

# State of Oregon

## Cascadia Subduction Zone

### County Response Information Annex

Component Three of the Oregon Cascadia Subduction Zone Earthquake and Tsunami Operations Plan



Oregon Military Department,  
Office of Emergency Management  
3225 State Street  
Salem, Oregon 97301  
503-378-2911

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# Preface

The purpose of this plan component is to provide record of Oregon's counties' unique operational concepts following a Cascadia Subduction Zone catastrophic earthquake and resultant tsunami.

This plan component was created through a series of discussions and interviews in each Oregon County. These discussions involved a wide variety of representatives including county and city emergency managers, police and fire responders, health care professionals, volunteers, private sector representatives, and others involved in the local response to this event.

This plan component is intended to outline each Oregon County's priorities, capabilities, general response assets, catastrophic event operational challenges and the support needed from outside of the State after the event.

Consultation with Oregon counties will occur and this document will be updated as needed to reflect changing capabilities, assets and understanding of the Cascadia Subduction Zone threat.

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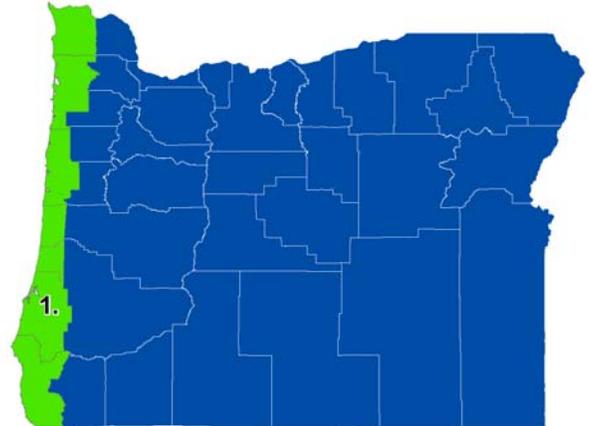
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# 1

## Oregon Coastal Counties

### CSZ Area 1, Oregon Coastal Counties

In the **coastal counties of Curry, Coos, Douglas, Lane, Lincoln, Tillamook and Clatsop**, being the closest area to the epicenter of the earthquake, extreme effects are to be expected. Shaking will be very severe and populated areas are subject to a massive tsunami within 15-30 minutes. Structures not built to modern codes are not expected to survive. Much of the coastal residential inventory is likely to be damaged or destroyed by the following tsunami which may travel more than a mile



inland in places. Tsunami waves are expected to begin arriving in about 30 minutes from the earthquake itself, leaving very little time for individuals to seek higher ground. Waves may continue periodically as aftershocks continue well past the initial quake.

Consequently, a relatively high fatality rate will be an additional impact. These counties are reached by a relatively small number of roads which all traverse hilly, landslide prone terrain and cross rivers with bridges that are not expected to survive. Access by road following the earthquake is likely to require a month or more of continuous effort by construction crews and engineers.

Coastal County shortfall expectations are:

- Electrical power will fail.
- Communications methods will largely fail.
- Fuel will be needed for response and for power generation. Propane will also be needed for some generators, cooking and heating.
- Normal response centers at police and fire stations will be severely disrupted.
- Travel in many areas will have to be by foot as roads will be broken, displaced, undermined, covered by debris or washed away.
- Isolated survivor communities in the coastal areas will likely be short on all supplies and those individuals exposed to the environment will have to be found and relocated to safe areas due to the severity of winter on the Oregon Coast.
- Large-scale shelter areas will have to be established on short notice. Large-scale evacuation of the surviving population is not logistically possible in the

### 1 Oregon Coastal Counties

short term. Self-evacuation from the region will not be practical for a month or more.

- Logistical support except from the sea will be very resource intensive.
- Health centers will be non-operational in the traditional sense. Some patients will require relocation and large number of injured will be treated by any reliable means – probably not to current standards of care.
- Pharmaceuticals will be in very short supply.
- Hasty sterilization such as by bleach immersion may be the only means available.
- Health response centers will have to be supported at multiple locations along the coast including offshore platforms.
- Augmentation of personnel will be required for all elements of response – fire, police/security, emergency management, utility maintenance, shelter staffing, etc.

# 1.1 CLATSOP COUNTY OREGON

## 1.1 Clatsop County

**Population:** Approximately 37,039 actual population and as a result of seasonal and weekend tourism can increase to greater than 75,000.

### **Incorporated Coastal Cities:**

Astoria, Cannon Beach, Gearhart, Seaside and Warrenton.

The executives of incorporated cities within Clatsop County are responsible for the direction and control of their community resources during emergencies.

### **Unincorporated Areas:**

Arch Cape, Bradwood, Brownsmead, Carnahan, Clifton, Elsie, Fern Hill, Fort Stevens, Grand Rapids, Hamlet, Hammond, Jeffers Garden, Jewell, Jewell Junction, Knappa, Lukarilla, Melville, Miles Crossing, Mishawaka, Navy Heights, Necanicum, Oklahoma Hill, Olney, Skipanon, Sunset Beach, Surf Pines, Svensen, Svensen Junction, Taylorville, Tolovana Park, Tongue Point Village, Uniontown, Vinemaple, Wauna, Westport.

**Major Rivers:** Columbia River, Necanicum River, Hunt Creek, Gnat Creek, Big Creek, Prairie Channel, Wallooskee River, Youngs River, Lewis and Clark River, Walker Creek, Beneke Creek, North Fork Nehalem River, Nehalem River, Neawanna River.

**Local Response Support:** Through extensive emergency management both at the County level and local community levels, the Sheriff's Department, local police and fire, search and rescue teams, and locally based emergency response trained volunteer teams are available to provide support and supplement local response and recovery operations.

### **First Responder Agencies / Entities:**

The following agencies and entities maintain primary roles and responsibilities during an emergency situation impacting Clatsop County:



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### 1.1 Oregon Coastal Counties – Clatsop County

#### Emergency Management Services

Clatsop County Office of Emergency Management

#### Law Enforcement Services

Astoria Police Department	Cannon Beach Police Dept.	Clatsop County Sheriff's Dept.
Gearhart Police Department	Seaside Police Department	Warrenton Police Department

#### Fire Services

Astoria FD	Knappa-Svensen, RFPD	Olney-Walluski RFPD	Hamlet Volunteer FD	John Day RFPD	Elsie Vinemaple RFPD
Warrenton RFPD	Olney Walluski Fire & Rescue	Oregon Department of Forestry		Westport-Wauna RFPD	Camp Rilea Wildland
Cannon Beach RFPD	Gearhart Fire Department	Lewis & Clark RFPD	US Coast Guard	Mist-Birkenfeld RFPD	Seaside Fire Department

#### Ambulance Service

Medix Ambulance Service provides seven ambulances based in Warrenton; ALS ILS BLS	Knappa Fire District provides one ambulance based out of Knappa; ALS BLS
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#### Public Health and Hospital Services

Columbia Memorial Hospital – Astoria	Providence Seaside Hospital - Seaside
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#### Emergency Communications Services

North Clatsop (Astoria) Regional Dispatch Center provides 9-1-1 Emergency Dispatch for the following agencies:

Clatsop County Sheriff	Westport Fire & Rescue	Astoria Police and Fire Departments	Oregon State Forestry	Knappa, Svensen Burnside RFPD	U.S. Coast Guard Air Station
Olney Walluski Fire & Rescue	Warrenton Police and Fire Departments	John Day, Fernhill RFPD	Elsie Vinemaple RFPD	Port of Astoria Security	

South Clatsop (Seaside) Dispatch Center , provides 9-1-1 Emergency Dispatch for the following agencies:

**1.1 Oregon Coastal Counties – Clatsop County**

Gearhart Police and Fire Departments		Seaside Police and Fire Departments		Cannon Beach Police and Fire Departments
Oregon Department of Forestry	U.S. Coast Guard Air Station	Oregon State Police	Clatsop County Sheriff	Hamlet Volunteer FD

<b>Identified Community Points of Distribution Locations</b>
Yet to Be Identified by County Emergency Management
<b>Identified Emergency Mobile Home Staging Locations</b>
Yet to Be Identified by County Emergency Management

**County Response Assumptions:**

- An emergency of this magnitude will require prompt and effective response and recovery operations by Clatsop County Office of Emergency Management, County Departments, Cities, volunteer organizations and the private sector;
- All primary emergency response staffs are trained and experienced in operating under NIMS and ICS;
- The County and Cities will be responsible for utilizing all available local resources along with initiating mutual aid and cooperative assistance agreements before requesting assistance from the state;
- The population of Clatsop County generally increases during peak tourist season reflecting a large influx of tourists, seasonal residents, daily visitors, cruise ship passengers and recreation enthusiasts;
- Significant increases to the local population may introduce challenges in meeting the needs of non-residents and other travelers during an emergency or disaster;
- Due to post-event logistics challenges, personal self-sufficiency for the population may be necessary for an unknown amount of time that could range from several days to several weeks;
- Local emergency planning efforts will focus on accommodating residents while preparing for large changes in population trends throughout the year;
- Response communication, transportation routes, equipment, and certain critical facilities may be destroyed or rendered inoperable during a disaster;
- Effective response will need public officials, first responders, volunteers, and residents to be familiar with established policies and procedures, assigned pre-designated tasks, provided with evacuation and assembly instructions and

### 1.1 Oregon Coastal Counties – Clatsop County

formally trained in their response duties, roles and responsibilities required during emergency operations;

- The City of Seaside expects to lose all emergency response capabilities.

#### **Catastrophic Event Assumptions:**

See Oregon Cascadia Subduction Zone Earthquake and Tsunami Operations Plan pages 4-1 to 4-11 for statewide Cascadia Subduction Zone earthquake and tsunami assumptions.

With this scenario emergency services will be immediately overwhelmed. All incident response will need to be prioritized due to limitations of survivable infrastructure, equipment and the ability of staff to reach their designated posts or offices. Major bridges over estuaries and waterways will be impacted and most likely impassable. Many coastal areas will be isolated due to the loss of roadways, bridges and communications. These isolated pockets of survivors may be on their own for a time period of much greater than 72 hours until communications and transportation between them can be reestablished.

Emergency services will be immediately overwhelmed with this scenario. All incident response will need to be prioritized due to limitations of staffing and resources.

There will be an immediate need to evacuate those survivors in need of resource-intensive care, and the need to evacuate the general surviving population will be a priority in order to lessen the burden on responders and resources.

#### **Clatsop County Priorities:**

##### **Clatsop County Sheriff's Office**

- Safety of emergency response personnel and assets;
- Take immediate protective measure for emergency personnel and resources;
- Assessment of County essential facilities for safety and security;
- Provide available equipment, resources and personnel to respond to community needs;
- Initiate response activities as conditions allow;
- Secure jail and coordinate with neighboring jurisdictions to transfer prisoners if necessary;
- Provide traffic control for evacuation and response as needed;
- Provide damage information to County emergency management or the State ECC.

##### **Clatsop County Emergency Management**

- Ensure safety of facilities and staff;

### **1.1 Oregon Coastal Counties – Clatsop County**

- Enact COOP protocols if needed - primary EOC is located at Camp Rilea, if that location is unusable or inaccessible, Clatsop County is prepared to operate their EOC wherever feasible;
- Contact County wide AOC's ( agency operation centers) to get situational awareness and needs information;
- Coordinate response with multiple impacted sites and limited resources;
- Initial emergency response activities will focus primarily on minimizing loss of life and property and damage to critical infrastructure;
- Establish contact with State ECC (– Emergency Communication Center) to request additional assistance;
- Clatsop County agencies and departments with developed COOPs will establish alternate facilities and staff locations as applicable;
- It is estimated that surviving Communication sites will last 10 days with propane backup.

#### **Clatsop County Public Information**

- Work with Emergency Management and other responding agencies to distribute targeted public information ;
- Work with media outlets coming into the area and coordinating messaging from responding agencies.

#### **Clatsop County Public Health**

- Assess and determine safety and usability of County Health Department staff and assets;
- Establish contact with Clatsop County hospitals to determine status and needs;
- Coordination with County Emergency Management to be able to maximize limited resources to address needs;
- Provide for the coordination and direction of County medical and health services and resources;
- Assess health hazards caused by damage to sewer, water, food, supplies, or other environmental systems and provide safety information;
- Serve as coordinator for public health and medical services;
- Serve as coordinator for Mass Care, Emergency Assistance, Housing and Human Services;
- Focus is on surveillance of public health issues (water, sanitation, vector control);
- Monitor environmental infrastructure (water, sanitation, and vector control);
- Assess the needs of special populations (e.g., elderly, disabled, homebound, and non-English-speaking);
- Initiate injury prevention and surveillance programs;

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- Ensure that essential facilities will be able to function post-impact (hospitals, health departments, physicians’ offices, storage sites for health care supplies, dispatch centers, paging services, and ambulance stations);
- Issue health advisories as needed;
- Allocate resources to match the needs of the disaster. Ensure the continuity of health care services (acute emergency care, primary care, and preventive care).

#### Clatsop County Cities

##### **General Priorities of Cities in Clatsop County:**

- Safety of emergency response personnel and assets: fire, police, public works, continuity of government;
- Safety of families of responders and other city staff;
- Provide public safety and security;
- Provide care and shelter to survivors gathered at evacuation sites;
- Prioritize and determine fire and rescue response;
- Assessment of emergency support assets;
- Assessment of essential facilities-police, fire stations, local government offices, for safety and security;
- Assessments of:
  - Safety of lifeline roads and bridges.
  - Safety of tide gates and levees.
- Public works to assess damage to critical utility services;
- Safety assessment of pre-designated sheltering facilities.

**City of Astoria** has a resident population of approximately 9,477 which can increase by 10,000 during peak tourist season and serves as an active port for commerce and cruise ships during the summer months. The city sits at an elevation of 23’ above sea level. The City Public Works shop is located near the tsunami inundation zone.

Water is a big concern for the City of Astoria. The majority of pipe systems are unlikely to survive. Currently the City is looking to expand the use of automatic shut off valves to preserve reservoir water. The City also has two emergency portable faucet stations with 10-15 taps on each that could be placed in the community to provide water to survivors.

**City of Cannon Beach** has a resident population of approximately 1,680 and sits at an elevation of 30’ above sea level. Currently the city is developing a system of caching of food and expanding ICS training for approximately 30 volunteers.

The city has robust evacuation planning, but will likely be short the needed supplies for those survivors at assembly areas. The city is currently planning for pre-deployed containers of supplies at evacuation areas designated as “super sites”. This program will

### 1.1 Oregon Coastal Counties – Clatsop County

be developed and expanded upon over time. Hypothermia and unsheltered evacuees is a big concern.

Most firefighters live in the Cannon Beach area, but many Cannon Beach police officers live outside the area and may not be able to report to duty. Response personnel unable to report for duty have instructions to report to other jurisdictions where they may be able to provide assistance.

**City of Gearhart** has a resident population of 1,150 and sits at an elevation of 26' above sea level, the dune line to the West of the City ranges from 46 feet to 65 feet. There are evacuation areas in the core area of the city. The majority of the flooding will come from the Necanicum and Neacoxie estuaries, not from the ocean itself (according to recent estimates).

**City of Seaside** has a resident population of approximately 6,457 (which can increase to 30,000+ in peak tourist season), and sits at an elevation of 12' above sea level; the City is extremely vulnerable in this catastrophic event.

**City of Warrenton** has a population of 4,096 and sits at an elevation of 8' above sea level. The city is built on tidal flats and Youngs Bay Estuary at the mouth of the Columbia River.

#### Astoria 911

- Assess and determine safety and usability of 911 staff and assets;
- Ensure safety of staff's families;
- Assess and repair if possible functionality of 911 system equipment and communications;
- Has ability to function using handheld radios to coordinate and communicate with responders.

\*Currently undergoing \$1.15 million seismic enhancement upgrade (completed by fall 2012)

Facility also houses fire, police, two command vehicles and a HAZMAT 11 vehicle.

#### Seaside 911

- Assess and determine safety and usability of 911 staff and assets;
- Ensure safety of staff's families;
- Assess and repair if possible functionality of 911 system equipment and communications;
- Has alternate communications site with pre-staged equipment;
- Has the ability to function off-site using handheld radios to coordinate and communicate with responders;
- Has portable HAM radio equipment.

The Seaside 911 facility houses police and all associated vehicles.

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**Clatsop County Fire Defense Board**

**General Fire Priorities**

- Safety of staff and families is the first priority, stations are prepared to shelter families;
- Personnel are instructed to respond to the nearest surviving fire station;
- Ensuring safety and usability of equipment, if possible staging equipment to safer locations on high ground, or in the case of fire boats, to a pre-designated safe location up river;
- Assess safety and usability of facilities;
- Assist and rescue survivors;
- Determine safety and accessibility for designated shelter areas for survivors;
- Make contact with County and City('s) EOC to advise on current response status and inform them of needs.

**Available Assets:**

**Fire**

**Astoria Fire and Rescue** consists of two fire stations with eleven full time firefighters and approximately 12 volunteer firefighters. Astoria fire stations are located outside of the tsunami inundation zone, and they expect that a large proportion of equipment is likely to survive the event.

Astoria Fire department serves a population of 10,000, with the number of people in town swelling to 25,000+ during tourist season.

Astoria Fire has HAM radio capability, both fixed and mobile as well as a satellite phone and satellite internet via the OSFM HAZMAT unit.

EOC for City of Astoria will be activated at Station 25.

**Camp Rilea Wildland Fire** has one full-time and two to four seasonal firefighters. The fire station is located near the tsunami inundation area for this event and its survival is questionable. Upon assessing safety of personnel and families, Camp Rilea Wildland will assist the Hamlet Community, and provide mutual aid as able. In addition to the needs indicated later in this document, they anticipate the need of EMS and medical supplies due to their anticipated isolation.

Camp Rilea Wildland serves a population of 120-1000 depending on the time of year.

Camp Rilea Wildland has a fixed HAM radio, HF radio, and a satellite phone.

**Cannon Beach Fire Department** supports two fire stations with two paid and 24 volunteer firefighters. Cannon Beach has two stations, one in mid-town, with another in Arch Cape (they are in the process of constructing a new station in Arch Cape) both located in the tsunami inundation zone. If the stations survive, there will be water

### 1.1 Oregon Coastal Counties – Clatsop County

damage to the lower level. For the fire station located in mid-town, depending on the depth of the water, equipment and apparatus that are unable to be moved to a higher location could be recovered with heavy equipment to remove debris. The current Arch Cape station is not expected to survive or be salvageable. The new station, once constructed will have a much higher likelihood of surviving, and its equipment being usable or at least recoverable.

Cannon Beach Fire serves 2,300 full time residents, with the population swelling to 15,000-20,000 during peak tourist season.

The department has HAM radio capability at two fixed locations (fire stations), along with two satellite phones.

The department provides high angle rescue, surf rescue, EMT's, rescue ambulance, a Zodiac boat and two Yamaha Rescue Craft.

Priorities of response are the following once safety of personnel and their families is met:

1. Activation of the Community Warning System (COWS);
2. Establishment of ICS for incident response;
3. Establishment of EOC;
4. Movement of fire equipment and apparatus to pre-designated locations;
5. Closure of Hwy 101 to inbound traffic at both ends of district;
6. Assist or enact traffic control to facilitate evacuation;
7. Tend to survivor informational and medical and life/safety needs.

**Gearhart Volunteer Fire Department** staffing consists of a paid firefighter and approximately 27 volunteer firefighters. There are two fire stations - City of Gearhart (in tsunami inundation zone) and Westlake substation. Equipment located at the City of Gearhart station could potentially be salvaged by heavy equipment. Westlake would be available to respond with passable roadways. The population served by the department is 3,100 residents and a tourist population that can swell the population to 10,000+.

There is fixed HAM radio capability at the Westlake station. Local communications will occur on tac channel 9, communications to Seaside will be on channels 6 or 14.

Lack of water supply will limit operations greatly.

**Hamlet Volunteer Fire Department** has two stations, both located outside the tsunami inundation zone. The main station was built to seismic standards, the Hamlet station will likely collapse. The stations contain the following vehicles: two 1000 gallon pumper trucks and a reserve, one tender, one rescue, one wildland/rescue engine and one mobile air truck. If the main station survives, they will have one engine, one rescue, one wildland/rescue and one mobile air truck available for response. The department has a staff of 12 volunteer firefighters.

### 1.1 Oregon Coastal Counties – Clatsop County

The Hamlet Volunteer FD serves 400 full time residents, with tourists possibly increasing the population to 1000.

The department has three HAM radio operators on staff with personal radios; the department owns zero.

**John Day Fire District** employs one paid and five volunteer fire fighters at its one station. The station is located out of the tsunami inundation zone. It is unlikely to survive the earthquake. Surviving equipment may need extracted from the rubble. The District serves approximately 500 people. In addition to the general priorities described above, the John Day District plans on establishing a command center with Knappa Fire. They expect to have minimal firefighting capabilities due to lack of water, loss of equipment, minimal personnel, and the inability to respond due to damaged roads.

**Knappa Fire District** has three stations and serves the communities of Knappa, Brownsmead and Svensen. All stations are located outside of the tsunami inundation zone. The District expects to lose all three stations, necessitating the removal of rubble to free surviving equipment. In addition to the general priorities described above, the Knappa District plans on establishing a command center with John Day Fire District. They expect to have minimal firefighting capabilities due to lack of water, loss of equipment, minimal personnel, and the inability to respond due to damaged roads.

**Olney Walluski Fire and Rescue District** is a completely volunteer district with two stations, serving a population of 3000, however due to the County Fairgrounds being in the district that number can increase by as much as 30,000 over a weekend. Both stations in the district are outside of the tsunami inundation area, River Point Station will experience heavier damage that may necessitate the extraction of equipment from the rubble. Olney sub-station will fare better and would be able to respond given roads are accessible. It is likely that forest roads may be needed to reach isolated areas if they are clear of debris. The River Point station has been determined as the command center for fire communications.

**Seaside Fire & Rescue** has three full-time firefighters and 36 volunteer firefighters. They provide fire protection, rescue and emergency medical services. There is one station located in Seaside, located within the tsunami inundation zone. Seaside Fire and Rescue serves 8500 full-time residents, the population including tourists can swell up to 75,000 people.

Seaside Fire and Rescue has a portable HAM radio.

Due to the severity of this event, the fire station and equipment will likely not survive the event. It is entirely unknown if Seaside Fire and Rescue could provide any personnel or equipment to respond to needs of the city.

**US Coast Guard, Columbia River** has 15 personnel serving at the City of Warrenton Airport. The facility is located in the tsunami inundation zone. It is possible that two

### 1.1 Oregon Coastal Counties – Clatsop County

airport crash trucks would survive the event. Communication occurs on VHF-AM Aircraft Band, and VHM-FM encrypted. The facility plans to move all surviving equipment and personnel to Camp Rilea if possible.

**Warrenton Fire** consists of two fire stations (Warrenton and a sub-station in Hammond); both facilities are located in the tsunami inundation zone. They are staffed by three full time firefighters and 32 volunteer firefighters. Warrenton Fire serves a population of 6,000, with a tourist population swelling the population to approx. 15,000 people.

It is extremely unlikely that either station will survive this event; it may be possible to salvage and recover equipment.

Personnel are instructed to report if at all possible to their assigned duty station upon ensuring the safety of families. If unable, they are instructed to monitor pagers or radios for information. A primary function would be to guide survivors to pre-designated tsunami collection points.

**Medix Ambulance Service** is a paid provider of ALS911 and inter-facility transports. Equipment includes ALS ambulances, four wheelchair vans and two comfort cars. They serve Clatsop County, and Pacific County, WA. Medix has four stations, two located within the tsunami inundation area. Medix maintains dispatchers at communications facility at all times. Medix has its own paging system and maintains direct phone lines with both North and South 911 call PSAPs.

They expect to have surviving five of seven ambulances and all wheelchair vans and cars. Additionally, most hard goods, supplies, ALS equipment, 35kw diesel generator (able to operate for approximately 14 days based on fuel supply) and all radio equipment. Fuel supplies are also located outside of the inundation zone and the company has made provisions to provide service before additional medical support can be brought into the area (approx. 72 hours).

Medix serves approx. 38,000 residents of both states and with tourists they would serve 75,000+ people at peak times. Their priorities are to account for personnel and to determine available personnel and resources to respond. They would then communicate and learn the status of area hospitals and determine conditions of roadways. Upon receiving communications, prioritize request for ambulances to areas of greatest need.

#### **Clatsop County Public Health**

- There are two hospitals in the County (Seaside and Astoria). Providence Seaside Hospital in Seaside will not survive the event based on the scenario. – unclear: independent hospital in Astoria;

### 1.1 Oregon Coastal Counties – Clatsop County

- Clatsop County Public Health Department is in Astoria, with departmental staff residing throughout the County. Decentralized staff are instructed to deploy to first responder sites around County post-event;
- There are supply caches of first aid supplies, sanitation and water quality supplies strategically placed around County including Astoria, Jewell, Knappa, and Cannon Beach.
- The Health Department has two satellite phones and HAM radio capability on site; however there is no HAM operator on site, they would need to request a HAM operator. The satellite phones are with designated staff on-call.
- The Department utilizes a volunteer management system for health and medical volunteers, including credentialing. The volunteer management system is managed by the Human Resource Department of Clatsop County. Each cache site in the county has a hard copy manual of the system that permits just-in-time credentialing and mobilizing of volunteers.

#### **Law Enforcement**

##### **Clatsop County Sheriff's Department**

- There are currently 23 deputies, each with take-home vehicles;
- Search and rescue has 15 ground volunteers, a high angle rescue team, dive team, and a marine team. There is limited USAR ability;
- Substations for the Sheriff's Department are located in the Knappa and Jewell areas;
- Initially there will be localized response with officers responding on their own until communication can be re-established and a coordinated response initiated;
- Jail houses approx. 60-70 inmates. There are concerns over building stability, and no water or sewage available post-quake. Jail has a generator. It is extremely likely that inmates will need to be moved to a more secure facility, or to a temporary guarded location;

**Astoria Police Department** provides 24 hour law enforcement, criminal investigations, traffic enforcement and Emergency Response. The Police Department hosts a Citizens Police Academy and Community Policing.

**Cannon Beach Police Department** provides 24 hour law enforcement, criminal investigations, traffic enforcement and emergency response. The Police Department hosts a Community Policing Program.

**Seaside Police Department** provides 24 hour law enforcement, criminal investigations and traffic enforcement and emergency response.

**Warrenton Police Department** provides 24 hour law enforcement, criminal investigations, traffic enforcement and emergency response.

### 1.1 Oregon Coastal Counties – Clatsop County

**Gearhart Police Department** provides 24 hour law enforcement, criminal investigations and traffic enforcement and emergency response.

**Oregon State Police** has a station located in Astoria, but its location next to the river means it is unlikely to survive. OSP has an ocean going vessel located here, but there are no protocols on moving it to a safe location post-event. OSP Troopers stationed in Astoria are instructed to report to the County EOC at Camp Rilea if their facility is lost, or if they are unable to report to Astoria.

#### **Additional County Assets and Capabilities**

**Astoria Branch of Portland & Western Railroad** is a 520 mile short line freight railroad that interchanges with the Albany and Eastern Freight Railroad, Burling Northern Santa Fe Railway, Central Oregon & Pacific Railroad, Coos Bay Rail Link, Hampton Railway, Port of Tillamook Bay Railroad and Union Pacific Railroad. Commodities include aggregates, brick and cement, chemicals, construction and demolition debris, food and feed products, forest products, metallic ores and minerals, steel and scrap. The Astoria Branch runs parallel to the Columbia River to Astoria, from Portland.

**The Port of Astoria** manages a combination of marine, marina, industrial, and aviation facilities. These facilities are primarily located in the City of Astoria (Port waterfront properties and infrastructure) and the City of Warrenton (airport and industrial properties). The Port Authority provides services to commercial and recreational boaters, two marinas, boat yard, cargo vessels, fish processing, cruise ships, research vessels and deep draft marine terminals. It also provides commercial leasing opportunities on its properties at the airport, Skipanon Peninsula, Tongue Point and waterfront locations. North Tongue Point Naval Air Station is a former submarine and destroyer base owned by the Washington Group.

**Astoria/Warrenton Regional Airport** is a joint civil-military public airport located three miles southwest of the City of Astoria. It is located in the adjacent City of Warrenton and is also the home of Coast Guard Air Station Astoria. The Airport has two major runways: 5,796' and 4,996; asphalt base.

**U.S. Coast Guard Group Astoria** controls operations of three HH-60 Jayhawk Helicopters and three Motor Lifeboat rescue stations located on the Oregon and Washington coasts. The U.S. Coast Guard Group provides search and rescue operations, law enforcement, aids to navigation support, and environmental protection. It also provides limited operations support to the National Motor Lifeboat School and Advanced Rescue Swimmer School as well as logistical support to two Pacific Area Coast Guard Cutters 'Alert' and 'Steadfast', both home ported in Astoria.

**Clatsop County Amateur Radio Services** has 42 ARES/RACES radio operators in the county along with several hundred HAM operators along the Oregon Coast capable of

### 1.1 Oregon Coastal Counties – Clatsop County

supporting emergency communication. These volunteers have protocols to “check-in” on pre-established frequencies in the event of a disaster. Many operators have personal equipment and could provide assistance if County responder communications equipment is damaged.

#### **Clatsop County Private Sector Assets and Capabilities:**

**PacifiCorp Power:** The Cascadia scenario indicates the potential for a temporary blackout across most of the Pacific Northwest, and likely longer-term outages west of the Cascade Mountains, particularly in coastal communities.

Pacific Power’s initial priorities for response to Clatsop County and all areas served across the Pacific Northwest:

- Implement employee / family care following the event;
- Assess and coordinate available resources;
- Establish command and control;
- Activate Pacific Power Emergency Action Center;
- Activate business continuity plans;
- Establish communication with other utilities and the ESF-12 Liaison;
- Stage and deploy company resources from across the region;
- Activate mutual assistance agreements;
- Assess damage (ground and air);
- Clear hazards .

With our company’s coastal resources likely impacted by the event, primary assistance would come from resources outside the impact area, with initial work being assessment and hazard mitigation (clearing downed lines).

Fuel, food, water, shelter, security and sanitation will all be key services needed to support crews in the impacted area during assessment, hazard mitigation and eventually power restoration work.

The following is an example of issues that could delay response activities to the coastal region:

- Travel into the impacted area is blocked, prohibiting assisting crews from accessing coastal communities (e.g. highways 8, 26, 30 and 101 are blocked);
- Unsafe conditions exist in the impacted area, prohibiting personnel from entering the region (e.g. aftershocks and chemical, biological or security hazards);
- Highway 101 is damaged due to tsunami debris, and assisting crews may have to wait for debris removal before accessing communities for assessment, hazard removal and restoration work;
- Pacific Power’s Clatsop Operations Center may be functional, but access to and from the facility may be cut-off due to tsunami damage (debris);

### 1.1 Oregon Coastal Counties – Clatsop County

- The lack of available fuel, food, water, shelter and sanitation in the impacted area may delay response by assisting crews.

It will also be important that public resources from local, county, state and federal agencies ensure two-way communication and incident coordination with critical private sector organizations.

**NW Natural Gas** NW Natural's initial priorities for response to Clatsop County:

Implement employee/family accountability and assistance

- Establish command and control;
- Mitigate initial hazards (control gas supply to affected areas);
- Activate NW Natural Emergency Operations Center;
- Assess and coordinate available resources;
- Assess damage (Gas Control Center, ground and air);
- Establish communication with other utilities and Oregon State ESF-12 Liaison;
- Deploy company resources to critical locations;
- Activate mutual assistance agreements;
- Restore service to functional customers.

Fuel, food, water, shelter, security and sanitation will all be key services needed to support crews in the impacted area during assessment, hazard mitigation and eventually gas supply restoration.

The following include, but are not limited to, issues that could delay response activities to the coastal region:

- Travel into the impacted area is blocked, prohibiting assisting crews from accessing coastal communities (e.g. highways 8, 26, 30 and 101 are blocked);
- Unsafe conditions exist in the impacted area, prohibiting personnel from entering the region (e.g. aftershocks and chemical, biological or security hazards);
- Highway 101 is damaged due to tsunami debris, and assisting crews may have to wait for debris removal before accessing communities for assessment, hazard removal and restoration work;
- NW Natural's Astoria Service Center may be functional, but access to and from the facility may be difficult;
- Gas supply from the valley to the coast may be interrupted due to damage to gas transmission lines;
- The lack of available fuel, food, water, shelter and sanitation in the impacted area may delay response by assisting crews.

Partnership with public agencies and other private sector organizations will be critical to ensure communication, transportation and resource coordination.

### 1.1 Oregon Coastal Counties – Clatsop County

A unique issue to the re-establishment of gas service is that it is required to be done by licensed technicians to each individual meter to re-light each appliance. In Clatsop County alone it would take approximately a month to complete this task, needing 300-400 personnel. This would, however, vary based on the amount of surviving structures.

**American Red Cross** has the following Clatsop County assets - 35 shelter sites, approximately 25 volunteers, six trailers, five caches consisting of cots and blankets, limited first aid, MREs or heater meals are located in some caches as are comfort items for children.

#### **Additional:**

Camp Rilea has rolling stock and tents owned by the Oregon Army National Guard;

Not located in Clatsop County, but the USFS has a stockpile in Tillamook County with approximately 3000 meals, tents, and sleeping bags.

ODOT has an AM emergency notification radio transmitter. It is on a short pole, and would likely survive the shaking and/or be easy to re-establish service. This could be used to broadcast much of the coast - 1650 AM.

#### **Clatsop County Catastrophic Event Operational Challenges:**

- Emergency services will be immediately overwhelmed with this scenario. All incident response will need to be prioritized due to limitations of staffing and resources;
- Damage to highway and port infrastructure will inhibit response capabilities;
- Water systems for fire suppression will likely not survive;
- Restoration of transportation routes can conceivably take weeks to months;
- Clatsop County will be fractured into pockets of isolated communities and neighborhoods due to loss of roadways, bridges, communication, and tsunami flooding;
- Individual pockets of survivors will be on their own for a time period of much greater than 72 hours until communications and transportation between these pockets is re-established;
- Many locations will be without emergency support of fire, law enforcement, and ambulance service until communication and transportation between these pockets is re-established;
- According to County and coastal city tsunami evacuation plans, many will be in pre-designated assembly areas and unable to get back to their homes;
- Depending on time of year, a significant tourist population may be located in coastal areas and unable to leave until transportation services can be restored. Most City and County food and water resources are not capable of providing for these additional populations;

### **1.1 Oregon Coastal Counties – Clatsop County**

- Generator Power will last for a few days – some hand pump capabilities for emergency access to fuels without power;
- Many generators in county require propane fuel to function;
- County and City resources have very limited urban search and rescue capabilities;
- Volunteer firefighters may not be able to respond due to roadway damage, family commitments and work priorities.

#### **Port of Astoria**

- The deep draft port channels will likely be inundated with debris which will need to be cleared prior to use for any type of deep draft emergency response shipping of essential needs supplies;
- Channel navigation will be destroyed, limiting access to points up river;
- Use of satellite phones for communication has proved limited in past use occurrences due to weather (approx. only getting 15 minutes of availability in an hour);
- County and City resources have very limited urban search and rescue capabilities;
- County and City resources have very limited potable water storage and/or water purification capabilities.

#### **Clatsop County Public Health / Hospitals in Clatsop County**

- Due to the scale of the incident, the medical system will be immediately overwhelmed;
- Modeling scenario calls for the complete loss of Providence Seaside Hospital;
- Hospitals have no stored supply of potable water or sterile water which will limit the ability to treat survivors;
- Medications will be limited due to the inability of receiving regular shipments. Lack of access for commercial medical suppliers;
- Survivors with chronic conditions will require prescriptions quickly or they will add to the medical burden as their conditions deteriorate;
- Medical facilities may not be able to provide more advanced care due to damages;
- Mortuary capabilities are limited.

#### **City of Seaside**

- Seaside will be isolated, and majority of town inundated by tsunami, all City services are in the inundation zone including Providence Seaside Hospital;
- Geography of community leads to a challenging situation for residents fleeing the tsunami;

### 1.1 Oregon Coastal Counties – Clatsop County

- Repeaters and communication equipment in City will be compromised and likely unusable by event, can however use portable communications gear to contact county EOC at Camp Rilea;
- Can only provide limited shelter and provisions for survivors at evacuation points;
- Police and fire personnel located outside of City are instructed to report to other communities to offer assistance if unable to report for duty in Seaside;
- 50 gallon containers with cached food and supplies are located at different spots within City, outside of inundation zone, and residential areas;
- Police and fire personnel located outside of City are instructed to report to other communities to offer assistance if unable to report for duty in Seaside;
- Seaside Heights, which is the secondary City EOC, is located next to hospital, and could be in the impacted area.

#### **Support Needed Immediately After a Catastrophic Event:**

- Immediate aerial and/or sea support needed to resupply communities with potable water, food, sheltering equipment and support, and response personnel;
- Fuel and batteries to keep communication gear operational;
- Immediate aerial support needed for evacuations of special medical needs survivors, patients needing serious care (dialysis and other resource intensive procedures), injured and other vulnerable populations;
- Need delivery of diverse fuels to include diesel, gasoline and propane;
- Need replacement trained and equipped emergency response personnel;
- Security contingents need to arrive with all out-of area response elements, local law enforcement will be unable to provide with limited personnel and resources;
- Urban search and rescue teams, self-sustaining with equipment;
- Aerial support needed for damage assessment;
- Assistance in re-establishing transportation networks, and equipment to re-establish roadways;
- Water purification equipment needed in all populated areas to provide potable water to survivors;
- Water purification equipment needed in all medical facilities;
- Sanitation facilities needed in all populated areas;
- Mass fatalities incident teams and equipment;
- Supplies of pharmaceuticals for chronic medical conditions, including psychological and behavioral health needs;
- Durable medical supplies and equipment for temporary medical facilities;
- Communications capabilities need to be re-established;

### 1.1 Oregon Coastal Counties – Clatsop County

- Security / policing staff needed to safeguard local pharmacies, shelters, and provide increased security at critical facilities and surviving food and water locations;
- Amateur radio equipment and antennae;
- Spontaneous volunteer management assistance and screening of volunteer skills and backgrounds;
- Screening capabilities for professional medical volunteers;
- Immediate access to communication and information to allow survivors to communicate with family members outside of the area and provide reunification services;
- Competition with other responders using the same contracts (i.e. helicopters).
- Cell phone re-establishment (COW Cellular on Wheels);
- Wind up radios for survivors;
- Need for shallow draft vessels to provide assistance and re-supply for Astoria and locations further up the Columbia until river navigation and channel depth is determined safe for larger vessels;
- Need for equipment and personnel to assess, repair and reopen a navigable channel on the Columbia;
- Additional volunteers to staff shelters;
- Will need open roadways to resupply shelters;
- Evacuation of willing residents to lessen support needs.

#### **PacifiCorp support needed immediately after a catastrophic event:**

- Will need fuel, housing and feeding of responders;
- Aerial assessments of power lines and facilities;
- Transportation and access on damaged roadways.

#### **NW Natural Gas Support need immediately after a catastrophic event:**

- Will need to immediately enact mutual assistance agreement to get help from other areas;
- Will need fuel, housing and feeding of responders;
- Transportation and access on damaged roadways;
- Assistance on assessment of damaged lines and facilities.

#### **Identified Mitigation and Pre-Event Preparation Needs:**

- Additional caches of radio equipment and antennae;
- Need to have better coordination with cross river communities in Washington;
- There are primarily volunteer firefighters in county. Firefighting personnel may have a wealth of experience outside of firefighting and be able to contribute to response. Identifying these skills prior to an event of any type could benefit Clatsop County;

### 1.1 Oregon Coastal Counties – Clatsop County

- Cities with essential services and facilities in the tsunami inundation zone need assistance and financing to relocate these assets to City owned lands outside of the tsunami inundation zone;
- Increased coordination and/or agreements with the private sector to provide assistance post event;
- Continued neighborhood and community training with Citizen Corps, CERT, Map Your Neighborhood and similar programs for public awareness and personal preparedness. Funding for citizen training materials and equipment;
- Funding to purchase water purification systems and water stores for hospitals and clinical medical facilities;
- Funding for storage facilities for food, water and sheltering supplies;
- Funding for individual community supply caches and storage containers to possibly include bottled water, water filter straws, shelter canopies, blankets, tarps, rain ponchos, survival food bars, sanitation supplies, and medical supplies;
- Special needs and long term care facilities need increased planning, protocols and procedures for patient evacuation, patient sheltering and care;
- Continued funding for retrofitting and possible relocation of essential facilities in all areas;
- Agreements with the private sector to supplement and address: bridge engineering, safety assessment and temporary rebuilding of roadways. Private sector coordination with aerial support companies needed also;
- Surge capacities of local hospitals cannot handle the medical needs after this event. Pre-event purchase and storage of critical/essential equipment is needed;
- There is a need for increased interoperable communications capability and equipment;
- Continued support and funding for retrofitting of local infrastructure to better withstand seismic events;
- Need for funding or technical assistance to establish vertical evacuation shelters in coastal cities;
- Increased communication abilities for Rural Fire Protection Districts and rural communities, especially in communities that are expected to be isolated in this event;
- Increased medical community plans for the evacuation and care of severely disabled/and non-ambulatory residents. These plans and protocols need to extend to in-home caregivers, foster homes, and long term care facilities;
- Caches of pharmaceuticals needed including oxygen, insulin, Lasix, antibiotics, Coumadin, psychotropic drugs, meds and supplies for burns;

### 1.1 Oregon Coastal Counties – Clatsop County

- Generally patients needing these medicines are faced with challenges from insurance companies to have a 3 month supply on hand in case of emergencies. Pushing for changes from insurance companies to allow for emergency supplies of these items will increase the preparedness of communities greatly.
- Increase outreach and training to communities to foster a culture of personal responsibility and preparedness;
- Outreach to tourists and non-local visitors regarding evacuation and preparedness;
- Future power and gas mitigation efforts and investment needs to focus on providing reliable service for those service areas that are likely to survive the quake and will likely remain afterwards;
- Power and gas companies need recognition from responding agencies and governments that they will need fuel, access and resources to complete restoration and repair of utilities;
- Increased funding for pre-event installation of auto shutoff valves to reduce gas leaks. Currently the main feeder lines from valley have them, as do newer meters installed in the last 10 years;
- Need for state and local governments and the private sector to better coordinate for effective response and acquisition of supplies and resources.

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# 1.2 COOS COUNTY OREGON

## 1.2 Coos County

**Population:** Approximately 63,043, actual population as a result of tourism can increase during spring and summer months.

### Incorporated Coastal Cities

Bandon, Coos Bay, North Bend, Lakeside

The executives of incorporated cities within Coos County are responsible for the direction and control of their community resources during emergencies.

### Unincorporated Coastal Communities:

Charleston, Barview, Hauser, North Bay, and Glasgow.

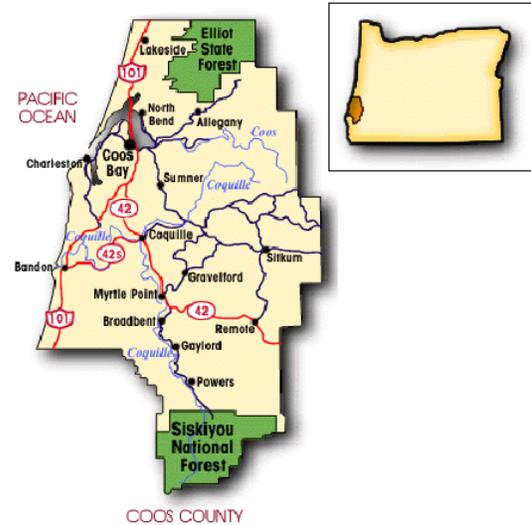
**Major Rivers:** Coquille River, Coos River, Millicoma

### Local Response Support:

Through extensive emergency management planning both at the County Level and Local Community levels, the Sheriff's Posse, wildland search and rescue teams (some cross trained in CERT), CERT (Citizen Emergency Response Team) Groups, Medical Reserve Corps, ARES/RACES HAM radio teams (Amateur Radio Emergency Services/Radio Amateur Civil Emergency Services), and Volunteers in Policing are available to support and supplement local response and recovery operations.

### First Responder Agencies / Entities:

The following agencies and entities maintain primary roles and responsibilities during an emergency situation impacting the coastal areas of Coos County:



## Cascadia Subduction Zone Plan - County Response Information Annex

### 1.2 Oregon Coastal Counties – Coos County

#### Emergency Management Services

Coos County Office of Emergency Management
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#### Law Enforcement Services

Coos County Sheriff's Office	Bandon Police Department	Coos Bay Police Department	North Bend Police Department
Coquille Indian Tribe Coos Bay / North Bend	Lakeside Volunteers in Policing (VIP)	Hauser Volunteers in Policing (VIP)	

#### Fire Services

Coos County Fire Defense Board	Bandon RFPD #18	Charleston RFPD	Coos Bay Fire & Rescue	Millington Fire (Coos Bay)	Sumner RFPD (Coos Bay)
Lakeside RFPD (Lakeside)	North Bend Fire Department	Hauser RFPD (North Bend)	North Bay RFPD (North Bend)	Southwestern Oregon Community College	

#### Ambulance Services

Bay Cities Ambulance	City Fire Department & RFPD Ambulance Services	Lower Umpqua Ambulance
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#### Public Health and Hospital Services

Coos County Public Health	Bay Area Hospital (Coos Bay / North Bend)	Coquille Valley Hospital (Coquille)	Southern Coos General Hospital (Bandon)
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#### Emergency Communications Services

Coos County 9-1-1	Coos Bay Dispatch	North Bend Dispatch
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#### Identified Community Points of Distribution (C-POD) Locations

<u>Coos Bay Area:</u> Education Service Dist. 1350 Teakwood, Coos Bay	<u>Coquille Area:</u> Coquille Supply 10054 Hwy 42, Coquille	<u>Bandon Area:</u> Bandon Airport 87718 Kehl Road, Bandon	<u>Lakeside Area:</u> Lakeside Lions Club 890 Bowron Street, Lakeside
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1.2 Oregon Coastal Counties – Coos County

Identified Emergency Mobile Home Staging Locations			
<u>Powers Area:</u> Powers County Park Powers Airport	<u>Coquille Area:</u> Coquille High School Ron’s Oil- 580 North Central Boulevard, Coquille	<u>Bandon Area:</u> Hardin Optical- 1320 Oregon Avenue SW, Bandon Ray’s Food- 66 Michigan Avenue, Bandon	<u>Lakeside Area:</u> Tenmile County Park Lakeside State Airport
<u>Coos Bay/North Bend</u> K-Mart- 3111 Ocean Boulevard Southeast, Coos Bay WalMart- 2051 Newmark Avenue, Coos Bay Mill Casino- 3201 Tremont Street, North Bend North Bend HS Marshfield HS Thomas & Sons Trucking- 840 South Front Street, Coos Bay Gold Coast Truck Repair- 62612 U.S. 101, Coos Bay Knife River LTM- 62155 U.S. 101, Coos Bay		<u>Myrtle Point Area:</u> King Logging- 94755 Quiet Valley Lane, Myrtle Point Safeway- 725 Ash Street, Myrtle Point Coos County Fairgrounds Union 76/Hodge Distributor- 1893 Roseburg Road, Myrtle Point	

**County and City Response Assumptions:**

- An emergency of this magnitude will require prompt and effective response and recovery operations by Coos County Office of Emergency Management, County Departments, Cities, volunteer organizations and the private sector;
- All primary emergency response staff are trained and experienced in operating under NIMS (National Incident Management System) and ICS (Incident Command System);
- The County and Cities will be responsible for utilizing all available local resources along with initiating mutual aid and cooperative assistance agreements before requesting assistance from the State;
- Due to post-event logistics challenges, personal self-sufficiency for the population may be necessary for an unknown amount of time that could range from several days to several weeks;
- The population of Coos County increases during peak tourist season, reflecting an influx of tourists, seasonal residents, daily visitors, and recreation enthusiasts;
- Significant increases to the local population may introduce challenges in meeting the needs of non-residents and other travelers during an emergency or disaster;

### 1.2 Oregon Coastal Counties – Coos County

- Local emergency planning efforts will focus on accommodating residents while preparing for large changes in population trends throughout the year;
- Response communication, transportation routes, equipment, and certain critical facilities may be destroyed or rendered inoperable during a disaster;
- Effective response will need public officials, first responders, volunteers, and residents to be familiar with established policies and procedures, assigned pre-designated tasks, provided with evacuation and assembly instructions and formally trained in their duties, roles and responsibilities required during emergency operations;
- The City of Bandon expects to lose all emergency response capabilities.

#### **Catastrophic Event Assumptions:**

See Oregon Cascadia Subduction Zone Earthquake and Tsunami Operations Plan pages 4-1 to 4-11 for statewide Cascadia Subduction Zone earthquake and tsunami assumptions;

Coos County will be fractured into pockets of isolated communities and neighborhoods due to loss of roadways, bridges, communication, and tsunami flooding. According to County and coastal city tsunami evacuation plans, many will be in pre-designated assembly areas and unable to get back to their homes. Individual pockets of survivors will be on their own for a time period of much greater than 72 hours until communications and transportation between these pockets is re-established. Many locations will be without emergency support of fire, law enforcement, and ambulance service until communication and transportation between these pockets is re-established.

Emergency services will be immediately overwhelmed with this scenario. All incident response will need to be prioritized due to limitations of staffing and resources.

#### **County Priorities**

##### Coos County Sheriff's Office

- Safety of emergency response personnel and assets;
- Assessment of County essential facilities for safety and security;
- Provide available equipment, resources and personnel to respond to community needs;
- Ensure safety and security of fuel resources;
- Identify and secure potable water resources, safe sheltering facilities, sanitation facilities, and food;
- Debris removal / clearance;
- Work with County agencies and State agencies in the repair and maintenance of lifeline routes;
- Provide traffic control for evacuation and response as needed.

### 1.2 Oregon Coastal Counties – Coos County

#### Emergency Management

- Ensure safety of facilities and staff;
- Contact county wide AOC's ( agency operation centers) to get situational awareness and needs information;
- Coordinate response with multiple impacted sites and limited resources;
- Establish contact with State ECC ( Emergency Communication Center) to request additional assistance.

#### Coos County Public Health

- Assess and determine safety and usability of County Health Department staff and assets;
- Establish contact with Coos County hospitals to determine status and needs;
- Coordination with County Emergency Management to be able to maximize limited resources to address needs.

#### Cities of Bandon, Coos Bay, North Bend and the Coquille Indian Tribal Government

- Safety of emergency response personnel, facilities and assets: fire, police, public works, enact continuity of government protocols;
- Provide public safety and security;
- Assessment of emergency support assets;
- Assessment of essential facilities-police, fire stations, local government offices, for safety and security;
- Public works to assess damage to critical utility services;
- Safety assessment of pre-designated sheltering facilities.

#### **Available Assets:**

##### **Fire**

#### Coos County Fire Defense Board

- Rural Fire Protection Districts throughout the County. Coastal specific districts are: Bandon RFPD, Charleston RFPD (Coos Bay), Sumner RFPD (Coos Bay), Lakeside RFPD (Lakeside), Hauser RFPD (North Bend), North Bay RFPD (North Bend);
- Districts are volunteer departments with minimal capabilities providing fire suppression to smaller unincorporated areas. Rural Fire Protection Districts can provide auxiliary equipment and manpower to larger incidents if needed;
- Have satellite phone communication capabilities.

Bandon RFPD provides fire protection for the City of Bandon. There are limited search and rescue capabilities between both the fire and police departments.

- Have satellite phone communication capabilities;
- Communications interoperability with the Bandon Police Department and the Oregon State Police;

### 1.2 Oregon Coastal Counties – Coos County

- There are five pre-designated assembly areas throughout the city.

Coos Bay Fire Department is a full service emergency safety provider covering 17 square miles, a population of approximately 23,000 with three fire stations and equipment.

- Coos Bay Fire houses Oregon, Region 15 Hazardous Materials response;
- The department manpower consists of 16 paid and approximately 40 volunteer personnel;
- Auxiliary equipment includes four, 4WD's and ten pick-up trucks;
- Medical response is supplemented with six ambulances.

North Bend Fire Department is a full service emergency response provider including marine rescue, dive rescue, fire suppression, wildland fire suppression and medical aid.

- North Bend Fire serves a population of approximately 9,695 with three fire stations and equipment;
- Response assets include: one jet boat for marine rescue & transport;
- Department manpower consists of 12 paid staff, 40 volunteers (15 are EMT certified).

North Bay Fire District is an all-risk fire and emergency services organization that responds assets from two stations and covers 29.5 square miles of suburban, rural, and industrial properties. The district provides traditional and wildland fire suppression and investigation as well as emergency medical services and specialty or technical calls for service.

- The district staffs one station and has 31 volunteer firefighters, 12 of which are State and/or nationally certified EMT's and Paramedics;
- Auxiliary equipment includes off-road and four wheeled drive vehicles, winches, chain saws, generators, and communication redundancy throughout the district;
- Agreements with industrial providers for services, equipment, and fuel during an emergency or disaster.

Coos County Health Department provides numerous public health programs as well as interfacing with the three hospitals in the County. All full service hospitals are outside of the tsunami inundation area.

- Bay Area Hospital (Coos Bay), Coquille Valley Hospital (Coquille), and Southern Coos Hospital (Bandon) all have 'Gate Keeper II' mobile medical hospital sheltering facilities and satellite phones;
- Max surge capacity of all three hospitals combined is 200;
- The Surgical Center and local clinics can take overflow from Bay Area Hospital (Coos Bay). Have three day supply of fuel to support their generator;
- Six Bay Area Clinics can provide support to hospital overflow and have satellite phones;
- Mortuary services capable of dealing with approximately 100 bodies;
- Ambulance service – 12 ALS (advanced life support) ambulances and ten BLS (basic life support) wheelchair vans;

### 1.2 Oregon Coastal Counties – Coos County

- Local medical radio system;
- ARES/RACES capabilities at hospitals;
- Medical Reserve Corps – approx. 20 members;
- Seven days of fuel supplies at local hospitals at regular day to day demands;
- Hospitals have areas capable of supporting helicopter landings.

#### Law Enforcement

##### Coos County Sheriff's Department

- Marine resources – three boats,
- ATV's;
- Sheriff's Posse, wildland search and rescue teams (not trained in urban search and rescue, some cross trained in CERT), CERT Teams, VIPs;
- Communications – 9-1-1 communications center, ARES/RACES and HAM radio, Communications Van, Packet Radio capabilities, Satellite phones;
- Vehicles – 34, 50+ personnel, four 4WD vehicles;
- Capability of providing sheltering and food for responders or others in unused portion of the County Jail;
- Approximately 10 – 15 days of fuel in the Coquille area for response and for generators.

##### Bandon Police

- Staffing availability provides for 24 hour a day, 365 days a year police service, unknown staffing post-event;
- Supplemental forces include nine volunteers and three reserve officers.

##### Coos Bay Police

- The Police Department is served by 38 staff members, providing for 24 hour a day, 365 days a year police service, unknown staffing post-event;

##### North Bend Police

- The Police Department is served by 16 Paid and 10 reserve officers, providing for 24 hour a day, 365 days a year police service, unknown staffing post-event;

##### Coquille Indian Tribe Police

- Tribal Police consists of three officers who are duly sworn and fully recognized as Peace Officers in the State of Oregon;
- Tribal Police Officers can assist local Police Agencies as available.

#### **Additional County Assets and Capabilities:**

- Damage assessment can be done by the County Assessor's Office;
- Coos County has numerous CERT teams throughout the County.

##### County Parks :

- Bastendorff (beach - in the Tsunami inundation area), two cabins which sleep six, vault toilets, 50 gallons of gasoline; Laverne park – spring water, one cabin-

### 1.2 Oregon Coastal Counties – Coos County

sleep six, shop building, wood stove, 50 gal. gas, one hand pump; Powers -3 cabins, sleep six, shop building, wood stove, 50 gal. Gas, 50 gal. diesel;

- Riley Park – two cabins, large parking area, 12 volt pump (fuel), 20 gal. Gas, 240 gal. diesel; Lakeside Boat Ramp, large shop (no heat), large parking area, small tractor, dump truck, two 20' trailers, one 20' boat. Equipment yard in Coquille: backhoe, dump truck, 2,500 kw generator, hand tools.

County Road Department – Shop and yard located in Coquille.

- Assets/capabilities: Staging Area – Coquille Yard;
- Bridge damage assessment team – partnered with ODOT;
- Debris Management Team;
- EOC Operations staffing along with EOC Procurement staffing;
- Heavy equipment – excavators, loaders etc.; trucks; trained staff in disaster response; base station emergency generator;
- Fuel storage: gas – 25,000 gallons., diesel-25,000 gallons;
- County Road Master would assess road damage and determine needs for getting them operational;
- Bridge Damage Assessments would work closely with ODOT.

Coquille Indian Tribe

- Tribe has a full functional Health Clinic;
- Food and water for 300 people enough to last for approximately seven days;
- Food and services are on Tribal Lands and can be shared if not needed by Tribal members;
- Have ARES/RACES radio capabilities.

International Port of Coos Bay – is the largest coastal natural deep draft harbor between San Francisco and Puget Sound.

- Entrance Range Depth – 47 feet.
- Channel Depth – 37 feet.
- Location: Lat - 43°22'North; Long - 124°22' West

Southwest Oregon Community College

- Community College has pre-designated heli-spots, flat areas for staging, and dorms for responders (depending on damage);
- All campus areas are out of the Tsunami Inundation Zone.

**Catastrophic Event Operational Challenges**

- Bridge and overpass damage –111 County bridges, ODOT is responsible for 173 in the County;
- Slide prone areas on major lifeline roadways which would impact supply and evacuation routes of Highway 42 and Highway 101;
- Bandon –

### 1.2 Oregon Coastal Counties – Coos County

- All City essential services, utilities, and public works equipment is in the Tsunami Inundation Zone. Any emergency response is likely to be very minimal if at all;
- No trained citizen CERT groups to provide assistance;
- Pre-designated assembly areas have no capabilities to provide shelter, food or water;
- City has minimal generator capabilities and all fuels are purchased commercially – no stored, City owned fuels;
- Airport in Bandon is expected to survive.
- Coos Bay – Portions of City will be isolated due to bridge damage and tsunami inundation.
- North Bend –
  - Portion of the City will be isolated due to bridge damage and tsunami inundation. Major transportation artery, Hwy. 101, will be cut off with damage to the McCullough Bridge.
- Northern portions of the County on the north side of the McCullough Bridge will need to seek medical care and sheltering in Douglas County – Reedsport. Large portions of the populations will be isolated in assembly areas and unable to return to their homes.
- County and City resources have very limited urban search and rescue capabilities;
- County and City resources have very limited potable water storage and/or water purification capabilities;
- Port of Coos Bay – The deep draft Port Channel will be inundated with debris which will need to be cleared prior to use for any type of shipping of essential needs supplies.
- Coos County Health Department / Hospitals –
  - Due to the scale of the incident, the medical system will be immediately overwhelmed;
  - Hospitals have no stored supply of potable water or sterile water which will limit the ability to treat survivors;
  - Medications will be limited due to the inability of receiving regular shipments. Lack of access for commercial medical suppliers;
  - Survivors with chronic conditions will require prescriptions quickly or they will add to the medical burden as their conditions deteriorate;
  - All hospitals have generator power with some fuels, and “Gate Keeper II” tent hospitals, however none of the hospitals have any equipment for these medical tents. Any medical equipment, bedding, supplies will need to be transported from damaged hospitals if possible;
  - Medical facilities may not be able to provide more advanced care due to conditions;

### 1.2 Oregon Coastal Counties – Coos County

- Mortuary capabilities are limited to approximately 100. No pre-designated refrigeration capabilities including commercial refrigeration.
- Depending on time of year, a significant tourist population may be located in coastal areas and unable to leave until transportation services can be restored. Most City and County food and water resources are not capable of providing for these additional populations;
- Water systems – for fire suppression will likely not be operational;
- Generator power will last for a few days – some hand pump capabilities for emergency access to fuels without power;
- US Coast Guard – marine facilities and equipment are at sea level and are not likely to survive. Aerial Rescue Support is at North Bend Airport (elevation 16') and is expected to receive severe damage;
- County Search and Rescue teams are trained for wildland SAR only. They will provide as much assistance as possible for Urban Search and Rescue (some cross trained in CERT).

#### **Support Needed Immediately After a Catastrophic Event:**

- Need delivery of diverse fuels to include diesel, gasoline and propane;
- Safe and secure buildings/shelters for critical infrastructure and responding personnel;
- Need replacement trained and equipped emergency response personnel from outside of the area(s). The community of Bandon expects to lose all emergency response capabilities;
- Additional urban search and rescue teams, self-sustaining with equipment;
- Mass Fatalities incident teams and equipment;
- Immediate aerial and/or sea support needed to resupply communities with water, food, shelter, and response personnel;
- Support needed for evacuations of special medical needs survivors, injured and vulnerable populations. Relocation of patients needing serious care (dialysis and other resource intensive procedures) to facilities outside of the impacted areas;
- Critical need of generator power and fuels. Most generators are not expected to survive event;
- Additional temporary sheltering, food and water supplies for displaced survivors and tourists; due to aftershocks and safety concerns, public buildings and schools may not be feasible to use immediately;
- Water purification equipment in all populated areas to provide potable water to survivors;
- Water purification equipment needed in all medical facilities;
- Sanitation facilities need in all populated areas;
- Supplies and equipment for bridging, road repair and debris removal;

### 1.2 Oregon Coastal Counties – Coos County

- Durable medical supplies and equipment for temporary hospital facilities;
- Supplies of pharmaceuticals for chronic medical conditions, including psychological and behavioral health needs;
- Security staff to safeguard local pharmacies, shelters, increased security at critical facilities and surviving food and water locations;
- Spontaneous volunteer management assistance and screening of volunteer skills and backgrounds;
- Screening capabilities for professional medical volunteers;
- Amateur radio equipment and antennae;
- Cell phone re-establishment (COW Cellular on Wheels);
- Immediate access to communication and information to allow survivors to communicate with family members outside of the area and provide reunification services.

#### **Identified Mitigation and Pre-Event Preparedness:**

- Cities with essential services and facilities in the tsunami inundation zone need assistance and financing to relocate these assets to City owned lands outside of the tsunami inundation zone;
- Increased coordination and/or agreements with the private sector to provide assistance post event;
- Continued neighborhood and community training with Citizen Corps, CERT, Map Your Neighborhood and similar programs for public awareness and personal preparedness.
- Funding to purchase water purification systems and water stores for hospitals and clinical medical facilities;
- Funding for storage facilities for food, water and sheltering supplies;
- Funding for individual community supply caches and storage containers to possibly include bottled water, water filter straws, shelter canopies, blankets, tarps, rain ponchos, survival food bars, sanitation supplies, and medical supplies;
- Special needs and long term care facilities need protocols and procedures for patient evacuation, patient sheltering and care;
- Continued funding for retrofitting and possible relocation of essential facilities in all areas;
- Agreements with the private sector to supplement and address: bridge engineering, safety assessment and temporary rebuilding of roadways. Private sector coordination with aerial support companies needed also;
- Surge capacities of local hospitals cannot handle the medical needs after this event. Pre-event purchase and storage of critical/essential equipment is needed;

### 1.2 Oregon Coastal Counties – Coos County

- There is a need for interoperable communications capability and equipment for County hospitals;
- Medical services needs water purification abilities and stored potable and sterile water;
- Funding for retrofitting local water infrastructure. Community water tanks and pipe network are not expected to survive earthquake;
- Retrofitting of clinics and ambulatory medical surgery centers;
- Increased communication abilities for Rural Fire Protection Districts and rural communities, especially in communities that are expected to be isolated in this event;
- Better communication abilities to provide medical services communication interoperability with county communications;
- Increased medical community plans for the evacuation and care of severely disabled/and non-ambulatory residents. These plans and protocols need to extend to in-home care givers, foster homes, and long term care facilities;
- Caches of pharmaceuticals needed including oxygen, insulin, Lasix, antibiotics, Coumadin, psychotropic drugs, meds and supplies for burns;
  - Generally patients needing these medicines are faced with challenges from insurance companies to have a 3 month supply on hand in case of emergencies. Pushing for changes from insurance companies to allow for emergency supplies of these items will increase the preparedness of communities greatly.
- Agreements with private security companies to provide security for pharmacies surviving the event to safeguard existing pharmaceuticals.

# 1.3 CURRY COUNTY OREGON

## 1.3 Curry County

**Population:** Approximately 22,364. Population as a result of tourism can increase during spring and summer months.

**Incorporated Coastal Cities:**

Brookings, Gold Beach, Port Orford

The executives of incorporated cities within Curry County are responsible for the direction and control of their community resources during emergencies.

**Unincorporated Coastal Communities:**

Harbor, Pistol River, Wedderburn, Nesika Beach, Ophir, Sixes, Denmark, Langlois

**Major Rivers:**

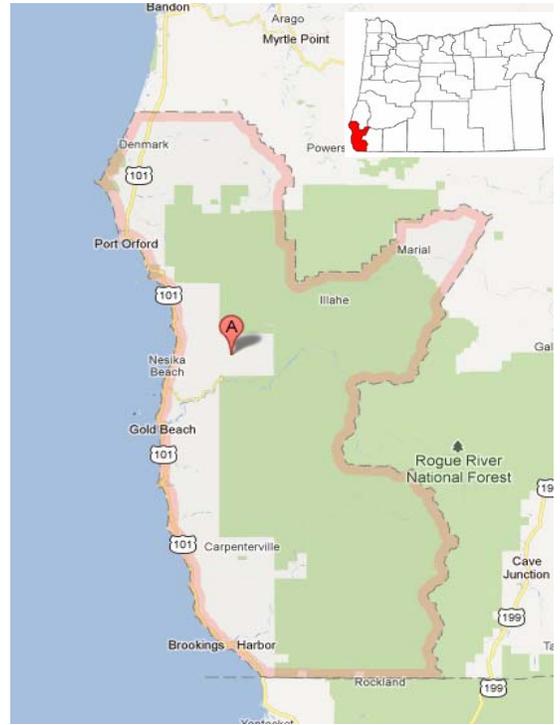
Rogue River near Gold Beach, Chetco River near Brookings

**Local Response Support:**

Emergency Management planning at the County level, Local Community level, and Special Service District level will commit all resources and services, if necessary, to accomplish the response priorities. Special Service Districts include: fire protection, water delivery, schools, and ports, Border Coast Regional Airport Authority and Curry Transit.

**First Responder Agencies / Entities:**

The following agencies and entities maintain primary roles and responsibilities during an emergency situation impacting the coastal areas of Curry County.



## Cascadia Subduction Zone Plan - County Response Information Annex

### 1.3 Oregon Coastal Counties – Curry County

#### Emergency Management Services

Curry County Office of Emergency Management

#### Law Enforcement Services

Curry County Sheriff's Department	Brookings Police Department	Gold Beach Police Department	Port Orford Police Department
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#### Fire Services

Brookings RFPD	Gold Beach Volunteer Fire Dept.	Port Orford RFPD	Winchuck RFPD	Ophir RFPD	Langlois RFPD
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#### Ambulance Service

Cal-Ore Life Flight	Port Orford Community Ambulance, Inc.
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#### Medical Services

Curry County Public Health (Gold Beach)	Curry General Hospital (Gold Beach)	Curry Medical Center (Medical Clinic, Brookings)	Curry Family Medical Clinic (Port Orford)
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#### Emergency Communication Services

Curry County 9-1-1	Pelican Bay Amateur Radio Club (PBARC) Emergency (Emergency back up communications system)
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#### Identified Community Points of Distribution Locations

Yet to be identified by County Emergency Management

#### Identified Emergency Mobile Home Staging Locations

Yet to be identified by County Emergency Management

#### **County Response Assumptions:**

- An emergency of this magnitude will require prompt and effective response and recovery operations by Curry County Office of Emergency Management, County Departments, Cities and volunteer organizations;
- All primary response staffs are trained and experienced in operating under NIMS and ICS;
- The County will be responsible for utilizing all available local resources along with initiating mutual aid and cooperative assistance agreements before requesting assistance from the State;

### 1.3 Oregon Coastal Counties – Curry County

- Given shortages of time, space, equipment, supplies and personnel during a catastrophic disaster, self – sufficiency will be necessary for an unknown amount of time that could range from several days to several weeks;
- The population of Curry County increases during peak tourist season reflecting an influx of tourists, seasonal residents, daily visitors, and recreation enthusiasts;
- Local emergency planning efforts should focus on accommodating residents while preparing for changes in populations trends throughout the year. Significant increases to the local population may introduce challenges in meeting the needs of non-residents and other travelers during an emergency or disaster;
- Response communication, equipment and work centers may be destroyed or rendered inoperable during a disaster;
- Effective response will need public officials, first responders, volunteers, and residents to be familiar with established policies and procedures, assigned pre-designated tasks, provided with evacuation and assembly instructions and formally trained in their duties, roles and responsibilities, required during emergency operations.

#### **Catastrophic Event Assumptions:**

See Oregon Cascadia Subduction Zone Earthquake and Tsunami Operations Plan pages 4-1 to 4-11 for statewide Cascadia Subduction Zone earthquake and tsunami assumptions.

Curry County will be fractured into pockets of isolated communities and neighborhoods due to the loss of roadways, bridges and communications capabilities. Impact predictions for Gold Beach, Port Orford and the Harbor community indicate that much of these communities will be destroyed by a Cascadia Subduction Zone tsunami inundation event. Individual pockets of survivors will be on their own for a time period of greater than 72 hours until communications and transportation between these pockets is reestablished.

Emergency services will be immediately overwhelmed with this scenario. All incident response will need to be prioritized due to limitations of staffing and equipment. Total support will be needed for the most basic needs.

#### **County Priorities:**

##### **Curry County**

- Safety of emergency response personnel and their families. Response personnel will include fire, law enforcement, county public works personnel;
- Life saving and protection of property are response priorities;
- Stabilizing damaged public and private structures to facilitate search and rescue and/or protect the public's health and safety;
- Enact continuity of government protocols where appropriate;

### **1.3 Oregon Coastal Counties – Curry County**

- Conduct unit reconstruction – recall of critical employees, and the collection, inventory, temporary repair and allocation of county assets;
- Identify and secure potable water resources, safe sheltering facilities, sanitation facilities, and food;
- Provide emergency food and temporary housing to survivors;
- Provide for the safety and security of fuel resources;
- Determine extent of damage to the following systems: transportation, water, solid waste, electrical, wastewater, and hazardous materials;
- County Roadmaster to assess road damage and determine needs for getting them cleared and accessible. Have working agreements with ODOT and could coordinate response efforts;
- Curry County will work with ODOT to conduct bridge damage assessments;
- Debris removal / clearance;
- Repair – maintain lifeline routes;
- Restoration of critical facilities.

#### **Curry County Emergency Management**

- Activation of the County EOC for the purpose of coordinating emergency response activities;
- Obtaining timely inventories of current resources and assets;
- Serving as primary point of contact for resource requests from County departments, cities, and the general public;
- Identifying facilities and services that are essential to the life of the community, and prioritizing for the repair and restoration of such vital facilities;
- Activation of intergovernmental agreements with neighboring jurisdictions for support;
- Establish contact with the State ECC for State and Federal assistance as needed.

#### **Curry County Public Health**

- Evacuation of Curry General Hospital which is located in the Tsunami Inundation Zone of Gold Beach;
- Providing emergency medical assistance to injured;
- Establishing temporary and ad hoc medical facilities to deal with medical surge;
- Assessment of public health and sanitation systems and identifying areas of concern;
- Inventorying, securing and prioritizing available pharmaceuticals and medical supplies;
- Providing crisis counseling and mental health services;

### 1.3 Oregon Coastal Counties – Curry County

- Coordinating and identifying individuals with special needs within the impacted area;
  - Agencies and organizations involved in managing, transporting and communicating with special needs populations:
    - Public Health,
    - Home Health and Hospice, Curry County Emergency Services,
    - Curry General Hospital, private clinics and care facilities throughout Curry County,
    - Curry Transit,
    - School districts and local radio stations serving Curry County.
- Providing mortuary Services;
- Animal and vector control.

#### **Cities of Brookings, Gold Beach and Port Orford**

- Safety of emergency response personnel and assets;
- Public safety and security;
- Assessment of city essential facilities for safety, usability and security;
- Establish continuity of government;
- Assessment of damage to critical infrastructure;
- Providing for the protection, management, distribution, and use of remaining resources;
- Coordinate operations with the civil defense/emergency service organizations of other jurisdictions;
- Establish a city Emergency Operations Center (EOC) from which city government can function efficiently during disasters;
- Provide coordinated direction and control for emergency operations within the City and initiate mutual support activity, among neighboring communities, Curry County and the State.

#### **Available Assets:**

##### Fire:

Coastal Rural Fire Protection Districts include: Cape Ferrelo RFP Department, Harbor RFPD, Winchuck RFPD, Ophir RFPD, Langlois RFPD, Sixes RFPD and Wedderburn RFPD.

Brookings Fire and Rescue is a full service emergency safety provider to a population of approximately 6,350.

Gold Beach Fire Department is a fire emergency safety provider to a population of approximately 1,900. The department provides structural fire protection with 18-25 voluntary fire fighters.

### 1.3 Oregon Coastal Counties – Curry County

Port Orford contracts with the Port Orford Rural Fire Protection District for fire services. It is a volunteer organization serving a population of 1,153 residents.

#### Law Enforcement:

Curry County Sheriff's Department provides 9-1-1 communications center, criminal division, civil division, wildland search and rescue and animal control.

The department also provides law enforcement assistance to other county agencies as needed.

Brookings Police Has a staff of approximately 13 sworn staff as well as reserve officers. The department provides 9-1-1 dispatch, patrol, K-9 unit, detectives, reserve officers and Volunteers in Policing Services.

Gold Beach Police supports the local police department with five officers, two reserve officers and Volunteers in Policing Services Program.

Port Orford Police provides three full time officers which are supplemented with reserve officers.

#### Curry County Public Health

- Curry County Health Department has two satellite phones;
- Department can provide some support for securing potable drinking water;
- Can assist with food safety issues;
- Medical Examiner provides birth and death certificates;
- Some additional first aid supplies are kept on hand. Hospital has mobile capabilities. Hospital Shelter tents are on a bus with some equipment and supplies;
- Health Department can conduct medical testing, some immunizations as well as limited capacity to provide additional medicine and supplies for first aid.

#### **Additional County Capabilities:**

- Brookings Airport located at 459' above sea level – out of the tsunami inundation level. Largest runway is 2,900' X 60' on good asphalt, built on bedrock;
  - Location: Lat: 42°04'28.4000 N; 124°17'.3380 West.
  - Airport is expected to survive a large magnitude earthquake and tsunami.
- Boats, 15,000 KV power generator, two 10 X 32' tents in trailers for sheltering. However these assets are stored at airport in Gold Beach, in the tsunami inundation zone;
- Mobile command Unit with radio capabilities;
- Curry County has identified six possible alternate EOC facilities;

### 1.3 Oregon Coastal Counties – Curry County

- Lobster Creek Youth Camp has camping areas with cabins, generator, water system, walk-in coolers. (Facility is located north of the Rogue River Bridge and would be inaccessible by anyone on the south side of the Bridge);
- Cranberry bogs located near cities have their own water systems and septic systems;
- Curry County CERT program which currently has 65 trained and equipped volunteers.

#### **Catastrophic Event Operational Challenges:**

- County assets, including the County Public Works yard (heavy equipment and generators) and an ODOT facility, that are stored in the Gold Beach area are in the tsunami inundation zone and are not expected to survive;
- The Southern Oregon Coast terrain can make evacuations difficult. Communities are located at sea level with the Coast Range and unimproved roadways to the east. Evacuees likely to be in improvised areas along hillside;
- Coastal communities of Gold Beach, Port Orford and the Harbor community will sustain severe damages according to this scenario;
- By nature of a catastrophic event, essential personnel will be delayed in response due to commitments to personal and family safety and security. Responses will be delayed as personnel check in as 'available' for mission deployment;
- Transportation damage will prevent responders not living near their facilities from reaching their work;
- Damage to transportation infrastructure reduces response capability and effectiveness;
- Evacuation routes that have been established have no facilities for evacuees;
- Much larger population with tourists, estimated that population is 50% greater than listed due to tourist population;
- With harbor damages the only viable method of support by sea is by air or with unimproved beach landings;
- Danger in ferrying people and resources across waterways impacted by tsunami and debris;
- High damage expected at public and response facilities - Driftwood Elementary, Port Orford Police Department, and Rural Fire District Office;
- Due to projected damage to transportation routes there will be no emergency medical capabilities north of Brookings to the Coos County border;
- Curry General Hospital is located in the tsunami inundation zone;
- Hospital sheltering, food and medical supplies are in a bus and capable of moving and setting up alternate medical facilities. The bus is stored at the

### 1.3 Oregon Coastal Counties – Curry County

hospital in the inundation zone. The ability of moving bus to a safe location out of the inundation area is questionable;

- Lack of clean water will limit the ability to medically treat survivors;
- Medical facilities may not be able to provide more advanced care due to conditions;
- Limited ability of those needing medical care to get to medical facilities in County, no ability to move those needing severe care (burn victims, dialysis, etc.);
- Water system for fire suppression will likely not survive, draft sites where they can pump is unlikely to be accessible due to mud;
- Search and rescue teams are trained for wildland SAR only. They will provide as much assistance as possible for urban search and rescue (some cross trained in CERT).

#### **Support Needed Immediately After a Catastrophic Event:**

- Need replacement trained and equipped response personnel from outside the area(s) beyond 72 hours for urban search and rescue, law enforcement, fire response, debris removal and restoration of lifeline roadways;
- Immediate aerial or sea re-supply of external resources for life sustainment. Food, water and shelter needs will be much greater than Curry County can provide for due to tourist impacts;
- Aerial or sea evacuation of injured, vulnerable populations and tourists;
- Water purification equipment needed in all populated areas to provide potable water to survivors;
- Fuel – diesel, gasoline, propane;
- Communication system power, support and repeaters to maintain response;
- Sanitation needs;
- Supplies and support for residents to shelter in place;
- Additional fire/rescue equipment and replacement parts;
- Need support and temporary shelter (tents, larger gathering tents for many people) for survivors. Due to aftershocks and safety concerns, school facilities not feasible to re-shelter immediately;
- Durable medical goods and pharmaceuticals for chronic illnesses;
- Need additional supply caches for medical goods and pharmaceuticals;
- Assistance and transportation relocation of patients needing serious care (dialysis and other resource intensive procedures);
- Medicines for psychological and behavioral health needs;

### 1.3 Oregon Coastal Counties – Curry County

- Psychological first aid training for responders and shelter staff;
- Security staff for shelters and increased security presence at critical facilities (infrastructure, fire stations, pharmacies and surviving food locations);
- Ability to screen volunteers and shelter populations to provide security for shelters;
- Immediate access to communication and information to allow survivors to communicate with family members outside of the area and provide reunification services;
- Need support and temporary shelter (tents, larger gathering tents for many people) for survivors. Due to aftershocks and safety concerns, school facilities and other survivor locations are not feasible to re-shelter immediately;
- Engineering assets / bridge inspectors.

#### **Identified Mitigation and Pre-Event Preparation:**

- Procure property out of the tsunami inundation areas both north and south of the Rogue River to stage essential resources and supplies;
- Identify location to cache and space to deploy mobile hospital facilities and supplies;
- Curry County Public Health / Curry General Hospital need an updated emergency operations plan and an evacuation plan;
- Seek funding to retrofit or relocate buildings and/or infrastructure at risk of damage in a high magnitude earthquake. Federal grant funding has been denied for public buildings in the tsunami inundation areas of Curry County coastal communities due to their low percentage survivability from a tsunami;
- Relocation of critical facilities and motor pools outside of the inundation area;
- Volunteer management protocols for locals;
- Donations management protocols for locals;
- State assistance and support of counties for continued COOP planning and resources;
- Agreement on standards for alternate catastrophic medical response protocols to deal with scenario;
- Pre-planning of impact on and response to vulnerable populations;
- Planning on what chronic care needs will be needed based on population in the County;
- Funding for individual community supply caches, similar to that described on the next page, to include shipping container or similar large survivable storage device;

1.3 Oregon Coastal Counties – Curry County

**Seagrove Community  
250 Person Disaster Supply Cache**

	Quantity	Price	Total Price	Comments
<b><u>WATER</u></b>				
Bottled Water	250	\$ 0.20	\$ 50.00	
Water Filter Straws	250	\$ 6.00	\$ 1,500.00	Filters 20 gallons/water per straw
55-gallon Water Barrels	8	\$ 80.00	\$ 640.00	1/2 gallon water per person for 3 days
<b><u>SHELTER</u></b>				
10 x 20 Steel Frame Canopy	10	\$ 199.00	\$ 1,990.00	Sleeping Quarters (Costco)
32 x 16 Steel Frame Canopy	2	\$ 479.00	\$ 958.00	1 Medical Treatment Area, 1 Gathering/Eating Area (acecanopy.com, amazon.com)
Mylar Blankets	250	\$ 1.00	\$ 250.00	
Rain Ponchos	250	\$ 0.50	\$ 125.00	Dollar Store
Tarps	20	\$ 10.00	\$ 200.00	Floors for Canopies (Costco)
<b><u>MEDICAL</u></b> 500 Person Trauma Medical Kit				
	1	\$ 1,050.00	\$ 1,050.00	EQ Management (100 person kit is \$400)
<b><u>FOOD</u></b> : Survival Food Bars				
	1000	\$ 3.50	\$ 3,500.00	3600 calorie food bars, perforated (EQ Management)
<b><u>SANITATION</u></b> : Toilet Kits				
	12	\$ 20.00	\$ 240.00	5 gallon bucket w/liners, seat,lid, toilet paper, hand sanitizer, & disinfectant
<b><u>SEARCH &amp; RESCUE KIT</u></b>				
	1	\$ 500.00	\$ 500.00	4 person professional rescue kit (EQ Management)
<b><u>CONTAINER</u></b> (20 foot steel storage container)				
	1	\$ 3,795.00	\$ 3,795.00	Weather proof, tamper proof (Attec Containers)
<b>TOTAL</b>			<b>\$ 14,798.00</b>	

**ASSUMPTIONS:**

Hypothermia is a significant threat  
 Hundreds of aftershocks will discourage people from staying in homes that aren't destroyed in the initial earthquake (psychological barriers, structural barriers)  
 Water and Shelter are the highest survival needs  
 Supplies (food, shovels, clothing, etc) will be able to be collected from homes that aren't destroyed.

**Other Needs:**

Pet Supplies (leashes, food, carriers)  
 Rope/Stakes/hammer  
 Lanterns/Flashlights  
 Stocking caps/gloves

- County and State need knowledge of nightly occupancy of hotels in order to plan more effectively for needs of tourists;
- Policies and procedures for identifying and credentialing useful volunteers that are spontaneous and not affiliated with County emergency response volunteer groups.

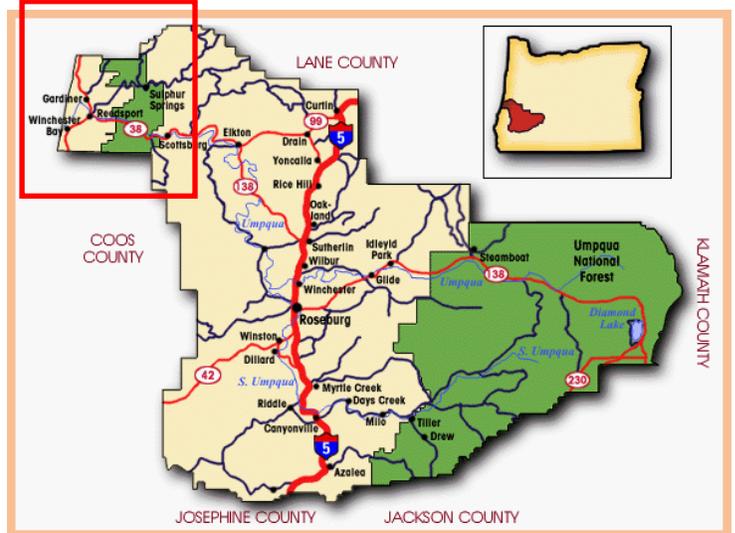
# 1.4 COASTAL DOUGLAS COUNTY OREGON

## 1.4 Coastal Douglas County

**Population:** The Douglas County coastal area population is approximately 6,413 persons, and as a result of tourism could be twice that or more during peak tourist seasons.

The county has an area of 5,134 square miles. Douglas County extends from the Pacific Ocean to the Cascade Range. This document focuses primarily with coastal Douglas County (Scottsburg to the Pacific Ocean). As the most populous City, some information from the City of Roseburg is included. There will be a follow up annex for eastern Douglas County in the near future.

### Coastal Douglas



### Incorporated Coastal

**Cities:** City of Reedsport

The executives of incorporated cities within Douglas County are responsible for the direction and control of their community resources during emergencies and will coordinate response with County Emergency Management.

**Unincorporated Coastal Communities:** Winchester Bay, Gardiner, Scottsburg

**Major Rivers:** Umpqua River, Smith River

**Local Response Support:** Through existing emergency management planning and agreements, The Salvation Army, Sheriff’s Posse, Douglas County Search and Rescue Team, Douglas County Community Emergency Response Teams (CERT), other volunteer groups and private contractors are available to assist and supplement local response and recovery operations.

### First Responder Agencies / Entities:

The following agencies and entities maintain primary roles and responsibilities during an emergency situation impacting the coastal areas of Douglas County:

## Cascadia Subduction Zone Plan - County Response Information Annex

### 1.4 Oregon Coastal Counties – Coastal Douglas County

#### Emergency Management Services

Douglas County Office of Emergency Management

#### Law Enforcement Services

Douglas County Sheriff's Department	Reedsport Police Department	Oregon State Police
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#### Fire Services

Western Douglas/Lane County Fire Defense Board	Roseburg Fire Department (HazMat)	Coos Forest Protective Association	Reedsport Volunteer Fire Department	Gardiner Rural Fire Protection District	Winchester Bay Rural Fire Protection District
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#### Ambulance Services

Lower Umpqua EMS - 2 ALS ambulances operated from the Lower Umpqua Hospital, Reedsport

#### Public Health and Hospital Services

Douglas County Public Health	Lower Umpqua Hospital (Reedsport)	Mercy Medical Center (Roseburg)
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Peace Health Hospital in Florence and Bay Area Hospital in Coos Bay are both significantly closer than Roseburg.

#### Emergency Communications Services

Douglas County Emergency Communications 9-1-1 Center	City of Reedsport Communications
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#### Identified Community Points of Distribution and Mobile Home Staging Locations *\*\* All of these locations are located in the tsunami inundation zone. Coastal Douglas County has no other areas that meet the criteria. \*\**

International Paper Company Site-Old Hwy 101 Gardiner OR 97441 43° 44' 32.38" N, 124° 06' 51.30" W <i>*Site for both C-POD and mobile home staging</i>	Bolon Island- American Bridge Manufacturing- 135 American Bridge Way, Reedsport OR 97467 43° 42' 52.74" N, 124° 06' 03.20" W <i>*Site for both C-POD and mobile home staging</i>
Douglas County Stockpile, Site east side of Bolon Island 43° 42' 49.27" N, 124° 05' 50.60" W <i>*C-POD Only</i>	Reedsport Real Estate Development, LLC 711 Port Dock Road, Reedsport OR 97467 43° 42' 21.19" N, 126° 06' 22.01" W

### 1.4 Oregon Coastal Counties – Coastal Douglas County

	(McIntosh Slough area, owned by Mast Bros.) <i>*Site for both C-POD and mobile home staging</i>
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#### **County Response Assumptions:**

- An emergency of this magnitude will require prompt and effective response and recovery operations by Douglas County Office of Emergency Management, County Departments, Cities, volunteer organizations, and the private sector;
- All primary response staff are trained and experienced in operating under NIMS and ICS;
- The County will be responsible for utilizing all available local resources along with initiating mutual aid and cooperative assistance agreements before requesting assistance from the state;
- The county is minimally prepared to carry out disaster response on an event of this magnitude;
- The County will use all available local resources, including mutual aid and cooperative assistance agreements, before requesting assistance from state and federal resources;
- Douglas County's population can increase at various times during the year from an influx of tourists, seasonal residents, visitors, and recreation enthusiasts.
- Local emergency planning efforts will focus on accommodating residents while preparing for changes in population trends throughout the year. However, significant increases to the local population will introduce challenges in meeting the needs of non-residents and other travelers during an emergency or disaster;
- Given shortages of time, space, equipment, supplies, and personnel during a catastrophic disaster, self-sufficiency (for local governments and population at large) will be necessary for an unknown amount of time that could range from several days to several weeks;
- Wheeled-vehicle access may be hampered by bridge failures, washed out roads, and landslides, making conventional travel to any area heavily impacted impossible;
- Communities will be isolated and mostly inaccessible;
- Emergency response will be heavily impacted due to the probable loss of bridges creating three pockets of isolated areas along the Douglas County coast. Gardiner and north, Reedsport north of Scholfield Creek, Reedsport south of Scholfield Creek to include Winchester Bay and possibly the Lakeside area which is in Coos County;
- Response and recovery resources located in tsunami inundation area will likely be lost if they cannot be moved to higher ground rapidly. Resources located on liquefiable soils will also likely be lost or severely damaged;

### 1.4 Oregon Coastal Counties – Coastal Douglas County

- U.S. Coast Guard resources in Winchester Bay will be lost if they cannot be moved out to sea rapidly;
- Emergency response personnel will be impacted due to road and bridge damage and the inability to reach areas of the community or report for duty;
- Winchester Bay (Salmon Harbor) will be inaccessible due to debris;
- Current demographics of area contain a large number of older residents and emergency response personnel. This increases the challenge of responding and caring for that population.

#### **Catastrophic Event Assumptions:**

See Oregon Cascadia Subduction Zone Earthquake and Tsunami Operations Plan pages 4-1 to 4-11 for statewide Cascadia Subduction Zone earthquake and tsunami assumptions.

Douglas County coastal communities will be cut off from assistance coming from I-5 and central Douglas County. The coastal areas will most likely be isolated into four distinct areas due to damaged bridges and roadways (Winchester Bay, South Reedsport, North Reedsport and Gardiner). These isolated communities will be without emergency support until communications and transportation between them is reestablished. The coastal section of Douglas County will most likely be isolated from assistance north/south as well. Not only will be isolation between these sub areas but the coastal area will most likely be isolated from the Interstate 5 (I-5) corridor where the most quantity of services and resources are located.

Emergency services will be immediately overwhelmed. Communities will likely be isolated for a time period much greater than 72 hours.

Salmon Harbor, which is one of the larger recreational facilities on the Oregon Coast, would be severely impacted and possible loss of life would be significant. Debris would be significant and hinder response into the area.

#### **County Priorities:**

##### **Douglas County Sheriff's Office**

- Ensure safety of County response personnel;
- Assess safety, usability and security of facilities;
- Enact continuity of government protocols where appropriate;
- Support short term lifesaving and shelter needs of impacted population;
- Clearing life line roadway routes from coastal areas to I-5 corridor for supplies and evacuations;

##### **Douglas County Emergency Management**

- Ensure safety of facilities and staff;
- Contact County-wide AOCs and impacted areas to get situational awareness and identify needs;

### 1.4 Oregon Coastal Counties – Coastal Douglas County

- Coordinate response with multiple impacted sites and limited resources;
- Contact State ECC to coordinate the provision of essential needs through county, state and federal resources.

#### **Douglas County Public Health**

- Assure safety staff and usability of facilities and assets;
- Establish contact with county medical facilities to obtain a status and determine needs;
- Coordinate with County Emergency Management to be able to maximize limited resources, determine capabilities, address needs and deliver assistance.

#### **City of Reedsport**

- Safety of response personnel including fire, police, public works;
- Assess safety, usability and security of City facilities;
- Enact continuity of government protocols where appropriate;
- Public safety and security;
- Establish search and rescue operations;
- Safety assessment of pre-designated sheltering facilities;
- Adapt to ongoing situations as they arise to continue life/safety missions;
- If possible, recover essential fire and police equipment and resources from impacted areas;
- Establish traffic safety zones on major roadways;
- If possible, take steps to prevent possible flooding from levee breaches;

#### **Available Assets:**

##### **Fire: (Responses for all fire districts were similar; information includes coastal Douglas County, Reedsport, Winchester Bay, and Gardiner.**

**Winchester Bay RFPD** – Has one fire station staffed with approximately 22 volunteer firefighters (some with EMT certifications). The station and staff serve a population of approximately 382 which can double during peak tourist season. The Winchester Bay Fire Station has a “Moderate” collapse potential, per DOGAMI SB2 assessment, it is also in the inundation zone.

**Reedsport Fire Department** – has two fire stations staffed with approximately 41 volunteers specializing in firefighting, rescue, hazardous materials incidents, special assignments, and fire prevention education. The department has a fully functioning EOC with 72 hour emergency power and local, county and state communications capability, including ham radio and satellite internet. Douglas County Emergency Management has established an agreement with the City of Reedsport to use Fire Station #2 as a Western Douglas County Area Operations Center. There are county and coastal mutual aid agreements in place. Additional assets include 1000 sandbags, and 9 portable

### 1.4 Oregon Coastal Counties – Coastal Douglas County

generators. Station 1 has a “High” collapse potential, per DOGAMI SB2 assessment. Station 2 has a “Low” collapse potential, per DOGAMI SB2 assessment.

**Gardiner RFPD** –The Gardiner fire station provides fire suppression for a rural community of approximately 248 residents. Staffed with nine personnel (volunteer), and equipped with two Class A fire engines, one quick attack, one pick-up truck, 2x2 kilowatt Honda generators. The fire station is located well inside the inundation zone. The Gardiner Fire Station has a “High” collapse potential, per DOGAMI SB2 assessment.

#### **Health Care:**

**Douglas County Health Department** – provides numerous public health programs as well as interfacing with the coastal medical services. The Lower Umpqua Hospital District in Reedsport provides a full service medical facility with a 56 bed capacity. The Hospital District provides an Adult Level IV Trauma Center and two ALS ambulances that operate from the hospital. Lower Umpqua Hospital has a “Gate Keeper II” mobile medical hospital sheltering facility. Additionally, there is a rural health care clinic in the north Reedsport area. The building that houses the Health Dept. has a “High” collapse potential, per DOGAMI SB2 assessment.

**Lower Umpqua Hospital** - Two of the three buildings at Lower Umpqua Hospital are rated as having a “High” collapse potential, per DOGAMI SB2 assessment. The only building with a “Low” rating is the ambulance garage and office.

#### **Law Enforcement**

**Douglas County Sheriff’s Department** has assigned four to five resident deputies to the coastal area. The deputies provide law enforcement to the Gardiner and Winchester Bay unincorporated communities, and areas not served by municipal police. The building that houses the Sheriff’s Office has a “High” collapse potential, per DOGAMI SB2 assessment.

**Oregon State Police** has assigned approximately three to five officers to the coastal Douglas County area at any given time. Most are based out of Coos Bay and may not be able to assist in Douglas County due to damaged roadways.

**Reedsport Police Department** provides one or two officers on duty at all times. The department has received grant funds for a communications trailer. The plans for building the trailer are currently being finalized. The trailer will be equipped with a mobile repeater system for interoperable communications systems as well as being able to back up the cities secondary PSAP. The Reedsport Police Department building has a “High” collapse potential, per DOGAMI SB2 assessment.

#### **Additional Coastal County/Agency Capabilities:**

**Oregon State Parks** – The Umpqua Lighthouse State park is on high ground out of the tsunami inundation zone. There is some large equipment available and there is fuel stored on the premises. Other state parks in the area have sheltering capabilities with yurts and cabins. Generally located near fresh water lakes, these parks can be used as staging or command areas. The American Red Cross currently has a 100 person sheltering trailer staged at Honeyman State Park in Lane County.

### 1.4 Oregon Coastal Counties – Coastal Douglas County

**US Coast Guard Station Umpqua River** – Has 43 personnel, many living near the Umpqua Lighthouse. Boats available to the USCG include: two 47 foot motor lifeboats (MLB), one 25 foot response boat (safeboat). The USGS has various generators and pumps at their facilities. The Coast Guard is capable of navigating waterways that contain debris.

Air support is based at the North Bend Airport Coast Guard Station (Coos County) 22 miles to the south.

The first USCS priority will be getting MLB's out to sea at least 900 meters (6/10 of a mile) if possible and moving other resources to higher ground. USCG will establish a command post at the Umpqua Lighthouse which offers an unobstructed view of the Umpqua Bar. MLB's will return to port after "all clear" is determined and begin providing near shore search and rescue and ATON (Aids to Navigation) survey of the area.

#### **City of Reedsport**

- City public works assets, county public works assets and ODOT coastal assets are located in a centralized area;
- Fuels for these assets are centrally located;
- Schools are located on high ground and can be used as shelters if not heavily damaged;
- Schools have an alert system for contacting parents should an event happen and immediate parental pick-up becomes necessary;
- School yards and properties can be used for staging areas;
- Schools in Reedsport are located on high ground and can shelter up 200 people;
- City of Reedsport owns the Cruse Memorial Hospital Heliport (near Lower Umpqua Hospital): Latitude; 43°41'41.419", Longitude; -124°08'16.408".
- Emergency Management has positioned a 40' container with first aid supplies, blankets, cots and CERT equipment.

#### **Additional Community Assets:**

- Reedsport churches can be used as shelters provided they are determined to be safe. Some have commercial sized kitchens;
- Local lumber companies may have cold storage capabilities, and some generators;
- Clear Lake, south of Winchester Bay is the main water supply for the area and the water is relatively pure, but a challenge would be getting it to residents after the event.

#### **Catastrophic Event Operational Challenges:**

- Most of the support to Coastal Douglas County will come from the City of Roseburg and the bulk of county resources reside in Central Douglas County. Roads to the coastal areas are likely to be damaged and impassable.

### 1.4 Oregon Coastal Counties – Coastal Douglas County

- Roseburg will deal with local issues first and provide support to outlying coastal communities as practical and capable. The Umpqua River and Deer Creek run through the middle of Roseburg and the city may be faced with local isolation due to collapsed bridges and damaged infrastructure.
- City of Roseburg houses the State Hazardous Materials Team #1 – DC HazMat
- Douglas County assets based along the I-5 corridor – will be cut off and the county will not be able to get equipment, supplies and personnel into the coastal areas.
- Douglas County, ODOT, and City public works and road assets maintained at the county yard in Reedsport are in an area that would be isolated due to bridge and road failure and may be in the tsunami inundation area;
- Much larger population with tourists, Estimated that population is 50% greater than listed due to tourist population;
- Tourists are primarily visitors from other locations in Oregon and the Northwest USA. Due to impacts in their own jurisdictions, it could be a challenge returning them to their homes;
- Large elderly population evacuating by foot over uneven terrain will be extremely challenging;
- The only viable method of support by sea is by air or with unimproved beach landings until assessments/repairs to port infrastructure can be made;
- With the exception of fuels for marine craft – most of the fuel required for generators for government buildings and medical facilities is propane. Propane delivery for generators will be impaired due to road and bridge damage;
- Access to fuel, even if underground tanks are intact will be difficult;
- Port of Umpqua – has fuel storage for boats. The harbor and marina will be heavily impacted by the earthquake and tsunami. The channel can only accommodate shallow draft boats as it has not been dredged in many years. It is extremely likely that marine assets and fuels will be lost in this event;
- Community medical and food resources (grocery stores) will be only be accessible to those in the south end of Reedsport if the Schofield Creek bridge fails;
- Probable collapse of the Hwy. 101 Bridge over the Umpqua River and Smith Rivers to the north and south of Bolon Island, and the Schofield Creek bridge in Reedsport will divide Coastal Douglas County into three geographically isolated sections and will severely impact any emergency response;
- OR Highway 38, a vital lifeline to central Douglas County, is extremely susceptible to landslides, sink holes and debris flows. In wet weather these dangers, in addition to the possible collapse of the Mill Creek Bridge near Loon Lake due to the earthquake, will limit access to Coastal Douglas County significantly.

### 1.4 Oregon Coastal Counties – Coastal Douglas County

- Danger in ferrying people and resources across waterways impacted by tsunami and debris;
- One of the fire stations in Reedsport (124 N. 4th St.) is located in the tsunami inundation zone resulting in the probable loss of two of the city's four fire vehicles and equipment;
- Very limited manpower for an extended incident;
- Very limited CERT and Red Cross personnel in the area;
- Spontaneous volunteer management and safety;
- Very limited heavy equipment capability for search and rescue in major collapse zones.
- Due to isolated areas of the communities – some personnel will be unable to respond to their jurisdictional duty stations;
- US Coast Guard – based on event assumptions the Winchester Bay facility will likely be destroyed in a major event. All Motor Lifeboats are expected to be lost. Command and control will be provided by Coast Guard Group North Bend, provided that their facility survives;
- Coastal community churches that can be used as shelters have no generator power;
- Coastal Douglas County demographics contain a large portion of the population being elderly;
- The depressed economy and high poverty rate in Coastal Douglas County limit preparedness opportunities for that population.

#### **Support Needed Immediately After a Catastrophic Event:**

- Shelter for population (especially if weather is inclement), drinking water, food and sanitation;
- Will need replacement trained and equipped response personnel from outside the area(s) beyond 72 hours to supplement law enforcement, fire, urban search and rescue;
- Any responding personnel/teams will need to be completely self-supporting as any supporting infrastructure will be compromised;
- Immediate aerial or sea resupply of external resources for life sustainment. Food, water and shelter needs will be much greater than Coastal Douglas County can provide for. If during tourist season situation will be exacerbated;
- Aerial or sea evacuation of injured, vulnerable populations and tourists;
- Water purification equipment needed in all populated areas to provide potable water to survivors;
- Fuel – Diesel, gasoline, propane;
- Communication system power, support and repeaters to maintain response;

### 1.4 Oregon Coastal Counties – Coastal Douglas County

- Safe and secure buildings and shelters;
- Aerial support needed for evacuations of special medical needs survivors, injured and vulnerable populations;
- Relocation of patients needing serious care (dialysis and other resource intensive procedures);
- Water purification equipment needed at medical facilities;
- Sanitation facilities needed in all populated areas and schools;
- Temporary sheltering, food and water supplies. Due to aftershocks and safety concerns public buildings and schools may not be feasible to use immediately;
- Durable medical supplies, equipment, personnel and temporary hospital sheltering facilities;
- Supplemental law enforcement personnel to safeguard local pharmacies, shelters, and provide increased security at critical facilities, and surviving food and water locations;
- Mass fatalities equipment and support;
- Personnel capable of bridge and road damage assessment to determine safety and usability;
- Immediate access to communications and information to allow survivors to communicate with family members outside of the area and provide reunification and/or evacuation services;
- Supplies and support for residents to shelter in place;
- Additional fire/rescue equipment and replacement parts;
- Durable medical goods and pharmaceuticals for chronic illnesses;
- Need additional supply caches for medical goods and pharmaceuticals;
- Psychological first aid training for responders and shelter staff;
- Medicines for psychological and behavioral health needs.

#### **Identified Mitigation and Pre-Event Preparation:**

- Relocation of essential services and equipment currently located in the tsunami inundation zone;
- Need to identify and establish pre-designated and safe staging areas for essential equipment, and services;
- Fortify the bridge at the entrance to Salmon Harbor to withstand earthquake so people have an evacuation route;
- Create hiking trails that lead up the bluff on the south side of Salmon Harbor for a secondary evacuation route;
- Need additional satellite phones and communications equipment for responding agencies and medical facilities;

### 1.4 Oregon Coastal Counties – Coastal Douglas County

- Need guidance on policy and procedures for dealing with the mass fatalities;
- Funding for increased public education and preparedness;
- Train coastal and tourist population in evacuation procedures and preparedness;
- Policies and procedures for identifying and credentialing useful volunteers that are spontaneous and not affiliated with county emergency response volunteer groups;
- Contact and coordination with local contractors to possible aid in road reconstruction, building safety assessment and other post-event needs;
- Volunteer programs (Citizen Corps) need continued funding, increased training of volunteers and increased footprint to prepare community and increase readiness for such an event;
- Need funding for training in shelter management to augment the American Red Cross resources;
- Agreement on standards for alternate catastrophic medical response protocols to deal with scenario;
- Additional 100 person sheltering trailer to be staged at Umpqua Lighthouse State Park;
- Pre-planning of impact on vulnerable populations and what they will need in post-event;
- Funding for individual community supply caches;
- Promote use of and assistance in provision of Personal family supplies;
- Continued discussion and emergency management coordination and planning with locals, State and Federal agencies;
- Need continued funding for retrofitting of critical facilities;
- Funding for storage facilities for sheltering supplies for population, drinking water, food and sanitation
- Funding for individual or community supply caches and containers to include water, water filtering equipment, shelter, blankets, tarps, rain gear, food, sanitation and medical supplies.
  - Any storage or caching of supplies need to be in a survivable container / device
- Identified needs in:
  - planning, training and exercises of a catastrophic scenario;
  - coordination and communication of response services,
  - Clarification of command and control issues between city and county administered unincorporated areas.

**1.4 Oregon Coastal Counties – Coastal Douglas County**

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# 1.5 COASTAL LANE COUNTY OREGON

## 1.5 Coastal Lane County

**Population:** Lane County’s population is approximately 351,715; however that includes the entire County. Coastal Lane County’s population is approximately 25,000.

**Incorporated Coastal Cities:** Florence

The executives of incorporated cities within Lane County are responsible for the direction and control of their community resources during emergencies.

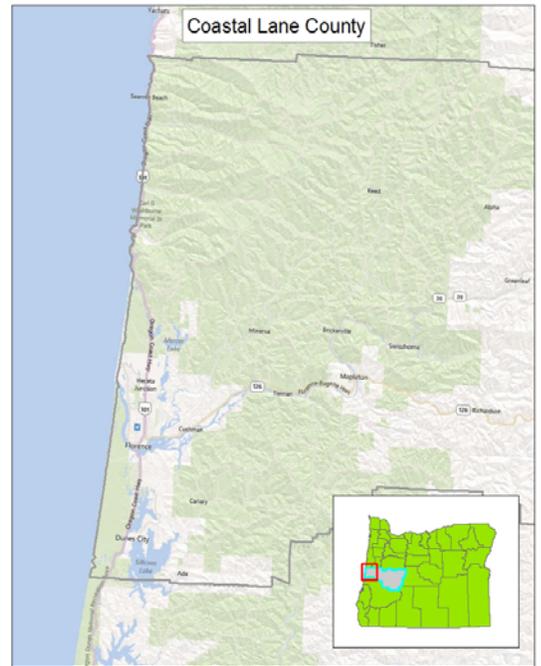
**Unincorporated Coastal**

**Communities:** Dunes City, Glenada

**Major Rivers:** Siuslaw River

**Local Response Support:** Through extensive emergency management planning both at the County and local community levels, coastal resources include incorporated cities, rural coastal communities, school districts, rural fire protection districts, and the private sector. Planning encompassing all response efforts are organized under the Lane County Office of Emergency Management and the Western Lane Emergency Operations Group.

**First Responder Agencies / Entities:** The following agencies and entities maintain primary roles and responsibilities during an emergency situation impacting the coastal areas of Lane County.



## Cascadia Subduction Zone Plan - County Response Information Annex

### 1.5 Oregon Coastal Counties – Coastal Lane County

#### Emergency Management

Lane County Office of Emergency Management

#### Law Enforcement Services

City of Florence Police Dept.	Lane County Sheriff's Dept.	Oregon State Police
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Confederated Tribes of Coos, Lower Umpqua & Siuslaw Indians

#### Fire Services

Siuslaw Valley Fire & Rescue District

#### Ambulance Service

Western Lane Ambulance Service

#### Public Health and Hospital Services

Lane County Department of Public Health

Peace Harbor Hospital (Florence)

#### Emergency Communications Services

Lane County 9-1-1

Siuslaw Valley Fire & Rescue – Secondary PSAP

#### Identified Community Points of Distribution Locations

Yet to be identified by Lane County.

#### Identified Emergency Mobile Home Staging Locations

Yet to be identified by Lane County.

### **County Response Assumptions:**

- An event of this magnitude will require prompt and effective response and recovery operations by Lane County Office of Emergency Management, County Departments, Cities, volunteer organizations and the private sector;
- All primary emergency response staff are trained and experienced in operating under NIMS and ICS;
- The county will be responsible for utilizing all available local resources along with initiating mutual aid and cooperative assistance agreements before requesting assistance from the State;

### 1.5 Oregon Coastal Counties – Coastal Lane County

- Due to post-event logistics challenges, personal self-sufficiency for the population may be necessary for an unknown amount of time that could range from several days to several weeks;
- The population of Coastal Lane County increases dramatically during peak tourist season and other times of the year;
- Significant increases to the local population may introduce challenges in meeting the needs of non-residents and other travelers during an emergency or disaster;
- Effective response will need public officials, first responders, volunteers, and residents to be familiar with established policies and procedures, assigned pre-designated tasks, provided with evacuation and assembly instructions and formally trained in their duties, roles and responsibilities, required during emergency operations;

#### **Catastrophic Event Assumptions:**

See Oregon Cascadia Subduction Zone Earthquake and Tsunami Operations Plan pages 4-1 to 4-11 for statewide Cascadia Subduction Zone earthquake and tsunami assumptions.

- Coastal Lane County will be fractured into pockets of isolated communities and neighborhoods due to loss of roadways, bridges, communication, and tsunami flooding;
- Individual pockets of survivors will be on their own for a time period of much greater than 72 hours until communications and transportation between these pockets is re-established;
- Many locations will be without emergency support of fire, law enforcement, and ambulance service until communication and transportation between these pockets is re-established;
- Emergency services will be immediately overwhelmed with this scenario. All incident response will need to be prioritized due to limitations of staffing and resources;
- Self-sufficiency will be necessary for an unknown amount of time that could range from several days to several weeks given the shortages of time, space, equipment, supplies and personnel during a catastrophic event;
- Response communication, transportation routes, equipment, and certain critical facilities may be destroyed or rendered inoperable during a disaster;
- Critical infrastructure and services will be crippled as well as transportation routes and the ability of essential personnel to respond;
- Essential emergency response personnel staffing level is expected to be reduced by half;
- Effective response will need public officials, first responders, volunteers, and residents to be familiar with established policies and procedures assigned and

### 1.5 Oregon Coastal Counties – Coastal Lane County

pre-designated tasks, provided with evacuation and assembly instructions and formally trained in their duties, roles and responsibilities required during emergency operations;

- Emergency response and medical capabilities will be immediately overwhelmed;
- Critical communications will be heavily impacted if not totally disabled;
- Assistance from Lane County non-coastal resources from the Eugene area will be cut off due to road damage, bridge damage and slides, and unable to provide additional personnel, equipment and essential resources.

#### **Coastal Lane County Priorities:**

##### Lane County Road Master

- Assess road damage and determine needs for getting them cleared and usable;
- Work with ODOT to provide road and bridge damage assessments;
- Assist with debris removal;
- Repair and maintain lifeline routes.

##### Lane County Public Health

As the local public health authority, Lane County Public Health (LCPH) is responsible for assuring the essential services of public health for all of Lane County.

Lane County Health and Human Services will coordinate the provision of public health and medical services in most impending or actual health emergencies affecting Lane County.

##### Priorities:

- Assess and determine safety and usability of County Health Department staff and assets;
- Establish contact with Peace Harbor Hospital and other medical providers to determine status and needs;
- Coordination with County Emergency Management to be able to maximize limited resources to address needs.

##### Peace Harbor Hospital

- Ensure safety of patients and staff;
- Follow evacuation plan and be aware of routes;
- Development of incident command system, which will help establish priorities while using previously identified communications pathways and tools;
- Determine facility functionality and sheltering capacity.

##### City of Florence

- Ensure safety of emergency response personnel and assets: fire, police, public works, and enact continuity of government protocols if needed;
- Ensure public safety and security;

**1.5 Oregon Coastal Counties – Coastal Lane County**

- Search and rescue, medical services, evacuation and/or sheltering;
- Building officials will prioritize assessment of shelters, safety of schools and government operational facilities;
- Public works to assess damage to critical utility services.

**Confederated Tribes of Coos, Lower Umpqua & Siuslaw**

- Ensure the safety and security of Tribal members, assets and properties and provide emergency support.

**Available Local Assets:**

**Fire**

**Siuslaw Fire & Rescue District**

- The District provides emergency response to approximately 25 thousand coastal lane county residents;
- The district is staffed with 12 full-time employees, 18 part-time and approximately 60 volunteer firefighters. Some staff members are certified EMT's;
- Personnel family plans exist for employees;
- The district supports eight fire stations throughout Western Lane County;
- Provides secondary emergency medical response, search and rescue; wildland search and rescue assistance for the Sheriff's Department and marine / water rescue with a twin engine 25' Zodiac boat. The District also has some human powered watercraft such as kayaks;
- Fire and EMS services are also provided to Dunes City, and the unincorporated area of Glenada located just south of Florence;
- Western Lane Ambulance Service provides six ambulances to Coastal Lane County.
- Coastal Lane County has trained and equipped CERT teams;
- The district has some satellite phone capability.

**Law Enforcement**

- The **Lane County Sheriff's Department** is headquartered in Eugene. Deputies are assigned to the coastal areas for dune patrol and law enforcement activities to the unincorporated areas of the Lane County coast;
- **Florence Police Department** supports 14 full time law enforcement staff and four reserve officers which serve approximately 8,466 residents;
- **Oregon State Police** is based in Coos Bay and generally provides four to five troopers to the area;

### 1.5 Oregon Coastal Counties – Coastal Lane County

- **Confederated Tribes of Coos, Lower Umpqua & Siuslaw** employ two peace officers for the protection and law enforcement for tribal members, lands and assets.

#### Lane County Health Department

##### Capabilities:

- The ability to direct and support an event or incident with public health or medical implications by establishing an organization and supervision structure consistent with the National Incident Management System;
- Emergency Public Information and Warning: ability to develop, coordinate, and disseminate information, alerts, warning, and notifications to the public and incident management responders;
- Information Sharing: ability to conduct multijurisdictional exchange of health related information and situational awareness data among state and local governments and private sector;
- Medical Countermeasures Dispensing: ability to provide medical countermeasures (including vaccines, antiviral drugs, antibiotics, etc.) in support of treatment of the populations;
- Prioritize requests for health, medical, and behavioral health services, and coordinate their delivery through the Lane County Emergency Operations Center;
- Medical Materiel Management and Distribution: ability to acquire and maintain, transport, distribute, and track medical material during an incident;
- Perform epidemiological surveillance, case and outbreak investigation and follow-up;
- Initiate appropriate preventive health measures to control and prevent the spread of communicable diseases;
- Provide education to responders and public to prevent or control vectors such as insects or rodents;
- Provide for the monitoring and evaluation of environmental health risks or hazards as needed and ensure that appropriate actions are taken to protect the health and safety of disaster victims, responders, and the general public;
- Locate, receive and coordinate equitable distribution and administration of vaccine and chemoprophylaxis medications, if needed and as available;
- Coordinate the collection and submission of samples to the Oregon State Public Health Lab (OSPHL) for appropriate testing;
- Monitor food handling and mass feeding and other sanitation elements in emergency shelters;
- Work with local utilities and State of Oregon Drinking Water program to provide information on safe water treatment and/or access to safe drinking water;

### 1.5 Oregon Coastal Counties – Coastal Lane County

- Coordinate with Lane County Public Works, Land Management Division and the Eugene/Springfield water pollution control facility to assure the availability of proper sewage disposal facilities and waste and refuse disposal practices;
- Provide public health updates to partners. Advise the public and partners on such matters as emergency water supplies, waste disposal, mass feeding services, vectors, food safety, immunizations, disinfection, isolation and quarantine;
- Provide education and guidance as necessary for the protection of medical responders;
- As possible, collect and provide information on the number of injuries, illnesses and deaths related to the emergency;
- Non-pharmaceutical interventions: ability to recommend and implement strategies for disease, injury and exposure control;
- Public Health Surveillance and Epidemiological Investigation: the ability to create, maintain, support, and strengthen surveillance and detection systems and epidemiological investigation to prevent, detect, control and stop the spread of disease, illness, or injury.

#### Assets:

- Trained public health professionals including: public health officer, public health nurses, environmental health specialists, health educators, and dieticians;
- Mutual aid agreements with neighboring counties for public health personnel and other resources;
- Active relationships with community based organizations, hospitals and healthcare systems;
- Established coordination, communication, and resource sharing relationships with the Oregon Health Authority;
- Communications and alerting equipment and supplies including: handheld uhf radios, ham radios and base station with rooftop antenna, satellite telephones, email, internet, cellular phones, laptops, fax machines, and internet based technologies such as: broadcast fax, the Oregon Health Alert Network (secure alerting and collaboration tool), and the Oregon Hospital Capacity Website (system to monitor real time hospital situational awareness);
- Vaccine management and distribution resources;
- Small cache of medical supplies and medical personal protective equipment: gloves, gowns, N-95 respiratory masks;
- Small pool of passenger vehicles including passenger vehicles;
- Office space and meeting rooms;

### 1.5 Oregon Coastal Counties – Coastal Lane County

- Memorandum of agreement with large facilities for the setup of alternative care sites, a federal medical station, or mass dispensing/distribution locations;
- Medical sample processing and shipping facilities.

#### Peace Harbor Hospital

- Located in Florence, serves a population of approximately 25,000;
- Peace Harbor Hospital is a member of the Western Lane Emergency Operations Group;
- The hospital supports a helispot for Life Flight medical transportation to critical urgent care facilities in the Eugene area;
- Capacity: room for 50 critical patients and 50 ambulatory patients;
- The hospital is certified as a Level IV Trauma Center;
- The facility has five stationary generators;
- Hospital, hospital campus and off campus warehouse;
- Fuel storage includes 4,000 gallons of fuel always on hand with capacity up to 8,000 gallons if possible;
- Communications: satellite radio, HAM radio, short wave hand held radios (eight).

#### **Additional County Capabilities:**

**Western Lane Emergency Operations Group** is a collaborative effort between government entities and associated private citizen groups to identify, proactively plan for, mitigate the impact of, react to, and recover from natural or man-made disasters in Western Lane County. The primary goal is to respond appropriately, efficiently, and to effectively utilize all of the community's resources in all facets of disaster preparation training and emergency response to protect life and property.

**City of Florence Department of Public Works** – is located out of the tsunami inundation zone and has the resources and capabilities to repair roads and culverts. Public Works have assets including: backhoes, dozers, graders, plows, 4K tons of gravel – however have no stored fuels.

**Oregon State Parks** - Can provide space and staging areas. The parks also have stored fuels. The parks system has one 100,000 gallon water storage tank at Honeyman, however it is not seismically rated for a 9.0 earthquake and may not survive. There is a large landing area for aerial resources located at Woahink Lake east of Highway 101 off Canary Rd.

**Lane County Public School District** – Serves approximately 1,300 students in and around the Florence area. The Middle School is of newer construction and is built to higher earthquake standards and is expected to be usable and has been designated as a Red Cross Shelter. The Middle School can also support not only sheltering but can be sectioned off and portions can be used as a medical facility and has space to land a

### 1.5 Oregon Coastal Counties – Coastal Lane County

helicopter if needed. All of the schools located in the coastal areas of Lane County are out of the tsunami inundation area.

#### Aviation Assets

- **Florence Airport** - has a runway over three thousand feet long. The airport keeps fuels available for resident and visiting aircraft. Fuels: 6,000 gallons – Avgas; 4,000 gallons of Jet-A fuels. There are hand pumps available at the airport. The airport is out of the tsunami inundation zone and has staging capabilities;
- **ApexHeli Oregon, Inc.** is an active member of the Western Lane Emergency Operations Group, is a full service commercial, tour & training company offering both fixed wing and helicopter services and have stored fuel resources. Helicopters can handle 800 pounds – external load or 4 passengers;
- Local logging companies have some air resources – however no agreements have been set;
- Sea plane landings could occur on the many lakes in the area.

#### Sheltering Capabilities

- The Florence Event Center is out of the tsunami inundation zone and is capable of sheltering 300 – 400 people. The building has generator power available. Employees of the Center have attended shelter management classes in February, 2012;
- The Elks Club is large and could be used as a shelter – however no agreements have been set.
- ARC has staged two trailers in the Florence area. One is north of the Siuslaw Bridge and the other is south of the bridge. Each trailer has cots, blankets and some supplies (no food or water) to care for 100 people.

#### **Catastrophic Event Operational Challenges:**

- The Siuslaw River Bridge is likely to be heavily impacted by a major earthquake which will limit accessibility to medical and other essential facilities in Florence;
- City of Florence wastewater plant has two portable generators on trailers; 60 kw and 30 kw. However, the wastewater plant, generators, and equipment are in the tsunami inundation zone and are not expected to survive;
- Essential emergency response personnel will be impacted and agencies are expecting one half of their staff to be able to report for work;
- Critical infrastructure including: water, fuels, communication, power, roads and bridges are expected to be severely damaged;
- Transportation and lifeline routes in and out of the area to central Lane County will be heavily impacted;
- Mortuary capabilities will not be able to handle the number of fatalities generated by this event;

### 1.5 Oregon Coastal Counties – Coastal Lane County

- Limited urban search and rescue capabilities;
- Local government buildings have generators, however they are fueled with propane and would be a challenge to replenish post-event.

#### Medical

- Inability of staff to report to work due to infrastructure damage, injury, death, family concerns etc.;
- Due to the scale of the incident, the medical system will be immediately overwhelmed;
- Damaged or destroyed communications systems;
- Damaged medical facilities;
- Limited public health staffing surge resources and inability to sustain a prolonged response over multiple operational periods;
- Lane County Public Health has no active presence in coastal areas or outlying communities. Travel and transport may be difficult or impossible. Establishing situational awareness may be difficult.
- Inability to call upon mutual aid agreements since neighboring communities will also be impacted.

#### Peace Harbor Hospital

- Evacuation capacity compromised by the event;
- Security of staff, patients and facilities;
- Access to medical supplies;
- The demographics of patient population likely means there will be a proportional medical need that will be a challenge to meet;
- Concerns regarding emergency power. Existing fuel storage is at risk (underground) and the generator is also ground level;
- No dedicated water supply that is independent of the city supply. Concerns over disruption and/or contamination in this event;
- Staffing issues regarding the likelihood of bridges to the east and south being impassable. Many staff members live on either side of the bridges. Transportation of supplies and personnel will be heavily impacted;
- Hospital and medical facilities (clinics) will be immediately overwhelmed and may not be able to provide more advanced care due to conditions;
- Medical facilities may not be able to provide more advanced care due to conditions;
- Medications will be limited due to the inability of receiving regular shipments. Lack of access for commercial medical suppliers;
- Survivors with chronic conditions will require prescriptions quickly or they will add to the medical burden as their conditions deteriorate;
- The Peace Harbor Hospital is just outside of the current tsunami inundation area and is surrounded by a 42 foot berm. If tsunami inundation occurs and

### 1.5 Oregon Coastal Counties – Coastal Lane County

breaches the 42 foot berm around the hospital, water will be captured inside the berm with no outlet making the hospital inaccessible as well as trapping occupants inside;

- The Peace Harbor Hospital also has two Gate Keeper hospital shelters, however they are being stored at the Sacred Heart Hospital in River Bend (located in Springfield);
- Tourists - Depending on time of year – tourists will be stranded in isolated areas and unable to leave until transportation services can be restored. Most City and County food and water resources are not capable of providing for these additional populations.

#### **Support Needed Immediately After a Catastrophic Event:**

- Potable water and water purification systems;
- Safe and secure buildings for critical infrastructure, continuity of government and emergency management personnel in addition to safe and secure shelters;
- Hospital shelters, durable medical equipment and personnel, EMT's;
- Staffing: environmental health specialists, public health nurses, epidemiologists, incident management personnel will be needed to maintain response;
- Hospitals will require additional medical supplies and material including pharmaceuticals, antibiotics, vaccines, food, water, and temporary sheltering facilities;
- Assistance re-establishing communication systems;
- Portable generators;
- Fuel;
- Hand pumps for water and fuel;
- Urban Search and Rescue Teams, self-sustaining for a minimum of 72 hours, and equipment;
- Law enforcement / security for pharmacies and medical supplies, as well as existing food and water supplies and shelter facilities;
- Aerial support needed for evacuations of special medical needs survivors, injured and vulnerable populations. Relocation of patients needing serious care (dialysis and other resource intensive procedures);
- Temporary sheltering, food and water supplies. Due to aftershocks and safety concerns public buildings and schools may not be feasible to use immediately;
- Sanitation facilities needed in all populated areas;
- Engineers, supplies and essential heavy equipment for bridging, road repair and debris removal;
- Just-In-Time screening capabilities for professional medical volunteers;
- Mass Fatalities Incident teams and equipment.

1.5 Oregon Coastal Counties – Coastal Lane County

**Identified Mitigation and Pre-Event Preparation:**

- Areas with essential services and facilities in the tsunami inundation zone need assistance and financing to relocate these assets to City owned lands outside of the tsunami inundation zone;
- Increased coordination and/or agreements with the private sector to provide assistance post event;
- Funding to purchase shelters for schools including a three day minimum supply of water and food;
- Transfer of the designated 'Gate Keeper' hospital shelters from the Springfield area to Peace Harbor Hospital. Training on setting up alternative care sites;
- Funding to purchase and cache durable medical equipment and first aid supplies for hospital shelters;
- Funding for storage facilities for food, water and sheltering supplies;
- Funding for individual community supply caches and storage containers to possibly include bottled water, water filter straws, shelter canopies, blankets, tarps, rain ponchos, survival food bars, sanitation supplies, and medical supplies;
- Caches of pharmaceuticals needed including oxygen, insulin, Lasix, antibiotics, Coumadin, psychotropic drugs, and meds and supplies for burns;
  - Generally patients needing these medicines are faced with challenges from insurance companies to have a three month supply on hand in case of emergencies.
- Funding to purchase delivery systems for purified potable water;
- Additional portable generators that run on gasoline or diesel fuel;
- Continued neighborhood and community training with CERT and Map Your Neighborhood for public awareness and personal preparedness. Funding for training materials and equipment;
- Funding for storage container for CERT and Medical Reserve Corps equipment;
- Locate alternate areas to store emergency sheltering and other essential assets out of the tsunami inundation area;
- Coordination and/or agreements with the private sector assets and capabilities including: bridge engineering, safety and temporary rebuild and aerial support;
- Special needs and long term care facilities need protocols and procedures for patient evacuation, patient sheltering and care;
- Continued funding for retrofitting and possible relocation of essential facilities in all areas.

# 1.6 LINCOLN COUNTY OREGON

## 1.6 Lincoln County

**Population:** Approximately 45,000, actual population as a result of tourism could be twice that or more at all times of the year.

The county has an area of 980 square miles.

**Incorporated Coastal Cities:** Depoe Bay, Waldport, Siletz, Lincoln City, Newport, Toledo, Yachats

The executives of incorporated cities within Lincoln County are responsible for the direction and control of their community resources during emergencies.

**Unincorporated Areas:** Otis, Rose Lodge, Gleneden Beach, Lincoln Beach, Logsden, Little Albany, Harlan, Tidewater, Yaquina, Beverly Beach, Chitwood, Eddyville, Fisher, Burnt Woods, Agate Beach, Nashville, Neotsu, Nortons, Newport Heights, Kernville, Miroco, Otter Rock, Seal Rock.

**Major Rivers:** Alsea, Salmon, Siletz, Yachats, Yaquina

**Local Response Support:** Through existing emergency management planning, The American Red Cross, Sheriff's Posse, Lincoln County Search and Rescue Team, the Radio Amateur Civil Emergency Service, the Lincoln County Citizen Emergency Response Team (CERT), and private contractors are available to support and supplement local response and recovery operations.

**First Responder Agencies/Entities:** The following agencies and entities maintain primary roles and responsibilities during an emergency situation impacting Lincoln County:



## Cascadia Subduction Zone Plan - County Response Information Annex

### 1.6 Oregon Coastal Counties – Lincoln County

#### Emergency Management Services

Lincoln County Office of Emergency Management
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#### Law Enforcement Services

Lincoln County Sheriff's Department	Toledo Police Department	Newport Police Department
Lincoln City Police Department	Lincoln County District Attorney's Office	

#### Fire Services

Lincoln County Fire Defense Board	Linn/Benton Region 5 Hazardous Materials Response Team	
Chairman, County Fire Chief	Newport Volunteer Fire Department	
North Lincoln Fire & Rescue	Depoe Bay Fire District	
Seal Rock Fire District	Central Oregon Coast Fire District	
Yachats Fire	Toledo Fire	Siletz Fire

#### Ambulance Services

Pacific West Ambulance	South Lincoln Ambulance Association	Central Oregon Coast Fire and Rescue
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#### Public Health and Hospital Services

Lincoln County Health and Human Services	Samaritan North Lincoln Hospital, 3043 NE 28th St. Lincoln City, OR 97367
Samaritan Pacific Communities Hospital, 930 SW Abbey St., Newport, OR 97365	

#### Emergency Communications Services

LINCOM 911	Lincoln City Police 911 Dispatch	Toledo Police 911 Dispatch
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#### Identified Community Points of Distribution (C-POD) Locations

Yet to be identified by County emergency management

#### Identified Emergency Mobile Home Staging Locations

Yet to be identified by County emergency management

#### **County Response Assumptions:**

- An emergency of this magnitude will require prompt and effective response and recovery operations by Lincoln County Office of Emergency Management, County Departments, Cities, volunteer organizations, and the private sector;

### 1.6 Oregon Coastal Counties – Lincoln County

- All primary emergency response staff are trained and experienced in operating under NIMS and ICS;
- The County will be responsible for utilizing all available local resources along with initiating mutual aid and cooperative assistance agreements before requesting assistance from the State;
- Given shortages of time, space, equipment, supplies, and personnel during a catastrophic disaster, self-sufficiency will be necessary for an unknown amount of time that could range from several days to several weeks;
- The population of Lincoln County increases dramatically throughout the year reflecting an influx of tourists, seasonal residents, daily visitors, and recreation enthusiasts.
  - Local emergency planning efforts will focus on accommodating residents while preparing for changes in population trends throughout the year. However, significant increases to the local population may introduce challenges in meeting the needs of non-residents and other travelers during an emergency or disaster;
- Response communication, equipment and work centers may be destroyed or rendered inoperable during a disaster;
- Effective response will need public officials, first responders, employees, volunteers, and residents who are familiar with established policies and procedures, assigned pre-designated tasks, provided with evacuation and assembly instructions, and formally trained in their duties, roles, and responsibilities required during emergency operations.

#### **Catastrophic Event Assumptions:**

See Oregon Cascadia Subduction Zone Earthquake and Tsunami Operations Plan pages 4-1 to 4-11 for statewide Cascadia Subduction Zone earthquake and tsunami assumptions.

Lincoln County will be fractured into pockets of isolated communities due to loss of roadways, bridges and communication. Individual pockets of survivors will be on their own for a time period of much greater than 72 hours until communication and transportation between these pockets is reestablished. Many locations will be without emergency support until communication and transportation between these pockets is re-established;

Emergency services will be immediately overwhelmed with this scenario. All incident response will need to be prioritized due to limitations of staffing and equipment.

#### **County Priorities:**

##### **Fire: (Responses for all fire districts were similar; information includes North Lincoln, Newport and Seal Rock Fire Districts)**

**North Lincoln Fire and Rescue** is volunteer with a small paid administrative staff and approximately 70 volunteers covering 80 square miles. The fire district is spread over six locations- four smaller substations and two master stations. All NLFR facilities are

### 1.6 Oregon Coastal Counties – Lincoln County

located out of current tsunami inundation area. The district covers part of southern Tillamook County, and can provide limited assistance to that area.

**Newport Fire** has both career and volunteer firefighters and is tasked with protecting 15,000 people living in 25.8 square miles. Newport Fire has two stations, one located north and another south of the Yaquina Bay Bridge. Both stations are located out of tsunami inundation area, however main facility north of bridge is an old facility and likely will not survive. It's possible that fire equipment can be dug out of the rubble of the north station, but if not the district would lose majority of rolling stock including off road capabilities.

**Seal Rock Rural Fire Protection District** has approximately 16 personnel and two stations located outside of the tsunami inundation zone in Seal Rock and Bayshore. The district protects approximately 16 square miles and approximately 1400 people.

- Staff will react independently and report for duty once families are safe;
- Staff at all Districts are instructed to bring their families to surviving facilities;
- Inspect surviving fire department facilities for safety and usability;
- Stations will radio into main station command center to report availability and surviving equipment. Conduct windshield surveys where they can reach and begin response operations;
- Fires will only be fought to stop conflagration and to save life. County fire services are challenged dealing with one apartment complex fire on a good day, let alone with limited staffing and damaged equipment as likely under this scenario.

**Depoe Bay Fire District** protects 13 square miles of mostly unincorporated areas of Lincoln County including Siletz Keys, Salishan, Gleneden Beach, Lincoln Beach, Boiler Bay, Depoe Bay, Miroco, and Otter Rock. The permanent population is 8000, however there are multiple hotels including four multi-story commercial structures which house large tourist populations most months of the year, increasing the population as much as tenfold. Depoe Bay Fire District has three stations: Depoe Bay (Station 2300) at the District's center is in the tsunami zone and will likely not even survive the earthquake, Gleneden Beach (Station 2200) near the northern end of the District is just barely out of the tsunami zone – with new tsunami mapping, it may be in the newly defined inundation zone, and Otter Rock (Station 2400) at the far southern end of the District is on high ground, but has no staff there.

- Staff & volunteers will take care of their families first;
- Will have minimal firefighting capability due to lack of water and potential loss of equipment;
- Main goals will be accessibility to survivors and rescue.

#### **Law Enforcement Priorities:**

- Conduct situational status assessment of department resources ;
- Secure critical facilities (fuel);

### 1.6 Oregon Coastal Counties – Lincoln County

- Team up with and assist fire departments to serve as a response strike force and to provide security for fire response operations.

#### **City of Lincoln City**

- Safety of facilities and personnel;
- Safety and provision of assistance to City population;
- Assessment of infrastructure and restoration of public works;
- Approx. 72 hours' worth of fuel for operations (vehicles and generators).

#### **Lincoln County Public Health**

- Ensure safety of facilities and staff;
- Contact surviving and available health resources in County;
- Coordination with County Emergency Management and responders to be able to maximize limited resources to help.

#### **Lincoln County Emergency Management**

- Ensure safety of staff and facilities;
- Contact County-wide AOCs to get situational awareness and needs;
- Coordinate response with multiple impacted sites and limited resources;
- Contact State ECC to request additional assistance.

#### **Lincoln County Schools**

- Ensure safety of students, facilities and staff;
- Evacuate schools into temporary shelters for safety of students;
- Coordinate available supply caches for school use;
- Coordinate with Red Cross and County Emergency Management for additional use of surviving school buildings.

#### **Available Assets:**

##### **Fire:**

- North Lincoln Fire and Rescue has a water search and rescue team, equipped with three personal watercraft, small kayaks, etc. and a 10-15 man team equipped for surface water rescue. Watercraft could be used to establish communication with isolated pockets of survivors;
- County has civil engineers employed with the City of Newport and Lincoln City as well as the County engineer. To supplement structural engineering and safety assessments, senior building officials and local contractors may be able to be utilized;
- Many smaller watercraft (personal boats) of the public could possibly be utilized to supplement response and provide assistance;

### 1.6 Oregon Coastal Counties – Lincoln County

- County responders would be able to make temporary crossings over smaller water bodies by dropping culvert and dropping rock;
- ATV resources for both fire and police;
- Seal Rock has a CERT team consisting of 15-20 volunteers;
- Seal Rock has ODOT facility in district-Seal Rock Fire is working to place fuel container (approx. 500 people) at ODOT facility for use by fire district;
- Seal Rock Has two shelters (tents) capable of holding 200 people, *\*to be purchased 2012-2013.*

#### Health

- Health Department has four satellite phones in the county;
- Two water purification units capable of 750 and 400 gal/hour not for public usage, for first responders and clean water for health care;
- Two hospitals and numerous clinics in Newport and Lincoln City;
- Supply cache at Samaritan Pacific Communities Hospital (Newport) capable of providing minimum of 100 patients of varied care needs. Supply Cache have organized “to go” equipment in place to set up a medical facility outside of the hospital grounds;
- County Public Health has a mobile clinic (trailer) with basic medical supplies in Newport;
- Mobile water purification units at each of Lincoln County’s eight fire districts have a 120 gal/hr water purifier, Lincoln County has one, hospitals in Lincoln City and Newport each have one, and Lincoln County Public Health has two. Priority usage of these water purifiers is to keep response and medical assistance functioning;
- City of Toledo has mobile water purification unit for entire city. Housed at public works and have trained public works staff running it;
- Four (north, south, east and central county) caches of EMS supplies cached in County containing: PPE equipment, basic trauma and first aid supplies, oxygen.

#### Schools

- Schools - 6000 students to be sheltered based on scenario occurring during school hours;
- If school is not in session, these supplies would be made available for the general population;
- If school is in session there is not enough supplies to assist outside of the schools;
- Main shelter schools have cache of supplies;
- Teen CERT has cache of equipment in schools;
- CERT group in Lincoln City high school can provide help to the high school;

### 1.6 Oregon Coastal Counties – Lincoln County

- Agreement w/ Red Cross to use schools as shelters only if the schools are not being used to shelter students, however dual sheltering is a possibility in this scenario;
- Most school buses are not located on school property. In Lincoln City they are located in the inundation zone;
- Newport school buses are stored in Toledo next to fire department. Could be used for communications, shelter and fuel supply;
- Waldport buses are also on high ground at the school and can be used for shelter, fuel, and communications;
- Waldport – Crestview Heights School has a Satellite Phone;
- Newport Intermediate School has a Ham Radio.

#### **Law Enforcement**

- Newport Police volunteers (approx. 27) could augment response and support;
- ATV resources for both fire and police;
- City of Newport has two jet boats for law enforcement located near Newport middle school;
- OSP has two zodiac boats in Lincoln County;

#### **Additional County Capabilities:**

- Fire support for landings at Newport airport;
- The City of Waldport has supply caches on high ground-supplies and water, food for five days in several locations around the city;
- Public Health has the ability and resources to provide assistance in making alternate sheltering arrangements for those with behavioral health issues and other issues that may present stress on the general shelter population;
- Mobile communication trailers located in County, including satellite phones at the hospitals and with the Siletz tribe.

#### **Catastrophic Event Operational Challenges:**

- Much larger population with tourists, estimated that population is 50% greater than listed due to tourist population;
- Tourists are primarily visitors from other locations in Oregon and the Northwest USA. Due to impacts in their own jurisdictions, it could be a challenge returning them to their homes;
- With harbor damages the only viable method of support by sea is by air or with unimproved beach landings;
- Water system for fire suppression will likely not survive, draft sites where they can pump is unlikely to be accessible due to mud;

### 1.6 Oregon Coastal Counties – Lincoln County

- Working off generators, will need power generation to maintain mobile radio charge. Communication centers and EOCs using amateur radio to communicate amongst County, generators will last approximately 72 hours;
- County has no USAR ability other than water rescue and light SAR training by CERT and fire departments;
- Estimated that 50% of emergency responders available due to policy of responders capable of bringing family to a safe location at the stations. With described scenario (0900 on a work day), response could be delayed as responders check on safety of families;
- Newport Fire has two stations located north and south of the Yaquina Bay Bridge. Both stations are located out of tsunami inundation area, however main facility north of bridge is an old facility and likely will not survive. It's possible that fire equipment can be dug out of the rubble of the station, but if not the district would lose majority of rolling stock including off road capabilities. Stations loss would also impact support facilities for staff and family;
- Areas to the east in Newport along Highway 18 may not be accessible; likely that access to Toledo will be cut off;
- Danger in ferrying people and resources across waterways impacted by tsunami and debris;
- Depoe Bay Fire District will be geographically cut off from all other areas of the County. It will not be able to receive support from either Lincoln City from the north or Newport from the south;
- Siletz Bay Airport will be destroyed;
- Depoe Bay's harbor will be severely impacted;
- Depoe Bay Fire District's only medical facility (Depoe Bay Samaritan Clinic) will be destroyed in the tsunami;
- Depoe Bay Fire District's survivors will likely congregate on high ground areas in the adjacent forest with limited shelter and provisions available;
- Many public safety personnel live outside community they serve;
- Waldport Fire is in inundation zone and their facilities, rolling stock and boats will be lost. City Hall in Waldport will also likely be destroyed;
- Likely access to harbor in Newport to be blocked by debris from tsunami and bridge debris;
- Yachats- fire station in tsunami inundation zone, likely loss of all equipment;
- Due to topography, Waldport has limited space available for tsunami evacuation assembly areas. Evacuees likely to be in improvised areas along hillside;
- Toledo likely to lose earthen dam for winter water supply as a result of shaking;
- Limited ability of those needing medical care to get to medical facilities in county, no ability to move those needing severe care (burn victims, dialysis, etc.);

### 1.6 Oregon Coastal Counties – Lincoln County

- Lack of clean water will limit the ability to medically treat survivors;
- Medical facilities may not be able to provide more advanced care due to conditions;
- No unified coordination among health care sector in County;
- Limited knowledge of citizens' medical issues, limited data available;
- Spread of disease amongst survivors;
- Lack of access for commercial medical suppliers;
- Concern over fire safety and tent shelters;
- Challenge in providing for responding law enforcement officers over the long haul, County fire services indicated they could support police food and shelter needs if needed;
- Spontaneous volunteer management and safety;
- Extremely limited police personnel available (City of Newport indicated likely having five to six officers per shift, other Cities would experience a similar low percentage available).

#### **Support Needed Immediately After a Catastrophic Event:**

- Need replacement trained and equipped response personnel from outside the area(s) beyond 72 hours;
- Immediate aerial or sea re-supply of external resources for life sustainment. Food, water and shelter needs will be much greater than Lincoln County can provide for due to tourist influx;
- Aerial or sea evacuation of injured, vulnerable populations and tourists;
- Water purification equipment needed in all populated areas to provide potable water to survivors;
- Fuel – diesel, gasoline, propane;
- Communication system power, support and repeaters to maintain response;
- Sanitation needs;
- Supplies (culvert, rock) and equipment needed for road repair and temporary bridge construction;
- Seal Rock Fire District will need small boats, they have PWC, but those are ill equipped for rescue and transport;
- Supplies and support for residents to shelter in place;
- Additional fire/rescue equipment and replacement parts;
- Need support and temporary shelter (tents, larger gathering tents for many people) for survivors. Due to aftershocks and safety concerns, school facilities not feasible to re-shelter immediately;
- Schools' top needs are water, shelter, food, and additional medical supplies;

### 1.6 Oregon Coastal Counties – Lincoln County

- Durable medical goods and pharmaceuticals for chronic illnesses;
- Need additional supply caches for medical goods and pharmaceuticals;
- Assistance and transportation relocation of patients needing serious care (dialysis and other resource intensive procedures);
- Medicines for psychological and behavioral health needs;
- Psychological first aid training for responders and shelter staff;
- Security staff for shelters and increased security presence at critical facilities (infrastructure, fire stations, pharmacies and surviving food locations);
- Ability to screen volunteers and shelter populations to provide security for shelters;
- Immediate access to communication and information to allow survivors to communicate with family members outside of the area and provide reunification services;
- Mass fatality personnel support and equipment.

#### **Identified Mitigation and Pre-Event Preparation Needs:**

- Volunteer management protocols for locals;
- Donations management protocols for locals;
- Coordination with quarry and construction companies for roadway reconstruction, equipment and other post-event needs;
- Agreement with law enforcement agencies in Lincoln County to have officers report to the nearest law enforcement jurisdiction to join their ranks if they are unable to report at their own jurisdiction;
- Look at alternate locations for school bus storage so they could be used for evacuation support, fuel, communications and perhaps sheltering;
- State assistance and support of counties for continued COOP planning and resources;
- Local officials be trained in NIMS and ICS and response procedures;
- Agreement on standards for alternate catastrophic medical response protocols to deal with scenario;
- Pre-planning of impact on vulnerable populations and what they will need in Lincoln County post-event;
- Preparedness planning for drug and alcohol centers to have more of their prescription needs;
- Planning on what chronic care needs will be needed based on population in the County;
- Funding for individual community supply caches, similar to that described on the next page, to include shipping container or similar large survivable storage device;

1.6 Oregon Coastal Counties – Lincoln County

Seagrove Community  
250 Person Disaster Supply Cache

	Quantity	Price	Total Price	Comments
<b><u>WATER</u></b>				
Bottled Water	250	\$ 0.20	\$ 50.00	
Water Filter Straws	250	\$ 6.00	\$ 1,500.00	filters 20 gallons/water per straw
55-gallon Water Barrels	8	\$ 80.00	\$ 640.00	1/2 gallon water per person for 3 days
<b><u>SHELTER</u></b>				
10 x 20 Steel Frame Canopy	10	\$ 199.00	\$ 1,990.00	Sleeping Quarters (Costco)
32 x 16 Steel Frame Canopy	2	\$ 479.00	\$ 958.00	1 Medical Treatment Area, 1 Gathering/Eating Area (acecanopy.com, amazon.com)
Mylar Blankets	250	\$ 1.00	\$ 250.00	
Rain Ponchos	250	\$ 0.50	\$ 125.00	Dollar Store
Tarps	20	\$ 10.00	\$ 200.00	Floors for Canopies (Costco)
<b><u>MEDICAL:</u></b> 500 Person Trauma Medical Kit				
	1	\$ 1,050.00	\$ 1,050.00	EQ Management (100 person kit is \$400)
<b><u>FOOD:</u></b> Survival Food Bars				
	1000	\$ 3.50	\$ 3,500.00	3600 calorie food bars, perforated (EQ Management)
<b><u>SANITATION:</u></b> Toilet Kits				
	12	\$ 20.00	\$ 240.00	5 gallon bucket w/liners, seat,lid, toilet paper, hand sanitizer, & disinfectant
<b><u>SEARCH &amp; RESCUE KIT</u></b>				
	1	\$ 500.00	\$ 500.00	4 person professional rescue kit (EQ Management)
<b><u>CONTAINER (20 foot steel storage container)</u></b>				
	1	\$	\$ 3,795.00	Weather proof, tamper proof (Aztec Containers)
<b>TOTAL</b>			<b>\$ 14,798.00</b>	

**ASSUMPTIONS:**

Hypothermia is a significant threat  
 Hundreds of aftershocks will discourage people from staying in homes that aren't destroyed in the initial earthquake (psychological barriers, structural barriers)  
 Water and Shelter are the highest survival needs  
 Supplies (food, shovels, clothing, etc) will be able to be collected from homes that aren't destroyed.

**Other Needs:**

Pet Supplies (leashes, food, carriers)  
 Rope/Stakes/hammer  
 Lanterns/Flashlights  
 Stocking caps/gloves

- County and State need knowledge of nightly occupancy of hotels in order to plan more effectively for needs of tourists;
- Policies and procedures for identifying and credentialing useful volunteers that are spontaneous and not affiliated with county emergency response volunteer groups;
- Contact and coordination with local contractors to possible aid in road reconstruction, building safety assessment and other post-event needs;
- Volunteer programs (Citizen Corps) need continued funding, increased training of volunteers and increased footprint to prepare community and increase readiness for such an event;
- Assessment of alternate forest service roads to reach eastern parts of County;
- Upgrade generators of emergency response agencies in County;
- Promote use of and assistance in provision of personal family supplies;
- Continued discussion and emergency management coordination and planning with locals, State and Federal agencies;
- Need continued funding for retrofitting of critical facilities;
- Increased prioritization and guidance from federal government and State for personal preparedness for greater than 72 hours;

### **1.6 Oregon Coastal Counties – Lincoln County**

- Coordination and support from the State to deal with mass fatalities using catastrophic planning protocols created to deal with issues as a result of this event.

# 1.7 TILLAMOOK COUNTY OREGON

## 1.7 Tillamook County

**Population:** The Tillamook County population is approximately 25,845 persons. As a result of tourism, the population can increase dramatically during spring and summer months.

### Incorporated Coastal Cities:

Bay City, Garibaldi, Manzanita, Nehalem, Rockaway Beach, Tillamook, Wheeler

The executives of incorporated cities within Tillamook County are responsible for the direction and control of their community resources during emergencies.

### Major Rivers:

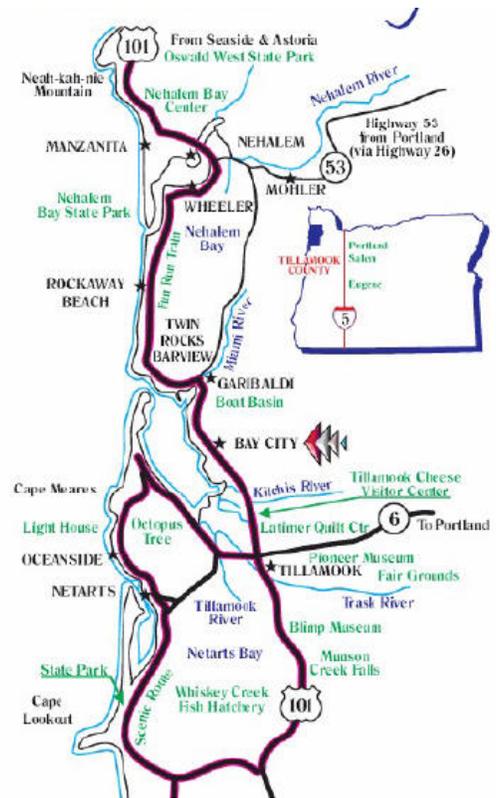
Trask, Kilchis, Miami, Wilson, Tillamook, Nehalem

### Local Response Support:

The Tillamook County Sheriff's Department coordinates Emergency Management, search and rescue, marine and forest deputies, criminal probation and parole and the county jail. The County Sheriff also provides contracted law enforcement to the incorporated City of Garibaldi, as well as unincorporated communities in the county.

### First Responder Agencies / Entities:

The following agencies and entities maintain primary roles and responsibilities during an emergency situation impacting the coastal areas of Tillamook County.



## Cascadia Subduction Zone Plan - County Response Information Annex

### 1.7 Oregon Coastal Counties – Tillamook County

Emergency Management Services	
Tillamook County Emergency Management	City of Manzanita Emergency Management
City of Rockaway Beach Emergency Management	

Law Enforcement Services	
Tillamook County Sheriff's Department	Tillamook County Sheriff's Department for: City of Garibaldi
Manzanita Police Department (Also serves City of Wheeler)	City of Tillamook Police Department
City of Rockaway Beach	

Fire Services			
Bay City Volunteer Fire Department	Garibaldi Rural Fire Protection District	Nehalem Bay Fire and Rescue District	Nestucca Rural Fire District
Netarts / Ocean Side Fire District	Rockaway Beach Volunteer Fire Department	Tillamook Fire District	

Ambulance Services
Tillamook County General Hospital Ambulance Service

Hospital and Medical Services		
Tillamook County General Hospital	Adventist Clinics	Bayshore Clinic (Pacific City)
Rinehart Clinic (Wheeler)	Tillamook County Health Clinics	

Emergency Communication Services	
Tillamook County Emergency Communications District - Provides 9-1-1 Communications for the following emergency response agencies:	
Manzanita Department of Public Safety	Oregon State Police – Sub Station
Rockaway Beach Police Department	Tillamook County Sheriff
Tillamook Police Department	Bay City Volunteer Fire Department
Garibaldi Rural Fire Protection District	Nehalem Bay Fire and Rescue District
Nestucca Rural Fire District	Netarts / Oceanside Fire District
Rockaway Beach Volunteer Fire Department	Tillamook Fire District
Tillamook County General Hospital Ambulance	

Identified Community Points of Distribution Locations
Yet to be determined by County Emergency Management
Identified Emergency Mobile Home Staging Locations
Yet to be determined by County Emergency Management

### 1.7 Oregon Coastal Counties – Tillamook County

#### **County Response Assumptions:**

- An emergency of this magnitude will require prompt and effective response and recovery operations by Tillamook County Office of Emergency Management, County Departments, Cities, volunteer organizations and the private sector;
- All primary emergency response staffs are trained and experienced in operating under NIMS and ICS;
- The County will be responsible for utilizing all available local resources along with initiating mutual aid and cooperative assistance agreements before requesting assistance from the State;
- Due to post-event logistics challenges, personal self-sufficiency for the population may be necessary for an unknown amount of time that could range from several days to several weeks;
- The population of Tillamook County increases during peak tourist season reflecting an influx of tourists, seasonal residents, daily visitors and recreation enthusiasts;
- Available County and City emergency responders are not enough to sustain operations for long periods due to major damage and destruction.
- Available stored fuels are not sufficient to sustain emergency response operations for more than 48 hours.

The response capability of Tillamook County is unable to provide and/or sustain this type of operation especially during tourist season when populations can double.

#### **Catastrophic Event Assumptions:**

See Oregon Cascadia Subduction Zone Earthquake and Tsunami Operations Plan pages 4-1 to 4-11 for statewide Cascadia Subduction Zone earthquake and tsunami assumptions.

Many of the coastal communities in Tillamook County will be fractured into pockets of isolated communities and neighborhoods due to loss of roadways, bridges, communication, and tsunami flooding. Individual pockets of survivors will be on their own for a time period of much greater than 72 hours until communications and transportation between these pockets is reestablished. Additionally, these locations will be without emergency support of fire, law enforcement, and ambulance service until communication and transportation between these pockets is reestablished;

Coastal communities at low elevations will likely suffer severe damage due to the earthquake and resulting tsunami. Damaged infrastructure will inhibit any movement in and out of impacted areas. Emergency Services will be immediately overwhelmed with this event. All incident response will need to be prioritized due to limitations of staffing, equipment, excessive damage and inaccessibility to impacted areas.

### 1.7 Oregon Coastal Counties – Tillamook County

#### **County Priorities:**

##### **Tillamook County Sheriff's Office**

##### **Emergency Management**

- Ensure safety of facilities and staff;
- Preservation of life and safety;
- Obtaining manpower and equipment to support increased and prolonged first responder issues that will follow;
- Contact county wide AOC's to assess situation and determine needs;
- Coordinate response with multiple impacted sites and limited resources;
- Contact State ECC to request additional assistance.

##### **Tillamook County Public Health**

- Assure safety and usability of County Health Department, staff and assets;
- Establish contact with County Hospital and local clinics to determine serviceability and needs;
- Coordinate with County Emergency Management to be able to maximize limited resources to address needs.

**Tillamook County Cities** –Cities in the County are striving to have as many facilities functional after the event to take care of the response and recovery process, including looking where possible to stage all critical equipment out of the affected area and in strategic locations throughout. Normally these locations will be the evacuation areas to help assist citizens displaced from their homes. In this event there will be a very limited time frame for evacuation which may greatly limit abilities to give aid to displaced citizens.

Due to geographic factors many County Cities are currently not well equipped to handle catastrophic incidents where a large part of the area will be devastated due to tsunami and/or earthquake or similar events. There is a high probability that critical facilities and water and wastewater facilities will be lost or severely damaged. With the probability of areas of the County cut off from other areas due to landslides, bridge collapses, and flooding, this could hamper a long term restoration effort and search and rescue operations.

With surviving resources and capabilities Tillamook County Cities' priorities are:

- Safety of emergency response personnel, facilities and assets: fire, police, public works, enact continuity of government protocols;
- Public safety and security;
- Establish lifesaving and survivor search and rescue operations;
- Assessment of emergency support assets;
- Assessment of essential facilities-police, fire stations, local government offices, for safety and security;

### 1.7 Oregon Coastal Counties – Tillamook County

- Establish command and control system with an EOC and communications;
- Safety assessment of pre-designated sheltering facilities;
- Public works to assess damage to critical utility services;
- Provide continual assessments of the situation as it changes.

#### **Available Assets:**

##### **Fire**

Tillamook Fire District provides fire service for Tillamook, Kilchis, Idaville, Cape Meares, Trask, Wilson, Fairview, South Prairie, Bewley Creek, and Pleasant Valley. The District maintains three fire stations with three full time staff and 40 volunteers:

- Tillamook;
- Pleasant Valley;
- Cape Meares.

Bay City Fire Department provides fire service with one fire station and 18 volunteer staff.

City of Garibaldi Fire – provides fire service with one fire station and 18 paid per call firefighters. The City has received a FEMA grant for the seismic rehabilitation of their fire station.

City of Manzanita Fire Department provides fire service with one fire station, two full time firefighters and 18 volunteer fire fighters.

City of Nehalem Bay Fire & Rescue Department provides fire and rescue service with one fire station and 20 volunteer firefighters.

Rockaway Beach Volunteer Fire Department provides fire protection with one station, 15 paid per call firefighters and 15 volunteer firefighters.

City of Wheeler fire services are provided by Nehalem Bay Fire & Rescue.

Emergency services for Tillamook County fire agencies include:

- Fire Suppression;
- Fire Prevention;
- Emergency Medical Services;
- Wildland and light urban search and rescue;
- Mutual aid to surrounding communities if possible due to staffing concerns;

##### **Law Enforcement**

###### **Tillamook County Sheriff**

- Tillamook County Emergency Management operates under the Sheriff's Office.
- The department has volunteer marine and wildland search and rescue teams.
- Maintains criminal, probation, parole and county jail divisions.

### 1.7 Oregon Coastal Counties – Tillamook County

- Has at its disposal a communication trailer and a converted ambulance used for communication support.
- County offices / jail are supported with a large diesel generator that supports 40% of the building in the event of an outage.
- Generator for facilities with 48 – 96 hours of fuel.
- Maintains an MOU with Sheldon Oil (a main supplier of fuel within the County) to supply additional fuel during an emergency, assuming they could get there and the storage containers were not damaged.
  - Sheldon Oil has numerous gas stations throughout the County.
  - Sheldon Oil has installed generators at three of their gas stations (one north, one central and one south) in the coastal County area;

Bay City - Law enforcement is contracted through the Tillamook County Sheriff's Department and serves a population of approximately 1,286.

Garibaldi – Law enforcement is contracted through the Tillamook County Sheriff's Department and serves a population of approximately 895.

Manzanita Police Department - employs three sworn officers and a Police Chief. The department serves a population of approximately 564.

Nehalem – Law enforcement is contracted through the Tillamook County Sheriff's Department as well as the Manzanita Police Department. The law enforcement contracts serve a population of approximately 200.

Rockaway Beach – Law enforcement is provided by five officers and serves a population of approximately 1,276.

Tillamook – Law enforcement is provided by the City Police Department. The Department employs 13 officers and serves a population of approximately 11,000 including the unincorporated communities of Kilchis, Idaville, Cape Meares, Trask, Wilson, Fairview, South Prairie, Bewley Creek and Pleasant Valley.

City of Wheeler contracts with the Sheriff's Department and Manzanita Police Department to provide law enforcement services for approximately 391 residents.

#### Tillamook County Health Department

- Public Health Department; Public and Environmental Health Programs / Health Officer and two Program Managers;
- Staff includes: one physician, four public health registered nurses, two environmental health specialists and office support specialists;
- Three Primary care clinics with staffing of: primary care staff including medical director, two physicians, one adult nurse practitioner, one pediatric nurse practitioner, two physicians assistants, one clinic nurse manager, two registered nurses, three medical assistants, one clinic manager, seven medical records / clerical support staff;

### 1.7 Oregon Coastal Counties – Tillamook County

- Primary care clinics have basic medical supplies, including limited chronic care medications and antibiotics;
- Two of the clinics have generator power sources to run the entire clinic;
- All three clinics have radio communication abilities including base and hand held radios;
- Two mobile HAM radios;
- Tillamook County Public Health supports the Tillamook County Medical Reserve Corps;
- Two satellite phones for staff to use to maintain communications in emergencies;
- Nehalem Bay has Medical Reserve Corps volunteers, but is included as a medical asset under Tillamook County.

#### **Additional County Capabilities:**

The Port of Tillamook Bay facility is located on a former WWII Naval Air Station encompassing 1600 acres of mixed area including forest land, wetland, airport, and mainly industrial use. A large lumber mill is also on Port lands including small shops and trucking facilities.

Assets and capabilities include:

- 5,000 foot runway at the airport and a cross runway;
- Available landing area for helicopters;
- The airport runways have a large capacity for air freight weight;
- Fuels – Jet-A and 100 low led availability;
- Septage Receiving Station for municipal waste;
- Small fleet of pickup trucks;
- Large equipment: front end loader, excavator, CAT, skid-steers, large railroad cranes and trained personnel to run them;
- Large paved areas for large trailers, storage, etc.;
- A few buildings have kitchen areas.
- Storage area available for cots and medical supplies;
- Personnel trained in water and wastewater management;
- Located six miles from Tillamook Bay at an elevation of 36', with higher elevations further into the Industrial Park's 1600 acres.

#### **Nehalem Department of Public Works:**

- Can provide water treatment and distribution through city infrastructure;
- Currently installing a new water line parallel to Hwy. 101 – nearing completion;
- Street maintenance – and appropriate equipment;
- Waste water treatment facilities;
- Engineering management.

### 1.7 Oregon Coastal Counties – Tillamook County

#### Tillamook County Department of Public Works:

- Agreements with Portland Metropolitan Area Transportation Cooperative (PMAT) and ODOT;
- 18 emergency contracts with excavation contractors;
- Three on-call contracts with engineering firms;
- Fuel storage tanks;
- Generators at the north, central and south County shops;
- Sand bags;
- Tarps;
- Heavy equipment: excavators, backhoes, dozer, graders, dump trucks, crane and vactor vacuum truck, as well as trained personnel with experience.

#### Catastrophic Event Operational Challenges:

- Mobilization of essential emergency response personnel will be limited due to damaged roadways and bridges and inaccessibility to offices and equipment as well as family commitments and safety issues;
- Communications capabilities will be severely impacted;
- Maintaining generator power to critical facilities due to lack of fuel;
- County and City resources have very limited urban search and rescue capabilities;
- County and City resources have very limited potable water storage and/or water purification capabilities;
- Available stored fuels may be damaged and become unusable;
- A large part of Tillamook County's economy is in dairy products. Animal populations will present unique issues from the need of electricity for milking, and animal mortality and disposal needs.

#### Port of Tillamook

- The Port is located south of the City of Tillamook; getting to the Port if roads are blocked would be an issue for its use as a personnel and material staging location;
- The port supports a railroad that starts at the Industrial park and continues parallel to Hwy. 101 up through the Wheeler area. The rail line was damaged in the storms of 2007 and cannot support freight weight, however there is a tourist train in current operation. If no major damage occurs to the rail it can be used to transport people from south of Tillamook up through the County.
- There are many older (1940's) buildings that are not seismically upgraded. The large blimp hangar is in danger of collapse with such an event.

**1.7 Oregon Coastal Counties – Tillamook County**

Tillamook County Public Works:

- Limited staffing;
- Bridge conditions;
- Crew support;
- Failing / poor condition of road system;
- Communications both internal and external;
- Slide prone areas on major lifeline roadways which would impact lifeline routes / evacuation routes;
- Many of the communities along the coast will be isolated due to damaged roadways and bridges.

Health Department & Hospitals

- Medical assets will be immediately overwhelmed due to the loss of the Tillamook Hospital, located in the tsunami inundation zone. Surviving medical clinics will be insufficient to handle the injured;
- Tillamook Hospital Helispot is in the tsunami inundation zone;
- Structural damage or demolition of clinic facilities and supplies / equipment;
- Damage to vehicles or roads limiting ability of staff to respond;
- Actual involvement of staff and families, injury and/death; or their homes in destruction caused by tsunami/earthquake;
- No stored supply of potable water or sterile water which will limit the ability to treat survivors;
- Medications will be limited due to the inability of receiving regular shipments. Lack of access for commercial medical suppliers;
- Mortuary capabilities are limited.

**Support Needed Immediately After a Catastrophic Event:**

- Immediate assessments of County assets and accounting for staff availability and safety;
- Building safety assessments;
- Urban search and rescue support and personnel;
- Fuel for critical facility generators and responders;
- Safe and secure buildings/shelters for critical infrastructure and responding personnel;
- Need replacement trained and equipped emergency response personnel from outside of the area(s);
- Mass Fatalities incident teams and equipment;
- Immediate aerial and/or sea support needed to re-supply communities with water, medical supplies, food, shelter, and response personnel;
- Re-establishment of transportation lifeline routes for evacuations, support personnel and equipment;
- Inspections and determinations of use restrictions for surviving bridges;

### 1.7 Oregon Coastal Counties – Tillamook County

- Support needed for evacuations of special medical needs survivors, injured and vulnerable populations. Relocation of patients needing serious care (dialysis and other resource intensive procedures) to facilities outside of the impacted areas;
- Aerial resources for assessments, evacuations, and supplies;
- Additional temporary sheltering, food and water supplies for displaced survivors and tourists; due to aftershocks and safety concerns public buildings and schools may not be feasible to use immediately;
- Water purification equipment in all populated areas to provide potable water to survivors;
- Water purification equipment needed in surviving medical facilities;
- Sanitation facilities need in all populated areas;
- Supplies and equipment for bridging, road repair and debris removal;
- Durable medical supplies and equipment for temporary hospital facilities;
- Supplies of pharmaceuticals for chronic medical conditions, including psychological and behavioral health needs;
- Establishment of community points of distribution throughout the County, and within walkable distance for survivors;
- Communications support.

#### **Identified Mitigation and Pre-Event Preparation:**

- Cities with essential services and facilities in the tsunami inundation zone need assistance and financing to relocate these assets to City owned lands outside of the tsunami inundation zone;
- Increased coordination and/or agreements with the private sector to provide assistance post event;
- Funding to purchase water purification systems and water stores for critical facilities, hospitals and clinical medical facilities;
- Medical services needs water purification abilities and stored potable and sterile water;
- Funding to purchase water purification systems and water stores for hospitals and clinical medical facilities;
- Funding for storage facilities for food, water and sheltering supplies;
- Funding for individual community supply caches and storage containers to possibly include bottled water, water filter straws, shelter canopies, blankets, tarps, rain ponchos, survival food bars, sanitation supplies, and medical supplies;
- Special needs and long term care facilities need protocols and procedures for patient evacuation, patient sheltering and care;
- Continued funding for retrofitting and possible relocation of essential facilities in all areas;

### 1.7 Oregon Coastal Counties – Tillamook County

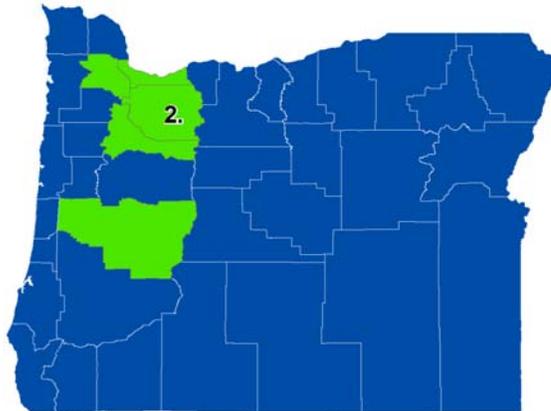
- Agreements with the private sector to supplement and address: bridge engineering, safety assessment and temporary rebuilding of roadways. Private sector coordination with aerial support companies needed also;
- Critical need of generator power and fuels. Most generators are not expected to survive event;
- Surge capacities of local hospitals cannot handle the medical needs after this event. Pre-event purchase and storage of critical/essential equipment is needed;
- There is a need for interoperable communications capability and equipment for County hospitals;
- Funding for retrofitting local water infrastructure. Community water tanks and pipe network are not expected to survive earthquake;
- Retrofitting of clinics and ambulatory medical surgery centers;
- Increased communication abilities for Rural Fire Protection Districts and rural communities, especially in communities that are expected to be isolated in this event;
- Better communication abilities to provide medical services communication interoperability with County communications;
- Medical community needs plans for the evacuation and care of at least four thousand severely disabled/and non-ambulatory residents. These plans and protocols need to extend to in-home caregivers, foster homes, and long term care facilities;
- Caches of pharmaceuticals needed including oxygen, insulin, Lasix, antibiotics, Coumadin, psychotropic drugs, meds and supplies for burns;
- Generally patients needing these medicines are faced with challenges from insurance companies to have a three month supply on hand in case of emergencies.
- Agreements with private security companies to provide security for pharmacies surviving the event to safeguard existing pharmaceuticals.

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# 2

## Metropolitan Oregon Counties

### CSZ Area 2, Metropolitan Oregon Counties



In the **Oregon Metropolitan Counties of Washington, Multnomah and Clackamas (and to a lesser extent the cities of Eugene (Lane County) and Salem (Marion County))**, effects related to the earthquake include: Power supplies will fail and be unavailable for a month or more except by generator. The general

situation for roads will pertain to bridges that will be unavailable due to collapse or separation from approach abutments. Many will only allow limited traffic. Neighborhoods in urban centers will be initially isolated by road damage and debris. Railroad facilities including bridges will be damaged in multiple locations. Pipeline delivery of fuels will cease due to damage of compressors or pumps until they can be tested. They may run at less than full capacity for months or years. Many masonry structures will sustain significant damage including historical buildings. Areas with older, masonry apartment stock will require significant shelter capacity to be opened nearby. Much housing stock will survive with varying damage but loss of sanitary sewer, the need for gas, electrical and plumbing inspection will prevent prompt re-occupying of existing housing stock. Some hospitals / health facilities will sustain serious damage, though loss of water and power may be more significant factors initially. PDX International and The Port of Portland will be closed for weeks and possibly months. Partial reopening of the airport and port and their access to nearby warehousing and fuel storage will be critical. Older firehouses and police stations as well as logistical support centers for trains, busses, and public safety will sustain damage requiring relocation of those operations.

### 2. Metropolitan Oregon Counties

Oregon Metropolitan Counties shortfall expectations are:

- Priority reconnection to main line for air and marine ports and petroleum terminals as well as hospitals and water utilities;
- Electrical power will fail;
- Communications methods will largely fail. Surviving communication systems will degrade as generators run out of fuel;
- Normal response centers at police and fire stations will be disrupted in some areas;
- Road clearing and debris management may have to be apportioned on an area or regional basis;
- Communities may be isolated and require either re-supply of food and medicines or relocation of some residents;
- Large-scale shelter areas will have to be erected on short notice in larger urban areas;
- Multiple urban search and rescue teams will be required in each of the cities of Portland and its suburbs, Salem and Eugene; and to a lesser degree in smaller Cities throughout Western Oregon);
- This area will be a significant center of the health services response and recovery activity to the impacted area overall and will require a variety of support systems to enable leveraging the world-class facilities located here;
- Pharmaceuticals supply will be reduced;
- Augmentation of personnel will be required for all elements of response: fire, police, security, emergency management, utility maintenance, shelter staffing, etc.;
- Immediate / initial response in first 96 hours will be from local residents and resources;
- Limited operational state of radio transmission / overloaded with high volumes of emergency responder traffic;
- Fuel and food deliveries will be required within one week. Diesel and gasoline are priority fuel deliveries for generators and responders and propane for some generators and heating. Utility restoration support will be a priority in these areas;
- Support for voluntary self-evacuation by providing transport to relocation assistance;
- Control of vehicle access to surviving freeways and state highways will be required to minimize non-emergency traffic.

## 2.1 CLACKAMAS COUNTY OREGON

### 2.1 Clackamas County

TO BE DEVELOPED

**2.1 Metropolitan Oregon Counties-Clackamas County**

TO BE DEVELOPED

## 2.2 LANE COUNTY OREGON

### 2.2 Lane County

TO BE DEVELOPED

**2.2 Metropolitan Oregon Counties-Lane County**

TO BE DEVELOPED

## 2.3 MARION COUNTY OREGON

### 2.3 Marion County

TO BE DEVELOPED

**2.3 Metropolitan Oregon Counties-Marion County**

TO BE DEVELOPED

## 2.4 MULTNOMAH COUNTY OREGON

### 2.4 Multnomah County

TO BE DEVELOPED

**2.3 Metropolitan Oregon Counties-Multnomah County**

TO BE DEVELOPED

## 2.5 WASHINGTON COUNTY OREGON

### 2.5 Washington County

**Geography and Demography:** Washington County is located in northwestern Oregon, just west of the city of Portland. It is bordered by Tillamook County on the west, Yamhill and Clackamas counties on the south, Clackamas and Multnomah counties on the east, and Columbia County on the north.

The County occupies an area of 727 square miles and has a 2010 population of 529,710. All or parts of 16 incorporated cities lie within the County, and about 58% of the total population are city residents. The largest cities in the County are Beaverton and Hillsboro with 2010 populations of 89,803 and 91,611 respectively. The County Seat is located in the city of Hillsboro.

Approximately 10.4% of the population is 65 years or older. Approximately 22.9% of the population speaks a language other than English at home with Spanish being the most common other language.

The County is very rural on the west and heavily developed on the east. The agricultural and nursery industries dominate in the rural areas and light manufacturing and retail industries dominate in the urban areas. The County serves as home to the state's largest private sector employer, the Intel Corporation, the world headquarters of the Nike Corporation, many "high tech" companies including Tektronix and TriQuint, and other large companies including Genentech, Columbia Sportswear, and SolarWorld.

From an elevation of 120 feet above sea level at Tualatin, the County rises to 3,464 feet at South Saddle Mountain on its western boundary.

Dominant features of the County landscape are the Coast Range mountains on the west, the Tualatin Mountains, including the Portland West Hills, on the north and east, and the Chehalem Mountains, including Bald Peak, on the south. Also prominent are Cooper and Bull Mountains in the southeast. The agriculturally rich Tualatin Valley lies between the mountain ranges and hills.

The County's only significant watercourse is the Tualatin River. Rising from its headwaters in the Coast Range, the river meanders through the Tualatin Valley in an east-southeast direction to its confluence with the Willamette River at the city of West Linn in Clackamas County. A number of tributary creeks flow through the valley and drain into the Tualatin River. The largest of these creeks are Gales, Dairy, McKay, Rock, Beaverton, and Fanno.

### 2.5 Metropolitan Oregon Counties-Washington County

An important feature of the Tualatin River watershed is Scoggins Dam. Located on Scoggins Creek in western Washington County, this high hazard, 151' high, 2,700' long earthen dam stores, at capacity, 59,910 acre feet of water and controls roughly 5% of the Tualatin River watershed. The dam is owned by the U.S. Bureau of Reclamation and operated by the Tualatin Valley Irrigation District. Its primary purpose is to provide drinking and irrigation water, recreation, and flood control.

Major highways in the County include Interstate 5, which runs north/south in east County; State Highway 26, which runs from southeast to northwest and links Portland to the coast; State Highway 6, which branches off Highway 26 in west County and runs westerly to the coast; State Highway 217, a bypass route linking Interstate 5 to Highway 26 in east County; and State Highway 47, which runs north/south and links the west County cities of Banks, Forest Grove, and Gaston to Columbia and Yamhill counties.

The Portland-Hillsboro Airport (KHIO) is a full service, tower-controlled (0600-2200) airport operated by the Port of Portland. It is the busiest general aviation airport in Oregon with approximately 700 flight operations per day. The airport is open 24 hours-a-day and has two paved runways – 13/31, which is 6,600' in length with instrument approaches and 12/20, which is 4,050' in length with visual only approaches. KHIO has four full service fixed-base operators (FBOs). Available fuel includes Jet-A and 100 LL Avgas.

The Portland and Western Railroad provides limited freight rail service in the County and the Tri-County Metropolitan Transit District (TriMet) provides light rail commuter service from Hillsboro to Portland, the Portland airport, east Multnomah County, and Clackamas County, and commuter rail service from Beaverton to Wilsonville.

The County is home to Pacific University with campuses in Forest Grove and Hillsboro, Portland Community College in the Rock Creek area, and a research facility associated with Oregon Health and Sciences University. The research facility includes the Regional Primate Center.

2.5 Metropolitan Oregon Counties-Washington County

**Cities and Unincorporated Areas:**

Cities					
City	2010 Population	Notes	City	2010 Population	Notes
Banks	1,777		Lake Oswego	36,619	Small portion, most in Clackamas County
Beaverton	89,803		North Plains	1,947	
Cornelius	11,869		Portland	583,776	Small portion, most in Multnomah County
Durham	1,351		Rivergrove	289	Small portion, most in Clackamas County
Forest Grove	21,083		Sherwood	18,194	
Gaston	637		Tigard	48,035	
Hillsboro	91,611	County seat	Tualatin	26,054	Small portion is also in Clackamas County
King City	3,111		Wilsonville	19,509	Small portion, most in Clackamas County
Unincorporated Areas					
Aloha	Bacona	Balm Grove	Bethany	Blooming	Bonita
Bonny Slope	Bradley Corner	Buckheaven	Bull Mountain	Buxton	Carnation

**2.5 Metropolitan Oregon Counties-Washington County**

Cedar Hills	Cedar Mill	Chehalem	Cherry Grove	Dilley	Dixie
Elmonica	Farmington	Gales Creek	Garden Home	Glencoe	Glenwood
Hayward	Hazeldale	Helvetia	Hillside	Huber	Kansas City
Kinton	Laurel	Laurelwood	Manning	Marlene Village	Metzger
Middleton	Midway	Mountindale	Mulloy	Norwood	Oak Hills
Orengo	Patton	Progress	Raleigh Hills	Reedville	Rock Creek
Roy	Scholls	Six Corners	Somerset West	Tanasbourne	Thatcher
Timber	Tobias	Verboort	Watts	West Haven	West Slope
West Union	Whitford	Wilkesboro	Witch Hazel		

**Emergency Responder Agencies / Entities:**

The following agencies and entities maintain primary roles and responsibilities during an emergency situation impacting Washington County:

Emergency Management Services	
Agencies with dedicated emergency management staff:	
<ul style="list-style-type: none"> <li>▪ Washington County</li> <li>▪ City of Beaverton</li> <li>▪ City of Hillsboro</li> </ul>	<ul style="list-style-type: none"> <li>▪ City of Tigard</li> <li>▪ Tualatin Valley Fire &amp; Rescue</li> </ul>
Agencies with collateral duty emergency management staff:	
<ul style="list-style-type: none"> <li>▪ City of Cornelius</li> <li>▪ City of Forest Grove</li> <li>▪ City of North Plains</li> <li>▪ City of Sherwood</li> </ul>	<ul style="list-style-type: none"> <li>▪ City of Tualatin</li> <li>▪ Clean Water Services</li> <li>▪ Joint Water Commission</li> <li>▪ Tualatin Valley Water District</li> </ul>

Law Enforcement Services		
Beaverton Police Department	Cornelius Police Department	Forest Grove Police Department

**Cascadia Subduction Zone Plan - County Response Information Annex**

**2.5 Metropolitan Oregon Counties-Washington County**

Hillsboro Police Department	King City Police Department	North Plains Police Department
Oregon State Police	Sherwood Police Department	Tigard Police Department
Tualatin Police Department	Washington County Sheriff's Office	

Fire Services		
Banks Fire District #13	Cornelius Fire Department	Forest Grove Fire & Rescue
Gaston Rural Fire District	Hillsboro Fire Department	Oregon Department of Forestry
Tualatin Valley Fire & Rescue	Washington County Fire Dist. #2	

Ambulance Services	
Emergency Transport	Non-Emergency Transport
Metro West Ambulance	AMR Ambulance
Life Flight Network Air Ambulance	Community Ambulance
	Medix Ambulance

Public Works Services – Roads		
City of Banks	City of Beaverton	City of Cornelius
City of Forest Grove	City of Hillsboro	City of King City
City of North Plains	City of Sherwood	City of Tigard
City of Tualatin	Oregon Department of Transportation	Washington County Department of Land Use and Transportation

## Cascadia Subduction Zone Plan - County Response Information Annex

### 2.5 Metropolitan Oregon Counties-Washington County

Public Works Services – Water		
City of Banks	City of Beaverton	City of Cornelius
City of Forest Grove	City of Hillsboro	City of North Plains
City of Sherwood	City of Tigard	City of Tualatin
Joint Water Commission	LA Water Co-op	Raleigh Water District
Timber Water Association	Tualatin Valley Water District	West Slope Water District

Public Works Services – Sewer		
City of Beaverton	City of Cornelius	City of Forest Grove
City of Hillsboro	City of Sherwood	City of Tigard
City of Tualatin	Clean Water Services	

Public Health Services	
Washington County Department of Health and Human and Human Services – Including:	
<ul style="list-style-type: none"> <li>▪ Public Health</li> <li>▪ Epidemiology and Communicable Disease</li> <li>▪ Environmental Health</li> </ul>	<ul style="list-style-type: none"> <li>▪ Mental Health</li> <li>▪ Solid Waste</li> </ul>

Hospital Services	
Kaiser Westside Medical Center – Hillsboro	Providence St. Vincent Medical Center – Beaverton
Tuality Community Hospital – Hillsboro	Tuality Hospital – Forest Grove
Cedar Hills Hospital (Psychiatric Care) – Beaverton	
Legacy Emanuel Hospital Trauma Center – Portland (Multnomah County)	
Legacy Meridian Park Medical Center – Tualatin (Clackamas County)	

## Cascadia Subduction Zone Plan - County Response Information Annex

### 2.5 Metropolitan Oregon Counties-Washington County

Oregon Health and Science University (OHSU) Hospital Trauma Center – Portland (Multnomah County)
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Military Facilities/Services	
Oregon Army National Guard Headquarters, 2nd Battalion, 218th Field Artillery Forest Grove	Oregon Army National Guard Company D, 2nd Battalion, 162nd Infantry Hillsboro
Oregon Army National Guard Headquarters, 41st Infantry Brigade Combat Team Tigard	

Shelter Services	
American Red Cross Oregon Trail Chapter	Washington County Housing Services Department

Animal Care Services	
Washington County Animal Services	Oregon Humane Society

Emergency Communications Services
Washington County Consolidated Communications Agency (WCCCA) – Beaverton – Public Safety Answering Point (PSAP) providing 9-1-1 call-taking services for Washington County. Also, provides dispatch services for local government fire and law enforcement agencies.
Metro West Ambulance – Hillsboro – Dispatches own ambulances for emergency transport
Public Works Agencies (Road, Water, Sewer) – Dispatch own agency response resources
Washington County Amateur Radio Emergency Service (WashCo ARES) – Provides amateur radio emergency communications support to local governments and hospitals

Utility Services – Power/Energy
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## Cascadia Subduction Zone Plan - County Response Information Annex

### 2.5 Metropolitan Oregon Counties-Washington County

Forest Grove Light and Power	Northwest Natural
Portland General Electric (PGE)	West Oregon Electric Cooperative

Telephone Services – Landline and Cellular	
<b>Landline:</b> <ul style="list-style-type: none"> <li>▪ CenturyLink</li> <li>▪ Comcast</li> <li>▪ Frontier</li> </ul>	<b>Cellular:</b> <ul style="list-style-type: none"> <li>▪ AT&amp;T</li> <li>▪ Cricket</li> <li>▪ Sprint</li> <li>▪ T-Mobile</li> <li>▪ U.S. Cellular</li> <li>▪ Verizon Wireless</li> </ul>

Public Transportation Services	
Tri-County Metropolitan Transit District (TriMet)	Ride Connection
Bus Light Rail Commuter Rail Lift Service	Disability Service Lift Service

### **Pre-identified Response and Recovery Logistics Sites:**

State and Regional Disaster Aviation Plan Facilities		
Secondary Airports	Latitude	Longitude
Port of Portland Hillsboro Airport (KHIO)	45.5406111	-122.9501944
Tertiary Airports	Latitude	Longitude
Starks Twin Oaks Airpark (7S3)	45.4284503	-122.9421569
Helispots	Latitude	Longitude
PCC Rock Creek	45.5666667	-122.8583333
Tualatin Hills Park and Recreation District – Beaverton	45.5166667	-122.8416667
Cedar Park Middle School – Beaverton	45.5166667	-122.8
North Plains Glider Port (1OR4)	45.6040036	-123.0248286

## Cascadia Subduction Zone Plan - County Response Information Annex

### 2.5 Metropolitan Oregon Counties-Washington County

Sunset Park Airstrip (1OR3) – Banks; North Plains	45.5915039	-123.0095500
Forest Grove High School	45.5333333	-123.1166667
Gaston Middle and High School	45.4366667	-123.1416667
Hillsboro High School	45.4966667	-122.9666667
Aloha High School	45.4866667	-122.8666667
Tualatin High School	45.3666667	-122.775
Cook Park – Tigard	45.3966667	-122.775
Fowler Middle School – Tigard	45.43	-122.7916667

Community Points of Distribution Locations		
CPOD Name	Latitude	Longitude
SW Jenkins and Karl Braun – Beaverton	45.501083	-122.820743
Jesuit High School – Beaverton	45.485978	-122.767134
Southwest Christian School – Beaverton	45.448334	-122.827095
Hillsboro Stadium	45.554298	-122.906907
Washington Square – Tigard	45.450953	-122.7755
Tigard High School	45.403919	-122.768
Forest Grove High School	45.535213	-123.120314
Banks High School	45.615388	-123.113748
Regal Cinema – Sherwood	45.370298	-122.840281
Red Tail Golf Center – Beaverton	45.460834	-122.779891

Emergency Mobile Home Staging Locations		
Mobile Home Staging Area	Latitude	Longitude
NE Corner of SW Jenkins and SW 158 <sup>th</sup> – Beaverton*	45.507914	-122.839766

## Cascadia Subduction Zone Plan - County Response Information Annex

### 2.5 Metropolitan Oregon Counties-Washington County

SE Corner of SW Tualatin Valley Hwy and SW 160th Ave – Beaverton	45.491298	-122.841049
SW Corner of Hwy 8 and Hwy 217 – Beaverton*	45.489764	-122.793572
SE Corner of SW Allen and Hwy 217 – Beaverton	45.476001	-122.786824
Vacant Lot/Building – Corner of SW Western and SW 5 <sup>th</sup> – Beaverton*	45.483484	-122.782345
Parking Lot – 9134 SW Canyon Road – Beaverton	45.49612	-122.770286
Parking Lot – SW Washington Square Road and SW Greenburg Road – Tigard	45.450829	-122.775135
Parking Lot (Former GI Joe’s Store) – 16775 SW 12 <sup>th</sup> Street – Sherwood	45.364514	-122.848831
Parking Lot – 23500 NW Jacobson Road – Hillsboro	45.564956	-122.920255
Washington County Fairplex – 873 NW 34 <sup>th</sup> Avenue - Hillsboro	45.531478	-122.948073
Vacant Lot Adjacent to Reserve Golf Course – Hillsboro*	45.490013	-122.909889

\* Weather dependent – unpaved or partially paved

### **Mutual Aid Agreements:**

Mutual Aid	
Washington County Fire Defense Board Inter- and Intra-County Mutual Aid Agreements	Law Enforcement Master Mutual Aid Agreement
Omnibus Inter-County Mutual Aid Agreement	Cooperative Public Agencies of Washington County (Public Works)
Portland Metropolitan Area Transportation (PMAT) Co-Operative Intergovernmental Agreement for Equipment and Services	Oregon Public Works Emergency Response Cooperative Assistance Agreement
Oregon Urban Search and Rescue (USAR) Task Force Mutual Aid Agreement	Building Inspection Services Intergovernmental Agreement
Oregon Water/Wastewater Agency	Hospital/Health System Facility

**2.5 Metropolitan Oregon Counties-Washington County**

Response Network (ORWARN)	Emergency Mutual Aid Agreement
Western Region Mutual Assistance Agreement (WRMAA) [Gas and Electric Utility Mutual Aid]	Northwest Mutual Assistance Agreement (NWMAA) [Gas and Electric Utility Mutual Aid]
Ambulance Service Mutual Aid Agreement	

**Catastrophic Event Assumptions:**

See Oregon Cascadia Subduction Zone Earthquake and Tsunami Operations Plan pages 4-1 to 4-11 for statewide Cascadia Subduction Zone earthquake and tsunami assumptions.

- Emergency services will be immediately overwhelmed. All incident response will be constrained and prioritized due to incident volume and magnitude and staffing and other resource limitations.
- Local and regional mutual aid resources will not be available.
- Hundreds of people will die and many more will suffer traumatic injuries requiring advanced medical treatment. In the first 48-72 hours of the incident, assistance to and transport of those requiring treatment will be provided primarily by family members, neighbors, or co-workers.
- Thousands of victims with acute medical conditions will require rapid evacuation from the region.
- Public and public safety communications will be largely inoperable due to damage, overloaded circuits, and/or loss of power/fuel. Back-up public safety communications systems will be operational but will provide significantly reduced capabilities.
- Fuel supply will be limited to what is in vehicles and what remains in undamaged fuel storage tanks.
- Power will be lost for an extended period. Facilities with back-up power will be able to operate briefly but will be unable to obtain additional fuel.
- Natural gas will be lost for an extended period. Storage facilities and transmission lines will be damaged and compressors will lose power.
- Potable water supply for both drinking and firefighting will be disrupted for an extended period. Treatment facilities, reservoirs, and transmission lines will be damaged and treatment facilities and pump stations will lose power.
- Sanitary sewer service will be compromised for an extended period. Treatment facilities and transmission lines will be damaged and treatment facilities and pump stations will lose power.
- Bridges over waterways will be impacted and some will collapse or be impassable.
- Overpasses on major highways will be impacted and some will collapse or be impassable.

### 2.5 Metropolitan Oregon Counties-Washington County

- Major highways and many arterials and collectors will be damaged by ground movement, liquefaction, and/or culvert failure. Many will also be impeded by landslides and/or structural collapse debris.
- Public safety facilities, including fire, EMS, law enforcement, public works, and communications, as well as agency emergency operations centers will sustain moderate non-structural damage. Most will remain functional although limited in use by non-structural damages and utility disruption. A few will sustain significant structural damage rendering them non-functional.
- Older commercial and residential buildings, including those of unreinforced masonry and concrete tilt-up construction, will suffer significant damage and many will be uninhabitable. Newer construction residential and commercial buildings will fare better. Although most will suffer non-structural damages and there will be pockets of buildings with structural damages, most will remain habitable although limited in use by utility disruption.
- Hospitals and other healthcare delivery system facilities (clinics, dialysis centers, ambulatory surgery centers, etc.) will sustain moderate structural and non-structural damages. Some will sustain more significant damage. The healthcare system as a whole will remain operational but will be significantly limited in its capability and capacity due to the damages, staff shortages, interruptions in power, fuel, and water supply, and access to pharmaceutical and other medical supplies.
- Thousands of people will be displaced from their homes. Most will attempt to remain in or near their homes for security reasons unless forced to leave by weather or other hazardous condition, medical needs, or other family issues.
- Thousands of people may not be able to get to their homes due to damaged transportation infrastructure.
- Many pre-designated Red Cross shelters will be damaged and uninhabitable and many local Red Cross volunteers will be unable to support shelter operations in the facilities that remain functional.
- Mass transit (bus, light rail, commuter rail) will be unavailable for an extended period.
- The food distribution and delivery systems will be damaged or otherwise disrupted. Grocery stores will be damaged and lose refrigeration and food distribution centers will be damaged or unable to move foodstuffs to operational stores.
- Many TV and radio stations will remain operational but will be limited in their capabilities by power loss and fuel supply disruption.
- Evacuees and casualties from harder hit coastal communities may require short or long term support from neighboring inland communities.
- Uncontrolled fires and hazardous material releases are likely.
- Numerous aftershocks of significant magnitude will greatly exacerbate the situation.

### 2.5 Metropolitan Oregon Counties-Washington County

#### **County Response Assumptions:**

- Local governments, businesses, non-governmental organizations, and citizens will act independently at first to assess damages, save lives, stabilize the incident, and protect property. This includes pre-established volunteer groups such as Community Emergency Response Team (CERT) and Amateur Radio Emergency Service (ARES). As command, control, and communications are reestablished/restored, they will act in a more coordinated manner to maximize outcomes with response efforts prioritized based on incident magnitude/impact and resource availability.
- Local governments will declare emergencies and seek help from the state and federal governments.
- Federal resources will be mobilized quickly but will not arrive for at least 24-72 hours after incident impact. Their arrival may be further delayed by transportation limitations and higher priority missions in other parts of the Pacific Northwest.
- Emergency operations plans and continuity of operations plans will be implemented and emergency operations centers will be activated to manage, support, and coordinate response efforts, albeit with significantly reduced staff and diminished capabilities.
- Although some public safety agency and other critical response organization (e.g., public works and electric, gas, water, and sewer utility) equipment will be damaged during the earthquake, most will still be operational.
- The public safety 800 MHz radio system will sustain some damage but will still provide some capability in the site trunking, failsoft, or simplex modes.
- Scoggins Dam will sustain substantial damage. However, it will not be full and will not catastrophically fail at the time of the earthquake. This will allow for a controlled, emergency drawdown of Hagg Lake. [Note: This assumption is based on the state plan assumption of an early February earthquake. If the earthquake occurs later in the spring or early summer, the reservoir will likely be full and a catastrophic failure is more likely. Regardless of time, aftershocks will further compromise the dam's integrity.]
- Local hospitals will be operating at near-maximum capacity at the time of the earthquake.
- Hundreds if not thousands of out-of-county residents who work in the county will be stranded and unable to return home due to transportation and transit system disruptions.

#### **County Response Priorities**

The initial response priorities of Washington County and its cities and special districts are:

- Personnel safety – emergency responders , co-workers, family, neighbors

### 2.5 Metropolitan Oregon Counties-Washington County

- Rapid situational assessment – immediate area then expanding to jurisdictional and countywide
- Reconstituting government and re-establishing government operations (i.e., COOP Plan implementation)
- Activation of emergency operating facilities and implementation of emergency operations plans
- Developing a common operating picture
- Implementing modified incident response priorities focusing on life safety and incident stabilization including firefighting, emergency medical services, search and rescue, hazardous material spill containment, and rendering safe downed power lines and ruptured natural gas lines
- Establishing operable and interoperable communications and developing an emergency communications plan
- Identifying critical personnel, equipment, supply, and commodity needs and transmitting a resource request to the state
- Assessing damage to critical facilities (public safety buildings, hospitals, communications centers, roads, bridges, water treatment and storage facilities, etc.)
- Removing debris from emergency transportation and other critical routes
- Developing an emergency transportation plan
- Identifying and securing fuel supplies and developing a fuel management/allocation plan
- Identifying and activating alternate care sites (e.g., casualty collection points)
- Coordinating with public and private utilities and supporting the mobilization of their resources to facilitate response and the restoration of services to critical facilities
- Restoring community security, maintaining law and order, and developing and implementing site-specific security plans
- Assessing public and environmental health impacts, identifying resource needs to address the impacts, and developing and implementing plans to mitigate the impacts
- Initiating mass fatality response operations
- Identifying and activating sites for vertical (i.e., by air) medical evacuation and re-supply
- Identifying and activating community-based shelters including facilities for medically-fragile and other vulnerable populations
- Identifying and activating Community Points of Distribution (C-PODs)
- Preparing and disseminating emergency public information
- Gathering data for, preparing, and submitting an Initial Damage Assessment (IDA)
- Mobilizing and organizing community volunteers

**2.5 Metropolitan Oregon Counties-Washington County**  
**Summary of Available Assets by Discipline/Function:**

**Local Government**

- **Fire Service** – Engines, trucks, heavy rescues, brush rigs, water tenders, HazMat response vehicles, emergency transport vehicles, portable shelters, mobile command post, mobile communications vehicles, technical and heavy rescue equipment, water rescue equipment, career and volunteer staff
- **Law Enforcement** – Patrol vehicles, armored vehicles, mobile command posts, mobile communications vehicle, VHF/UHF portable radio cache, fixed wing plane, water rescue equipment, portable shelters, career and reserve deputies/officers
- **Public Works**
  - **Transportation** – Graders, dumps, front end loaders, excavators, sweepers, bucket trucks, plows, forklifts, utility vehicles, trailers, light towers, variable message signs, barricades, concrete saws, crews
  - **Water** – Graders, dumps, front end loaders, backhoes, vac trucks, utility vehicles, emergency water distribution systems
  - **Sewer** – Graders, dumps, front end loaders, backhoes, vac trucks, remote TV camera capabilities, utility vehicles, crews, confined space entry teams
  - **Stormwater** – Graders, dumps, front end loaders, backhoes, vac trucks, sweepers, remote TV camera capabilities, utility vehicles, crews, confined space entry teams
  - **Vegetation** – Chippers, brush cutters, mowers, chain saws, utility vehicles, crews
  - **Electric Utility** – Trucks (digger-derrick, boom, incident response/repair, flatbed, dump, pickup), trailers (flatbed, reel), backhoes
- **Health and Human Services** – Community clinics and nurses, small animal sheltering equipment and supplies, communicable disease investigation teams, environmental health teams, behavioral health teams, solid waste staff, portable shelters, medium capacity water purification filters, Community Assessment for Public Health Emergency Response (CASPER) Toolkit, Medical Reserve Corps volunteers
- **Public Safety Communications** – Mobile communications trailer with 800 MHz portable radio cache
- **Emergency Management** – CERT volunteers

**Non-Governmental Organizations**

- **Washington County Amateur Radio Emergency Service (WashCo ARES)**
  - Approximately 100 dual-registered (ARES/RACES) emergency communication radio operators.

### 2.5 Metropolitan Oregon Counties-Washington County

- Ability to operate served agency (i.e., county, city, special district, 9-1-1 center, and hospital) amateur radio equipment and/or provide and operate personal equipment
- **American Red Cross**
  - Approximately 100 pre-designated shelters
  - Trailered shelter supplies
  - Trained shelter management/operations volunteers
  - Behavioral health teams
- **Housing and Supportive Service Network (HSSN)**
  - Homeless severe weather shelter facilities with hot meals (church-based, other)
  - Trained shelter operations volunteers

### Private Sector

- **Metro West Ambulance** – Emergency and non-emergency patient transport
- **Cedar Hills Hospital** – Psychiatric hospital specializing in mental health and chemical dependency care
- **Kaiser Permanente**
  - Kaiser Westside Medical Center, 126 beds
  - Healthcare clinics – Beaverton, Hillsboro, Tanasbourne, Tualatin
- **Providence Health and Services**
  - Providence St Vincent Medical Center, 523 beds, 3500 employees including more than 2,000 medical staff
  - Healthcare clinics – Bethany, Cedar Mill, Hillsboro, Sherwood, Tanasbourne, Tigard
- **Tuality Healthcare** – 1200 employees with over 300 medical staff
  - Tuality Community Hospital, 167 beds
  - Tuality Forest Grove Hospital, 48 beds
  - Healthcare clinics – Hillsboro
- **Portland General Electric (PGE)**
  - Repair facilities (Hillsboro and Beaverton) with helicopter landing zones
  - Digger-derrick trucks (heavy lift boom ; hydraulic auger)
  - Boom trucks (two-man lift; 45'-90' reach; crew of 5-6)
  - Repair rigs (45' max reach boom; crew of 2)
  - Incident response/repair rigs (man-lift; crew of 1)
  - Other trucks –Flatbed; Dump; Reel; Pickups

### 2.5 Metropolitan Oregon Counties-Washington County

- Backhoes
- **NW Natural**
  - Resource centers (Hillsboro and Tualatin). Note: Tualatin center closing early 2014 and resources moving to new center in Sherwood)
  - Trucks – Dump, Crane, Crew, Pickup, Welder, Fire (1 ton mini)
  - Tractor-Trailer with 40' flatbed trailers and LNG and CNG trailers
  - Vans – Cargo, Step, Hi-Cube
  - Fork Lifts
  - Backhoes /Frontend Loaders
  - Trailers (equipped with the following) – Cook wagon; Generators; Compressors; Refrigeration; Weed sprayer; Sandblaster; Message board; Fire suppression; HAZMAT (fully equipped); Oil recovery; Vacuum system; Mobile lubrication; Vapor evacuation; Sweepers; Tilt; Pipe; Flatbed; others
  - Small boat w/trailer
  - All-terrain vehicles (ATVs)
  - Portable Generators
  - Pipe (steel and poly)
- **Verizon Wireless**
  - Cell on Wheels (trailered cell site)
  - Cell on Light Truck
  - Cellular repeater on trailer
  - Generator on trailer
- **Intel Corporation**
  - Intel Emergency Amateur Radio Service (iEARS) – Trained amateur radio operators; mobile communications van
  - Emergency Response Teams – On site HazMat responders
  - Contracted ATC-20 qualified building inspectors
  -

### **Washington County Catastrophic Event Operational Challenges:**

- Incident activity and resource demands far outstripping available resources
- Staffing reductions caused by injury, death, isolation, and transportation limitations
- Need to reestablish government operations while simultaneously responding to public needs
- Damaged public safety infrastructure including equipment and facilities
- Constrained or non-existent fuel supply
- Heavily damaged transportation infrastructure
- Greatly limited communications capabilities (government and public)
- Widespread loss of power
- Diminished water supply for drinking, fire suppression, and sanitary services
- Significantly reduced healthcare system capabilities at the time of highest need

### 2.5 Metropolitan Oregon Counties-Washington County

- Insufficient heavy rescue/urban search and rescue capabilities
- Need for and delivery of mass care (sheltering, feeding, etc.) greatly influenced by weather conditions (rain, snow, temperature, etc.)
- Heavily damaged sanitary sewer collection system

#### **Support Needed Immediately After a Catastrophic Event:**

- Activation of the National Disaster Medical System (including Disaster Medical and Veterinary Assistance Teams, Disaster Mortuary Teams, Federal Medical Stations, aerial evacuation of victims and patients requiring acute medical care, and staff to provide definitive medical care)
- Incident Management Teams, Urban Search and Rescue Teams, Disaster Mental Health Teams, and other personnel resources to support incident response, damage assessment, maintenance of law and order, and infrastructure restoration
- Fuel – gasoline, diesel, and propane
- Aviation assets to support situation assessment, evacuation, and re-supply
- Communications and technology resources – radio caches, cell on wheels, satellite comms, satellite web access
- Generators for agency/response use
- Mass care/shelter resources – people, temporary facilities, food, water, and sanitation
- Heavy equipment to clear debris and reopen highways
- Commodities to meet basic public needs – food, water, ice, tarps, generators, sanitary supplies, etc.
- Water purification and storage
- Medications (including those to supply community pharmacies) and medical supplies

#### **Identified Mitigation and Pre-Event Preparation Needs:**

##### Planning:

- Fuel contingency planning – local and regional
- Private sector coordination planning with emphasis on the healthcare, utility, and communications sectors
- Community-based sheltering
- Sheltering of medically fragile and other vulnerable populations
- Detailed evacuation planning for Scoggins Dam failure
- Agency-specific and countywide disaster communications planning
- Commodities distribution planning linked to state and federal plans

##### Equipping:

- Emergency generators at fueling facilities

### 2.5 Metropolitan Oregon Counties-Washington County

- Shelter supplies
- Amateur radio equipment installations at critical facilities
- Radio caches, repeaters, and antennae

#### Training/Educating:

- ATC-20 post-earthquake building damage inspection
- Neighborhood and community training through Citizen Corps (CERT, MRC, NW, VIPS), Map Your Neighborhood, and similar programs for public awareness and personal preparedness

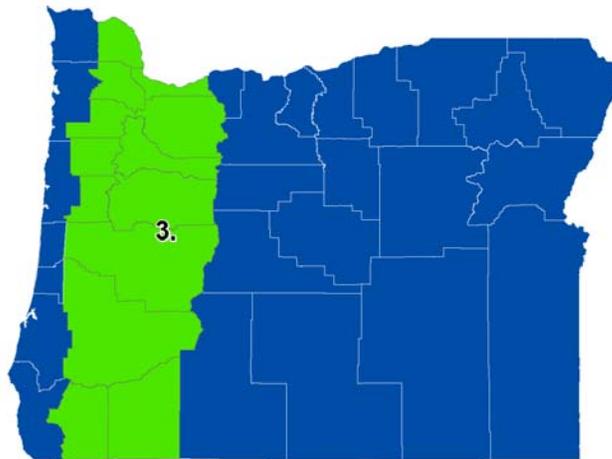
#### Mitigating:

- Seismic upgrade of critical facilities (bridges, emergency transportation routes, hospitals, public safety facilities, utility infrastructure, etc.)
- Non-structural mitigation at critical facilities

# 3

## Oregon Counties West of the Cascade Range

### CSZ Area 3, Counties West of the Cascade Range



In Western Oregon Counties including Josephine, Jackson, Douglas, Lane, Linn, Benton, Marion, Polk, Yamhill and Columbia, (including areas of Washington, Multnomah and Clackamas Counties not described in the Oregon Metropolitan Counties shortfall

**expectations)** significant effects primarily related to shaking and impacts along rivers and roadways are to be expected. Freeways and associated bridges will be damaged, rail lines will be damaged or buried by landslides in multiple places, and communities will be isolated by interrupted roads through direct damage or landslide. Certain dike structures may fail causing localized flooding and possibly some deaths. Industrial plants in the area will experience emergency shutdown of processes which may result in some catastrophic failures and deaths/injuries at those plants. Some bulk storage facilities for petroleum or other hazardous products will rupture due to mechanical strain through shaking, sloshing of contents, or liquefaction of supporting soils. A certain percentage of this loss can be expected to escape secondary containment. Many of these facilities are associated with major cities along rivers and along Interstate 5. If this occurs during fish runs, entire reproductive year-groups may be lost. Severe environmental contamination will result. A mechanical rearrangement of Columbia River sediment may block shipping channels and create unexpected currents. All response activities adjacent to the Columbia River will need to be coordinated with State of Washington counties across the Columbia and Washington EMD.

### 3. Oregon Counties West of the Cascade Range

Western Oregon County shortfall expectations are:

- Electrical power will fail;
- Communications methods will largely fail. Surviving communication systems will degrade as generators run out of fuel;
- Normal response centers at police and fire stations will be disrupted in some areas but less so than on the coast;
- Bridges throughout Western Oregon may be severely damaged, fail or block vital traffic on the Columbia River;
- Smaller, rural communities may be isolated and require either re-supply of food and medicines or relocation of some residents;
- Large-scale shelter areas will have to be erected on short notice in larger urban areas;
- Multiple urban search and rescue teams will be required and possibly teams with specialized experience with industrial plants;
- Logistical support will likely come via Eastern Oregon through to surviving airports in Western Oregon Counties;
- Health centers will be damaged and operate at reduced capacity. Some patients will require relocation and injured will be treated by available means – probably not current standards of care;
- Pharmaceuticals supply will be severely reduced;
- Augmentation of personnel will be required for all elements of response, fire, police, security, emergency management, utility maintenance, shelter staffing, etc.;
- Immediate / initial response in the first 96 hours will be from local residents and resources;
- Many warning systems and methods used locally are not interconnected between neighboring jurisdictions i.e., Public System Answering Points (PSAP's / 911);
- Limited operational state of radio transmission / overloaded with high volumes of emergency responder traffic;
- Fuel and food deliveries will be required within one week. Diesel and gasoline are priority fuel deliveries for generators and responders. Propane will be needed for generators and heating;
- Generally, all fuel delivery via pipeline will be halted for a period of a month or more;
- Water and sewage treatment will be compromised and be out of service for an indefinite time.

## 3.1 BENTON COUNTY OREGON

### 3.1 Benton County

TO BE DEVELOPED

**3.1 Oregon Counties West of the Cascade Range-Benton County**

TO BE DEVELOPED

## **3.2 RURAL CLACKAMAS COUNTY OREGON**

### **3.2 Rural Clackamas County**

TO BE DEVELOPED

**3.2 Oregon Counties West of the Cascade Range-Rural Clackamas County**

TO BE DEVELOPED

## 3.3 COLUMBIA COUNTY OREGON

### 3.3 Columbia County

TO BE DEVELOPED

**3.3 Oregon Counties West of the Cascade Range-Columbia County**

TO BE DEVELOPED

## 3.4 DOUGLAS COUNTY OREGON

### 3.4 Douglas County

TO BE DEVELOPED

**3.4 Oregon Counties West of the Cascade Range-Douglas County**

TO BE DEVELOPED

## 3.5 LANE COUNTY OREGON

### 3.5 Lane County

TO BE DEVELOPED

**3.5 Oregon Counties West of the Cascade Range-Lane County**

TO BE DEVELOPED

# 3.6 LINN COUNTY OREGON

## 3.6 Linn County

TO BE DEVELOPED

**3.6 Oregon Counties West of the Cascade Range-Linn County**

TO BE DEVELOPED

## 3.7 JACKSON COUNTY OREGON

### 3.7 Jackson County

TO BE DEVELOPED

**3.7 Oregon Counties West of the Cascade Range-Jackson County**

TO BE DEVELOPED

## 3.8 JOSEPHINE COUNTY OREGON

### 3.8 Josephine County

TO BE DEVELOPED

**3.8 Oregon Counties West of the Cascade Range-Josephine County**

TO BE DEVELOPED

## 3.9 RURAL MARION COUNTY OREGON

### 3.9 Rural Marion County

TO BE DEVELOPED

**3.9 Oregon Counties West of the Cascade Range-Rural Marion County**

TO BE DEVELOPED

## 3.10 POLK COUNTY OREGON

### 3.10 Polk County

TO BE DEVELOPED

**3.10 Oregon Counties West of the Cascade Range-Polk County**

TO BE DEVELOPED

## **3.11 RURAL WASHINGTON COUNTY OREGON**

### **3.11 Rural Washington County**

TO BE DEVELOPED

**3.11 Oregon Counties West of the Cascade Range-Rural Washington County**

TO BE DEVELOPED

## 3.12 YAMHILL COUNTY OREGON

### 3.12 Yamhill County

TO BE DEVELOPED

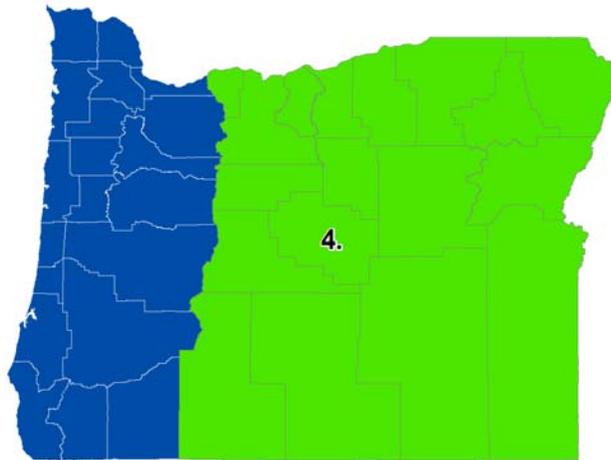
**3.12 Oregon Counties West of the Cascade Range-Yamhill County**

TO BE DEVELOPED

# 4

## Counties East of the Cascade Range

### CSZ Area 4, Counties East of the Cascade Range



In all **counties east of the Cascade Mountains**, effects related to the earthquake include: indirect impacts related to transportation corridors (roads, rail, and air), power disruption, supply side chain distribution (including fuel, food, and natural gas), demand for logistics and staging areas, shelter, and relocation of individuals and animals from

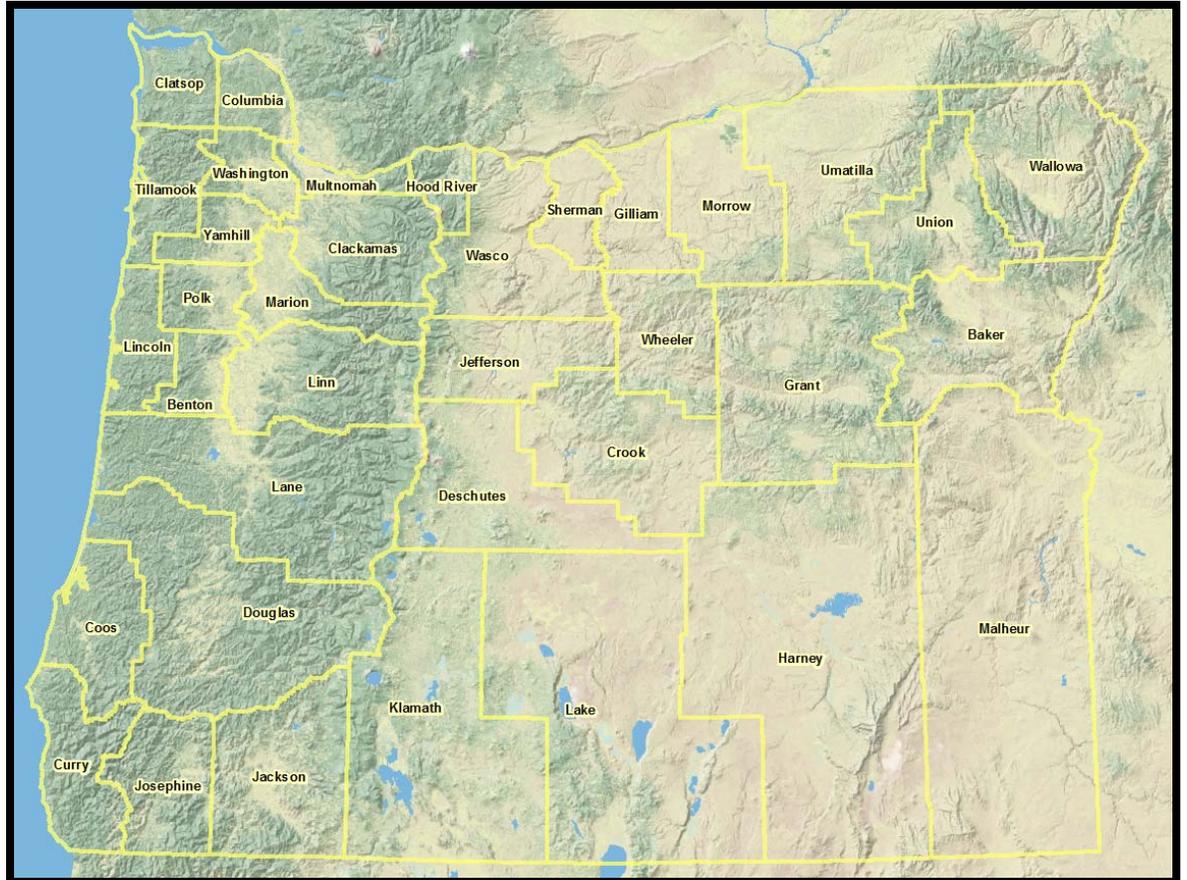
the impacted areas. Transportation interruptions and prioritization of emergency supplies to Western Oregon will disrupt raw material imports and finished-agricultural product export. Financially this is an extreme impact and alternate routing to ports of opportunity will be required. This will increase shipping costs, affecting Oregon's agricultural economy. Massive staging areas are likely to be required in various areas of Central and Eastern Oregon with the primary location of relief supplies likely at an established federal ISB at Roberts Field Airport in Redmond, Oregon, Deschutes County. River traffic on the Columbia River will be an important response and recovery lifeline. Mutual aid from Eastern Oregon local jurisdictions will be sought to the maximum degree possible. Many building inspectors, police, firefighters, medical personnel, engineers, and public works personnel may deploy to the impacted areas of Western Oregon.

**4. Oregon Counties East of the Cascade Range**

**ALL COUNTIES EAST OF THE CASCADE RANGE TO BE DEVELOPED**

# A

## Appendix A – Oregon County Map





# B

## Appendix B

TO BE DEVELOPED IF NEEDED



# C

## Appendix C

TO BE DEVELOPED IF NEEDED