the two locations and wash over road when they run out of room.

# Water purification

If you can't store enough water, make sure you can make more

Creating an emergency water supply for you and your family is a vital part of emergency preparations.

The Centers for Disease Control and Prevention (CDC) recommend storing at least 1 gallon of water per day for each person and each pet.

Store at least a seven-day supply of water for each person and each pet. If possible, store one month of water. This is one of the most crucial prep items.

Observe the expiration date on store-bought water, as water does expire. The plastic in the water bottles can begin to break down and the resulting chemicals will leech into the water. Replace non store-bought water every six months.

Store a bottle of unscented liquid household non concentrated chlorine bleach (the label should say it contains between 5-6 percent and 8.25 percent sodium hypochlorite) to disinfect your water. It's also a good option for general cleaning and sanitation use. Make sure the bleach has no added ingredients.

There are several ways to purify water if there is no bottled water (which is preferred in an emergency situation).

**IMPORTANT: Water contaminated with fuel or toxic chemicals will not be made safe by any method described here. Use bottled water or a different source of water if you know or suspect that your water might be contaminated with fuel or toxic chemicals.**

## Filters

Many portable water filters can remove disease-causing parasites such as cryptosporidium and giardia from drinking water.

The best advantage of filters over other purification methods is that they allow you to skip the pre-filter step. You can literally stick most straw filters in a mucky pond and get safe drinking water immediately.

Carefully read and follow the manufacturer's instructions for the water filter you intend to use.

**Commercial water filters, like those available at camping stores, are very effective options.**

They can effectively filter and purify water contaminated with microorganisms, toxic chemicals and heavy metals. Their effectiveness depends on design, condition and proper use.

- Home water filters: These are not suitable for backcountry survival. While some home water filters do advertise that they can remove bacteria, they generally have large pore sizes which allow bacteria, parasites and protozoa to get through. Only use these for treating hard water in your everyday life and do not rely on them for survival.
- Pump filters: These filters are often used while camping. They work by putting one end in the water source, and with a hand-operated pump, water is pulled up and through a filter cartridge. Clean water comes out the other end.
- Gravity filters: Gravity filters have become more popular recently, especially for family camping. To use one, you put water inside a pouch and then hang the pouch somewhere high up (like in a tree). Gravity forces the water down through a filter mechanism, and clean water comes out the lower side.
- Squeeze filter: Squeeze water filters have become a popular choice for survival filters. They work by putting water in a collection vessel (such as a pouch or a water bottle). You screw the filter mechanism onto the vessel, then physically squeeze the pouch, forcing the water through the filter so clean water comes out on the other side. Because there is no need for a pump mechanism, squeeze water filters are incredibly tiny and lightweight. They also are very simple to use and can be adapted. For example, you can fit them with straws to drink directly from the water source or attach them to a water bladder to make a gravity system.
- Straw filter: Straw water filters were invented by a company who wanted to give people in developing countries a cheap, easy way to treat water. Instead of filtering the water and drinking it, you just sip the water directly from the source. These do not give you a way to collect water, though. The only way to make straw-style survival filters work on the move is to put dirty water in a water bottle and use the straw to drink from it. But then you've got a contaminated water bottle, which could cause other issues. That said, they are cheap and very portable so they are worth considering.

For more information on water filters, visit [tinyurl.com/CDCwaterfilters](http://tinyurl.com/CDCwaterfilters).

If the water is cloudy

1. Filter it through a clean cloth, paper towel or coffee filter, or allow it to settle.
2. Draw off the clear water.
3. Proceed to sanitation process of your choice.

## Handwashing and Hygiene

Don't forget handwashing! Keeping hands clean during an emergency helps prevent the spread of germs. If your tap water is not safe to use, wash your hands with soap and water that has been made safe – always use sterile water.

Obtain hand sanitizer and create a handwashing station that conserves valuable clean water. Baby wipes are incredibly useful, too. They are good for washing up when you can't spare fresh water.

## Boiling

This is a sure method to kill disease-causing organisms in nonbottled water, including viruses, bacteria and parasites. You can improve the flat taste of boiled water by pouring it from one container to another and then allowing it to stand for a few hours, or by adding a pinch of salt to each quart or liter of boiled water.

1. Bring the clear water to a rolling boil for 1 minute. *At elevations above 6,500 feet, boil for 3 minutes.*
2. Let it cool.
3. Store the boiled water in cleaned, sanitized containers with tight covers, such as food grade water storage container. These can be found at surplus or camping supply stores.

## Disinfectants

If boiling is not possible, you often can make small quantities of filtered and settled water safer to drink by using a chemical disinfectant such as unscented household chlorine bleach.

Bleach starts to degrade after six months and retains almost no effectiveness after one year. For purification purposes, replace bleach every six months.

Disinfectants can kill most harmful or disease-causing viruses and bacteria and are not good at controlling more resistant organisms.

1. Follow the instructions for disinfecting drinking water that are written on the label of the bleach.
2. If the necessary instructions are not given, check the "Active Ingredient" part of the label to find the sodium hypochlorite percentage, and use the information in the following table as a guide. Typically, unscented household liquid chlorine bleach will be between 5-6 percent and 8.25 percent sodium hypochlorite, though concentrations vary.

**WATER** continued on Page 23 >>

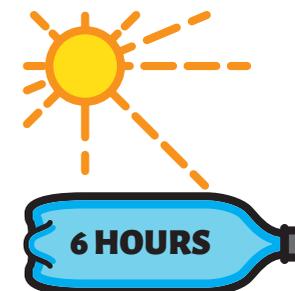
**CLOUDY WATER**



**INSTANT**



**1 MIN**



**6 HOURS**



**20 MIN**

3. If you have a 5-6 percent concentration: 2 drops of bleach per 1 quart/liter of water; 8 drops or less than one-eighth teaspoon per 1 gallon of water; 40 drops or one-half teaspoon per 5 gallons.
4. If you have 8.25 percent concentration: 2 drops of bleach per 1 quart/liter; 6 drops or less than one-eighth teaspoon per 1 gallon; 30 drops or one-third teaspoons per 5 gallons.

*If the water is cloudy, murky, colored or very cold, double the amount of bleach listed for water amount.*

5. Stir the mixture well.
6. Let stand for at least 30 minutes before you use it.
7. Store the disinfected water in clean, sanitized containers with tight covers.

*To disinfect water with tablets that contain chlorine or iodine, follow the manufacturer's instructions on the label or in the package.*

#### Distillation

1. Fill a pot halfway with water.
2. Tie a cup to the handle on the pot's lid so the cup will hang upright when the lid is placed upside down on the pot

*Make sure the cup is not dangling in the water.*

3. Boil water for 20 minutes.

*The water that drips from the lid into the cup is distilled. This method collects the vapor.*

For information on commercially bottled water and other beverages, visit [tinyurl.com/CDCbottledbeverages](http://tinyurl.com/CDCbottledbeverages).

#### Solar radiation

In an emergency situation, water can be disinfected with sunlight, but it only works on non-cloudy water.

**Water in a clear plastic bottle, preferably lying on a reflective surface (such as aluminum foil), will be safe to drink after a minimum of six hours in bright sunlight.**

#### Storing water

- When choosing a container to store water, food grade water storage containers are best. But you can use plastic containers with a screw-cap lid, such as two-liter soda pop bottles.
- Do not use glass bottles or old bleach bottles.
- Avoid using plastic milk jugs. They are difficult to seal tightly and become very brittle over time.
- After gathering containers, thoroughly rinse them and the lid with water, and fill it to the very top. For extra safety, thoroughly rinse the container with a weak solution of liquid chlorine bleach. Empty this solution out and fill the container up to the top with fresh water.
- Seal the container tightly, label it "drinking water," and date it.
- Store containers in a cool dark place (under the bed, in the corner of closets, behind the sofa).
- Rotate water every six months.

Refer to Page 25 for more information on how much water you will need to store. You might be surprised just how much water is needed to support a family for one week.

#### How long does food keep?

"Sell by" is the date used to ensure quality for a period of time after you buy it.

"Best by" and "use by" are terms that tell you when to eat (or freeze) a product for the best quality. A jar of salsa may not taste as fresh and tangy as it's supposed to, for example, and crackers may be soft instead of crisp after those dates.

"Most consumers don't realize that they're really more about food quality than food safety," said Dr. Robert Gravani, a professor of food science at Cornell University.

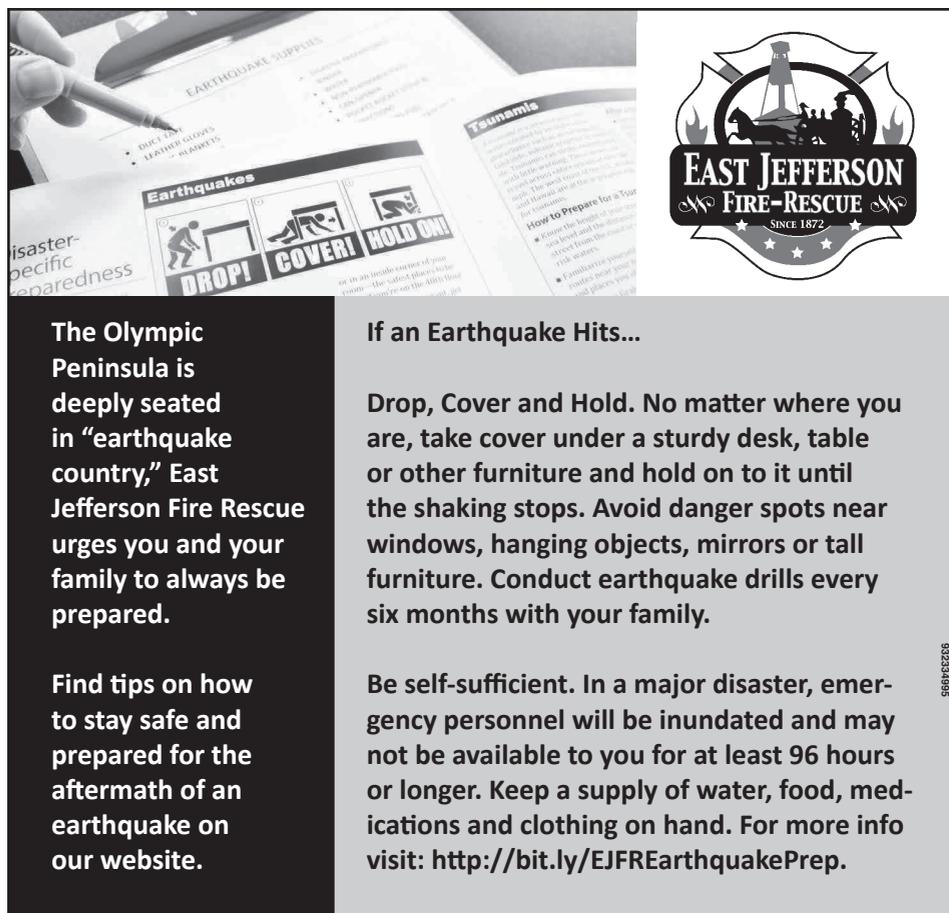
Food may not be at its peak after those dates, but such factors as staleness and color change are quality problems, not safety concerns.

"The truth is that in many cases, food on a shelf—or even in a fridge—past the date on the package is fine to eat. That 'expired food' doesn't have to be thrown away."

Most commercially packaged freeze dried/dehydrated foods can last 30 years or longer.

Number 10 cans can potentially keep food safe to eat far longer than the expiration date indicates. They should be shrink wrapped to minimize contact with moisture. Cans need to be stored so they do not come in contact with the outer walls to avoid condensation due to heat transfer from the steel container.

Keep food stores in durable containers in a cool, dry, dark area where they are not directly on the floor.



**EARTHQUAKE SUPPLIES**

**Earthquakes**

**DROP! COVER! HOLD ON!**

**East Jefferson FIRE-RESCUE**  
SINCE 1872

**The Olympic Peninsula is deeply seated in "earthquake country," East Jefferson Fire Rescue urges you and your family to always be prepared.**

**Find tips on how to stay safe and prepared for the aftermath of an earthquake on our website.**

**If an Earthquake Hits...**

**Drop, Cover and Hold.** No matter where you are, take cover under a sturdy desk, table or other furniture and hold on to it until the shaking stops. Avoid danger spots near windows, hanging objects, mirrors or tall furniture. Conduct earthquake drills every six months with your family.

**Be self-sufficient.** In a major disaster, emergency personnel will be inundated and may not be available to you for at least 96 hours or longer. Keep a supply of water, food, medications and clothing on hand. For more info visit: <http://bit.ly/EJFREarthquakePrep>.

93234995



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ourfirstfed.com > 800.800.1577

Member FDIC  
EQUAL HOUSING LENDER

# Emergency dialysis diet

## Follow this advice if you can't get dialysis

Dialysis takes some of the water and waste out of your blood. Waste and water build up between treatments. When you get three treatments a week, this buildup should not cause a problem. When you can't get treatment, the extra water and waste in your body can cause problems.

You will need to follow a special, strict diet to limit buildup of water, protein wastes and potassium when you can't get your treatments.

This diet does not take the place of dialysis, but you can reduce the waste that builds up in your blood if you follow the plan and change what you eat. This may save your life. Review the plan with your facility dietitian to see if you need to make changes based on your needs. Ask questions before an emergency.

If you are on home dialysis — either home hemodialysis or peritoneal dialysis — and can't do your treatments, this diet may apply to you, too.

In an emergency or disaster situation, you should do everything you can to get your regular dialysis treatments. In any emergency, follow the 3-Day Emergency Diet Plan until you can get treatment. You should always try to get dialysis within three days of your last treatment.

Go to [bit.ly/DialysisDiet](http://bit.ly/DialysisDiet) for the full menu.

### Drinks

- Water is the best choice to drink.
- Avoid sport drinks and beverages with phosphates.

### Tips

- Use fresh foods first if you have them.
- You can freeze bread three months in a plastic bag.
- If you have diabetes, you may wish to avoid the sweets in this diet plan.



• SKILLED NURSING  
• PT, OT, & SPEECH THERAPY  
• CARDIAC CARE  
• SHORT-TERM REHAB

**BE SURE TO LOOK FOR THIS SIGN!**

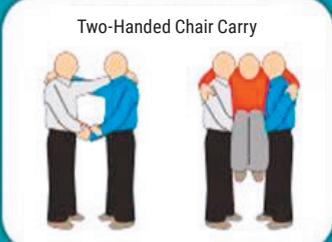
*Your Life. Our Commitment.*

1000 S. 5th Ave Sequim, WA  
AvamereOlympicCareOfSequim.com — 360-582-3900

3-DAY EMERGENCY DIET ITEMS FOR DIALYSIS	
WHAT TO BUY	HOW MUCH TO BUY
<b>DRINKS</b>	
Distilled or bottled water	1 to 2 gallons
Dry milk OR evaporated milk	3 packages of dry milk OR 4 cans of evaporated milk (8 ounces each)
Cranberry, apple, or grape juice	6 cans or boxes (4 ounces each)
<b>FOOD</b>	
Cereal. <b>No bran, granola, or cereal with dried fruit or nuts.</b>	6 single-serving boxes (or 1 box)
Fruit, or "fruit cups," with pears, peaches, mandarin oranges, mixed fruit, applesauce, or pineapple packed in water or juice. <b>No heavy syrup, raisins, or dried fruit.</b>	12 cans (4 ounces each)
Low sodium asparagus, carrots, green beans, peas, corn, yellow squash or wax beans. <b>No dried beans such as pinto, navy, black, ranch style or kidney. No potatoes or tomatoes.</b>	6 cans (8 ounces each)
Low sodium or No-salt added Tuna, Crab, Chicken, Salmon, or Turkey	6 cans (3 ounces or 4 ounces each)
Unsalted peanut butter or almond butter	1 jar
Mayonnaise	3 small jars (or 8 to 12 single-serve foil wrapped packs)
Jelly (if you don't have diabetes)	1 small jar
Sugar-free Jelly (if you have diabetes)	1 small jar
Vanilla wafers, Graham crackers, or Plain unsalted crackers	1 box
Sugar-free candy, like sourballs, hard candy,	1 package
<b>2   3 Day Emergency Renal Diet, August 2015</b>	
<b>FOOD THAT WILL SPOIL</b>	
This should be rotated before its expiration date.	
White bread	1 loaf
<b>NOTE:</b>	
If you have diabetes, you may wish to avoid the following foods. Speak to your dietitian.	
Sourball candy, hard candy, jelly beans, or mints	1 package
Honey	1 small jar
White sugar	Small box (or box of sugar packets)
Marshmallows (optional)	1 bag

## Evacuation Procedures

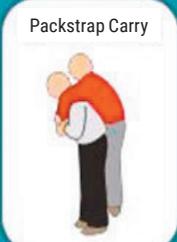
### For People With Disabilities



Two-Handed Chair Carry



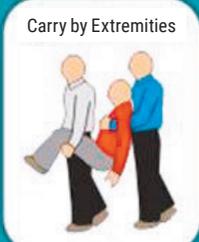
Chair Carry



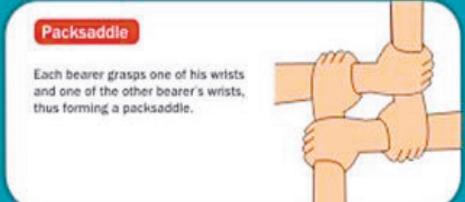
Packstrap Carry



Walking Assist

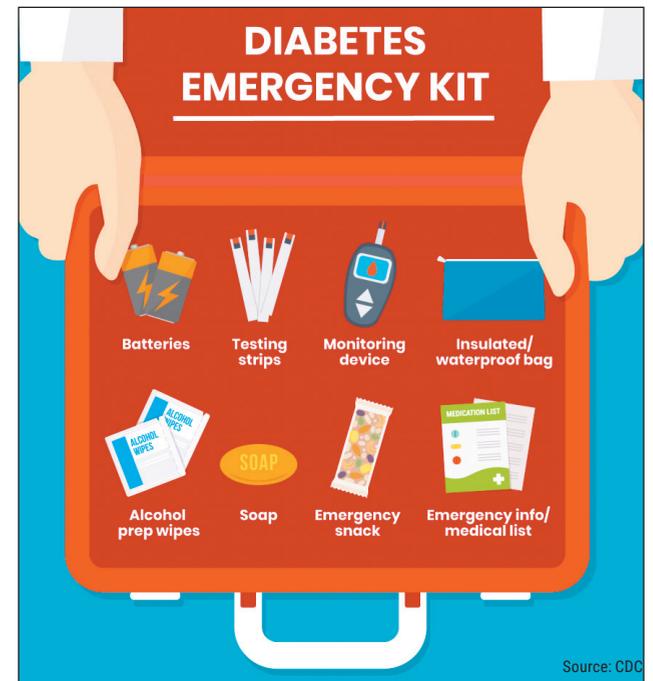


Carry by Extremities



**Packsaddle**

Each bearer grasps one of his wrists and one of the other bearer's wrists, thus forming a packsaddle.



## Storing insulin for disasters

### Insulin for injection does not keep well

Insulin from various manufacturers is often made available to patients in an emergency and may be different from a patient's usual insulin. After a disaster, patients in the affected area may not have access to refrigeration.

According to the product labels from all three U.S. insulin manufacturers, it is recommended that insulin be stored in a refrigerator at approximately 36 to 46 degrees Fahrenheit. Unopened and stored in this manner, these products maintain potency until the expiration date on the package.

Insulin products contained in vials or cartridges supplied by the manufacturers (opened or unopened) may be left unrefrigerated at a temperature between 59 F and 86 F for up to 28 days and continue to work.

However, an insulin product that has been altered for the purpose of dilution or by removal from the manufacturer's original vial should be discarded within two weeks.

**Note: Insulin loses some effectiveness when exposed to extreme temperatures. The longer the exposure to extreme temperatures, the less effective the insulin becomes. This can result in loss of blood glucose control over time. Under emergency conditions, you might still need to use insulin that has been stored above 86 F.**

You should try to keep insulin as cool as possible. If you are using ice, avoid freezing the insulin. Do not use insulin that has been frozen. Keep insulin away from direct heat and out of direct sunlight. When properly stored insulin becomes available again, the insulin vials that have been exposed to these extreme conditions should be discarded and replaced as soon as possible.

# Sanitation for your family

## Earthquakes often leave waste pipes unusable

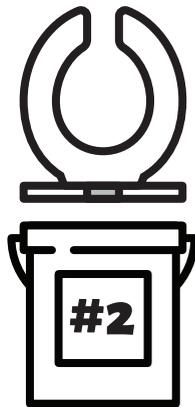
Sanitation is exceptionally important in the event of a disaster. Without proper sanitation, the biggest threat you and your family will face is disease.

Sanitation issues are most common in earthquake scenarios because sewer lines and septic systems are vulnerable to the intense shaking.

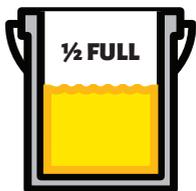
Start by building your emergency toilet. Separation of pee and poo is key to protecting yourself from unnecessary illnesses.



**TIGHT-FITTING LID & TOILET SEAT**



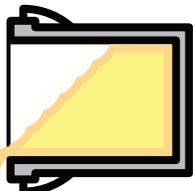
**#2**



**DILUTE**

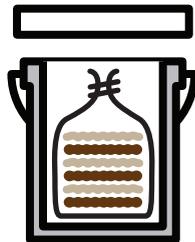
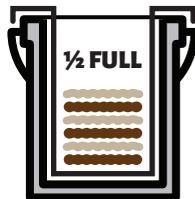


**DILUTE**



**SEPARATE**

**LINE & SPRINKLE WITH EACH USE**



**STORE UNTIL DISPOSAL INSTRUCTIONS ARE RECEIVED**



Pee is much more voluminous than poo but also is not a major health concern. Your poo, however, is where pathogens are found.

Separating pee from poo will drastically reduce odors and ensure waste can be managed efficiently. Depending on your household size, multiple buckets might be needed.

Gather your supplies. You will need the following items:

- three 5-gallon buckets (potentially more) with *tight-fitting lids*
- trash/plastic bags
- a toilet seat and a screened cover for one bucket *adapt a regular one buy a camping toilet seat or use cheap pipe insulation or a pool noodle*
- carbon-based material *such as sawdust, shredded paper, bark chips, mulch, dry leaves, grass clippings, peat moss or coir fiber*

Label your buckets “#1” and “#2” or “pee” and “poo.” The third bucket (or a lidded trash can) will be used for menstrual products, if applicable to your family.

Store the buckets and seat with carbon materials beside them until needed.

When using the buckets, try not to mix the pee and poo. Combining the two significantly increases odor.

All toilet paper should be placed in the poo bucket.

Separate used menstrual products (burn them after each cycle for long-term disposal).

Remove the seat, and close the lid tightly on the bucket when finished.

After using the poo bucket, sprinkle as much carbon material as is needed to evenly cover the surface of the poo with a thin layer. This reduces smell and deters flies. Either leave the seat on the poo bucket or cover the bucket with a cloth or screen. This allows the bucket to ventilate but doesn't invite pests.

When disposing the contents of the buckets, the pee bucket will fill up faster than the poo bucket. When the pee bucket is about half capacity, dilute the pee with water and pour it on a designated permeable surface, such as grass or rock.

If wastewater systems are down for only a few weeks, the safest storage for poo is in the bucket. Store full poo buckets in a secure location away from food and water, children, pets and pests.

For women, menstruation is something they need to address during natural disasters. These situations can leave women and girls without access to clean and safe sanitary products. As a result, women and girls are forced to use improvised methods to manage their periods, including torn pieces of clothing and rags.

Along with ensuring you have pads and tampons in your emergency kit, extra well-fitted underwear is encouraged. Consider reusable menstrual cups that can be cleaned and sanitized between periods to cut down on bulk and improve long-term independence.

On the Peninsula, groups are working out the best way for sanitary product disposal.

“Cooperative communal disposal and eventual pit disposal may have to become the default solution for an extended period of time,” said Judy Harvey of the Joyce Emergency Planning and Preparation Group.

For online information on emergency preparedness and response in Clallam County, visit [bit.ly/ClallamEPG](http://bit.ly/ClallamEPG).

In Jefferson County, visit [bit.ly/JeffersonEPG](http://bit.ly/JeffersonEPG).

## Calculating Water Needs

It's amazing how quickly supplies for seven days add up, even when it's just for a couple people.

Survival guidelines suggest about 1.1 gallons of water per person per day are needed; however, in order to cook and sanitize food preparation equipment, more is needed. The Joyce Emergency Planning and Preparation (JEPP) Mobile Emergency Water Supply Project by Terry Barnett and Jim Buck proceeded with the assumption that about 1.5 gallons per day would be sufficient to support ongoing needs of sheltering persons.

Philadelphia officials state that the average person uses 101.5 gallons of water per day during routine activities. They estimate water uses include:

- full bathtub equals 36 gallons
- three gallons per flush times six to eight flushes per day equals 18 to 24 gallons
- two gallon per minute with a standard shower times 10 minutes shower equals 20 gallons
- hygiene (washing face, brushing teeth) equals two and a half gallons

Compared to total gallons of water used per day by the average person, one and one-tenth gallons of drinking water required to survive seems inconsequential; however, when you're in a survival situation, clean water can become very scarce. So, unless you have a 1,400-gallon tank of potable water ready to go, you must consider what you're willing to go without.

Below are calculations for two people to be able to drink and perform food preparations for seven days, using the bare minimum, cited by JEPP. In an analysis of estimated costs for generic store-bought water, it was found that gallon jugs are cheapest.

## WATER USE AND COST CALCULATIONS

GALLONS	USE
1.1	gallons/day/person base use. CDC recommends at least 1 gallon per day. Joyce Emergency Planning and Preparation (JEPP) uses 1.1 in its planning guides.
0.4	gallons/day/person for cooking and sanitation in kitchen. Adjustment amount from Joyce planning guide.
2.5 gallons / day	extra for general hygiene use, like brushing teeth, washing face (does not include flush toilets, baths or showers) ( <a href="http://bit.ly/PhilaWaterUse">bit.ly/PhilaWaterUse</a> )
2 gallons / min	10-min shower takes about 20 gallons (2 gal/min)
1 cup / serving / person	extra for freeze-dried and dried foods (average 1 cup water per serving per person.)
<b>1.5</b>	<b>Total gallons water consumption /day/person</b>
<b>2</b>	<b>Number of people</b>
<b>7</b>	<b>Number of days</b>
<b>21</b>	<b>Total gallons expected water use</b>

Size	BOTTLE SIZE (OZ.)	# / CASE	\$ / CASE	TOTAL OZ.	QTY	TOTAL EST. \$
Personal	8	80	\$34.00	640	5 cases	\$170.00
Standard	16.9	40	\$20.89	676	4 cases	\$83.56
1 Gallon	128	1	\$1.29	128	21 bottles	\$27.09
5 Gallon	640	1	\$15.00	640	5 bottles	\$75.00

Source: Public Hygiene Lets Us Stay Human (FLUSH)

# Personal Preparedness Stories

In a recent poll conducted by *Peninsula Daily News*, readers shared their experiences of times when being prepared came in handy.

*“Last three-day power outage, we had plenty of food, water, cooking stoves, propane, flashlights, our generators and gas for our generators. It was actually really nice.”*

*“During the last big wind storm on the Olympic Peninsula, when there were power outages for a couple of days, we had power and light thanks to our 12kW backup generator, plus ample food/supplies. We also were thankful for our backup supplies during the recent snow storms as the snow cut us off from the road.”*

*“The ice storm of '96, when I had two young children as a single mom. Fortunately, I was a Girl Scout and daughter of Midwestern farmers who taught me the value of storing up food and necessities. I went over a week without any power or need to leave home. The only loss was my two large aquariums that I couldn't keep warm enough, even with adding heated water on a camp stove outside.”*

*“Last winter's power outages, I was able to maintain a reasonable level of comfort because I had generator, heater and stove fuel, lamp oil and plenty of canned goods.”*

*“We have battery lanterns, flashlights and glow sticks staged around our home. We have camping supplies and a full pantry. We have nonpotable water in jugs to refill our toilet tanks so we can continue to flush after the well pump dies. We do OK when the power goes out. We can read, play board games, eat and such. (No heat without electricity, so we do eventually get cold.)”*

*“Power outage for more than 10 hours. Had lantern, lots of batteries, hand-crank radio, propane gas stove to cook, battery backup for phone. Didn't have deck of cards, but I do now.”*

*“I am that guy that shows up at the neighbors house on my tractor plowing their driveway and loaded with firewood during the last snow storm. Last month I took care of 11 other older people that needed help just getting out. So odds are 1 in 12 people will help out.”*

Most residents on the Peninsula recognize its isolation from the rest of the world as an asset; beautiful mountain scenery and hiking out your back door makes whatever other inconveniences living out here might bring inconsequential. However, that isolation also means people need to come together when an emergency strikes.

Regardless of where you are in your preparation efforts, we hope everyone reading this guide has been inspired to take another step toward making the Olympic Peninsula a stronger community.

# Surviving on ≈\$1 per meal

This is an example of a survival food cache. It will feed two people for a week. This requires three meals a day for seven days for two people, which is 42 meals plus snacks. Butter and milk were not used with any dry mix. Liquids from cans were used to hydrate pasta. The challenge was to create an appealing, healthful menu for minimum price. The total price came to \$45.31 or \$1.08 per meal. All of it fits in a 6 gallon bucket sealed with a special lid called a gamma seal lid.

Below is a menu for each day with weight, calories and estimated price.

DAY	ITEM	Weight (oz)	Calories for 2	Calories for 1	Cost for 2	
1	Maple & Brown Sugar Oatmeal (2)	2.74	320	160	\$0.34	
	Original Oatmeal (1)	1.37	100	50	\$0.17	
	Raisins (2)	2.00	180	90	\$0.44	
	Picante Chicken Ramen Noodle Soup (2)	6.00	760	380	\$0.40	
	Can of Chunk Chicken Breast (1)	5.00	112.5	56.25	\$0.98	
	Snack, Hikers Mix (2)	14.00	2240	1120	\$2.00	
	Alfredo Broccoli Knorr Pasta (1)	4.50	460	230	\$1.00	
	Can of Chunk Ham (1)	5.00	225	112.5	\$1.18	
				2198.75		\$6.51
2	Raisin & Spice Oatmeal (3)	4.11	450	225	\$0.52	
	Raisins (1)	1.00	90	45	\$0.23	
	Cocoa Hot Chocolate (2)	1.42	160	80	\$0.33	
	Mac & Cheese (1)	7.25	750	375	\$0.40	
	Can of Chunk Ham (1)	5.00	225	112.5	\$1.18	
	Snack, Hikers Mix (2)	14.00	2240	1120	\$2.00	
	Creamy Chicken Knorr Pasta (1)	4.20	440	220	\$1.00	
	Can of Chunk Chicken Breast (1)	5.00	112.5	56.25	\$0.98	
				2233.75		\$6.64
3	Apples & Cinnamon Oatmeal (2)	2.47	260	130	\$0.34	
	Raisins (2)	2.00	180	90	\$0.44	
	Chicken Ramen Noodle Soup (2)	6.00	760	380	\$0.40	
	Can of Chunk Chicken Breast (1)	5.00	112.5	56.25	\$0.98	
	Snack, Hikers Mix (2)	14.00	2240	1120	\$2.00	
	Alfredo Broccoli Knorr Pasta (1)	4.50	460	230	\$1.00	
	Can of Salmon (1)	5.00	360	180	\$1.00	
			2186.25		\$6.16	
4	Cinnamon & Spice Oatmeal (3)	4.11	510	255	\$0.52	
	Raisins (2)	2.00	180	90	\$0.44	
	Can of Chunk Chicken Breast (1)	5.00	112.5	56.25	\$0.98	
	Alfredo Knorr Pasta (1)	4.40	480	240	\$1.00	
	Snack, Hikers Mix (2)	14.00	2240	1120	\$2.00	
	Chili Ramen Noodle Soup (2)	6.00	760	380	\$0.40	
	Chicken Bologna	11.00	605	302.5	\$1.00	
				2443.75		\$6.34
5	Maple & Brown Sugar Oatmeal (2)	2.47	320	160	\$0.34	
	Original Oatmeal (1)	1.37	100	50	\$0.17	
	Raisins (1)	1.00	90	45	\$0.22	
	Cocoa Hot Chocolate (2)	1.42	160	80	\$0.33	
	Cheddar Broccoli Knorr Pasta (1)	5.70	600	300	\$1.00	
	Can of Salmon (1)	5.00	360	180	\$1.00	
	Snack, Hikers Mix (2)	14.00	2240	1120	\$2.00	
	Smokehouse Bacon Knorr Pasta (1)	4.00	420	210	\$1.00	
	Can of Chunk Ham (1)	5.00	225	112.5	\$1.18	
				2257.5		\$7.24
6	Apples & Cinnamon Oatmeal (2)	2.47	260	130	\$0.34	
	Raisins (2)	2.00	180	90	\$0.44	
	Creamy Chicken Ramen Noodle Soup (2)	6.00	760	380	\$0.40	
	Can of Chunk Chicken Breast (1)	5.00	112.5	56.25	\$0.98	
	Snack, Hikers Mix (2)	14.00	2240	1120	\$2.00	
	Creamy Garlic Shells Knorr Pasta (1)	4.40	440	220	\$1.00	
	Can of Salmon (1)	5.00	360	180	\$1.00	
			2176.25		\$6.16	
7	Raisin & Spice Oatmeal (1)	1.37	150	75	\$0.17	
	Cinnamon & Spice Oatmeal (1)	1.37	170	85	\$0.17	
	Original Oatmeal (1)	1.37	100	50	\$0.17	
	Raisins (2)	2.00	180	90	\$0.44	
	Cocoa Hot Chocolate (2)	1.42	160	80	\$0.33	
	Mac & Cheese (1)	7.25	750	375	\$0.40	
	Can of Chunk Ham (1)	5.00	225	112.5	\$1.18	
	Snack, Hikers Mix (2)	14.00	2240	1120	\$2.00	
	Beef Ramen Noodle Soup (2)	6.00	760	380	\$0.40	
	Chicken Bologna	11.00	605	302.5	\$1.00	
				2670		\$6.26

Prices estimated from local discount stores.