

TILLAMOOK COUNTY, OREGON EMERGENCY OPERATIONS PLAN

ANNEX R

EARTHQUAKE & TSUNAMI

I. PURPOSE

- A. Tillamook coastal communities are at risk to both earthquakes and tsunamis. Tsunamis are sea waves produced by an undersea earthquake. These sea waves caused by the earthquake or undersea landslide can reach 50 or more feet in height, which would be devastating in low-lying coastal areas. Secondary hazards from a localized earthquake may include fire, HAZMAT release, or dam failures, among others. Many coastal communities also have a high liquefaction hazard that can cause subsidence and structural failures.
- B. To provide education and training for communities in both earthquake awareness and tsunami preparedness. Provide adequate warning and safe evacuation from tsunami hazard areas and to mitigate earthquake hazards. To protect life and property that are likely to be affected during an earthquake and/or tsunami event.

II. SITUATION AND ASSUMPTIONS

A. Situation

Tillamook County is subject to earthquake, and tsunami risk, which could significantly endanger many lives and property. Historically, earthquake and tsunamis incidents are infrequent, but can produce devastating effects in our community.

Tillamook County is situated on the west slope of the Coastal Range and we have a narrow coastal strip, which constitutes approximately 10% of the county land area. This narrow corridor is where 75% of our population is located. Additionally, many of our communities have high liquefaction risk. This will intensify the effects of an earthquake causing major damages.

B. Assumptions

Accesses to the disaster areas will be limited and Public Works, county road equipment and personnel would be overwhelmed and not able to cope with a serious earthquake or a tsunami event during the initial response. State and federal assistance would need to be requested through a State of Emergency, County Board of Commissioners action and forwarded through Tillamook County Emergency Management.

Assistance through mutual aid agreements would be necessary, including resource assistance through local and private contractors.

Protection of life and property is PARAMOUNT in all decisions relating to the response and recovery operations.

CONCEPT OF OPERATIONS

A. Emergency Management

1. Mitigation and Preparedness
 - a. Review and update plans and operating guidelines.
 - b. Determine resource requirements.
 - c. Test emergency alert and warning systems including communication equipment on a monthly basis with 9-1-1 and participating jurisdictions.
 - d. Coordinate with other agencies on plans and emergency preparedness.
 - e. Exercise and evaluate our EOP and functional annexes. Provide training and capability assessments. Update plans on an annual basis.
 - f. Provide earthquake and tsunami awareness and preparedness training for our communities. Provide information on non-structural and structural mitigation.
 - g. Strengthen our building and zone ordinances to mitigate against earthquake and tsunamis.
2. Response
 - a. Coordinate receipt and dissemination of an earthquake or tsunami warning. The 9-1-1 Center activates County Tsunami Warning System when notification is received from NAWAS, LEDS, or from Tillamook County Department of Emergency Management.
 - b. Activate EOC, and RACES Communications.
 - c. Coordinate with:
 - (1) County and city officials.
 - (2) Adjacent jurisdictions.
 - (3) State and federal agencies.
 - d. Advise chief executives of county and cities.
 - e. Arrange for support of emergency services.
 - f. Provide for and supervise damage assessment, and monitor ocean activity.
 - g. Assist with PIO activities.
 - h. Coordinate with American Red Cross and to open shelters.
 - i. Assign RACES radio operators to designated shelters and key locations.
 - i. Initiate evacuation and provide shelter, food and basic health care for victims.

3. Recovery
 - a. Respond to requests from other agencies for assistance and support.
 - b. Supervise and coordinate public announcements.
 - c. Determine status of damage, injuries, and fatalities.
 - d. Keep executives informed.
 - e. Arrange for assistance and support to local agencies and the public from federal and state agencies.

B. Law Enforcement Agencies

1. Mitigation and Preparedness
 - a. Review and update operating guidelines.
 - b. Train personnel.
 - c. Review alert plan for deputies, officers, and reserves.
 - d. Review direction and control capabilities.
 - e. Exercise and evaluate training and capabilities.
2. Response
 - a. Notify key personnel.
 - b. State Police will establish roadblocks to prevent re-entry to evacuated areas and coordinate with ODOT for placement of barricades.
 - c. Sheriff will establish roadblocks to prevent re-entry to evacuated areas and coordinate with Public Works for placement of barricades.

3. Recovery
 - a. Provide security, assign personnel for crowd control, and to prevent looting in evacuation areas.
 - b. Respond to requests for assistance.
 - c. Do not allow re-entry to evacuated areas until all clear has been issued.
 - d. Provide traffic control.
 - e. Assist with damage assessment.

C. Fire Services

1. Mitigation and Preparedness
 - a. Review and update operating guidelines.
 - b. Train personnel.
 - c. Establish necessary mutual aid.
 - d. Exercise Mass Casualty Incidents and evaluate training and capabilities
2. Response
 - a. Receive and disseminate warning.
 - b. Notify key personnel and account for all personnel
 - c. Carry out warning and evacuation with sirens and loud speakers.
 - d. Evacuate beaches to a minimum height of 50+ feet above mean low water.
 - e. Advise residents to turn off all utilities before leaving their homes.
 - f. Perform emergency medical services (as appropriate).
 - g. Perform rescue activities and report preliminary damage assessment to EOC.
 - h. Establish and report to EOC Casualty Collection Points where EMS can triage injured victims.
3. Recovery
 - a. Respond to requests for assistance.
 - b. Conduct damages assessment and complete Initial Damage Assessment forms.
 - c. Coordinate with State and federal agencies as needed

D. Public Works

1. Mitigation and Preparedness
 - a. Review and update operating guidelines.
 - b. Train personnel.
 - c. Test emergency communication equipment.
 - d. Exercise and evaluate training and capability
2. Response
 - a. Notify and account for personnel, contact EOC for assignments
 - b. Coordinate with law enforcement for traffic control and provide barricades for roadblocks.
 - c. Provide necessary equipment for protection of life and property.
 - d. Check all county roads and bridges for damages and report to EOC.
3. Recovery
 - a. Assist with heavy rescue.
 - b. Provide debris removal from roads.
 - c. Assist with damage assessment and other assigned duties.

E. Tillamook County General Hospital

1. Mitigation and Preparedness
 - a. Review and update operating guidelines.
 - b. Train personnel.
 - c. Establish necessary mutual aid.
 - d. Identify and make necessary plans for medical treatment areas.
 - e. Exercise and evaluate training and capability.
2. Response
 - a. Coordinate emergency medical resources and establish medical treatment areas in established Casualty Collection Points. Notify EOC for personnel on scene and provide contact numbers or radio frequencies.

ORGANIZATION AND ASSIGNMENT OF RESPONSIBILITIES

A. Local Government

1. County Commissioners
 - a. Perform duties as chief executives of the county.
 - b. Declare emergency for county.
 - c. Establish board priorities.
 - d. Make major decisions.
 - e. Provide overall guidance and direction to EOC.
2. Mayors and City Managers
 - a. Declare emergency for city.
 - b. Establish priorities within the city.
 - c. Coordinate with County Commissioners to establish priorities.
 - d. Make decisions to protect life and property.
3. Emergency Management Director
 - a. Advise executives and brief key officials and personnel.
 - b. Coordinate emergency activities and support and initiate ICS and NIMS.
 - c. Activate Alert and Warning Systems and open EOC.
 - d. Assemble resources (data, maps, charts, etc.) and assign County personnel for incident management activities.
 - e. Organize and supervise response operations and damage assessment efforts.
 - d. Appoint a Public Information Officer to provide public information
4. 9-1-1 District
 - a. Initiate alert and warning system as outline in approved protocols.
 - b. Notify key personnel and monitor and dispatch emergency traffic.
 - c. Coordinate with Tillamook County EOC and Department of Emergency Management.
 - d. Initiate their approved protocols for type of incident.
5. Sheriff and Police Department

- a. Assist with rescue, first aid, on-site communications and preliminary damage assessment and initiate ICS.
 - b. Establish security protect life, property and patrol damage areas to prevent looting.
 - c. Establish roadblocks provide traffic control
6. Fire Services
- a. Protect life and property and initiate ICS.
 - b. Provide warning, evacuation and establish Casualty Collection Points.
 - c. Fight fires and other respond to other emergencies as assigned.
 - d. Provide emergency medical services.
 - e. Assist with damage assessment, rescue, and on-site communications.
7. Public Works
- a. Assist first responders with heavy rescue.
 - b. Clear debris from roads and check all roads and bridges for safety.
 - c. Provide heavy equipment and recovery assistance.
 - d. Support law enforcement with barricades and personnel for roadblocks.
 - e. Cooperate with Health Department on water testing.

B. State

- 1. Oregon Emergency Management (OEM)
 - a. Receive NAWAS warning during normal business hours and disseminate to county and city warning points.
 - b. Coordinate requests for state agency assistance.
 - c. Request for the Governor to declare a State of Emergency for the disaster area, and request if necessary a Presidential Declaration through FEMA Region X.
- 2. Oregon State Police (OSP)
 - a. Receive NAWAS warning and disseminate to county warning points when OEM is not operating and disseminate tsunami warning information on Law Enforcement Data System (LEDS).
 - b. Staff roadblocks on state highways.
 - c. Assist county operations as feasible.
- 3. Oregon Department of Transportation (ODOT)

- a. Provide personnel and barricades for state highway roadblocks
- b. Assist Tillamook County Road Department, or other assigned duties as directed by the Governor.

C. Federal

- 1. United States of Commerce National Oceanic and Atmospheric Administration (NOAA), National Weather Services Alaska Tsunami Warning Center and Pacific Tsunami Warning Center
 - a. Collect data and issue information on earthquakes and tsunami watches and/or warnings for Alaska, California, Oregon, Washington and British Columbia in Canada. Tsunami watches and/or warnings are sent via National Warning System (NAWAS) dedicated telephone lines to state warning points and forwarded to county/city warning points. Broadcast Alert and Warning on the NOAA Weather Alert Radio System from the Portland Office of the National Weather Service.
- 2. Department of Homeland Security, Office of Domestic Preparedness, through the Federal Emergency Management Agency (FEMA)
 - a. Provide mission assignments, and damage assistance.
 - b. Coordinate federal aid before, during and following a disaster.
 - c. Implement the Federal Response Plan and NIMS.
 - d. Initiate the National Incident Management System and to coordinate with State and Local Emergency Coordination Centers and local Incident Command System.

IV. DIRECTION & CONTROL

- A. The Emergency Operations Center will maintain interoperability communications with the Incident Commander, first responders and Tillamook County Departments. The Emergency Operations Center will maintain a back up 9-1-1-dispatch capability in case our 9-1-1 Center is damaged or overloaded.
 - 1. Have communications capability with all Fire Departments, Districts and State Forestry.
 - 2. Maintain communications capability with all law enforcement agencies countywide and with State Police.
 - 3. To have the ability to communicate with State Office of Emergency Management and the State Emergency Operations Center.
- 3. Activate the R.A.C.E.S. communications group to provide situation updates in the field and to assign communications frequencies and personnel to evacuation shelters, or other assigned duties. These volunteer radio operators will work with Red Cross Shelter Managers and Emergency Management to provide information to the local EOC for operational and logistical support i.e., damage assessments, food, water and medical supplies.

III. WARNING FOR LOCAL OR DISTANT TSUNAMI

- A. The Tillamook County Tsunami Warning System will be activated if a WARNING is

issued. The warning system consists of activating the countywide Tsunami Warning Sirens, the Emergency Alert System and our countywide NOAA Weather Alert Radio System. Coastal areas of the county will be evacuated up to a minimum height of 50+ feet above mean low water. Residents will be instructed to go to high ground or to one of the designated reception centers in their area. Tsunami Inundation Zone and evacuation route signs have been posted throughout the County to direct visitors and residents to safe areas.

1. The Tillamook County Emergency Operations Center (EOC) will be activated. Command and control of the emergency will be run from the EOC.
2. All police and fire personnel in Tillamook County should respond to their preprogrammed assignments. Residents of the affected areas of the tsunami will be warned by sirens, NOAA Weather Alert Radio System, loud speakers and instructed to listen to KTIL radio station, 1590 AM and 104.1 FM, and Coast 105.5 FM Garibaldi for instructions and further information.

IV. EMERGENCY PUBLIC INFORMATION

A. Public Information

1. The Public Information Officer (PIO) acting in consultation with the chairperson of the Board of Commissioners and the Emergency Management Director will make all public information announcements. In the absence of the PIO or their alternate, a county Commissioner or the Emergency Management Director will appoint a PIO and will approve all public information.
2. Provide additional information to the public after tsunami sirens have been activated.
3. Inform NOAA Weather Alert Radio System for evacuation and sheltering information.
4. Provide situation reports for local news, radio stations and national news organizations.

V. HEATH AND MEDICAL

A. County Health Department

1. Provide essential medical care and public health protection for the affected population.
2. Coordinate water and sanitation tests.
3. Provide mortuary and vital record services.
4. Provide damage assessment for public health and medical facilities and systems.
5. Prepare public health information to the PIO for immediate release.
6. Prepare and disseminate reports to State and federal counterparts.

B. Tillamook County General Hospital

1. Coordinate emergency medical resources and establish medical treatment areas as necessary.

V. MASS CARE

A. Tillamook Emergency Medical Service.

1. Shall activate their mutual aid agreements as necessary. The Tillamook EMS Advisory Counsel Chairperson will coordinate with State EMS Coordinator for assistance in patient transport and tracking. Close coordination will be made to the County EOC.

B. Tillamook County General Hospital

1. Shall coordinate with surrounding hospitals and with State for patient admissions when their capability has exceeded their capacity. The County EOC will be given periodic updates and a phone number where friends and relatives can find out where patient is located.

C. American Red Cross

1. Coordinate with Emergency Management Director in providing shelter and food according to Tillamook County's Emergency Operations Plan, Annex D, Mass Care.
2. Work closely with our Local EMS coordinator and Tillamook General Hospital for assisting with Mass Care issues.

D. Tillamook Emergency Amateur Radio Service (R.A.C.E.S. / A.R.E.S.)

1. Provide voice and digital emergency communications both locally and interstate.
2. Provide communications from Casualty Collection Points or triage areas to EOC.

TSUNAMI WATCH

TILLAMOOK COUNTY EMERGENCY COMMUNICATIONS DISTRICT (9-1-1)

1. Copy and acknowledge all information received from the National Warning System (NAWAS).
2. Proceed with disseminating watch notice using Tillamook County Warning System Directory.

EMERGENCY MANAGEMENT

1. Copy and acknowledge all information received over NAWAS or from Tillamook County Emergency Communications District (9-1-1)
2. Proceed with disseminating watch notice using Tillamook County Warning System Directory.

ALL OTHER RESPONSE AGENCIES

1. Copy and acknowledge all information received from TCECD or Emergency Management.
2. Proceed with disseminating watch notice using Tillamook County Warning System Directory.

T S U N A M I W A R N I N G

TILLAMOOK COUNTY EMERGENCY COMMUNICATIONS DISTRICT (9-1-1)

1. Copy and acknowledge all information received from the National Warning System (NAWAS) and activate the Tsunami Warning System.
2. Proceed with disseminating warning using Tillamook County Warning System Directory.
3. Anytime there is significant ground shaking, conduct a role call of all Fire Districts to all fire departments to staff their stations and put personnel on stand-by.

EMERGENCY MANAGEMENT

1. Copy and acknowledge all information received over NAWAS or from Tillamook County Emergency Communications District and confirm with 9-1-1 if Tsunami Warning System was activated.
2. Proceed with disseminating warning using Tillamook County Warning System Directory and provide public information to 9-1-1 and the local news media.
3. Notify County Board of Commissioners and have key personnel report to EOC.
4. Appoint a PIO for providing public information and updates on shelters and evacuation routes.
5. When necessary prepare an Emergency Declaration for State and federal assistance.

ALL OTHER RESPONSE AGENCIES

1. Copy and acknowledge all information received from TCECD or Emergency Management.
2. Proceed with disseminating warning and/or begin evacuation procedures.

EVACUATION ACTION FOR FIRE DEPARTMENTS

Activate the Incident Command System, County Fire Chief will serve as the Incident Commander

1. Drive slowly on all streets and roads in assigned area using high/low siren.
2. Stop frequently, turn off siren and using the public address systems, announce in a calm, clear voice, "Immediate evacuation is recommended due to the threat of high water from a tsunami which is expected to reach the area. If you need transportation assistance, please come outside. For further information tune to local radio stations KTEL radio station at 1590 AM , 91.9, 104.1, 105.5 FM."
3. Direct residents to use the designated evacuation routes to nearest high ground or reception center.
4. If you encounter a resident with a sheet or large white cloth tied to the front door or hanging from a window, stop and arrange for transportation assistance via radio.

NOTE: Assure that sheet or cloth is removed upon evacuation.

CAUTION: Do NOT use force to insure evacuation.

5. Continue to travel your designated area until residents have been notified to evacuate.
6. If you encounter anyone that refuses to evacuate, log the resident's address and attempt to get the names of the people who are not evacuating.
7. Upon completion of evacuation confirmation of your assigned area, notify 9-1-1 and relocate your vehicle to staging area.

**IMPLEMENTING PROCEDURES, RESPONSIBLE PARTY -
CHAIRPERSON, COUNTY BOARD OF COMMISSIONERS**

1. Receive notification.
2. Advise other commissioners by telephone.
3. Proceed to EOC.
4. Confirm that key emergency personnel have been notified to stand-by and are prepared to respond if requested.
5. The first commissioner to arrive at the EOC will act as Chairperson for the Board of Commissioners until the Chairperson arrives.

BOARD OF COMMISSIONERS

1. Receive emergency notification from chairperson.
2. Proceed to EOC unless directed by chairperson to stand-by.
3. Make decision to evacuate.
4. Authorize expenditures and commitments of county resources.
5. Ensure that at least one commissioner is in the EOC during all shifts.
6. Make emergency declaration request to OEM requesting state and federal assistance, as appropriate.
7. Make re-entry decisions after all clear has been issued.

**IMPLEMENTING PROCEDURES - RESPONSIBLE PARTY
DIRECTOR EMERGENCY MANAGEMENT**

1. Receive notification.
2. If no tsunami is generated, watch will be cancelled.
3. If tsunami is generated, watch will be upgraded to tsunami warning.
4. Activate EOC and the National Incident Management System (NIMS).
5. Activate Tsunami Alert and Warning System and the Notification Directory.
6. Confer with Commissioners, Sheriff and Mayors.
7. Ensure emergency organizations are standing by for evacuation.
8. Coordinate with OEM.
9. Coordinate activities with other agencies.
10. Determine status of damage, injuries and fatalities and keep executives informed.
11. Request cities and county forward all damage information to Emergency Management to be relayed to OEM.

**IMPLEMENTING PROCEDURES - RESPONSIBLE PARTY
MAYOR OR MAYOR PRO TEM**

1. Receive notification of tsunami warning from city fire department.
2. Proceed to city's EOC.
3. Notify city council members of emergency and need for "Declaration of Emergency".
4. Make Declaration of Emergency to implement County Emergency Operations Plan.
5. Notify Director of Emergency Management of Declaration of Emergency.
6. Authorize expenditures and commitment of city resources to protect life and property.
7. Coordinate re-entry after all clear has been issued.
8. Forward all damage information to county Emergency Management.

**IMPLEMENTING PROCEDURES, RESPONSIBLE PARTY -
SHERIFF**

1. Receive notification; activate the Incident Command System.
2. Call out all available personnel. (If WATCH, alert personnel to be on standby.)
3. Confer with Commissioners and Director of Emergency Management.
4. Direct and establish roadblocks.
5. Standby until closeout or escalation of emergency.
6. Report to EOC to coordinate law enforcement activities.
7. Direct any special department activities.
8. Direct re-entry procedures.

IMPLEMENTING PROCEDURES - RESPONSIBLE PARTY
FIRE CHIEFS

1. Receive notification, coordinate with the County Fire Chief who is the countywide Incident Commander.
2. Call out all available personnel. (If WATCH, alert personnel to be on standby.)
3. Fire Services Coordinator or Tillamook Fire District Chief will report to EOC.
4. Receive notification and evacuate beach areas to minimum 50 feet elevation above mean low water.
5. Proceed with evacuation; refer to Attachment #1.
6. Verify completion of evacuation.

**IMPLEMENTING PROCEDURES - RESPONSIBLE PARTY
LAW ENFORCEMENT AGENCIES**

1. Receive notification.
2. Call out all available personnel. (If WATCH, alert personnel to be on standby.)
3. Receive notification.
4. Establish roadblocks.

**IMPLEMENTING PROCEDURES - RESPONSIBLE PARTY
COUNTY PUBLIC WORKS DEPT.**

1. Receive notification.
2. Call out all available personnel. (If WATCH, alert personnel to be on standby.)
3. Director of Public Works or their assignee will report to EOC.
4. Coordinate with Sheriff's Dept. on placing barricades on County roads.
5. Respond necessary personnel and equipment for protection of life and property.
6. Request personnel forward all damage information to Emergency Management.

IMPLEMENTING PROCEDURES - RESPONSIBLE PARTY
OREGON STATE POLICE

1. Receive notification.
2. Coordinate roadblocks with Sheriff, County Public Works and ODOT.
3. Respond with necessary personnel and equipment for the protection of life and property.
4. Coordinate re-entry with Command Posts. Keep residents out until all clear has been issued.

IMPLEMENTING PROCEDURES - RESPONSIBLE PARTY
OREGON DEPARTMENT OF TRANSPORTATION (ODOT)

1. Receive notification.
2. Begin monitoring county roads.
3. Coordinate placing barricades with Sheriff, Oregon State Police, and County Public Works.
4. Respond with necessary personnel and equipment for protection of life and property.
5. Coordinate re-entry with Command Posts. Keep residents out until all clear has been issued.

**IMPLEMENTING PROCEDURES - RESPONSIBLE PARTY
RADIO TECHNICIAN**

1. Receive notification.
2. Proceed to EOC and report to EOC commander.
3. Provide communications assistance as necessary.
4. Remain at EOC until re-entry is complete or until relieved.

**IMPLEMENTING PROCEDURES - RESPONSIBLE PARTY
PUBLIC INFORMATION OFFICER**

1. Receive notification.
2. Proceed to EOC and report to EOC commander.
3. Provide Public Information as necessary.

**IMPLEMENTING PROCEDURES - RESPONSIBLE PARTY
COUNTY COUNSEL**

1. Receive notification.
2. Proceed to EOC and report to EOC commander.
3. Provide legal counsel as necessary.