

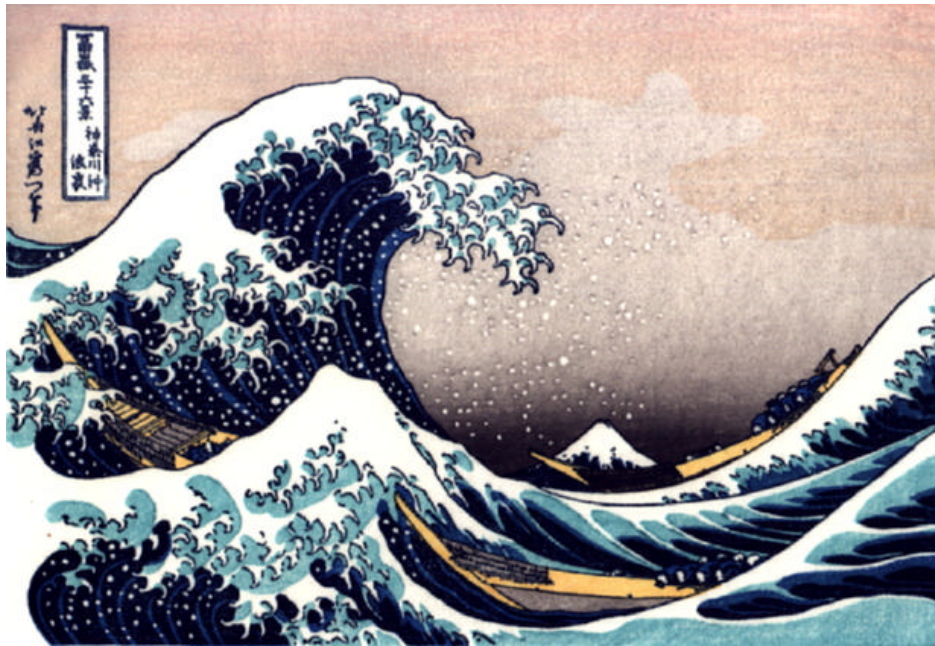


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# Local Planning Guidance on Tsunami Response

## SECOND EDITION

*A Supplement to the Emergency Planning Guidance  
for Local Governments*



Gray Davis  
Governor  
State of California

Dallas Jones  
Director  
Governor's Office of Emergency Services

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# Preface

The research, the committee deliberations, and the writing of this document were supported by the National Oceanic and Atmospheric Administration (NOAA), the National Tsunami Hazard Mitigation Program, the National Earthquake Hazards Reduction Program of the Federal Emergency Management Agency (FEMA), and the California Governor's Office of Emergency Services (OES) Earthquake Program.

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**Local Planning Guidance on Tsunami Response**  
*A Supplement to the Emergency Planning Guidance for Local Government*

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# Executive Summary

The California Governor's Office of Emergency Services convened a Tsunami Hazard Mitigation Workshop in 1997. The workshop was comprised of local, state and federal agencies representing coastal communities and programs. Even though participating local jurisdictions were aware of the tsunami threat, most had done little tsunami specific evacuation, mitigation, preparedness, response or recovery planning. The workshop participants identified a critical need for the development and distribution of up-to-date inundation maps to the communities at risk, as well as the development of guidance on how to use the maps for local government.

In October of 1997, representatives of coastal counties were brought together to identify and prioritize the areas along the California coastline to be mapped during the initial phase of the tsunami mitigation program. With funding from the National Tsunami Hazard Mitigation Program of National Oceanic and Atmospheric Administration (NOAA), Professor Costas Synolakis of the University of Southern California was selected to produce inundation projections for selected coastal areas. The areas chosen were: 1) San Francisco County and San Mateo County (Golden Gate through San Mateo), 2) Santa Barbara County, 3) San Diego County (Coronado to Encinitas), and 4) Los Angeles County (Santa Monica to Palos Verdes). Projections of tsunami inundation in Humboldt Bay and Crescent City will be provided by the NOAA Tsunami Inundation Mapping Effort (TIME) Center in Newport, Oregon as part of a national assessment of alternative modeling approaches (NOAA published initial inundation maps for Humboldt Bay and Crescent City in 1994).

There is agreement within the tsunami and emergency response communities that technology alone cannot protect coast habitats in the immediate area of a near-source tsunami. When a large subduction zone earthquake occurs nearby, the first tsunami waves may reach coastal communities within a few minutes of the event. Local populations at risk must be able to recognize the signs of impending tsunami hazards and seek higher ground immediately. Communities need to be aware of what areas are likely to be flooded. Local decision-makers need to understand the risk and be provided with mitigation tools in order to make informed planning decisions. Planners, emergency responders, and residents need to understand the multi-hazard ramifications of a very large local earthquake and its disruption to the community.

This planning guidance is intended to assist local governments in the initial development of a tsunami response plan and the procedures necessary to deal with a tsunami's impact on their communities. This guidance covers three main areas:

- Use of Model Inundation Maps
- Development of tsunami specific plans including evacuation procedures
- Explanation of tsunami warning procedures.

While this planning guidance is designed for use by local governments, as defined in the Standardized Emergency Management System (SEMS), it may also be used for planning purposes by Operational Areas (OAs). State or federal agencies that support local governments through field offices will also find this a useful planning document.

## Introduction

A tsunami (seismic sea wave, tidal wave) is a series of waves most commonly caused by an earthquake beneath the sea floor or by a large undersea landslide. In the open ocean, tsunami waves travel at speeds of up to 600 miles per hour but are too small to be observed. As the waves enter shallow water, they slow down and may rise to several feet or, in rare cases, tens of feet. Tsunamis can cause great loss of life and property damage where they come ashore. The first wave is almost never the largest; successive waves may be spaced tens of minutes apart and continue arriving for many hours. Since 1812, the California coast has had 14 tsunamis with wave heights higher than three feet; six of these were destructive. The Channel Islands were hit by a damaging tsunami in the early 1800s. The worst tsunami resulted from the 1964 Alaskan earthquake and caused 12 deaths and at least \$17 million in damage to northern California. The April 25, 1992 Cape Mendocino earthquake produced a one-foot tsunami that reached Humboldt Bay in about 20 minutes after the shaking. Although not damaging, this tsunami demonstrated that a wave could reach our coastline quickly. Two general types of tsunamis could affect the coastal areas of California:

***Local-source tsunami:*** If a large tsunami-genic earthquake occurs at or near the California coast, the first waves may reach coastal communities within minutes after the ground shaking stops. There is no time for authorities to issue a warning. Mitigation requires an understanding of areas at risk, areas of safety, evacuation routes and a trained public that understands the need to immediately move inland or to higher ground.

Though infrequent, California has experienced local tsunamis in the past, and paleotsunami evidence shows major tsunami impact in the recent geologic past. Risk is considered high along the north coast of California, from Crescent City to Cape Mendocino; moderate south of Cape Mendocino to north of Monterey; high south of Monterey to Palos Verdes; and moderate south of Palos Verdes to San Diego (see Historic California Tsunamis in Appendix 2.) Large local tsunamis may impact the entire California coastline. Waves from an earthquake at the Cascadia Subduction Zone could reach southern California in less than 2 hours.

***Distant-source tsunami:*** Very large earthquakes in other areas of the Pacific Rim may also cause tsunamis which could impact California's coast. The first waves would reach our coastline many hours after the earthquake occurred. Tsunami Warning Centers are responsible for alerting local officials, who may order evacuation. Effective mitigation requires an understanding of the tsunami warning system, local areas at risk, and evacuation planning.

## Use of Model Inundation Maps

California coastal communities need to know the areas where damage is possible from a tsunami in order to prepare for and reduce losses. Local decision makers need to understand their risk in order to make informed planning decisions. The major steps in using the model inundation maps to develop a tsunami vulnerability analysis are:

- Transfer information from the model tsunami inundation maps to jurisdiction based maps.
- Analyze and confirm the inundation projections by field surveys and detailed topographic review.
- Develop map overlays for the following:
  - ◆ Critical facilities (police, fire, city hall, public works facilities, airports, major supply warehouses)
  - ◆ Special needs facilities (schools, public assembly, hospitals, convalescent homes)
  - ◆ Special needs populations (e.g. non-English speakers, physically disabled, elderly, children)
  - ◆ Transportation lifelines
  - ◆ Hazardous materials sites and facilities
  - ◆ Population demographics
- Identify boundaries of Tsunami Evacuation Zone with well-known landmarks, such as streets, railroad or freeway rights-of-way, parks, etc.
- Identify refuge areas within the Tsunami Evacuation Zone and their shelter capacity for evacuated population.
- Survey proposed evacuation routes to determine post earthquake function of bridges, adjacent buildings, and expected safety of adjacent land uses (avoid hazardous buildings and HazMat sites).
- Locate evacuation routes and alternates.

### *Limitations and Use of Inundation Projections*

Ideally, tsunami response and evacuation planning should be based on reliable models of projected inundation at a given location and estimates of the probability of occurrence of earthquakes and tsunamis based on known as well as recurrence intervals. Unfortunately, both factors are limited by our knowledge of the tsunami history of the Pacific coast of California.

Three factors affect the accuracy of inundation projections: the quality of the mathematical model of tsunami wave propagation, the detail of data on topography and bathymetry (underwater topography), and the assumptions made about the origins and mechanism of tsunami generation.

The mathematical models now being used by NOAA and the State of California for projecting tsunami inundation are based on a consensus in the scientific community about the

propagation of waves from deep ocean to shallow coastal conditions. Furthermore, the models have been calibrated against actual recent tsunamis in Japan. A more important factor in the accuracy of inundation projections is the detail in the topographical and bathymetrical data. A lack of detail in mapping offshore bathymetry, or even seasonal changes in beach conditions, can have a significant impact on model output.

Identifying the origin or mechanism of “tsunami genesis” poses additional problems for inundation modeling. Tsunami waves generated from near-source or near-shore earthquakes, or underwater landslides, may vary in impact from those generated by distant subduction zone earthquakes. In order to avoid the conflict over tsunami origin, inundation projections are based on worst-case scenarios. Since the inundation projections are intended for emergency and evacuation planning, flooding is based on the highest projection of inundation regardless of the tsunami origin. As such, projections are not an assessment of the probability of reaching the projected height (probabilistic hazard assessment) but only a planning tool.

*Inundation projections and resulting planning maps are to be used for emergency planning purposes only. They are not based on a specific earthquake and tsunami. Areas actually inundated by a specific tsunami can vary from those predicted. The inundation maps are not a prediction of the performance, in an earthquake or tsunami, of any structure within or outside of the projected inundation area.*

# Development of Tsunami Plans

Information gathered during the transfer of the model inundation maps to local map overlays will be the basis for identifying both high priority responses and the steps to reduce potential dangers. The estimates can also be used to determine where damage is likely to occur, which areas and segments of the population are at the greatest risk, and to develop an evacuation route with a traffic control plan. A tsunami plan can identify what can be done to improve public safety and indicate where a community may need resources after a tsunami.

The development of a Tsunami Plan requires a multi-disciplinary approach and should involve local specialists (emergency responders, planners, engineers, utilities, and community based organizations). The city or county administrative officer should appoint a Tsunami Plan Working Group and designate a chairperson, usually the emergency services manager. The Tsunami Plan Working Group should include representatives from the following agencies:

- Law Enforcement
- Emergency Management
- Public Works
- Land Use Planning
- Social Services
- Fire Suppression
- American Red Cross
- Transportation providers
- Non-governmental and Community Based Organizations
- Warning Coordination Meteorologist from the regional NWS office
- Education Community

The Work Group will determine the best way to accomplish the planning process, develop an overall work program, and set a time schedule for completion (*See Tsunami Plan Checklist and Sample San Mateo County Plan in Appendix 3*).

One of the most critical elements of a Tsunami Plan is the Evacuation and Traffic Control Plan. Local governments are responsible for developing evacuation plans for possible implementation in response to a near or distant-source event. A distant-source tsunami event may allow several hours to evacuate. A near-source tsunami may require immediate self-evacuation through areas damaged by the earthquake and at some risk of aftershocks. Each jurisdiction should analyze how much time an evacuation would require and build that into the decision-making procedure. While developing its plan, each jurisdiction should decide how best to handle the occurrence of both earthquakes and tsunamis. Evacuation plans should also take into account the special needs of evacuees, including the medically fragile, mobility impaired, deaf, blind, and those who speak no English or English as a second language.

## ***Evacuation Plans***

Elements to consider in developing an evacuation plan are:

- Locate optimum evacuation routes. The primary objective is to move up and inland, away from the coast.
- Develop an evacuation route traffic control plan. This should be tasked to the public safety agencies. Public safety agencies should use their auxiliaries and volunteers to staff traffic control points.
- Identify refuge areas with the capacity to shelter the evacuated population. Select landmarks, school facilities, or other well-known public facilities.
- Develop simplified maps depicting tsunami evacuation zones, evacuation routes, and refuge areas.
- Develop notification and evacuation procedures with public safety agencies and distribute to field personnel.
- Disseminate maps and procedures to public. Ensure maps and procedures are posted in assembly facilities and areas, schools, special facilities, included in telephone books, etc.

After the plan has been completed, it is essential to develop education, training, and exercise programs for city and county employees as well as for the residents in the community. (*See sample Evacuation Checklist in Appendix 3*).

## ***Public Education Programs and Training***

A sustained public outreach program is needed to gain the long-term grassroots support of coastal populations and to institutionalize tsunami preparedness and mitigation. Such a program should encourage consistent information between local government and the community at risk. Innovative approaches should be encouraged at many different levels. Training is a crucial component for a successful tsunami response program. Local jurisdictions may want to develop a comprehensive program, based upon a training needs assessment. One of the most important means of educating the public is through tsunami education in the public schools. There are several areas that local jurisdictions may want to consider when developing a “Tsunami Training and Awareness Program”:

- Existing employee orientation and training programs and staff briefings
- First Responder training and exercise programs
- Incorporating tsunami education into existing earthquake programs in the public schools.
- “Tsunami Awareness Programs” for the public, including the special needs populations.

Questions to consider when evaluating existing employee training programs:

- What training already exists?
- What additional areas of training will be needed?
- How can these elements best be incorporated into current training programs?

Questions to consider regarding tsunami awareness programs:

- What training is needed to reach the various population types (e.g. elderly, business, transient, tourist, etc.)?
- How can training be delivered to best reach the community?
- How can tsunami education be incorporated into existing earthquake or all hazard mitigation programs?
- Does the awareness training for personnel and volunteers include a quick orientation?

Questions to consider regarding First Responder training programs:

- What First Responder training already exists that can be used by the local jurisdiction?
- Where does the First Responder training fit with other training elements?
- Does the jurisdiction need to develop First Responder training?
- Does the jurisdiction need assistance in developing its training?

Questions to consider when looking at employee training:

- What training needs to be implemented for dispatch centers?
- What training is needed for fire and rescue?
- What training is needed for EMS? HazMat?
- What training is needed for law enforcement?

## ***Exercises***

Communities can benefit by developing and implementing an exercise program to test the training received on the tsunami response plan. Important considerations are:

- How can development of a separate exercise program for tsunami improve the communities' ability to respond to a tsunami?
- Who should develop, conduct, and maintain the new tsunami response exercise program?
- Does the jurisdiction have the resources to conduct such exercises?
- In what creative ways can funding be found for an exercise program?

# Tsunami Warning System

The West Coast and Alaska Tsunami Warning Center in Alaska (WC/ATWC) and the Pacific Tsunami Warning Center (PTWC) in Hawaii monitor potential tsunamis. A regional Tsunami Warning or Watch is issued based on earthquake location and magnitude. When an earthquake of 7.5 or larger occurs within the Pacific basin, the warning centers issue warnings and watches. Areas within a 3-hour tsunami travel time of the epicenter will be placed in a Tsunami Warning status, and areas within a 3-6 hour tsunami travel time will be placed in a Tsunami Watch status. Tsunami estimated time of arrival will be disseminated for the tide stations within the Tsunami Warning and Watch areas. Additional bulletins are issued by the warning centers at hourly intervals until the advisories are either canceled or the existence of a damaging tsunami is confirmed. The information is transmitted to the Governor's Office of Emergency Services Warning Control Center and local emergency managers (See Appendix 4 for explanation of Tsunami Warning and Watch and sample messages).

When the California Office of Emergency Services Warning Center (WC) receives the information from WC/ATWC via NAWAS and/or California Law Enforcement Teletype System (CLETS), the WC/ATWC will announce what areas the message is for, whether it is an Information Bulletin, a Tsunami Watch, or a Tsunami Warning. The Warning Center does not undertake any threat analysis. All information received is passed directly to the Operational Areas via CLETS, California Alert and Warning System (CALWAS) and Emergency Alert System (EAS). Once the information has been sent out the following actions are taken:

- Verification is made with the printed copy received via National Weather Service (NWS) satellite. The information is re-transmitted via CLETS to all sheriff's offices (SO) of coastal counties and most local police departments (PD). Turn-around time from NWS to CLETS and out is a matter of a few seconds.

*NOTE: If the bulletin is only informational and a tsunami has not been generated, or is not expected, then no further action is taken by the WC.*

- The WC immediately polls all SOs of the 19 coastal counties and the CHP dispatch to verify that they received the bulletin via CALWAS. If not, then it is repeated to those counties that need the information. All 19 coastal counties' SOs are advised to check CLETS for the hard copy and to advise if not received.



- Verbal notification is then made to the OES Executive & Regional Duty Officers (EDO,RDO) and the following agencies:
  - ◆ California Division of Mines and Geology
  - ◆ Utilities such as Pacific Bell, San Onofre and Diablo Canyon nuclear plants and the California Utilities Emergency Association (CUEA).
  - ◆ Department of Water Resources
  - ◆ FEMA Region IX
  - ◆ California National Guard
  - ◆ Department of Fish and Game, Oil Spill PR
  - ◆ Department of Parks and Recreation.
  - ◆ State Lands Commission
  - ◆ American Red Cross
  - ◆ Department of Health Services Duty Officer
  - ◆ Department of Toxic Substances Control Duty Officer
  - ◆ US Fish and Wildlife Service
  - ◆ Emergency Medical Services Authority
  - ◆ Federal Aviation Administration
  - ◆ Any other notifications as requested by OES Duty Officers

“All Clears” are issued two hours after the last damaging wave. However, if there is no confirmation of a wave within two hours, the “all clear” is the responsibility of the local government regardless of whether a tsunami has been generated. This requires that the local government is able to observe the waves from a safe distance/height.

*A word of caution: Tidal gauges are not a reliable source of information if a damaging tsunami has occurred.*

As part of their tsunami plans, Operational Areas should develop procedures for disseminating the information to local jurisdictions and special districts. Local governments should work with the appropriate Operational Area or region to develop the elements of their notification system.

## **Appendices**

## Acronyms and Terminology

### Acronyms

ARB	Air Resources Board
CALTRANS	California Department of Transportation (DOT in State Agency Tables)
CALOSHA	California Occupational Safety and Health Administration
CALWAS	California Alert and Warning System
CCC	California Conservation Corps
CDC	California Department of Corrections
CDF	California Department of Forestry and Fire Protection
CDFA	California Department of Food and Agriculture
CHP	California Highway Patrol
CLETS	California Law Enforcement Teletype System
CNG	California National Guard
CYA	California Youth Authority
DFG	California Department of Fish and Game
DHS	California Department of Health Services
DIR	California Department of Industrial Relations
DMAT	Disaster Medical Assistance Team
DOD	United States Department of Defense
DOE	United States Department of Energy
DOE	United States Department of Education
DOJ	California Department of Justice
	United States Department of Justice
DOT	United States Department of Transportation
DPR	California Department of Pesticide Regulation
DTSC	California Department of Toxic Substances Control
DWR	California Department of Water Resources
EAS	Emergency Alert System
EMSA	California Emergency Medical Services Authority
EOC	Emergency Operations Center
EOPT	Emergency Operations Planning & Training (an OES Division)
ETA	Estimated time of arrival
FEMA	Federal Emergency Management Agency
FOSC	Federal On Scene Coordinator
FRERP	Federal Radiological Emergency Response Plan
FRP	Federal Response Plan
FTB	California Franchise Tax Board
HHS	United States Department of Health and Human Services
HMICP	Hazardous Materials Incident Contingency Plan
ICG/ITSU	The International Coordination Group for the Tsunami Warning System in the Pacific.

ITIC	International Tsunami Information Center
LFA	Lead Federal Agency
MLLW	Mean Lower Low Water
NAWAS	National Alert and Warning System
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NEHRP	National Earthquake Hazard Reduction Program
NEST	Nuclear Emergency Support Team
NOAA	National Oceanic and Atmospheric Administration
NRT	National Response Team
NTHMG	National Tsunami Hazard Mitigation Program
NWS	National Weather Service
OA	Operational Area
OEHHA	California Office of Environmental Health Hazard Assessment
OES	California Office of Emergency Services
PTWC	Pacific Tsunami Warning Center
REOC	Regional Emergency Operations Center (OES)
SEMS	Standardized Emergency Management System
SEP	State Emergency Plan
SSWWS	Seismic Sea Wave Warning System
SOC	State Operations Center
SWRCB	California State Water Resources Control Board
THRUST	Tsunami Hazard Reduction Using System Technology
TIME	Tsunami Inundation Mapping Effort
TWC	Tsunami Warning Center
USNSN	United States National Seismic Network
UTC	Universal Coordinated Time
WC	Warning Center (OES)
WC/ATWC	West Coast/Alaska Tsunami Warning Center
WCM	Warning Coordination Meteorologist
WMD/NBC	Weapons of Mass Destruction/Nuclear, Biological, Chemical
USCG	United States Coast Guard
US EPA	United States Environmental Protection Agency

## *Terminology*

**Amplitude:** The rise above or drop below the ambient water level as read on a tide gauge.

**Arrival Time:** Time of arrival, usually of the first wave of the tsunami, at a particular location.

**Bathymetry:** The measurement of the depths of oceans, seas, etc.

**Bore:** Traveling wave with an abrupt vertical front or wall of water. Under certain conditions, the leading edge of a tsunami wave may form a bore as it approaches and runs onshore. A bore may also be formed when a tsunami wave enters a river channel, and may travel upstream penetrating to a greater distance inland than the general inundation.

**CREST:** Consolidated Reporting of Earthquakes and Tsunamis. A project funded through the Tsunami Hazard Mitigation Federal/State Working Group to upgrade regional seismic networks in Alaska, Washington, Oregon, California, and Hawaii and to provide real-time seismic information from these networks and the United States National Seismic Network to the tsunami warning centers.

**ETA:** Estimated Time of Arrival. Computed arrival time of the first tsunami wave at coastal communities after a specific earthquake has occurred.

**First Motion:** Initial motion of the first wave. A rise in the water level is denoted by R, a fall by F.

**Free Field Offshore Profile:** A profile of the wave measured far enough offshore so that it is unaffected by interference from harbor and shoreline effects.

**Harbor Resonance:** The continued reflection and interference of waves from the edge of a harbor or narrow bay. This interference can cause amplification of the wave heights and extend the duration of wave activity from a tsunami.

**Horizontal Inundation Distance:** The distance that a tsunami wave penetrates onto the shore. Measured horizontally from the mean sea level position of the water's edge, it is usually measured as the maximum distance for a particular segment of the coast.

**Inundation:** The depth, relative to a stated reference level, to which a particular location is covered by water.

**Inundation area:** An area that is flooded with water.

**Inundation Line (limit):** The inland limit of wetting, measured horizontally from the edge of the coast, defined by mean sea level.

**Leading-Depression Wave:** Initial tsunami wave is a trough, causing a draw down of water level.

**Leading-Positive Wave:** Initial tsunami wave is a crest, causing a rise in water level. Also called a leading-elevation wave.

**Local/Regional Tsunami:** Source of the tsunami is within 1000 km of the area of interest. Local or near-field tsunami has a very short travel time (30 minutes or less), mid-field or regional tsunami waves have travel times on the order of 30 minutes to 2 hours.

*Note: "Local" tsunami is sometimes used to refer to a tsunami of landslide origin.*

**Maremoto:** Spanish term for tsunami

**Marigram:** Tide gauge recording showing wave height as a function of time.

**Marigraph:** The instrument which records wave height.

**MLLW:** Mean Lower Low Water. The average low tide water elevation often used as a reference to measure run-up.

**Ms:** Surface Wave Magnitude. Magnitude of an earthquake as measured from the amplitude of seismic surface waves. Often referred to by the media as "Richter" magnitude.

**Mw:** Moment Magnitude. Magnitude based on the size and characteristics of the fault rupture, and determined from long-period seismic waves. It is a better measure of earthquake size than surface wave magnitude, especially for very large earthquakes. Calibrated to agree on average with surface wave magnitudes for earthquakes less than magnitude 7.5.

**Normal Earthquake:** An earthquake caused by slip along a sloping fault where the rock above the fault moves downward relative to the rock below.

**Period:** The length of time between two successive peaks or troughs. May vary due to complex interference of waves. Tsunami periods generally range from 5 to 60 minutes.

**Run-up:** Maximum height of the water onshore observed above a reference sea level. Usually measured at the horizontal inundation limit.

**Seiche:** An oscillating wave (also referred to as a seismic seawave) in a partially or fully enclosed body of water. May be initiated by long period seismic waves, wind and water waves, or a tsunami.

**Strike-Slip Earthquake:** An earthquake caused by horizontal slip along a fault.

**Teletsunami:** Source of the tsunami is more than 1000 km away from area of interest. Also called a distant-source or far-field tsunami. Travel time is greater than 2 hours.

**Thrust Earthquake:** Earthquake caused by slip along a gently sloping fault where the rock above the fault is pushed upward relative to the rock below. The most common type of earthquake source of damaging tsunamis.

**Tidal Wave:** Common term for tsunami used in older literature, historical descriptions, and popular accounts. Tides, caused by the gravitational attractions of the sun and moon, may increase or decrease the impact of a tsunami, but have nothing to do with their generation or propagation. However, most tsunamis (initially) give the appearance of a fast-rising or fast-ebbing tide as they approach shore, and only rarely appear as a near-vertical wall of water.

**Travel Time:** Time (usually measured in hours and tenths of hours) that it took the tsunami to travel from the source to a particular location.

**Tsunami:** A Japanese term derived from the characters "tsu" meaning harbor and "nami" meaning wave. Now generally accepted by the international scientific community to describe a series of traveling waves in water produced by the displacement of the sea floor associated with submarine earthquakes, volcanic eruptions, or landslides.

**Tsunami Earthquake:** A tsunamigenic earthquake which produces a much larger tsunami than expected for its magnitude.

**Tsunamigenic Earthquake:** Any earthquake which produces a measurable tsunami.

**Tsunami Magnitude:** A number that characterizes the strength of a tsunami based on the tsunami wave amplitudes. Several different tsunami magnitude determination methods have been proposed.

# **Tsunami Background Information**

## ***What is a Tsunami? What Causes It?***

A tsunami is a system of gravity waves formed in the sea by a large-scale disturbance of sea level over a short duration of time. A tsunami can be generated by submarine volcanic eruptions, displacement of submarine sediments, coastal landslides into a bay or harbor, meteor impact, or by vertical displacement of the earth's crust along a subduction zone/fault. The latter is by far the most frequent cause of tsunamis and, for all practical purposes, the primary cause of tsunamis capable of propagation across an ocean basin. The rupture of the earth's crust also generates a major earthquake, which can be detected and measured by seismic instrumentation throughout the world. However, because not all major coastal or near-coastal earthquakes produce tsunamis, there is no operational method to determine whether a tsunami has been generated by an earthquake except to note the epicenter of the earthquake and then detect the arrival of the characteristic waves at a network of tide stations.

In the deep and open ocean, tsunamis travel at speeds of 500 to 1,000 kilometers per hour (300 to 600 miles per hour). The distance between successive crests can be as much as 500 to 650 kilometers (300 to 400 miles). However, the successive tsunami waves in the deep sea have such great length and so little height they are not visually recognizable from a surface vessel. In the open ocean, the height of the waves may be no more than 30 to 60 centimeters (1 or 2 feet), and the passing waves produce only a gentle rise and fall of the sea surface. During the April 1946 tsunami impact in Hawaii, ships standing off the coast observed tremendous waves breaking on shore but did not detect any change in sea level at their offshore locations.

Upon reaching shallower water, the speed of the advancing wave diminishes, its wavelength decreases, and its height may increase greatly, owing to the piling up of water. The configuration of the coastline, shape of the ocean floor, and character of the advancing waves all play important roles in the destruction wrought by tsunamis along any coast, whether near the generating area or thousands of kilometers from it. Consequently, detection of a relatively small tsunami at any locality warrants immediate reporting to spread the alarm to all coastal localities of approaching potentially dangerous waves.

The force and destructive effects of tsunamis should not be underestimated. At some places, the advancing turbulent front is the most destructive part of the wave. However, where the rise is quiet, the outflow of water to the sea between crests may be rapid and destructive, sweeping all before it and undermining roads, buildings, and other infrastructure with its swift currents. During withdrawals of the sea, ships can be thrown against breakwaters, wharves, and other craft, or washed ashore and left grounded.



In the shallow waters of bays and harbors, tsunamis can initiate a seiche, a seismic seawave in an enclosed body of water. If the tsunami period is influenced by the close proximity of a bay or harbor, the seiche is amplified with each succeeding wave. Under these circumstances, maximum wave activity is often observed much later than the arrival of the first wave.

A tsunami is not one wave, but a series of waves. The elapsed time between successive wave crests at a given point is usually 10 to 45 minutes. Oscillations of destructive proportions may continue for several hours, and several days may pass before the sea returns to its normal state. Frequently, the second or third wave is the most destructive. In the 1964 Crescent City tsunami, most of the deaths were caused by the debris-carrying second wave.

### ***Tsunami Categories***

A tsunami can be categorized as local, regional, or Pacific-wide. Those terms describe the potential destruction relative to the tsunami source area.

**Local** (near-source) tsunamis occur soon after the generating event and allow little time for warning and evacuations. Their impact may be large, but in a limited area. For example, in 1958, waves from a local tsunami in Lituya, Alaska ran up 485 meters, but destruction was focused on a small area.

**Regional** (intermediate) tsunamis are by far the most common. Destruction may be limited because the energy released was not sufficient to generate a destructive Pacific-wide tsunami, or because the source area limited the destructive potential of the tsunami. These events can occur within 15 minutes to 2 hours after the generating event. Areas affected by the tsunamis may not have felt the generating event.

**Pacific-wide** (distant source) tsunamis are much less frequent, but have a far greater destructive potential. The waves are not only larger initially, but they subject distant coastal areas to their destructive impact as they cross the Pacific basin. For example, the Chilean tsunami of May 22, 1960, spread death and destruction across the Pacific from Chile to Hawaii, Japan, and the Philippines. These events may have long lead times (up to 6 hours), but the breadth of the destruction is wide.

### ***Tsunamis in California***

Since 1812, 14 tsunamis with wave heights higher than three feet have struck the California coast. Six of these waves were destructive. The Santa Barbara Channel Islands were hit by a tsunami in the early 1800's. The worst tsunami in recent history resulted from a 1964 Alaskan earthquake and that caused 12 deaths and at least \$17 million in damage in northern California. The 1992 Cape Mendocino earthquake produced a 0.5 meter tsunami that reached Humboldt Bay about 15 minutes after the shaking. Although not damaging, this tsunami demonstrated that locally generated tsunamis can reach our coastline quickly.

The 1992 Cape Mendocino tsunami triggered more comprehensive analysis of historic tsunami events in California. Research findings now support the belief that the risk from locally generated (nearshore) tsunamis is 1) high along the coast from Crescent City to Cape Mendocino, 2) moderate south of Cape Mendocino to north of Monterey, 3) high south of Monterey to Palos Verdes, and 4) moderate south of Palos Verdes to San Diego.

Paleoseismic evidence suggests that large earthquakes capable of producing local tsunamis recur every two or three hundred years along the Cascadia Subduction Zone (see Figure # 1). Large earthquake-generated tsunami events in Southern California are believed to have similar return periods. In the Cascadia Subduction Zone, a locally generated tsunami may reach the shore in minutes or tens of minutes.

### ***The Tsunami Threat to Northern California***

The tsunami hazard on the north coast of California affects a predominantly rural area, with populations concentrated in low-lying coastal communities near the estuaries of large rivers. About 20,000 people live or work in areas of potential inundation, and an even greater number of tourists and visitors travel through potential inundation areas each year. The economy is resource and tourist-based. The area suffers from chronically higher unemployment than other parts of the state. The largest industrial centers are located along low-lying coastal sand pits and near harbors. These areas are particularly vulnerable to both tsunami flooding and strong shaking damage. Populated areas are isolated from each other and from regional urban centers. Roads, communication links, and critical lifelines connecting populated areas are extremely vulnerable to disruption from strong shaking, tsunami inundation, and other likely effects of a large Cascadia earthquake.

The Cape Mendocino region and the coastal and offshore areas of Humboldt and Del Norte Counties are among the most seismically active areas in the United States. Since 1980, there have been five earthquakes close to magnitude 7, and an additional six of magnitude 6 or larger. This contrasts significantly with the rest of the Pacific Northwest, where large or damaging earthquakes have been relatively infrequent in recent historical times.

The April 25, 1992 earthquake, with a moment magnitude of 7.1, was located onshore from the town of Petrolia at a depth of about 11km. The location and orientation of rupture strongly suggested a Cascadia Subduction Zone origin. This earthquake also produced many of the effects expected from a larger Cascadia Subduction Zone event: coastal uplift, strong ground shaking, and a locally generated tsunami that was detected at coastal tide gauges within 15 minutes of the earthquake. The tsunami, although not damaging, raised the concerns of agencies responsible for disaster planning and response.

## ***The Tsunami Threat to Southern California***

There is concern that a Cascadia event may have significant impacts on Southern California, similar to those experienced in Crescent City after the 1964 Alaskan earthquake, since the distance between Cascadia and Southern California is about the same as the distance from Alaska to Eureka. Indeed, tide gauges in Santa Barbara detected the tsunami generated by the April 25, 1992 Cape Mendocino earthquake. While not damaging, this event indicates that the southern California coastline is vulnerable to Cascadia events. Several poorly documented local tsunamis caused some damage to southern California communities in the 1800s. Historic records suggest that three tsunamis produced flooding in the Santa Barbara area during this period.

In addition, the Working Group on California Earthquake Probabilities of the Southern California Earthquake Center (SCEC) has identified the Palos Verdes, Santa Cruz Island, and Santa Rosa Island faults as active and potentially tsunamigenic. The displacement between the North American and Pacific plate is accommodated in part by the movements along strike-slip faults, some of which are in the offshore borderland. Strike-slip faults were not believed capable of generating damaging tsunamis before the 1994 Mindoro, Philippines event when a strike-slip onshore fault generated a tsunami large enough to move a 6,000-ton barge one mile inland. There is also suggestive evidence of episodes of vertical displacement capable of conventional tsunami generation associated with the offshore extension in the Palos Verdes fault.

The impacts of an earthquake on the Palos Verdes fault, and the resulting tsunami, may affect the Ports of Los Angeles and Long Beach, like the 1964 Alaska quake affected Anchorage. The resulting damage would be far larger than the \$17 million in damage seen in 1964 in Crescent City. Recent field surveys and modeling (1992-1996) by Professor Costas Synolakis have projected a 4 meter (13 ft.) tsunami that would cause extensive damage and flooding along flat coastlines such as those in Santa Monica Bay or in Orange and San Diego Counties. Communities that are sandwiched between the ocean and other bodies of water -- such as wetlands, river inlets, or salinas -- are at very high risk due to the possible overland flow and simultaneous tsunami attacks from multiple directions.

The densification of land use in Southern California and the continued development in areas exposed to coastal and riverine inundations have increased the risk of property damage and loss of life from future tsunamis. Even in locales where the tsunami hazard may be small, the land use development in areas subject to inundation and ground subsidence increases the overall risk. The rapid arrival of waves from a local event and the long duration of tsunami wave action intensify the risk from near-shore events. Future tsunamis may cause economic losses in coastal communities dependent on marine and harbor commerce. Losses to the tourist industry and harbor facilities in the Ports of Los Angeles, Long Beach, and San Diego could be very high, even for small events. Additional risk is posed by the potential release of toxic pollutants due to the failure of marine oil-transfer facilities and terminals.

### ***Near-Source Tsunami Detection***

At present, detection of near-source tsunamis is possible only where the shore can be observed. The first visible indication of an approaching tsunami is often a recession of water caused by the trough preceding an advancing wave. Any withdrawal of the sea, therefore, should be considered a warning of an approaching wave. On the other hand, a rise in water level may be the first event. Tide-gauge records of the Chilean tsunami of May 22,1960, generally showed a rise in water level as the first indication of this tsunami.

### ***Near-Source Tsunami Warnings***

There is agreement within the tsunami and emergency response communities that technology alone, automated warnings that can take up to 15 to 20 minutes to issue, cannot protect coastal inhabitants located in the immediate area of a near-source tsunami. When a large subduction zone earthquake occurs nearby, the first tsunami waves may reach coastal communities within minutes of the event. Local populations at risk should be able to recognize the signs of impending tsunami hazards, such as strong, prolonged ground shaking, and seek higher ground immediately. Communities should be informed, or determine themselves, which areas are likely to be flooded. Development, publication and distribution of inundation maps that define the inundation area, and designation of evacuation routes that indicate safe regions in which to assemble evacuees, can accomplish this. An effort to project potential inundation areas for selected communities in the state is underway.

Planners, emergency responders, and residents should try to assess and project the impacts of a very large local earthquake. At-risk regions need near-real-time determination of earthquake source information to assess the nature of the hazard in order to optimize emergency response. Local decision makers need to understand their risk and be provided with mitigation tools in order to make informed planning decisions.

### ***The Pacific-Wide Tsunami Warning System***

The West Coast & Alaska Tsunami Warning Center (WC/ATWC) in Alaska, and the Pacific Tsunami Warning Center (PTWC) in Hawaii monitor potential tsunamis. A Regional Tsunami Warning/Watch is issued based on earthquake location and magnitude, generally exceeding M7.5 (M7.0 for the Aleutians). Areas within a 3-hour tsunami travel-time zone of the epicenter will be placed in a Tsunami Warning status. Areas within a 3-6 hour travel-time zone will be placed in a Tsunami Watch status. Tsunami ETAs will be disseminated for the tide stations within the Tsunami Warning and Watch areas. Agencies contacted then evaluate the probability of a tsunami reaching their area and decide on appropriate action.

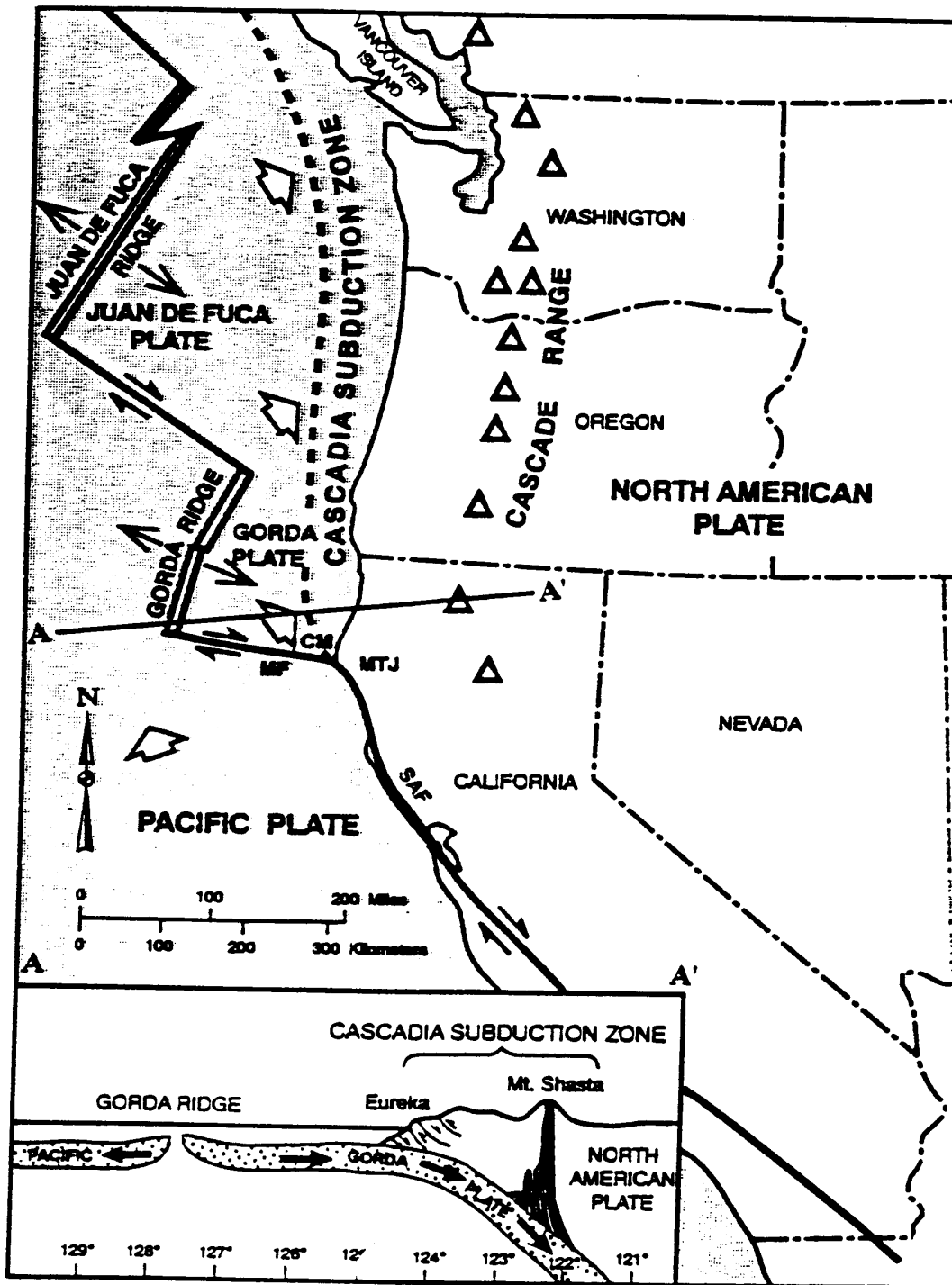
### ***Local Government Evacuation Plans***

Local governments are responsible for developing evacuation plans for possible implementation in response to near or distant-source events. A distant-source tsunami event may allow several

hours to evacuate. Each jurisdiction should analyze how much time a thorough evacuation would require and build that into its decision-making procedures. For instance, if it would take three hours to evacuate a densely populated area, an evacuation decision must be made when the first probable tsunami wave arrival time is a little more than three hours away.

A near-source tsunami may require immediate self-evacuation through areas damaged by the earthquake and at high risk of aftershocks. Evacuation plans should take into account potential earthquake damage when planning routes to use for evacuation. When developing a plan, each jurisdiction should decide how best to handle the occurrence of both an earthquake and a tsunami. Evacuation plans should take into consideration the special needs of the evacuees. Some of the special needs groups include the injured, the medically fragile, the aged, infants and young children, the handicapped, and non-English speakers or those who speak English as a second language. Care, shelter, communication, and transportation should be available at evacuee staging areas.

# North Coast Scenario



## *Historic California Tsunamis* **Tsunamis Of California**

This is a list of tsunamis that have affected coastal California since the early 1800's

(Taken from Tsunamis Affecting the West Coast of the United States, 1806-1992, Lander, J.F., Lockridge, P.A. and Kozuch, M.J. 1993)

<b>Year Month/day</b>	<b>Origin of Tsunami</b>	<b>Validity*</b>	<b>Cause**</b>	<b>Location of Effects</b>	<b>run-up (m)</b>	<b>Comments</b>
1806 3/24	S. California	2	E?	Santa Barbara	Observed	Boats beached.
1812 12/21	S. California	4	L	El Refugio  Santa Barbara Ventura	3.5  2.0 2.0	Ship at anchor drifted to shore and up canyon. Estimated run-up. Estimated run-up.
1851 5/15	California	1	E	Salinas San Francisco	Observed Observed	Mild shocks March, April, May 15, 17, and 28. marine flooding, ships, wharf rocked.
1851 11/13	N. California	1	E	San Francisco Bay	Observed	Unusual water movement felt on ship. Possible seiche.
1852 11/25	N. California	1	E	San Francisco	Observed	Lake Merced drained.
1853 11	Kuril Is., Russia	0	E	San Diego	Observed?	Marigrams not found.
1854 5/31	S. California	3	L	Santa Barbara	Observed	Sea agitated. Heavy swell came in. Not recorded.
1854 7/24	S. California	2	?	San Diego	<0.1	Current set up in a calm harbor.

<b>Year Month/day</b>	<b>Origin of Tsunami</b>	<b>Validity*</b>	<b>Cause**</b>	<b>Location of Effects</b>	<b>run-up (m)</b>	<b>Comments</b>
1854 10/4	N. California	3	?	San Francisco	<0.1	Waves recorded for 24 hours.
1854 10/22	N. California	2-3	E	San Francisco	Observed	Probably correct date for 10/26. Vessels swayed.
1854 12/23	Enshunada, Japan	4	E	San Diego San Francisco	<0.1	
1854 12/24	Nankaido, Japan	4	E	San Diego San Francisco	0.1	
1855 3/19	N. California	2	E	Humboldt Bay	Observed	Water in bay agitated for an hour.
1855 7/11	S. California	3	L	San Juan Capistrano	Observed	Two large waves surged on shore.
1856 2/15	N. California	3	L	San Francisco	0.6	Water rose and stayed high for 5 minutes.
1856 8/23	SE Hokkaido Island, Japan	4	E	California Coast San Diego	Observed 3.6	Exaggerated report and/or erroneous date.
1859 9/24	N. California	2	A	Half Moon Bay	4.6	Schooner damage. Minus tide at 3 am, small earthquake at 5:50 am.
1861 5/4	N. California	0	A	San Francisco	Observed	Tide dropped 30-45 cm below lowest low tide during the week.
1862 5/27	S. California	4	L	San Diego	1.2	0.9 to 1.2 m run-up. Possibly inundation rather than run-up.
1865 10/8	San Francisco	3	L	Santa Cruz	Observed	High flood tide and strong ebb tide following collapse of cliffs into bay.
1868 4/3	Hawaii	4	E	San Diego San Francisco	0.1 <0.1	



<b>Year Month/day</b>	<b>Origin of Tsunami</b>	<b>Validity*</b>	<b>Cause**</b>	<b>Location of Effects</b>	<b>run-up (m)</b>	<b>Comments</b>
1868 8/13	N. Chile	4	E	San Diego San Francisco San Pedro	0.3 0.3 1.8	45.7 cm bore. Wharf submerged.
1868 10/21	N. California	1132	L	Government Island Sacramento San Francisco Bay Santa Cruz	Observed  Observed 4.5  Observed	Registered on tide gauge.  0.61 m wave observed. 6.0 M surge on shore at Cliff House. Water rushed up river.
1869 2/10	N. California	1	M	Fort Point	Observed	Earthquake recorded on tide gauge?
1869 6/1	N. California	3		Fort Point	Observed	Earthquake waves recorded on tide gauge.
1872 3/26	S. California	0	E	San Pedro	Observed	Ship damaged.
1872 8/23	Fox Islands, Aleutian Is.	3	E	San Diego San Francisco	<0.1 <0.1	First instrumental location for a tsunamigenic earthquake.
1872 9/16	Fox Is. AK(?)	3		San Francisco	0.1	Oscillations recorded.
1875 10/12-14	N. California	0	M	Davenport	Observed	Wharf destroyed, waves on 12th, earthquake on 14th.

<b>Year Month/day</b>	<b>Origin of Tsunami</b>	<b>Validity*</b>	<b>Cause**</b>	<b>Location of Effects</b>	<b>run-up (m)</b>	<b>Comments</b>
1877 5/10	N. Chile	4	E	Anaheim Gaviota San Francisco San Pedro Santa Cruz Sausalito Wilmington	0.9 1.8 0.2 1.0 Observed 0.2 1.7	Swift currents. Observed. Recorded. Observed. Two waves observed. Observed.
1878 11/22	S. California	3	L	Avila Cayucos Sal Cape	Observed Observed Observed	Some wharf damage. Wharf damage. 1 killed, half of wharf destroyed.
1879 8/10	S. California	2	L	Santa Monica	Observed	
1883 8/27	S. Java Sea Krakatau	2	V	Sausalito	0.1	Air pressure wave recorded on marigram.
1987 (?) 7/8	N. California	2	L?	Sausalito	Observed	Distinct waves. No source known.
1895 3/9 and 30	S. California	2	L	San Miguel Is.	Observed	Bluffs collapsed into bay. Wave reports doubtful.
1896 6/15	Sanriku, Japan	4	E	Mendocino San Francisco Santa Cruz Sausalito	1.0 0.2 1.5 0.1	Log booms threatened.  Sand bag dike overtopped & festival float destroyed.
1901 3/3	N. California	3	L	Monterey	Observed	Earthquake near Parkfield. High waves.

<b>Year Month/day</b>	<b>Origin of Tsunami</b>	<b>Validity*</b>	<b>Cause**</b>	<b>Location of Effects</b>	<b>run-up (m)</b>	<b>Comments</b>
1906 1/31	Columbia- Ecuador	4	E	San Diego San Francisco	<0.1 Observed	Currents observed, boats turned.
1906 4/18	N. California	3	E	Navarro River San Francisco	Observed 0.1	Flooding of low-lying areas. Slight drop in water level.
1906 8/17	Central Chile	4	E	San Diego San Francisco	<0.1 <0.1	
1917 5/1	Kermadec Is., South Pacific	4	E	La Jolla San Francisco San Diego	Observed <0.1 <0.1	
1917 6/26	Samoa Is.	4	E	Presidio San Diego	<0.1 <0.1	
1918 9/7	Kuril Is., Russia	4	E	San Francisco	<0.1	
1918 11/8	Kuril Is., Russia	2	A	San Diego Presidio	<0.1 <0.1	Recorded.
1918 12/4	Chile	4	E	Presidio	Observed	Emergent.
1919 4/30	Tonga Is.	4	E	San Diego San Francisco	0.1 Observed	
1922	N. Central Chile	4	E	San Diego San Francisco Santa Cruz Los Angeles	0.2 0.2 Observed? Observed?	
1923 1/22	N. California	2	E	Cape Mendocino	<0.1	Recorded on tide gauge.

<b>Year Month/day</b>	<b>Origin of Tsunami</b>	<b>Validity*</b>	<b>Cause**</b>	<b>Location of Effects</b>	<b>run-up (m)</b>	<b>Comments</b>
1923 2/3	Kamchatka Peninsula, Russia	4	E	San Diego San Francisco Santa Cruz Los Angeles	0.2 0.1 Observed? Observed?	
1923 9	Kamchatka Peninsula, Russia	4	E	San Diego San Francisco Los Angeles	<0.1 Observed 0.1	Vessels set adrift in harbor.
1927 11/4	N. to S. California	4	E	La Jolla Pismo Beach Port San Luis San Diego San Francisco Surf	<0.1 Observed 0.8 Observed <0.1 1.8	Recorded on tide gauge.  Recorded on tide gauge. Recorded on tide gauge.
1928 6/17	S. Mexico	4	E	La Jolla San Francisco Los Angeles	<0.1 <0.1 <0.1	
1929 3/7	Fox Is., Aleutian Is.	4	E	Presidio	<0.1	Recorded.
1930 8/31	S. California	3	L?	Santa Monica  Redondo Beach Venice Beach	6.1  6.1	16 rescued, boat/pier damage.  1 death, many rescued. High waves.
1931 10/3	Solomon Is.	4	E	San Diego Santa Barbara	<0.1 <0.1	

<b>Year Month/day</b>	<b>Origin of Tsunami</b>	<b>Validity*</b>	<b>Cause**</b>	<b>Location of Effects</b>	<b>run-up (m)</b>	<b>Comments</b>
1932 6/3	Jalisco, Mexico	4	E	Long Beach Los Gatos San Diego San Francisco Santa Barbara	0.1 trace <0.1 trace <0.1	
1933 3/2	Sanriku, Japan	4	E	La Jolla Long Beach San Diego San Francisco Santa Monica	<0.1 <0.1 <0.1 <0.1 0.1	
1938 11/10	Alaska Peninsula	4	E	Crescent City San Diego Santa Monica	0.2 <0.1 0.1	
1943 4/6	N. Central Chile	4	E	Crescent City San Francisco San Diego Terminal Is. Los Angeles	trace <0.1 0.1 0.1	
1944 12/7	Ryukyu Trench, Japan	4	E	La Jolla Port Hueneme San Francisco San Diego Santa Terminal(? Los Angeles	trace 0.1 <0.1 <0.1 <0.1 <0.1	

<b>Year Month/day</b>	<b>Origin of Tsunami</b>	<b>Validity*</b>	<b>Cause**</b>	<b>Location of Effects</b>	<b>run-up (m)</b>	<b>Comments</b>
1946 4/1	E. Aleutian Is.	4	E	Experienced along the entire coast.	Observed, trace to 2.6	Arena Cove, wave height 4.3 m above MLLW. Bolinis, a small island was submerged and boats sunk. Catalina, a small pier was washed away. Noyo, 100 fishing boats thrown 1.8m up bank. Port Hueneme, sand deposited on railroad tracks. Santa Cruz, man drowned; cars pushed against houses. 8m boat washed 300m off beach into lagoon. Fisherman terrified.
1946 12/20	Nankaido, Japan	4	E	Avila Crescent City San Francisco Terminal Is.	0.1 0.2 <0.1 0.1	
1952 3/4	SE Hokkaido, Japan	4	E	Experienced from Crescent City south to San Diego	0.2 - <0.1	
1952 11/4	Kamchatka Peninsula, Russia	4	E	Crescent City to San Diego	Max. runup = 0.7m	Crescent City, 4 boats overturned, concrete buoys moved. Santa Cruz, one boat damaged; sand washed away.

<b>Year Month/day</b>	<b>Origin of Tsunami</b>	<b>Validity*</b>	<b>Cause**</b>	<b>Location of Effects</b>	<b>runup (m)</b>	<b>Comments</b>
1957 3/9	Central Aleutian Is.	4	E	Crescent City La Jolla Monterey San Diego	0.7 0.3 0.6 0.2	Minor damage 2 people swept off rocks Damage at \$5,000. Wall of water 1 m high reported at Shelter Is.
1956 11/6	S. Kuril Is., Russia	4	E	Port Hueneme San Francisco Avila	0.1 0.2 0.1	
1960 5/22	S. Central Chile	4	E	All of the West Coast	2.2	\$500,000 - \$1,000,000 damage, 2 killed.
1963 10/13	Kuril Is., Russia	4	E	Avila Crescent City Los Angeles La Jolla San Francisco	0.3 0.5 <0.1 0.1 <0.1	Fishing boat broke mooring.
1964 3/28	Gulf of Alaska - Alaska Peninsula	4	E	All of West Coast Crescent City  Trinidad Noyo San Francisco San Diego	  4.8  Observed 2.0 1.1 0.6	16 deaths, \$20 million total damage along west coast. 10 dead, 35 injured, 52 homes and 172 businesses damaged or destroyed. 5.4m above MLLW. 100 fishing boats damaged, 10 sunk. Floating restaurant mooring broke.

<b>Year Month/day</b>	<b>Origin of Tsunami</b>	<b>Validity*</b>	<b>Cause**</b>	<b>Location of Effects</b>	<b>run-up (m)</b>	<b>Comments</b>
1965 2/4	W Aleutian Is.	4	E	Crescent City Los Angeles San Francisco San Diego Santa Cruz Santa (?)	0.1 <0.1 <0.1 <0.1 <0.1 <0.1	Recorded. Recorded. Recorded. Recorded. Observed. Recorded.
1966 10/17	Peru	4	E	Crescent City San Francisco San Diego	0.1 <0.1 <0.1	
1968 5/16	Honshu, Japan	4	E	Crescent City San Francisco Santa (?) San Diego	0.6 <0.1 0.2 <0.1	
1971 7/26	New Ireland	4	E	Crescent City Long Beach Los Angeles	<0.1 <0.1 <0.1	
1974 10/3	Peru	4	E	Crescent City	<0.1	
1975 11/29	Hawaii	4	E	Port San Luis Santa Catalina Island Santa	0.4 1.4  Observed	\$1,000 damage to two docks.  Surge observed.
1977 6/22	Tonga Trench	4	E	Long Beach Los Angeles Port San Luis San Diego	0.1 <0.1 0.1 <0.1	



<b>Year Month/day</b>	<b>Origin of Tsunami</b>	<b>Validity*</b>	<b>Cause**</b>	<b>Location of Effects</b>	<b>run-up (m)</b>	<b>Comments</b>
1986 5/7	W. Aleutian Is.	4	E	Crescent City	0.1	
1987 1/30	Gulf of Alaska	4	E	Presidio, San Francisco	<0.1	
1988 3/6	Gulf of Alaska	2	E	San Francisco?	<0.1	Report not confirmed.
1989 10/18	N. California	4	E	Santa Cruz Monterey Moss Landing	Observed 0.4 1.0	Wave rushing out of harbor. Recorded. Water drained from Salinas River
1992 4/25	N. California	4	E	N. Spit Humboldt Bay Clam Beach Crescent City Trinidad	0.3 Observed 0.6 0.9	Waves arrived at Humboldt Bay about 20 minutes after ground shaking. Water level changed several feet. Oscillations in harbor, fourth wave was the highest. Cars stuck on beach.

\* The validity has been devised (Soloviev and Go, 1974; and Cox and Morgan, 1977) to rate how valid a tsunami report may be. In a five step scale:

- 0 = Not a valid report
- 1 = Probably not a valid report
- 2 = Possibly a valid report
- 3 = Probably a valid report
- 4 = Certainly a valid report

\*\* The key to the cause of the event is as follows:

- L = Landslide
- M = Meteorological
- A = Astronomical
- E = Earthquake
- V = Volcano

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## Tsunami Planning

### *Tsunami Sample Planning Template*

#### **Management**

Management may want to focus on several areas during the planning process, including organizational structure; coordination of various disciplines; inclusion of non-profit organizations or private businesses in the possible response organization; public information concerns; safety and security; and information sharing among the key players. In addition, management may also want to be involved in threat analysis plans and procedures development.

#### ***Organizational Structure***

Local government should consider the organizational structure required for a tsunami threat or actual event. In developing the organization, agencies may want to address the following questions:

- How should organizational and planning issues be addressed? Through multi-agency tsunami planning committee (TPCs)? Through regional as well as local efforts? Much of the success of future tsunami response efforts will depend upon establishing close working relationships among the key players at various government levels.
- What organization is already in place to deal with tsunamis?
- How will they interface with their state and federal counterparts?
- What levels of government need to be represented?
- What are the procedures for liaison to OES? Others?
- What organizational elements need to be represented? For example, the unified command?
- How will the transition from tsunami watch/warning to tsunami response be accomplished—if necessary?

#### ***Coordination of Disciplines***

A tsunami event will require multi-agency, multi-discipline coordination at all levels, including first responders. Questions to consider:

- How do local jurisdictions plan to coordinate medical, health, fire and rescue, public works, law and coroner?
- What are the issues associated with discipline coordination? In the

EOC environment? In the field?

- What communication systems and protocols need to be in place?
- How will vulnerable population issues be addressed?
- How will education and childcare facilities be addressed?
- How will animal care issues be addressed?

Non-profit organizations and businesses may become involved in a tsunami threat or event, either as potential victims or as possible support organizations.

***Non-Profits and  
Private Businesses***

- What non-profit organizations need to be involved in tsunami response planning?
- How do local jurisdictions include them in tsunami response?
- Are there businesses that need to be involved in tsunami response planning? Would they be potential victims? Could they provide support to emergency operations?

All Public Information personnel should review current plans and/or protocols to ensure the area(s) listed below are addressed.

***Public Information***

As we have seen in California during our natural disasters, public information plays a crucial role in managing an event. Some questions to consider are:

- What system(s) are available to alert the public?
- What protocols need to be established by local government?
- How does local government ensure support and cooperation with the media on a potentially sensitive subject?
- What protective actions need to occur for government response personnel to the public?
- How do local governments and the media address bilingual and multicultural concerns?
- What public information organizations need to be established? Media centers?

*Safety and Security*

All Safety and Security personnel should review current plans and/or protocols to ensure the area(s) listed below are addressed. Staff safety and operational security will be key concerns during a tsunami threat or actual event. Questions to consider:

- What actions do local governments need to take to protect their staff?
- What actions need to be taken to ensure operational security?
- What agencies have responsibility for perimeter security?

*Information  
Dissemination*

Information dissemination and sharing will be crucial during a tsunami threat or actual event. How an event unfolds will be determined to a great extent by “information” and how it is processed. Questions to consider:

- What protocols need to be established about sharing threat information? How will various disciplines share information across discipline lines (e.g.: law enforcement to medical).
- What components of the local response organization need to have information?
- What information elements need to be shared? And with what agencies, organizations, businesses, volunteer organizations, the media, and so on?
- Do agencies need to have “alert levels” or “readiness conditions” – even those that do not normally use these terms?

**Operations**

This section addresses concerns that may surface during tsunami response planning for branches normally associated with Operations.

***Fire Department***

All Fire and Rescue personnel should review current plans and/or protocols to ensure the areas listed below are addressed. Tsunami inundations are not a single wave event; several waves may inundate the coast over several hours. The first wave may be followed by larger, more destructive waves that go farther inland and carry debris.

- Are fire and rescue response personnel staged outside of the potential tsunami run up area until an all clear is given?
- Do existing procedures need to be modified to accommodate a tsunami scenario?
- Do first responder personnel need to receive any special instructions in the face of a potential tsunami threat?
- What time-critical refresher training needs to occur in anticipation of an event? (For example, refresher training on chemical agent identification.)
- What additional technical support teams will be required for a tsunami situation?
- Which fire and rescue functions need to be co-located with other disciplines for coordination purposes?
- Will the Fire and Rescue Branch need to request mutual aid to deal with the consequences of a tsunami event?
- Will Fire and Rescue Branch require extensive logistical support for their operations?
- How will fire and rescue personnel deal with the potential that they may become secondary tsunami casualties upon response to an event?
- How will fire and rescue personnel expand their operations beyond the normal day-to-day emergency response? What will be required to do this?
- How will the environmental needs be addressed?

- Have fire and rescue personnel prepared for an incident?
- Are decontamination procedures in place for fire and rescue personnel?

### ***Hazardous Materials***

All Hazardous Materials/Radiological personnel should review current plans and/or protocols to ensure the areas listed below are addressed. Tsunamis often involve many waves; several waves may inundate the coast over several hours. The first wave may be followed by larger, more destructive waves that go farther inland and carry debris.

- Are hazardous materials response personnel staged outside of the potential tsunami run up area until an all clear is given?
- Do existing procedures need to be modified to accommodate a tsunami scenario?
- Do first responder personnel need to receive any special instructions in the face of a potential tsunami threat?
- What time-critical refresher training needs to occur in anticipation of an event? (For example, refresher training on chemical agent identification.)
- What additional technical support teams will be required for a tsunami situation?
- Which hazardous materials or radiological functions need to be co-located with other disciplines for coordination purposes?
- Will the HazMat or Radiological Branch need to request mutual aid to deal with the consequences of a tsunami event?
- Will HazMat or Radiological Branch require extensive logistical support for their operations?
- How will HazMat or Radiological team personnel deal with the potential that they may become secondary tsunami casualties upon response to an event?
- How will HazMat expand their operations beyond the normal day-to-day emergency response? What will be required to do this?

- How will the environmental needs be addressed?
- Have radiological personnel prepared for an incident?
- Are decontamination procedures in place for radiological personnel?

All law enforcement personnel should review current plans and/or protocols to ensure the areas listed below are addressed. Several tsunami waves may inundate the coast over a number of hours. The first wave may be followed by larger, more destructive waves that go farther inland and carry debris.

### *Law Enforcement*

- Are law enforcement personnel staged outside of the potential tsunami run up area until an all clear is given?
- Do existing procedures need to be modified to accommodate a tsunami scenario?
- Do first responder personnel need to receive any special instructions in the face of a potential tsunami threat?
- What time-critical refresher training needs to occur in anticipation of an event? (For example, refresher training on evacuations.)
- What additional technical support teams will be required for a tsunami situation?
- Which law enforcement functions need to be co-located with other disciplines for coordination purposes?
- Will the law enforcement branch need to request mutual aid to deal with the consequences of a tsunami event?
- What additional logistical support will law enforcement require for operations?
- How will law enforcement expand their operations beyond the normal day-to-day emergency response? What will be required to do this?
- Are law enforcement personnel prepared to perform/direct mass evacuations and spontaneous evacuations?

*Coroner*

Generally, all of the standard mass fatality concerns would apply for coroner operations during a tsunami response. Tsunami inundations are not a single wave event; several waves may inundate the coast over several hours. The first wave may be followed by larger, more destructive waves that go farther inland and carry debris.

- Are coroner personnel staged outside of the potential inundation area?
- Do existing procedures need to be modified to accommodate a tsunami scenario?
- Do existing procedures address and deal with decontamination in the presence of hazardous materials? One area to be addressed is decontamination of the deceased prior to leaving the scene to prevent contamination of facilities. This requires setting up a specific decontamination procedure prior to transportation to the incident morgue or central morgue facility. It may also be necessary to establish a temporary morgue for any work with contaminated deceased.
- Are there provisions in place for securing of personal effects? They may be needed to assist in identification or at least in the “believed to be (BTB) identification. They must be secured for release to the family if appropriate.
- Are there provisions for the recovery and identification of the deceased? This is usually the highest priority of the family. It may, however, conflict with the other issues of a tsunami response. Recovery of bodies may be delayed, for instance, due to continued tsunami risks. Coroner staff should not enter the inundation zone until the “all clear” is issued.
- Do procedures address the issues of identification of large numbers of tsunami casualties, when there may be decontamination and dismemberment issues?
- Do procedures include the establishment of a Family Assistance Center? Mass fatalities management usually includes such centers. The centers facilitate information flow. Family members may need to be available for interviews, identification notifications, and remains disposition.



- Do coroner personnel need to receive any special instructions in the face of a potential tsunami threat?
- What time-critical refresher training needs to occur in anticipation of an event?
- What additional technical support teams will be required for a tsunami situation?
- Which coroner functions need to be co-located with other disciplines for coordination purposes?
- Will the Law Enforcement Branch need to request mutual aid to deal with the consequences of a tsunami event?
- What additional logistical support will be required for coroner operations?
- How will operations be expanded beyond the normal day-to-day emergency response? What will be required to do this?

***Medical and Health***

All medical and health personnel should review current plans and/or protocols to ensure the areas listed below are addressed. Tsunami waves may inundate the coast over several hours. The first wave may be followed by larger, more destructive waves that go farther inland and carry debris.

- Are medical personnel staged outside of the potential tsunami run-up area until an all clear is given.
- Do existing procedures need to be modified to accommodate a tsunami scenario?
- Do first responder personnel need to receive any special instructions in the face of a potential tsunami threat?
- What time-critical refresher training needs to occur in anticipation of an event (refresher training on chemical agent identification, biological hazards, or decontamination procedures, for example)?

- What additional technical support teams will be required for a tsunami situation?
- Which medical or health functions need to be co-located with other disciplines for coordination purposes? For example, there are instances in which medical and hazardous material personnel may need to conduct joint activities.
- Will the medical and health branches need to request mutual aid to deal with the consequences of a tsunami event? What will be the source of this aid?
- Will the medical and health branches need to establish significant logistical support for operations?
- How will medical and health personnel deal with the possibility that they may become secondary tsunami victims upon response to an event?
- How will medical and health expand their operations beyond the normal day-to-day emergency response? What will be required to do this?
- Should medical and health personnel establish contacts in the private sector prior to an incident for quicker access to supplies and personnel?
- Are decontamination procedures in place for medical personnel?
- If the event is a Mass Casualty Incident (MCI), how will medical personnel address the need for the possible massive amounts of mutual aid required?

Mental Health.

“Medical” also includes mental health support, which will focus on support to victims of a tsunami and support to response personnel, including EOC staff. Mental health planners should consider the same sort of questions that other elements of the medical and health community address. In addition, plans should incorporate the following areas:

Staff Background and Training

- Does your mental health staff have the requisite training in disasters, tsunamis, and dealing with trauma?

- Do they have an understanding of governmental response roles?
- Are they able to function as part of a multi-disciplinary team?

Crisis Management

- Public information: What role should mental health practitioners play as part of public information? What effect does public information have upon the mental health of the victims and responders?
- Support services: How can the mental health community provide crisis counseling, screening, diagnosis, and treatment for those in need of such services?
- Stress Management: How can mental health personnel support stress management programs within the EOC and other locations?
- Follow-up: What mental health follow-up programs need to be developed as a result of a threat or event?
- Integration and support: How do mental health activities integrate with and support other medical/health activities?
- Resources: What mental health resources are available within the community? Will additional mental health resources be required? How can non-medical support personnel, such as religious staff or social services personnel, be integrated into the process?
- Psychological aspects: How can mental health professionals address the psychological aspects of response activities such as: body recovery, identification, family notification, and transportation of the injured?

All care and shelter personnel should review current plans and/or protocols to ensure the areas listed below are addressed.

- Do existing procedures need to be modified to accommodate a tsunami scenario?
- What special instructions do care and shelter personnel need to receive regarding a potential tsunami threat?
- What time-critical refresher training needs to occur in anticipation of an

*Care & Shelter*

event (for example, refresher training on facility security procedures or mental health concerns during a tsunami event)?

- What level of facility security will be required for care and shelter operations during a tsunami situation?
- At what levels of the emergency response organization should there be care and shelter representation? Field level incident command post? City EOC? OA EOC?
- Will the care and shelter branch need to request mutual aid to deal with the consequences of a tsunami event? If so, what will be the source of this aid?
- Will the care and shelter branch need to establish significant logistical support for its operations? How will this connect to other logistical support, such as medical?
- How will care and shelter personnel handle mass evacuations and spontaneous evacuations? How will local law enforcement and fire personnel address this situation?

All Public Works personnel should review current plans and/or protocols to ensure the areas listed below are addressed. This branch may include public works, local state agency representation, and private concerns. It may include representatives from professional organizations. Tsunami inundations are not a single wave event; several waves may inundate the coast over several hours. The first wave may be followed by larger, more destructive waves that go farther inland and carry debris.

***Public Works and Utilities***

- Are public works and private and public agency personnel staged outside of the potential tsunami run up area until an all clear is given?
- How will building inspectors and other professionals be included in the process?
- All Utilities personnel should review current plans and/or protocols to ensure the areas listed below are addressed.
- The Utilities branch may be composed of both public and private utilities organizations in the areas of potable water, wastewater and sewage treatment, gas, and electricity. The branch may, of necessity,

coordinate extensively with the construction and engineering branch.

- What are the vulnerabilities for utilities?
- Do existing utilities procedures need to be modified to accommodate a tsunami scenario? If so, how should they be modified?
- Do utilities field personnel need to receive any special instructions in the face of a potential tsunami threat?
- What time-critical refresher training needs to occur in anticipation of an event?
- At what levels of the emergency response organization should there be utilities representation? Field level incident command post? City EOC? OA EOC?
- What additional utility technical support teams will be required for a tsunami situation?
- Which utilities components need to be co-located with other disciplines for coordination purposes? There are, For example, instances when utilities personnel may need to conduct joint activities with fire and rescue personnel.
- Will the utilities branch need to request mutual aid to deal with the consequences of a tsunami event? If so, what will be the source of this aid?
- Will the utilities branch need to establish significant logistical support for operations?
- How will utilities expand their operations to accommodate the emergency response?

**Planning and Intelligence**

There are at least two (2) main areas to consider:

- 1) Threat analysis
- 2) Identification of gaps and shortfalls in plans and procedures.

*Threat Analysis*

Threat analysis can include human factors (deaths, injuries, sheltering needs, etc.), lifelines and infrastructure (utilities, roads, bridges, etc.), and critical facilities (police and fire stations, schools, hospitals, etc.).

Other possible areas to examine would be facilities such as transportation hubs and industrial facilities with hazardous materials that are in the tsunami run-up zone. The Certified Unified Program Agency (CUPA), for example, will be registering the facilities that are exposed to the tsunami threat.

*Identification of Planning Gaps*

After reviewing the items contained in this Planning Template section, answer the following questions:

- What needs to be done?
- What are the action items?
- Who needs to do them?
- What are the timelines?
- Does the local jurisdiction need an entirely new plan to address tsunami issues or can existing plans and procedures be modified?

**Logistics**

As part of the planning process for the tsunami response, local government will probably identify support requirements (supplies, services, equipment, facilities, etc.). Resources databases will also need to be identified, developed, and maintained. Logistics planners will probably want to identify critical support operations, such as computer operations, that must remain intact and functional during an event.

*Support Requirements*

The following questions should be considered when identifying support requirements:

- What assets do local jurisdictions have to deal with the tsunami threat?
- What do they think they might need to overcome shortfalls?
- Do local jurisdictions know how to access/request resources from

other sources?

Development and use of the appropriate databases will be essential to the response effort. Some questions to consider:

***Resources Data  
Bases***

- What resource databases exist? How does the local government access them?
- What inundation maps exist?
- What resources do they need to manage and how?
- Does the jurisdiction need to develop a tsunami specific resources database? What should be in this database? Should its accessibility be restricted in some way?

## **Finance and Administration**

Issues, which may need to be addressed, include continuity of operations, such as payroll processing, and tracking the costs of an event.

### ***Continuity of Operations***

- What systems do local jurisdictions have for personnel tracking and payroll operations?
- What are the staff recall procedures?
- Will there need to be a set of recall procedures specific to tsunami response?

### ***Cost Tracking***

Like any other emergency response, local jurisdictions will want to track costs associated with a tsunami response. Is there anything unique to tsunami response that will impact cost tracking procedures?

## **Training and Exercises**

Training and exercises are a crucial component for a successful tsunami response program. There are several areas which local jurisdictions may want to consider:

- Development of a “Tsunami Response Training Program”
- Existing training programs
- Tsunami Awareness Programs
- First Responder Training Exercise Program

### ***Tsunami Response Training***

The local jurisdiction may want to develop a comprehensive program, based upon its training needs assessment. The program would include maintenance of training records.

Key questions to consider:

- What are our training needs?
- Can we identify our training needs?
- What do we need to do to meet our training needs?

### ***Tsunami Awareness Programs***

Questions to consider regarding tsunami awareness programs:

- Does the local jurisdiction need to develop and conduct a tsunami



awareness program?

- Who should get the awareness training?
- Does the awareness training include a quick orientation module that personnel can take in anticipation of a potential threat?

***First Responder Training***

Questions to consider:

- What First Responder Training already exists that can be used by the local jurisdiction?
- Where does the first responder training fit with other training elements?
- Does the jurisdiction need to develop first responder training?
- Does the jurisdiction need assistance in developing its training?
- What training needs to be implemented for dispatch centers? For fire and rescue? For EMS? For HazMat? For law enforcement?

***Exercises***

What is the current exercise program? Can it be modified to accommodate tsunami concerns?

- Does the jurisdiction need to develop a separate exercise program for tsunami?
  - Who should develop, conduct, and maintain the new tsunami response exercise program?
  - Does the jurisdiction have the resources to conduct such exercises?
  - What about funding for the program?
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## Sample San Mateo County Plan

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### ***Introduction***

The phenomenon called "Tsunami" is a series of ocean waves of extremely long length generated by earthquakes, volcanic eruptions, or massive undersea landslides.

As a tsunami crosses the deep ocean its length from crest to crest may be a hundred miles and its height from trough to crest only a few feet. Tsunamis may reach speeds of 600 miles per hour in deep water.

When the tsunami enters shallow coastal waters, its speed decreases and the wave height increases. This creates the large wave that becomes a threat to life and property. Following the arrival of the first wave, subsequent waves may increase in height and arrive minutes to hours later.

### ***Background***

Although there are no known recorded deaths from tsunami action in San Mateo County, it is probable that wave impact occurred in 1946, 1960, and 1964. In 1946 an earthquake in the Aleutian Islands generated a tsunami that caused one death in Santa Clara County. The resultant tsunami from the Alaskan earthquake of 1964 caused eleven deaths in Crescent City just south of the Oregon border.

The USGS has produced a tsunami inundation area map based on a 20-foot run-up along coastal areas and the Golden Gate. Such a run-up is estimated to occur an average of once every 200 years. The areas of the county that would be most heavily damaged by a tsunami are those along the Northern San Mateo Pacific Coast; Sharp Park State Beach, Rockaway Beach, and the Linda Mar area. The degree of damage experienced by these areas would depend on the local sea bottom and coastal topography as well as the incoming direction of the tsunami.

### ***Purpose***

The overall purpose of this plan is to protect life and property of the citizens of San Mateo County. Specific purposes of the plan are:

- To establish a county-wide understanding of the special operational concepts, organization, tasks, and coordinated emergency actions of public agencies, utility districts, and other

organizations and institutions which would be involved in a tsunami warning response.

- To provide for mobilization and direction of county and various city emergency organizations in support of evacuation and security operations.
- To provide for the rapid deployment of mutual aid.

**Activation**

This plan becomes effective upon notification of a Tsunami Watch or Warning issued by the National Weather Service, or on order of the Area Coordinator of Emergency Services or County Director of Emergency Services (County Manager). Any city may activate this plan for areas under its incident command authority.

This plan establishes procedures for the evacuation and control of the following areas at risk from tsunami (seismic sea wave) action:

<u>RISK AREA</u>	<u>INCIDENT COMMAND</u>
Gray Whale Cove State Beach	Sheriff’s Office
Montara State Beach	Sheriff’s Office
Pillar Point Harbor (Maritime Area)	Pillar Point Harbor District
Pillar Point Community	Sheriff’s Office
Half Moon Bay Beaches	Half Moon Bay PD

**Concept of Operations**

In the event of a Tsunami Warning, population in the designated risk areas will be warned and advised to move to temporary mass care facilities. After general warning to the public, the highest priority is alerting and moving institutional populations such as schools, hospitals, and convalescent care facilities.

The public will be warned using the following methods:

- Emergency service units using PA systems
- Providing Leaflets door-to-door (Enclosures 4 and 5)
- Announcements on TCI Cable Company system (Enclosure 6)
- Announcements on Travelers Information Service and Emergency Alert System
- Sounding of sirens (steady blast indicates peacetime emergency)

Each agency assigned Incident Command responsibilities will control operations within its area of responsibility.

SEE COASTSIDE Tsunami CHECKLIST (ENCLOSURE 2) FOR SPECIFIC ACTIONS REQUIRED IN THE EVENT OF A WATCH, WARNING, OR OCCURANCE.

Traffic Control Points to restrict sightseer traffic to the coast will be put into place as required (Enclosure 7).

***Relationship to Other Plans***

This plan is consistent with the San Mateo Operational Area Multi-Hazard Functional Plan. It contains information about authority, organization, and responsibilities of emergency services.

This plan outlines a broad response concept with attachments showing more detailed information for each risk area. Agencies and organizations with assigned response tasks should develop specific response procedures and checklists to support this plan.

***Area Security***

After an area has been evacuated, police security set up roadblocks, barricades, and/or a system of patrols.

***Area Re-entry***

Evacuated areas must remain closed to the public until after the threat of a Tsunami no longer exists. The decision to allow re-entry will be made by the risk area incident commander in consultation with the appropriate EOC. Residents should enter through control points to ensure that safety and sanitary precautions are provided.

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## ***ENCLOSURE 1***

### **KEY PHONE LIST**

#### **Federal Agencies**

Hawaii Tsunami Warning Center  
National Weather Service, Redwood City

#### **State Agencies**

California Office of Emergency Services Warning Center  
California OES Coastal Region  
State Parks and Beaches Day Time Phone No  
State Parks and Beaches 24 Hr Dispatch  
California Highway Patrol, Redwood City Office  
Responsible for Highway Marker 3.700 (south of Devil's Slide) to Monterey County Line)  
California Highway Patrol San Francisco Office  
Responsible for Highway Marker 3.700 (south of Devil's Slide) through Pacifica)  
California Highway Patrol Area Dispatch Center  
Dispatches all area Highway Patrol vehicles  
California Department of Parks and Recreation (24HR Dispatch)

#### **County Agencies**

Sheriff

#### **San Mateo Area Office of Emergency Services**

Office  
Room B-1 EOC  
Command Section  
Operations Section  
Logistics Section  
(Message Center)

#### **Pillar Point Harbor**

#### **Emergency Medical Services**

#### **Environmental Health**

#### **San Mateo Parks and Recreation**

#### **Fitzgerald Marine Reserve**

## **ENCLOSURE 2**

### **COASTSIDE TSUNAMI CHECKLIST**

- ❑ Prepare Tsunami Information Statement to pass to public (Enclosure 6). Cable Television and Emergency Alert Stations will pass information.
- ❑ Contact Westar Cable System Emergency Coordinator (*name*) to initiate Tsunami Warning Video and messages on Channels 6, 17 and 28.
- ❑ Prepare written warnings for the general public (Enclosure 4 and 5).
- ❑ Prepare plans for evacuation of equipment away from inundation areas.

**SPECIFIC ACTIONS TO BE TAKEN BY EACH AGENCY UPON NOTIFICATION OF A TSUNAMI WARNING, INDICATING THAT A TSUNAMI HAS BEEN DETECTED, AND THAT WARNING AND EVACUATION OF THREATENED AREAS SHOULD BE INITIATED.**

- ❑ Complete all items on Tsunami Watch Checklist above.
- ❑ Initiate warning and evacuation of threatened areas.
- ❑ Confirm Tsunami Warning with American Red Cross. Confirm opening of shelters.
- ❑ Move equipment away from threatened areas.
- ❑ Maintain contact with the San Mateo Area OES to provide situation updates and coordinate evacuation and road closures.
- ❑ Secure evacuated areas. Cordon off evacuated areas. Mark evacuated areas with placards.
- ❑ Maintain evacuation for a minimum period of two hours after arrival of last wave or upon ALL CLEAR transmitted by San Mateo Area OES.

❑

**SPECIFIC ACTIONS TO BE TAKEN BY EACH AGENCY IF TSUNAMI OCCURS AND DAMAGE RESULTS**

- ❑ Maintain full evacuation until minimum of two hours after arrival of last wave or upon ALL CLEAR from San Mateo Area OES. Additional waves may occur.
- ❑ After a two-hour safety period, secure damaged areas from re-entry by non-residents and property owners, emergency responders, and the press.
- ❑ Initiate windshield damage assessment. Compile Coastsides Damage Assessment Report for dissemination to San Mateo Area OES.
- ❑ Request San Mateo County Public & Environmental Health Departments inspect damaged areas to ensure areas are safe for residents.

- Upon approval by County Health that areas are safe for resident re-entry, allow residents, property owners, responders, the press, and other authorized individuals to enter area.
- Based on damage, consider Declaration of Emergency or Disaster.
- Establish response priorities and mutual aid requirements. Keep San Mateo Area OES up-to-date on events in damaged areas.

### **ENCLOSURE 3**

#### **SAMPLE BRIEFING FORMAT**

We have been warned by the National Weather Service that a Tsunami, or seismic sea wave, (may have) (has been) generated in the Pacific and may strike our coast. If a wave was generated, it will arrive here at approximately \_\_\_\_\_

Tsunamis have done great damage on the California coast. The most recent one in 1964 killed 12 people in Crescent City. They were not evacuated in time or were allowed to return to the evacuated area too soon. This tsunami also did damage in our area. A 1960 tsunami killed 61 in Hawaii and damaged our coast.

Our responsibility is to warn everyone within the inundation area shown on the map on the back of this briefing sheet, and to insure that special facilities in the risk area are evacuated. Temporary staging areas are being established at the Farallone View Elementary School, LeConte and Kanoff in Montara and Half Moon Bay High School on Lewis Foster Drive in Half Moon Bay. Information will be given to you at these locations as to when or if American Red Cross Shelters will be opened at these locations.

A tsunami is not a single wave, but a series of waves. Keep people out of the risk area until you are advised that re-entry may begin. Waves may be as far apart as one hour and may be as high as twenty feet on this section of coast.

Traffic Control Points may be set up at strategic locations to reduce traffic flow toward the coast. If you are on a Traffic Control Point, you may allow the following people through after warning them of the danger and expected time of arrival:

- residents who have a local address on their driver's license
- boat owners who can give you either a berth or CF number
- commercial trucks enroute to non-affected areas
- emergency services personnel including Red Cross Volunteers enroute to support operations



## **ENCLOSURE 4**

### **SAMPLE EVACUATION ORDER**

We have been warned by the National weather Service that a tsunami, or seismic sea wave (may have been) (has been) generated in the Pacific and may strike our coast. If a wave was generated, it will arrive here at approximately \_\_\_\_\_.

Under provisions of the Emergency Services Ordinance of the City of Half Moon Bay, I am ordering all persons in the risk area to evacuate to either Farallone View Elementary School or Half Moon Bay High School. Personnel evacuating from Point Montara, Princeton by the Sea, or El Granada should evacuate to Farallone View Elementary School located at LeConte and Kanoff in Montara. Personnel evacuating from Miramar, Highland Park, and Half Moon Bay should evacuate to Half Moon Bay High School on Lewis Foster Drive. You should be able to return to your homes within six hours. Security patrols will prevent anyone from entering the evacuated areas.

Tsunamis have done great damage on the California coast. The most recent one in 1964 killed 12 people in Crescent City. They were not evacuated in time or returned to the evacuated area before the all-clear signal was given. This tsunami also did damage in our area. A 1960 tsunami killed 61 in Hawaii six hours after a warning had been issued. Only those who ignored the warning were killed.

A tsunami is not a single wave but a series of waves. Stay out of the risk area until you are advised that reentry may begin. Waves may be as far apart as one hour and up to twenty feet high on this part of the coast.

There is no way to determine in advance the size of tsunamis in specific locations. A small tsunami at one beach can be a giant wave a few miles away. Don't let the modest size of one make you lose respect for all.

All tsunamis - like hurricanes - are potentially dangerous even though they may not strike each coastline or do damage when they do strike.

Never go down to the beach to watch for a tsunami. The wave moves much faster than you can run.

Sooner or later, tsunamis visit every coastline in the Pacific. This means that Tsunami Warnings apply to you if you live in any Pacific coastal area.

During this emergency, local police, fire, and emergency services officials are trying to save your life. Give them your fullest cooperation.

---

Chief of Police

## **ENCLOSURE 5**

### **ADVERTENCIA PARA EVACUACION**

Nos han advertido que un aguaje (maremoto) ha sido generado en el Oceano Pacifico y amenaza a nuestra costa maritima, segun el servicio federal metereologico. Las olas llegeran aqui aproximadamente a las [TIME OF ARRIVAL].

Se encuentra usted en una area de riesgo de aguaje o inundacion? Esto significa que el fuerte oleaje podria alcanzar o inundar esta area y se le advierte que para su seguridad abandone inmediatamente esta area y proceda a un lugar mas seguro hasta que las autoridades le informen que ha pasado el peligro.

**Se avisa a todos los residentes afectados alejarse del area y proceder a:** Farallone View Elementary School on LeConte y Kanoff en Montara or Half Moon Bay High on Lewis Drive en Half Moon Bay. Por favor permanezcan en el lugar indicado hasta que las autoridades les informen que pueden volver a sus hogares.

Maremotos han hecho muchos daños a la costa de California. En el mas reciente en 1964 perecieron 12 personas en Crescent que no se han evacuado a tiempo o que han vuelto al area evacuada antes que las autoridades han dado la señal. Este maremoto tambien ha hecho daños en nuestra area. En otro maremoto en 1961, 61 personas perecieron en Hawaii 6 horas despues de la advertencia. Solamente perecieron los que han desconocido la advertencia.

Un aguaje no es una sola ola sino una serie de olas con fuerza mayor que las comunes. Esten fuera del area de peligro hasta que las autoridades dicen que pueden volver. Las olas a veces se separan hasta una hora, y pueden alcanzar hasta una altura de 20 pies (6 metros).

No se puede prevenir la altura de un maremoto en avance. Un pequeño maremoto en una playa puede ser gigante en pocos kilometros de distancia. No pierden responcto por los maremotos cuando uno es pequeño!

Todos los maremotos pueden ser peligrosos, aun cuando no tocan todas las areas de peligro y no dañan todas las areas que tocan. Nunca se baja hasta la playa para observar un maremoto. Las olas corren mucho mas rapido que nosotros.

Antes o despues, maremotos tocan todas las costas pacificas. Eso quiere decir que las advertencias pueden ocurrir en todas las areas de la costa.

Durante estas emergencia, las autoridades de seguridad publica intentan protegerle. Por favor den su cooperacion completa.

\_\_\_\_\_

Firma

Jefe de Policia

**ENCLOSURE 6**

**WESTAR CABLE WARNING MESSAGE**

Westar Cable Company will place Tsunami Warning Messages on Channels 17 and 28 to warn people in the danger zones to evacuate. Additionally, an OES Tsunami Warning Video may be shown on Channel 6. Coordination for a tsunami message will be made through Mr./Ms \_\_\_\_\_ at Westar Cable. After normal work hours, Mr./Ms \_\_\_\_\_ can be paged

at \_\_\_\_\_. Mr. Fischer will confirm the validity of the request for the tsunami tape by contacting County Communications at \_\_\_\_\_, or the Office of Emergency Services at \_\_\_\_\_.

The Following tape message will be played on Westar Cable Television Channels 17 and 28.

"A tsunami, or seismic sea wave, has been generated in the Pacific and may strike our coast. If the wave was generated, it will arrive here at approximately \_\_\_\_\_. All persons in risk areas (low areas adjacent to the ocean) are ordered to evacuate to safe areas. Staging areas have been established at the Farallone View Elementary School on LeConte and Kanoff in Montara or Half Moon Bay High School on Lewis Drive in Half Moon Bay. You should be able to return to your homes within six hours. Security patrols will prevent anyone from entering the evacuated areas. Additional information is available on the Emergency Alert System. A tsunami information film is being played on Channel 6 and will provide some useful information."

**ENCLOSURE 7**

**TRAFFIC CLOSURE POINTS**

	<b>Traffic Control Point Location</b>	<b>Responsible Agency</b>
1.	Palmetto at Westline-DC Line	Daly City PD
2.	Highway 1 and Highway 35	SF CHP
3.	Hickey Blvd./Highway 35	Daly City PD
4.	Glencourt Way/Highway 35	South San Francisco PD
5.	Manor Drive/Highway 35	South San Francisco PD
6.	Sharp Park Rd/No Entry Rd	San Bruno PD
7.	San Pedro and Devils Slide	Pacifica PD or CalTrans
8.	Highway 92/Highway 35	RWC CHP
9.	Tunitas Creek Rd/Highway 35	Hillsborough PD
10.	Highway 84/Highway 35	San Carlos PD
11.	Old LaHonda Rd/Highway 35	Menlo Park PD
12.	Alpine Road/Highway 35	Sheriff's Honor Camp
13.	Highway 1 at Davenport	CHP

## ENCLOSURE 8

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## ***TSUNAMI WATCH CHECKLIST***

**SPECIFIC ACTIONS TO BE TAKEN BY EACH AGENCY UPON NOTIFICATION OF TSUNAMI WATCH INDICATING THAT A TSUNAMI MAY OCCUR.**

**ALL PREPARATIONS FOR WARNING AND EVACUATION ARE PLACED ON HOLD UNTIL A TSUNAMI WARNING IS RECEIVED.**

- ❑ *Upon notification of a Tsunami Watch, initiate recall of OES personnel and activate the Area OES office Emergency Operations Center (EOC). The OES office EOC will be used as the initial EOC for short period responses. If time permits, and if directed by the Area Coordinator, or if a tsunami occurs, the full scale EOC will be activated.*
- ❑ *Establish and maintain a Tsunami Master Log of all key information, contacts, actions taken, and related information. Information in log should include time of event and point of contact (with phone number).*
- ❑ Assemble available information on Tsunami Watch. Sources of Information:
  - California Office of Emergency Services Warning Center
  - California Coastal Region OES
  - National Weather Service, Redwood City
  - Alaska Tsunami Warning Center
  - Pacific Tsunami Warning Center
- ❑ Senior OES representative determines recommended initial course of action for jurisdictions and agencies.
- ❑ Conduct briefings for key personnel at Area OES or city EOCs as appropriate.
- ❑ Assign off-duty San Mateo Area OES personnel as follows:
  - ❑ Area Coordinator and Assistant Area Coordinator to Redwood City
  - ❑ Public Information Officer to Redwood City
  - ❑ District Administrators (one each) to Pacifica and Half Moon Bay
- ❑ Confirm that coastal communities and key agencies have received Tsunami Watch information and have established procedures for evacuation of endangered areas. Relay to the communities and agencies the recommended initial course of action and Area OES Point of Contact/phone number. NOTE: Public Safety Communications is responsible to provide an initial alert to all affected jurisdictions and agencies.

*Community*  
Pacifica

*Agency*  
City Manager

*Phone Numbers*

After normal hours	Pacifica Police Dept Pacifica Dispatch	
<b>TSUNAMI WATCH CHECKLIST contd.</b>		
Half Moon Bay/ Coastside After normal hours	City Manager Police Department Police Department	Through County Dispatch
Pescadero  After normal hours	CDF CDF Felton 24 Hr Hot Line	
Point Montara After normal hours	Fire Department Pt Montire FD	Through County Dispatch
San Mateo Sheriff's Office After normal hours	On Call Coordinator	MCW 249 Through County Dispatch
California Highway Patrol 24 Hr Hot Line		
Pillar Point Harbor Master		
Emergency Medical Services After normal hours		
Environmental Health After normal hours		
California State Beaches 24 Hour Dispatch		
Seton Coastside Hospital Seton Hospital OES Coastal Region		

- Alert American Red Cross (phone number) for possible opening of staging areas/shelters. The designated shelters are:



- Terra Nova High School for Sharp Park / Fairway Park, Rockaway Beach, and Linda Mar/ Shelter Cove
- Farallone View Elementary for the El Granada, Princeton by the Sea, Moss Beach, and Montara areas

**TSUNAMI WATCH CHECKLIST contd.**

- Half Moon Bay High School for the Miramar, Highland Park, Half Moon Bay, and Martin's Beach areas
- Pescadero High School for the Pescadero Area, San Gregorio, Franklin Point, and Ano Nuevo beach areas.
- Contact local press and provide brief on situation and area response:
 

<i>Name</i>	<i>Phone Numbers</i>
Bay City News (RWC)	
Bay City News (SF)	
Press Room	
San Mateo Times	
San Francisco Chronicle	
- Establish public information center and refer calls to the center.
- Monitor tide gauges via Weather Alert system.
- Advise managers of actions taken or underway:
 

<i>Name (County)</i>	<i>Phone Numbers</i>
Name (Half Moon Bay)	
Name (Pacifica)	
- **UPDATE JURISDICTIONS AT 30 MINUTE INTERVALS OR IMMEDIATELY UPON RECEIPT OF TIME SENSITIVE INFORMATION.**
- Offer use of mobile command post.
- On termination of incident, notify all agencies previously alerted.
- In coordination with Coastside and Pacifica Directors of Emergency Services, prepare tsunami information statement for public (ATTACHMENT B). Information will be passed by Cable Television and Emergency Alert Stations.
- If requested by Director of Emergency Services at the Coastside EOC, contact Westar Cable System Emergency Coordinator (wk / hm) to prepare to initiate
- Tsunami Warning Video and messages on Channel 17.

- If requested by Director of Emergency Services at the Pacifica EOC, contact TCI Cable System Emergency Coordinator (PH, or after normal working hours, HM) to initiate Tsunami Warning Video and messages on Channel 08.

## ***TSUNAMI WARNING CHECKLIST***

**SPECIFIC ACTIONS TO BE TAKEN BY EACH AGENCY UPON NOTIFICATION OF TSUNAMI WARNING INDICATING THAT A TSUNAMI HAS BEEN DETECTED AND THAT WARNING AND EVACUATION OF THREATENED AREAS MAY BE INITIATED.**

**NOTE: INDIVIDUAL JURISDICTIONS RETAIN AUTHORITY TO EVACUATE THEIR AREAS.**

- Upon notification of a Tsunami Warning, initiate recall of Area OES response personnel and activate the Area OES Office Emergency Operations Center (EOC). The OES Office EOC will be used as the initial EOC for short period responses. If time permits, and if directed by the Area Coordinator, or if a tsunami occurs, the full scale San Mateo Area EOC will be activated.

<b>OES Office</b>	All Personnel	<i>Phone Numbers</i>
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<b>Room 308</b>	Command
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<b>EOC</b>	Operations
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<b>Room B1</b>	Command
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<b>EOC</b>	Message Center
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	Operations/Logistics
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	Planning
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- Establish and maintain a Tsunami Master Log of all key information, contacts, actions taken, and related information. Information in log should include time of event and point of contact (with phone number).
- Assemble information on warning initial information. Sources of Information:
 

California Office of Emergency Services Warning Center	(916) 262-1621
California Coastal Region OES	(510) 286-0895
National Weather Service, Redwood City	(650) 364-4610
West Coast/Alaska Tsunami Warning Center	(907) 745-4212
	(907) 694-2698
Pacific Tsunami Warning Center	(808) 689-8207
	(808) 689-6655

- ❑ Senior Area OES representative determines recommended initial course of action to pass to jurisdictions and agencies. Direct coordination with jurisdiction's Directors of Emergency Services recommended for evacuations.

TSUNAMI WARNING CHECKLIST contd.

- ❑ Conduct briefings upon arrival of key personnel at Area OES or city EOCs as appropriate.
- ❑ Assign off-duty San Mateo Area OES personnel as follows:
  - Area Coordinator and Assistant Area Coordinator to Redwood City
  
  - Public Information Officer to Redwood City
  
  - District Administrators (one each) to Pacifica and Half Moon Bay
- ❑ Confirm that coastal communities and key agencies have received Tsunami Warning information and have established procedures for evacuation of endangered areas. Relay to the communities and agencies the recommended initial course of action and Area OES Point of Contact/phone number. NOTE: Public Safety Communications is responsible to provide an initial alert to all affected jurisdictions and agencies.

<i>Community</i>	<i>Agency</i>	<i>Phone Numbers</i>
Pacifica	City Manager Pacifica Police Dept	
After normal hours	Pacifica Dispatch	
Half Moon Bay/ Coastside	City Manager Police Department	
After normal hours	Police Department	Through County Dispatch
Pescadero	CDF CDF Felton	
After normal hours	24 Hr Hot Line	
Point Montara	Fire Department	
After normal hours	Pt Montire FD	Through County Dispatch
San Mateo Sheriff's Office		MCW 249
After normal hours	On Call Coordinator	Through County Dispatch
California Highway Patrol 24 Hr Hot Line		
Pillar Point Harbor Master		

Emergency Medical Services  
After normal hours

**TSUNAMI WARNING CHECKLIST contd.**

Environmental Health  
After normal hours

California State Beaches  
24 Hour Dispatch

Seton Coastside Hospital  
Seton Hospital  
OES Coastal Region

- ❑ Alert American Red Cross (259-1750 or 202-0600) for opening of staging areas/shelters. The designated shelters are:
  - Terra Nova High School for Sharp Park / Fairway Park, Rockaway Beach, and Linda Mar/ Shelter Cove
  - Farallone View Elementary for the El Granada, Princeton by the Sea, Moss Beach, and Montara areas
  - Half Moon Bay High School for the Miramar, Highland Park, Half Moon Bay, and Martin's Beach areas
  - Pescadero High School for the Pescadero Area, San Gregorio, Franklin Point, and Ano Nuevo beach areas.
- ❑ Contact local press and provide brief on situation and area response:
 

<i>Name</i>	<i>Phone Numbers</i>
Bay City News (RWC)	
Bay City News (SF)	
Press Room	
San Mateo Times	
San Francisco Chronicle	
- ❑ Establish public information center and refer calls (SOP 2.9).

- ❑ Monitor evacuations and provide assistance to jurisdictions as required. Advise jurisdictions and agencies that evacuations should be maintained until a minimum of two hours after the last wave has arrived.
- ❑ Monitor tide gauges via Weather Alert system.

**TSUNAMI WARNING CHECKLIST contd.**

- ❑ Advise managers of actions taken or underway:

<i>Name</i>	<i>Phone Numbers</i>
County	
Half Moon Bay	
Pacifica	
- ❑ **UPDATE JURISDICTIONS AT 30 MINUTE INTERVALS OR IMMEDIATELY UPON RECEIPT OF TIME SENSITIVE INFORMATION.**
- ❑ Offer use of mobile command post.
- ❑ On termination of incident, notify all agencies previously alerted.
- ❑ In coordination with Coastside and Pacifica Directors of Emergency Services prepare tsunami information statement for the public. Cable Television and Emergency Broadcast Stations will pass information.
- ❑ If requested by Director of Emergency Services at the Coastside EOC contact Westar Cable System Emergency Coordinator (wk hm.) to prepare to initiate Tsunami Warning Video and messages on Channel 17.
- ❑ If requested by Director of Emergency Services at the Pacifica EOC contact TCI Cable System Emergency Coordinator (PH, or after normal working hours, HM) to initiate Tsunami Warning Video and messages on Channel 08.

## ***TSUNAMI OCCURRENCE CHECKLIST***

### **SPECIFIC ACTIONS TO BE TAKEN BY EACH AGENCY IF A TSUNAMI OCCURS AND DAMAGE RESULTS**

- ❑ Advise jurisdictions to maintain full evacuation until minimum of two hours after arrival of last wave or upon ALL CLEAR. Additional waves may occur.
- ❑ Request jurisdictions initiate windshield damage assessment. Compile area wide Damage Assessment Report for dissemination to the Area Director of Emergency Services, OES Coastal Region, and State.
- ❑ Prepare for major PIO effort to disseminate information to public about event.
- ❑ Request County Public & Environmental Health departments inspect damaged areas to ensure they are safe for residents.
- ❑ Based on damage, consider San Mateo County Declaration of Emergency or Disaster.
- ❑ Establish response priorities and mutual aid requirements. Keep Coastal Region and State OES up-to-date on events in damaged areas.
- ❑ Activation, documentation, communication, and requests for assistance shall be in conformance with SEMS utilizing RIMS.

## ***TSUNAMI PROCEDURE***

### **1.10.1 GENERAL**

The coastal area and the baylands of San Mateo County are vulnerable to tsunami flooding when earthquakes occur in or around the Pacific Basin. To provide early warning of such waves, the National Warning System (NAWAS) has two major monitoring stations:

- The West Coast/Alaska Tsunami Warning Center (Palmer, Alaska) is responsible for reporting seismic movement along the North American Coast from the Aleutian Islands south through Baja California.
- The Pacific Tsunami Warning Center (Honolulu, Hawaii) is responsible for reporting seismic movement within the rest of the Pacific Ocean and coastal regions.

This plan describes actions to be taken by coastside and county agencies upon notification of a Tsunami Watch or Warning. Fourteen areas with potential flooding problems have been included in this plan. The areas threatened extend from Sharp Park State Beach in the north to Ano Nuevo Point in the south. They include portions of the communities of Pacifica, Montara, Moss Beach, Princeton by the Sea, Miramar, Half Moon Bay, Pescadero, and state beach areas.

### **1.10.2 ASSUMPTIONS**

*The plan is based on the following assumptions:*

- The tsunami threat in San Mateo county may be caused by a seismic event far from California. A locally generated tsunami is unlikely.
- At least three to four hours warning time will be available to warn the public, evacuate sensitive facilities, establish temporary shelters, and secure the coast area.
- After the arrival of the first wave, waves may continue to arrive at intervals for several hours. Risk areas can be reopened two hours after the last observed wave, or two hours after the Expected Time of Arrival (ETA) has passed without a wave coming ashore.
- Maximum wave height expected in this area is approximately 20 feet. This can vary considerably from one location to another.
- Withdrawal of the sea may be a precursor to arrival of the wave.
- Intervals between successive major waves may be similar. If the second wave arrives 20 minutes after first, it is likely that a third wave (if there is one) would arrive 20 minutes after the second.
- The first wave may not be the largest. The largest wave usually occurs within the first ten waves.



- Watch is an announcement by the National Weather Service that a seismic event has occurred in the Pacific and may have caused a tsunami.
- Warning is an announcement that a tsunami has been detected. Warning will be given if a wave is detected anywhere in the Pacific basin.

The coordination and response actions by involved agencies and jurisdictions shall be organized under the structure of the Standardized Emergency Management System (SEMS) and Incident Command System (ICS).

The inundation map for each tsunami-threatened area shows the maximum potential flood from tsunami action based on the Seismic Safety Element Geotechnical Hazard Synthesis maps of the County General Plan, or more current information.

Within the inundation area, special institutions such as schools, hospitals, and nursing homes are identified. Special procedures for warning, evacuation, and care of occupants should be arranged by the local agency with incident command authority.

### 1.10.3 ALERT SITUATIONS

#### ***DUMMY***

*An unscheduled "test" message to determine time required for disseminating messages.*

#### ***WATCH***

A Tsunami Watch message is generated in one of two ways based on earthquake location:

- West Coast/Alaska Warning Center detects an earthquake with a magnitude of 6.5 or greater generated along the North American Continent with a possible seismic sea wave with an arrival time of greater than three hours
- Pacific Tsunami Warning Center detects an earthquake of magnitude 6.5 or greater in the Pacific Basin with a possible seismic wave arrival time of greater than four hours

#### ***WARNING***

A Tsunami Warning message is generated in one of two ways based on earthquake location:

- West Coast/Alaska Warning Station detects an earthquake of magnitude 6.5 or greater along the North American Continent that may have generated a seismic sea wave with an arrival time of less than three hours
- Pacific Tsunami Warning Center detects an earthquake of 6.5 magnitude or greater in the Pacific Basin and a tsunami has been generated with an arrival time to be reported.

#### ***CANCELLATION***

A cancellation message will be sent when all danger of seismic sea wave has passed.

## 1.10.4 SPECIFIC RESPONSIBILITIES

### **Area Coordinator and Assistant Area Coordinator**

- Collect and interpret tsunami messages (**ATTACHMENT A**)
- Coordinate and disseminate area-wide response with jurisdictions and agencies
- Ensure watch/warning information is provided to media and public ASAP
- Designate facility for emergency operations for concerned agencies
- Maintain liaison with State OES for rapid access to mutual aid
- Prepare final report or memorandum at cancellation or end of event
- Review supplemental information (**ATTACHMENTS**)

### **Public Information Officer**

- Maintain liaison with media and prepare news releases (**ATTACHMENT B**)
- Prepare and send EAS message(s) as required
- Send watch/warning/cancellation messages to appropriate agencies (**ATTACHMENTS C, D, E**)
- Establish OES public information phone-in line and provide periodic or as required updates to recorded message
- Disseminate OES public information phone number to jurisdictions and news media
- Review supplemental information (**ATTACHMENTS**)

### **District Administrators**

- Recommend city EOC activation and disaster declaration as required
- Coordinate city EOC operations as directed
- Record damage assessment information
- Review supplemental information (**ATTACHMENTS**)

### **HazMat Specialist**

- Analyze affected cities for potential HazMat incidents

- Assist with any HazMat mitigation efforts before tsunami arrival
- Respond to HazMat incidents if required
- Assist in city/Area EOC with HazMat response as required
- Review supplemental information (**ATTACHMENTS**)

## **ATTACHMENTS**

- A. Pre-Watch/Watch Message
- B. Sample News Release (English and Spanish)
- C. Tsunami Watch Message
- D. Tsunami Warning Message
- E. Tsunami Cancellation Message
- F. Agencies Concerned with Tsunamis
- G. Incident Command Responsibilities
- H. Tsunami Time Curves (and Time-Conversion Table)
- I. Tsunami Warning Video Tape Distribution

## **ATTACHMENT A**

### **PRE-WATCH/WATCH MESSAGE**

Information regarding seismic movement and the possible generation of seismic sea waves is collected from the Pacific Tsunami Warning Station at Honolulu, Hawaii (HO) and the West Coast/Alaska Warning Station at Palmer, Alaska (AL). The reports contain the following elements:

#### **SAMPLE MESSAGE**

1. From Alaska Warning Station
2. To Office of Emergency Services
3. Pacific Coastal Earthquake 081527 GMT
4. Region - Prince William Sound, Alaska
5. 8.4
6. Johnson, Palmer Observatory

Lines 1 - 2      Self-explanatory

Line 3            Refers to the arrival time of ground-transmitted seismic waves (NOT tsunami or tidal waves) in Greenwich Mean Time (GMT or "Zulu") at the Palmer Observatory. Convert to local time using **ATTACHMENT H**.

In the Sample Message "08" is the hour; "15" stands for minutes after the hour; and "27" stands for seconds.

Line 4            Indicates the general location of the earthquake. Sometimes only a general direction or approximate mileage will be given.

Line 5            Gives the magnitude of the earthquake on the Richter Scale.

Line 6            Provides the name of employee sending the report.

## **ATTACHMENT B**

### **SAMPLE NEWS RELEASE (ENGLISH)**

According to the (West Coast/Alaska-Pacific) Tsunami Warning Center, a severe earthquake has been generated at (location) at (time). The earthquake was measured at (Magnitude) on the Richter Scale. It is (known/not known) at this time (that/if) a tsunami has been generated. If a tsunami has, in fact, been generated, the wave heights cannot be accurately predicted; however, the tsunami waves could cause great damage to coastal cities and communities.

Residents of affected areas are urged to keep tuned to your local Emergency Alert System station (KNBR 680; KGO 810; KCBS 740) for further information. People should stay away from low lying coastal areas until further notice. A tsunami is a series of waves and may be dangerous for several hours after the initial wave arrives at any particular point.

### **SAMPLE NEWS RELEASE (SPANISH)**

#### **ADVERTENCIA**

Un aguaje (maremoto) ha sido generado en el Oceano Pacifico y amenaza a nuestra costa maritima. Se avisa a todos los residentes afectados alejarse del area y proceder a:

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(Enter name and address of mass care shelter)

Por favor permanezcan en el lugar indicado hasta que las autoridades les informen que pueden volver a sus hogares.

Un aguaje no es una sola ola sino una serie de olas con fuerza mayor que las olas comunes. En 1964, 12 personas perecieron en un aguaje en Crescent City, California y otras 61 personas perecieron en Hawaii durante el aguaje de 1961. En nuestra costa las olas de un aguaje pueden alcanzar hasta una altura de 20 pies (6 metros).

Se encuentra usted en una area de riesgo de aguaje o inundacion? Esto significa que el fuerte oleaje podria alcanzar o inundar esta area y se le advierte que para su seguridad abandone inmediatamente esta area y proceda a un lugar mas seguro hasta que los autoridades le informe que ha pasado el peligro.

**ATTACHMENT C**

**TSUNAMI WATCH MESSAGE**

**TSUNAMI/SEISMIC SEA WAVE WATCH**

For information to all Sheriffs, Police Chiefs, California Highway Patrol, and Emergency Services Directors of coastal cities:

A severe earthquake has occurred at \_\_\_\_\_ (location). It is not known, repeat, not known at this time that a tsunami has been generated. You will be kept informed as further information becomes available.

Additional Information

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

Latitude: \_\_\_\_\_ Longitude: \_\_\_\_\_

Vicinity of: \_\_\_\_\_

Time: \_\_\_\_\_ PST or PDT Date: \_\_\_\_\_

Magnitude: \_\_\_\_\_

Tidal Gauge Stations at \_\_\_\_\_ and \_\_\_\_\_ have been queried.

ETA information (if wave is generated) is as follows:

San Mateo Coast \_\_\_\_\_ AM/ PM (TIME)

**ATTACHMENT D**

**TSUNAMI WARNING MESSAGE**

**TSUNAMI/SEISMIC SEA WAVE WARNING**

For information to all Sheriffs, Police Chiefs, California Highway Patrol, and Emergency Services Directors of coastal cities:

A severe earthquake has occurred at \_\_\_\_\_(location). A tsunami has been generated which is spreading over the Pacific Ocean. Wave heights cannot be predicted. The tsunami may cause great damage to coastal cities in the Pacific area.

Wave heights (these are not necessarily maximum) have been reported to (Alaska/ Hawaii) as follows:

Place	Height
_____	_____
_____	_____
_____	_____
_____	_____

You will be kept informed as further information becomes available.

Additional Information

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

Latitude: \_\_\_\_\_ Longitude: \_\_\_\_\_

Vicinity of: \_\_\_\_\_

Time: \_\_\_\_\_ PST or PDT Date: \_\_\_\_\_

Magnitude: \_\_\_\_\_

Tidal Gauge Stations at \_\_\_\_\_ and \_\_\_\_\_ have been queried.

ETA information (if wave is generated) is as follows:

San Mateo Coast \_\_\_\_\_ AM/ PM (TIME)

***ATTACHMENT E***

**TSUNAMI CANCELLATION MESSAGE**

***TSUNAMI SEISMIC SEA WAVE CANCELLATION***

For information to all Sheriffs, Police Chiefs, California Highway Patrol, and Emergency Services Directors of coastal cities:

No tsunami reports have been received. No tsunami/seismic sea wave has been generated. Warning/Watch status is canceled. All agencies assume all clear upon receipt of this message.



**ATTACHMENT F**

**AGENCIES CONCERNED WITH TSUNAMIS**

**Federal Agencies** **Phone Numbers**

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West Coast/Alaska Tsunami Warning Center  
Pacific Tsunami Warning Center  
National Weather Service, Monterey

**State Agencies**

California Office of Emergency Services Warning Center  
California Coastal Region OES  
State Parks and Beaches, Day Time Phone No .  
State Parks and Beaches, 24 Hr Dispatch  
California Department of Forestry  
Microwave 311  
California Highway Patrol Redwood City Office (Responsible for Highway Marker 3.700 (south of Devil’s Slide) to Monterey County Line)  
California Highway Patrol San Francisco Office (Responsible for Highway Marker 3.700 (south of Devil’s Slide) through Pacifica)  
California Highway Patrol Area Dispatch Center (Dispatches all area Highway Patrol vehicles)  
California Department of Parks and Recreation (24HR Dispatch)

**County Agencies**

Sheriff  
San Mateo Area Office of Emergency Services  
Office  
Room B-1 EOC  
Command Section  
Operations Section  
Logistics Section  
  
(Message Center)  
Pillar Point Harbor  
Emergency Medical Services  
Environmental Health

San Mateo Parks and Recreation

**Cities and Coastal Communities** **Phone Numbers**

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Half Moon Bay

Manager

Police

Police (24 HR Dispatch)

Fire

Coastside Opportunity Ctr

Cabrillo School District

Half Moon Bay High School

Farallone View

Elementary School

Pacifica

Manager

Police

Fire

EOC

Pescadero

La Honda-Pescadero

Unified School District

Pescadero High School

CDF

CDF Felton

Point Montara Fire

Pillar Point Harbor

Harbor Master

Robert McMahon

**Other Agencies**

American National Red Cross:

Seton Coastside Hospital:

**Other Tsunami-Prone Areas**

Crescent City

Eureka  
Santa Cruz

**ATTACHMENT G**

**INCIDENT COMMAND RESPONSIBILITIES**

	<b>Risk Area</b>	<b>Incident Command</b>
1	Sharp Park	Pacifica PD
2.	Rockaway Beach	Pacifica PD
3.	Linda Mar	Pacifica PD
4.	Gray Whale Cove State Beach	Sheriff's Office
5.	Montara State Beach	Sheriff's Office
6.	Princeton by the Sea	Sheriff's Office
7.	Pillar Point Harbor (Maritime Area)	Pillar Point Harbor Master
8.	Half Moon Bay State Beaches	California State Parks
9.	Half Moon Bay residential areas	Half Moon Bay Police Dept
10.	Martins Beach	Sheriff's Office
11.	San Gregorio Beach	State Parks
12.	Pescadero	Sheriff's Office
13.	Franklin Point	California State Parks
14.	Ano Nuevo Point	California State Parks

**ATTACHMENT H**  
**TSUNAMI TIME CURVES**

**CONVERSION TO/FROM GREENWICH MEAN TIME**

<u>Zone</u>	<u>Place</u>		<u>Time</u>								
R (Romeo)	Washington	EST	0100	0400	0700	1000	1300	1600	1900	2200	
S (Sierra)	Chicago	CST	2400	0200	0500	0800	1100	1400	1800	2100	
T (Tango)	Denver	MST	2300	0300	0600	0900	1200	1500	1700	2000	
U (Uniform)	San Francisco	PST	2200	0100	0400	0700	1000	1300	1600	1900	
V (Victor)	Dawson		2100	2400	0300	0600	0900	1200	1500	1800	
W (Whiskey)	Anchorage or Honolulu		2000	2300	0200	0500	0800	1100	1400	1700	
Z (Zulu)	England	GMT	0600	0900	1200	1500	1800	2100	2400	0300	

## Sample Santa Luisa Del Mar City Plan

This **sample** plan uses the **fictional** city of Santa Luisa Del Mar to highlight key planning concepts for tsunami response. The organizational structure for Santa Luisa Del Mar is outlined in the *Emergency Planning Guidance for Local Government* (January 1998). This sample plan reflects that organizational structure.

**Introduction**

In the wake of the 1992 Humboldt Earthquake and Tsunami, tsunamis have become an increasing concern for emergency management, emergency responders, and the public at large.

This plan augments the existing Santa Luisa Del Mar City Plan.

**Concept of Operations**

This plan or the applicable portions of this plan will be implemented as directed by the City Manager, Director of Office of Emergency Services (OES), or Incident Commanders as appropriate.

The SEMS functions for a tsunami response are indicated in *Unified Command and SEMS*.

Santa Luisa Del Mar has developed two working groups to address tsunami response planning. One group is the Santa Luisa Del Mar Tsunami Working Group (TWG) which addresses generic planning concerns. The other group is the Tsunami Watch/Warning (TWWG) Group, which deals with threat analysis, and notification issues and which will also be activated during a threat/actual event.

**Hazard Analysis for Tsunami**

According to the “Likelihood of Occurrence” Matrix from the Santa Luisa Del Mar City Plan, tsunami is an infrequent hazard with moderate severity for the city.

**Management**

Management assignments are reflected in *Unified Command and SEMS*.

Mental health support and psychological operations will be essential elements of the tsunami response approach.

**Organizational Structure**

The Santa Luisa Del Mar EOC will activate the appropriate SEMS functions based upon the tsunami threat or actual event.  
Note: Santa Luisa Sheriff’s Department personnel will be requested through mutual aid channels to provide support to Santa Luisa Del Mar PD.

Santa Luisa Del Mar will use multi-agency, multi-discipline coordination in its response to a tsunami threat or event.

A unified command will be established from the various agencies with

***Coordination of Disciplines***

responsibility for the incident. The unified command will facilitate coordination among agencies and disciplines.

Staffing in the Santa Luisa Del Mar Dispatch Center will be augmented to expedite response activities. A Dispatch Coordinator who has received tsunami response training will be assigned to oversee dispatch operations.

Areas of special concern may be:

- Coordination with education and child care facilities.
- Animal care issues, including care, shelter, and possible public health concerns.

***Inclusion of Non-profits and Businesses***

Non profit organizations, such as the American Red Cross, and private business concerns will be involved in tsunami response planning in Santa Luisa Del Mar.

The Santa Luisa Del Mar EOC will contact the appropriate non-profit organizations and private businesses in the event of a potential threat or actual event.

Santa Luisa Del Mar is committed to a public information program during a tsunami threat or actual event.

***Public Information***

The Santa Luisa Del Mar Public Information Officer (PIO) has developed some standardized tsunami response public information messages that may be used during an event. The Santa Luisa Del Mar PIO has also coordinated with media representatives regarding tsunami awareness.

The PIO will also involve mental health professionals in public information as needed.

The Santa Luisa Del Mar Public Information Officer will be brought into response planning activities as soon as practical during a tsunami threat or actual event.

***Safety and Security***

During a potential threat or actual event, employee safety and operational security will be key concerns for Santa Luisa Del Mar staff. City staff will be trained on these plans and security procedures.

During actual emergency operations, city staff will follow heightened safety and security procedures in effect. Security and safety procedures will also be implemented for all command posts and other operational sites. The City PD will serve as lead for security functions.

If the PD needs additional security assets, they will be requested through mutual aid or obtained through other sources.

The threat of a tsunami or actual tsunami event raises significant issues regarding information sharing and dissemination.

***Information  
Dissemination***

The notification of a potential tsunami threat and subsequent updates will be made through CLETS, RIMS, CALWAS, EDIS, EAS, NWS, and EMWIN and verbally confirmed. Emergency response personnel will observe communication security procedures.

The following systems will be used by Santa Luisa Del Mar to disseminate information:

- CLETS (California Law Enforcement Telecommunications System): for law enforcement information;
- RIMS (Response Information System): for information among the SEMS levels of government;
- Santa Luisa Del Mar City Dispatch: for field operations;
- EDIS
- CALWAS
- The media
- NWS (National Weather Service) Weather Wire
- EMWIN
- EAS (for alerts and warnings only)

The Santa Luisa Del Mar EOC will have scheduled briefings for EOC staff and other emergency response personnel.

***Office of Emergency  
Services***

The Santa Luisa Del Mar OES will be responsible for updates and maintenance of this plan.

Santa Luisa Del Mar OES will be responsible for management of EOC operations. The City OES will also provide staff for key positions at other locations.

Within the EOC, the City PD will assume the security function. The



PD will also function as a conduit for emergency management issues.

***Police Department***

Potential areas which the PD may address are:

- Law enforcement mutual aid
- Evacuation concerns, including mass and spontaneous evacuations
- Intelligence concerns
- Investigative Guidelines and statutory authority
- Use of force
- Facility and personnel protection
- Evacuation concerns, including mass and spontaneous evacuations

***Fire Department***

Potential areas which the FD may address are:

- Fire and rescue mutual aid
- Support to HazMat operations
- Coordination with EMS and hospitals
- Personnel protection issues
- Coordination with public works and utilities

The City Manager will oversee the administrative function in the EOC.

***Administration***

The City Budget Officer will oversee the finance operations within the EOC and will ensure that costs for a potential or an actual event are tracked in a timely manner.

**Finance**

**Operations**

See *Unified Command and SEMS*.

The operations chief will be either a Police Department or Fire Department staff person, depending upon the situation and availability of staff.

**Fire Department**

The City Fire Department will be the lead for fire response, hazardous materials events, and medical/rescue operations. The Fire Department will provide support as necessary to the Police Department. Existing procedures, such as the Santa Luisa Del Mar HAZMAT procedures, will be modified and used where possible.

The City Fire Department will assist with:

- Perimeter and access control
- Evacuation operations
- Notifications
- Damage assessment
- Fatalities management

Potential areas of concern may include:

- Addressing environmental needs;
- Ensuring decontamination procedures

The Fire Department will request Fire and Rescue mutual aid if needed to accomplish these functions.

**Police Department**

The Police Department will be the lead for:

- Perimeter security
- Access control
- Traffic/crowd control
- Evacuations
- Notifications

The Department will also coordinate coroner issues and assist with damage assessment and fatalities management.

The Police Department will request law enforcement mutual aid if needed to accomplish these functions.

**Public Works**

Public Works will serve as lead for damage assessment and will be the representative for utilities concerns. Potential Public Works activities:

- Reconnaissance of public infrastructure (roads, bridges, facilities, and utilities)
- Alternate route identification
- Building access
- Utility access rerouting
- Temporary repairs

Public Works will assist with:

- Access
- Crowd control
- Fatalities management
- City facility security issues

Public Works will request public works mutual aid if needed.

Parks and Recreation will assist with fatalities management and care and shelter issues. Potential care and shelter issues are:

***Parks and Recreation***

- Refresher training on security or mental health concerns for staff
- Care and shelter facility security
- Care and shelter representation within the EOC and other locations
- Potential mutual aid requirements
- Logistical requirements for care and shelter
- Care and shelter facilities for tsunami victims

City OES has worked with local hospitals, health care providers, and the Santa Luisa County Health Department to develop a separate medical plan for the tsunami response. This plan addresses the following areas:

***Medical/Health***

**Medical/Health**

- Modification of existing protocols to address tsunami response issues
- Medical first responder guidelines
- Refresher training procedures
- Coordination with other disciplines, such as HazMat
- Technical support team requirements
- Mutual aid procedures
- Logistical support requirements
- First responder security and personal protection concerns

- Procedures to access privately owned and operated medical assets
- Decontamination procedures
- Mass casualty incident (MCI) concerns

**Mental Health**

- Staff training in disasters and tsunami and emergency management
- Public information and mental health
- Mental health support services
- Mental health follow-up programs
- Integration of mental health with other programs
- Support to care and shelter and other operations
- Stress management programs for responders

## **Planning and Intelligence**

See *Unified Command and SEMS*

The Planning/Intelligence Chief position will be filled by a City OES staff member. In addition to the standard situation, documentation, demobilization, and resources units, Planning/Intelligence may include units that address emergency management and consequence management concerns. Planning and Intelligence will include representation from the Threat Early Warning (TEW) Group.

Planning/Intelligence will include mapping and geographic information systems (GIS) products.

## **Threat Analysis**

Threat Analysis Planning and Intelligence activities will address two key areas:

- General threat analysis
- Law enforcement and emergency management activities

Information, which is developed during the threat analysis process, will be shared with the appropriate agencies. Release of threat analysis information to the public will be based upon coordination with the PIO.

## **Office of Emergency Services**

City OES will provide staff for the situation and demobilization units.

Administration will provide staff for the documentation unit and will be responsible for that unit's function.

## **Administration**

Community Services will provide staff and be responsible for the resources unit.

## **Community Development**

The City PD will assign staff to work in the Emergency Management Unit, if established.

## **Police Department**

The City Fire Department will assign technical specialists to assist with fire and rescue, HazMat, and medical information.

## **Fire Department**

City Public Works will be responsible for maintaining and updating the facilities and utilities information.

## **Public Works**

**Logistics**

See *Unified Command and SEMS*

**Support Requirements**

The unit will be responsible for identifying supplies, services, equipment, and facilities that will be required for both the evacuation and response phases.

During emergency operations, particular emphasis will be placed on maintaining the operational capabilities of city computer systems and telecommunications, including landline and radio.

**Data Bases**

As part of its planning effort, City OES has developed a resources database for tsunami events. This database also identifies potential shortfalls and indicates potential sources to remedy the shortfalls. The database is a restricted use database.

**Administration**

City Administration will serve as lead for the logistics section.

**Community Development**

Community Development will assist with any logistics requirements for evacuations.

**Police Department**

City PD will provide input on law enforcement logistical support requirements.

**Fire Department**

City Fire will provide input on fire and rescue, HazMat, and medical logistical support requirements.

**Public Works**

City Public Works will assist with logistics requirements for evacuations.

**Finance and Administration**

Issues which may need to be addressed include:

- Continuity of operations
- Tracking the costs of an event

See *Unified Command and SEMS*

**Continuity of Operations**

It will be necessary to ensure continuity of day-to-day operations during a potential threat or actual event. This includes payroll processing, contracts management, and personnel actions.

It will be necessary to track costs associated with an event or

***Cost Tracking***

potential event. Within Finance/Administration there may be a separate Cost Unit.

Administration will assist with EOC operations. Finance will be responsible for the cost unit.

***Responsibilities***

**Training and Exercises**

Training and exercises will be in accordance with the Santa Luisa Del Mar master training schedule. The schedule includes an annual tsunami response exercise, tsunami awareness courses, first responder training, and joint training with Santa Luisa County.

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## **Explanation of the Tsunami Watch and Warning System**

### ***THE TSUNAMI WARNING SYSTEM IN THE PACIFIC***

Tsunami Warning Centers are responsible for gathering information on earthquakes which may generate tsunamis, and alerting state and local officials who may order evacuation. The entire Coast of California is at risk from distant-source tsunamis, such as the Crescent City tsunami of 1964 that originated in Alaska. Planning for these disasters requires local governments to look at their vulnerabilities. Where tsunami inundation projections are available, jurisdictions should develop inundation maps based on topographical features and population density. Where there are no such projections, governments can nonetheless develop evacuation plans.

The agency responsible for issuing information and warnings on possible tsunamis is the National Oceanic and Atmospheric Administration (NOAA), through the Tsunami Warning System. They operate two Tsunami Warning Centers. California receives all information about a potential threat of tsunamis from the West Coast/Alaska Tsunami Warning Center (WC/ATWC) in Palmer, Alaska. Information regarding Pacific-wide tsunamis is also collected by the Pacific Tsunami Warning Center in Ewa Beach, Hawaii. The operational objective of the Tsunami Warning System (TWS) in the Pacific is to detect and locate major earthquakes in the Pacific region, to determine whether they have generated tsunamis, and to provide timely and effective tsunami information and warnings to the population of the Pacific. Information and warnings are expected to minimize the hazards of tsunamis, especially to human life and welfare. To achieve this objective, the TWS continuously monitors the seismic activity and ocean surface level of the Pacific Basin.

### **OPERATIONAL PROCEDURES**

Functioning of the system begins with the detection, by any participating seismic observatory, of an earthquake of sufficient size to trigger an alarm attached to the seismograph at the individual station. Personnel at the station immediately interpret their seismograms and send their readings to PTWC or WC/ATWC. After the earthquake has been located and magnitude determined, a decision is made at the Warning Center concerning further action. If the earthquake is within or near the Pacific Ocean basin and its magnitude is 6.5 or greater, but less than or equal to 7.5 (less than or equal to 7.0 in the Aleutian Islands), then a Tsunami Information Bulletin is issued to the Warning System participants. Tsunami Warning/Watch Bulletins are issued to the dissemination agencies for earthquakes of magnitude greater than 7.5 (greater than 7.0 in the Aleutian Island region), alerting them to the possibility that a tsunami has been generated and providing data that can be relayed to the public so that necessary preliminary precautions can be taken.

If the earthquake appears to be strong enough to cause a tsunami and is located in an area where tsunami generation is possible, PTWC or WC/ATWC will check water level data from automatic tide stations located near the epicenter for evidence of a tsunami. If they show that a tsunami has been



generated that poses a threat to the population in part or all of the Pacific, the Tsunami Warning/Watch Bulletin is extended until there is no longer the threat of a destructive tsunami or it is upgraded to a Warning for the whole Pacific. The dissemination agencies then implement predetermined plans to evacuate people from endangered areas. If the tide station data indicate that either a negligible tsunami or no tsunami has been generated, PTWC or WC/ATWC issues a cancellation of its previously disseminated Tsunami Warning/Watch.

## DEFINITIONS

**Regional Tsunami Warning:** A bulletin, usually based only on seismic information, initially issued as a means of providing the earliest possible alert to the population near the epicentral area of an earthquake. It places a restricted area (2- to 3-hour tsunami travel time) in a condition that requires all coastal areas in the region to be prepared for imminent flooding from a tsunami and is usually based only on seismic information without tsunami confirmation. Subsequent warning bulletins, which incrementally expand the warning area, shall be issued at least hourly, or when conditions warrant, until upgraded to a Pacific-wide Warning or canceled.

**Pacific-wide Tsunami Warning:** A bulletin issued by the PTWC or the WC/ATWC after confirmation has been received that a tsunami has been generated which has caused damage at distances greater than 1000 kilometers from the epicenter and thus poses a threat to any populated area within the Pacific Basin.

**Regional Tsunami Watch:** A bulletin issued initially using only seismic information to alert all participants within 1 to 3 hours travel time beyond the tsunami warning area. The tsunami watch area will be expanded hourly until it is either canceled or upgraded by issuing a Pacific-wide warning. A Regional Tsunami Watch may be included in the text of the message that disseminates a Regional Tsunami Warning.

*(Note: Although Tsunami Watch and Tsunami Warning are defined separately for clarity, usual operating procedures include both the Warning and the Watch in a single watch/warning bulletin.)*

**Tsunami Information Bulletin:** A bulletin issued to advise participants of the occurrence of an earthquake in the Pacific or near-Pacific area with the evaluation that a potentially destructive tsunami was not generated. If the evaluation indicates the possible generation of a non-destructive tsunami, an investigation will be initiated and additional tsunami information bulletins will be issued until the investigation is concluded.

Appropriate Bulletins will generally be issued within 15 minutes of earthquake origin time for earthquakes occurring within a Center's regional Area of Responsibility (AOR) and within 10 minutes of receipt of data necessary to characterize the earthquake for earthquakes occurring outside of a Center's regional AOR. As initial warnings may be issued when tsunamis have not been generated, warnings are

limited in geographical extent until rapid confirmation of the existence or nonexistence of a tsunami is obtained.

**Pacific-wide Tsunami Warning Bulletin:** A message issued to all participants on a Pacific-wide basis after confirmation has been received that a tsunami capable of causing destruction beyond the local area has been generated and poses a threat to the coastal population for the entire Pacific Basin. Each hour updated information will be sent until the Pacific-wide Tsunami Warning is canceled.

**Regional Tsunami Warning/Watch Bulletin:** A message issued initially using only seismic information to alert all participants of the probability of a tsunami and advise that a tsunami investigation is underway. The area placed in Tsunami Warning status will encompass a 3-hour tsunami travel-time relative to the time of message issuance. Those areas within a 3 to 6-hour tsunami travel-time will be placed in a Watch status. A Tsunami Warning/Watch will be followed hourly by additional bulletins until it is either upgraded to a Pacific-wide Tsunami Warning or is canceled.

**Tsunami Message Bulletin:** A message issued to advise participants of the occurrence of a major earthquake in the Pacific or near-Pacific area. The message evaluates whether (a) A Pacific-wide tsunami was not generated based on earthquake and historical tsunamis data. This will be the only bulletin issued. No Pacific-wide tsunami warning is in effect; (b) An investigation is underway to determine if a Pacific-wide tsunami has been generated. Additional bulletins will be issued hourly, or sooner, as information becomes available. No Pacific-wide tsunami warning is in effect; or (c) No destructive Pacific-wide tsunami threat exists. However, some areas may experience small sea level changes. This will be the final bulletin issued unless additional information becomes available. No Pacific-wide tsunami warning is in effect.

If the event occurs in the WC/ATWC area of responsibility and exceeds the WC/ATWC Regional Warning threshold, but is less than the PTWC Warning/Watch threshold, an investigation will be initiated by PTWC and additional Tsunami Information Bulletins will be issued until the investigation is concluded.

**Tsunami Communication Test** Test messages are issued by PTWC at unannounced times on a monthly basis to determine writer-to-reader delays in disseminating tsunami information, to test the operation of the warning system by the evaluation of two-way communications with interactive personnel response, and to keep communication operating personnel familiar with the procedures for handling message traffic pertaining to the TWS.

## **COMMUNICATIONS REQUIREMENTS AND METHODS**

### **OBJECTIVE**

To ensure the timely and effective operation of the TWS, it is essential to have communication facilities that are capable of rapidly handling all data requests from Tsunami Warning Centers, the dissemination of seismic and tide reports, and the Tsunami Warning/Watch and Information Bulletins. Since such traffic is relatively infrequent, existing communication channels are used with some supplementation where absolutely necessary, instead of establishing a separate communication system that would, to a large extent, duplicate existing channels. Hence, the communication channels under the management and control of the United States Defense Information Systems Agency (DISA), Federal Aviation Administration (FAA), National Weather Service (NWS), Army, Navy, Air Force, Coast Guard, various international agencies, and private companies, as outlined herein, are to be used to handle the message traffic involved between Tsunami Warning Centers, the seismic and tide stations, and the dissemination agencies participating in the warning system.

### **COMMUNICATIONS SERVICES AVAILABLE**

PTWC and WC/ATWC maintain the following communications services:

<u>Service</u>	<u>TWS User Audience</u>
AUTODIN	U.S. Department of Defense and State Department facilities
AFTN	U.S. Federal Aviation Administration; and International affiliates
NIVIC	National Weather Service; forecast and data subscribers
NWW	National Weather Service; forecast subscribers and U.S. emergency service agencies
TELEX	Emergency service agencies in some South America and Pacific island states
INTERNET	Most international and domestic government agencies and academic institutions
FAX	All the above
NAWAS	Emergency management agencies nationwide.

## ***DISSEMINATION OF TSUNAMI WATCHES AND WARNINGS***

### **SELECTION OF AGENCY**

In order to limit the number of agencies to be contacted in the event of a tsunami, Tsunami Warning/Watch and Information bulletins generally are issued to only one agency in a country, territory, or administrative area. This agency usually is appointed by the central government or administrative head of the area concerned and has fundamental responsibilities for public safety and disaster mitigation. In California, the State Warning Center (WC) is the designated dissemination agency of bulletins issued by the PTWC or the WC/ATWC. In turn, the WC forwards the information to the operational areas, the operational areas are responsible for notifying local coastal cities and districts.

### **FUNCTION AND RESPONSIBILITIES OF DISSEMINATION AGENCY**

It is the ultimate responsibility of the dissemination agency, which may or may not be the local government, to evaluate the tsunami information received from PTWC or WC/ATWC and to decide on appropriate action after the receipt of a Tsunami Warning/Watch and Warning. Responsible agencies should have well-developed emergency plans for all threatened localities. These plans should clearly delineate areas of possible inundation. Evacuation routes should be designated, and safe areas should be marked. The amount of advance warning necessary to ensure evacuation from danger areas also should be known. Emergency duties and responsibilities should be designated, and all affected officials should be thoroughly familiar with their duties. Tsunami Watch and Warning information may be passed (depending on the time and facilities available) to the coastal population by any or all of the following methods: radio, television, sirens, bells, whistles, warning flags, mobile loud speakers, and personal contact.

### **ALL CLEAR PROCEDURE**

At present, WC/ATWC does not have enough data available to enable it to determine when danger has passed in many areas. Local conditions can cause wide variations in tsunami wave action. **Consequently, the local agencies and not WC/ATWC should make all-clear determinations.** In general, after receipt of a Tsunami Warning, action agencies can assume all-clear status when their area is free from damaging waves for 2 hours, unless additional ETA have been announced by PTWC or WC/ATWC, or local conditions (e.g., particularly strong currents in channels and harbors), warrant continuation of the Tsunami Warning status. If no wave or only insignificant waves occur, action agencies may assume all-clear status 2 hours after the latest ETA announced by PTWC or WC/ATWC, unless the presence of strong currents in channels and harbors has been noted, which may warrant continuation of the Tsunami Warning.

**SUMMARY OF WC/ATWC OPERATIONAL PROCEDURES**

<b>EARTHQUAKE MAGNITUDE (Ms)</b>	<b>EARTHQUAKE EPICENTER LOCATION AND WC/ATWC ACTION</b>
Ms less than 6.5	ALASKA, BRITISH COLUMBIA, WEST COAST OF U.S. Issue information message if appropriate
Ms equal to 6.5 and less than warning thresholds	ALASKA, BRITISH COLUMBIA, WEST COAST OF U.S. Issue Tsunami Information Bulletin
Ms equal to 6.5 and equal to or less than 7.5	PACIFIC BASIN OUTSIDE OF ALASKA AND CANADA/U.S. WEST COAST Issue Tsunami Information Bulletin
Ms greater than 7.0	ALASKA WEST OF UNIMAK PASS (I 65W) 1. Issue a warning to areas within 3 hours travel time of the expected bulletin issuance. 2. Issue a watch to the areas within 3 to 6 hours travel time. 3. Monitor tide gauges.
Ms greater than 7.0	ALASKA BERING SEA ONLY 1. Issue a warning to Alaska's Pribilof Island and Aleutian Islands from Attu to False Pass only. 2. There is no watch area. 3. Monitor tide gauges.
Ms greater than 7.0 and less than or equal to 7.5	ALASKA EAST OF UNIMAK PASS, U.S./CANADA WEST COAST 1. Issue a warning to areas within 2 hours travel time of the expected bulletin issuance. 2. Issue a watch to areas with 2 to 3 hours travel time. 3. Monitor tide gauges.
Ms greater than 7.5	ALASKA EAST OF UNIMAK PASS, U.S./CANADA WEST COAST 1. Issue Tsunami warning to areas within 3 hours travel time of the expected bulletin issuance. 2. Issue a watch to areas within 3 to 6 hour travel time. 3. Monitor tide gauge data.
Ms greater than 7.5	PACIFIC BASIN OUTSIDE OF ALASKA AND CANADA/U.S. WEST COAST 1. If the epicenter is within 6 hours tsunami travel time of any part of the WC/ATWC area of responsibility:

	<ol style="list-style-type: none"> <li>a. Issue a warning to the areas within 3 hours travel time of expected bulletin issuance.</li> <li>b. Issue a watch to areas within 3 to 6 hours travel time.</li> <li>c. Monitor tide gauge data.</li> </ol> <p>2. If the epicenter is more than 6 hours travel time from any part of the WC/ATWC area of responsibility, issue a Tsunami Advisory Bulletin.</p>
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**OPERATIONS**

WC/ATWC detects, locates, and computes magnitudes for major earthquakes in the entire Pacific Basin region. For events equal to or greater than M6.5, WC/ATWC coordinates epicenter and magnitude with PTWC. Bulletins issued by WC/ATWC and PTWC will contain statements telling of the other center's actions. Only WC/ATWC has the responsibility to issue messages/bulletins to Alaska, British Columbia, Washington, Oregon, and California. This includes warning, watch, advisory and information bulletins. WC/ATWC can provide technical advice to emergency managers within its area of responsibility. Data are provided to PTWC, NEIC, the Japan Meteorological Agency, HMS Russia, and others.

Micro computers provide 24-hour monitoring and analysis of seismic data telemetered to WC/ATWC from throughout North America and Hawaii. Locations and magnitudes are automatically computed in as little as two minutes. Two independent systems provide primary and back up reliability. Information is immediately transmitted via the NWWs and/or the NAWAS to emergency managers on the West Coast, in Alaska, and British Columbia. Tide data is available in real or near real time from throughout the Pacific.

**EARTHQUAKES IN THE ALASKA PENINSULA, GULF OF ALASKA, AND UNITED STATES/CANADA WEST COAST (Unimak Pass to the California/Mexico Border)**

A warning will be issued for an area within two hours wave travel time from the time of expected bulletin issuance for earthquakes greater than magnitude 7.0. A watch will be in effect for an area within two to three hours wave travel time.

Confirmation of the existence of a tsunami will be sought as rapidly as possible. ATWC will monitor the recorded tsunami effects and issue a cancellation or supplemental bulletin as appropriate. If negative or minor tsunami activity has been noted on the tide gauges nearest the earthquake epicenter 30 minutes after the ETA, the warning status will be canceled. All bulletins will be updated a least hourly.

**EARTHQUAKES IN ALASKA'S ALEUTIAN ISLANDS (Attu to Unimak Pass)**

A warning will be issued for an area within three hours wave travel time from the time of expected bulletin issuance. for Aleutian earthquakes greater than magnitude 7.0 A watch will be in effect for an area within three to six hours wave travel time.

Confirmation of the existence of a tsunami will be sought as rapidly as possible. WC/ATWC will monitor the recorded tsunami effects and issue a cancellation or supplemental bulletin as appropriate. If negative or minor tsunami activity has been noted on the tide gauges nearest the earthquake epicenter 30 minutes after the ETA, the warning status will be canceled. All bulletins will be updated at least hourly.

**EARTHQUAKES IN ALASKA'S BERING SEA**

A warning will be issued covering St. Paul and St. George Islands and the Aleutian Islands (Attu to False Pass). for earthquakes greater than magnitude 7.0. There will be no watch area and the warning will not be expanded, even if a significant tsunami is detected.

**EARTHQUAKES IN THE PACIFIC BASIN OUTSIDE THE WEST COAST, BRITISH COLUMBIA AND ALASKA**

, The WC/ATWC, after coordination with PTWC, will take the following actions for Pacific earthquakes greater than magnitude 7.5.

- a. When any part of the WC/ATWC area of responsibility is within six hours tsunami travel time from the epicenter, the Center will issue a tsunami warning covering an area with at least a 3-hour wave travel time from the time of expected bulletin issuance and a tsunami watch extending for an additional three hours travel time.
- b. When the epicenter is more than six hours tsunami travel time distant from any part of the WC/ATWC area of responsibility, the Center will issue a tsunami advisory bulletin.

Tide gauges throughout the Pacific will be monitored for confirmation of the existence of the tsunami. WC/ATWC will either issue a cancellation, continue the advisory/watch/warning, or cancel the watch/warning and change to an advisory bulletin if there is no danger to the WC/ATWC area of responsibility but PTWC continues its watch/warning. The appropriate action will be based on the tsunami history and actual wave observations. WC/ATWC will continue to monitor all tsunami effects and keep California, Oregon, Washington, British Columbia, and Alaska advised until all danger is past for any area of the Pacific.

## **TSUNAMI INFORMATION BULLETINS**

WC/ATWC will issue a Tsunami Information Bulletin whenever:

- a. An earthquake occurs with a magnitude of 6.5 or greater, but below the watch/warning thresholds of A.4.2 through of A.4.5, within its area of responsibility.
- b. An earthquake occurs with a magnitude equal to 6.5, but less than 7.5, outside its area of responsibility.



**LIKELIHOOD OF OCCURRENCE AND SEVERITY**

Hazard	Frequency			Severity		
	Infrequent	Sometimes	Frequent	Low	Moderate	High
Dam Failure	X					X
Earthquake M<5			X	X		
Earthquake M>5	X					X
Wildland Fire		X			X	
Floods		X		X	X	X
HazMat			X		X	X
Landslides	X			X		
Civil Disturbance	X			X		
Extreme Weather/Storm		X			X	
Aircraft Crash	X					X
Train Accident	X			X	X	X
Major Vehicle Accident		X		X		
Terrorism	X				X	X
Tsunami	X				X	

**TSUNAMI SEMS FUNCTIONS**

	<b>Mgmt/ Command</b>	<b>Operations</b>	<b>Planning/ Intell.</b>	<b>Logistics</b>	<b>Finance/ Admin.</b>
Incident Command	PD		OES		
Establish Perimeter		FD,PD			
Control Access		FD,PD,PW			
Traffic/Crowd Control		PD,PW			
EOC Operations	ADMIN,FD, FIN, OES, PD	PD,FD,PW, P&R	CD,ADMIN	ADMIN, PW, PD	FIN ADMIN
Evacuation		FD,PD	OES	CD,PW	
Notifications		PD,FD	OES		
Safeguard Evidence		PD,FD			
Public Information	PD,FD,OES		OES		
Med/Rescue Ops.		FD,P&R			
Damage Assessment		PD,FD,PW			
Situation Status			CD,PD,FD,P W		
Documentation			ADMIN,OES		FIN
Fatalities Mgmt.		PD,FD,PW, P&R			

**TSUNAMI COMPONENT**

<b>1<sup>st</sup> Quarter</b>	<b>2<sup>nd</sup> Quarter</b>	<b>3<sup>rd</sup> Quarter</b>	<b>4<sup>th</sup> Quarter</b>
<b>Awareness Training</b>	<b>First Responder</b>	<b>Exercise Preparation</b>	<b>Joint Exercise with Santa Luisa County</b>
Course consists of two components: 1) an orientation to tsunami 2) personal awareness and protection	Training for First Responders has three components: 1) refresher on tsunami issues 2) personal awareness and protection 3) discipline specific technical information	City EOC Exercise  Scenario: to be determined  Field component: Evacuation and Perimeter Security	Activation of both City and County EOCs  Scenario: To be determined  Field component: To be determined, depending upon scenario
Audience: All Santa Luisa Del Mar Staff	Audience: PD, FD, PW, selected medical personnel	Participants: Staff assigned EOC duties	Participants: Staff from both City and County assigned EOC duties  Staff for field component: To be determined

**Note:** This is a generic master training schedule. At the beginning of the training year, training coordinators will meet to identify the training emphasis and objectives.

**POTENTIAL TSUNAMI RESPONSE**

**Purpose:** To outline various tsunami response organizations

This table describes the potential tsunami response organizations at different levels of government. It is broken into two time periods: 1) preparedness 2) notification of potential/actual event.

<b>Government Level</b>	<b>Preparedness</b>	<b>Notification of potential/actual event</b>	<b>Role</b>
<b>Federal</b>	NOAA, NWS/WCM, NTHMP, FEMA	WC/ATWC	Assess, Notify and Verify
<b>State</b>	State OES State agencies	State OES State Warning Center State Agencies Departmental Operations Centers (DOCs)	Notify and Verify
<b>Regional</b>	State OES Regional Offices State agency district or other offices	State OES Regional Emergency Operations Centers (REOCs) State agency district offices	Notify, Verify, Assist w/ Threat Assessment
<b>Operational Area (OA)</b>	Operational Area government	Operational Area EOC May include activation of a tsunami threat assessment group	Notify, Verify, Coordinate and Respond *.
<b>City</b>	City government	City EOC(s) May include activation of tsunami threat assessment group	Notify, Verify, Coordinate and Respond *.
<b>Field</b>		Unified Command First Responders (Law, Fire & Rescue, Medical, Public Works) Various special purpose teams, such as the National Guard	Respond as directed

\*Implement Evacuation Plans, Care & Shelter, Perimeter Security, SAR, etc. May proclaim a local emergency and request State assistance.

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**TSUNAMI RESPONSE ACTIONS**

<b>Emergency Management</b>	<b>Action</b>
<ul style="list-style-type: none"> <li>Threat notification and assessment within law enforcement and emergency management community</li> </ul>	<ul style="list-style-type: none"> <li>Activation of EOCs (City and OA), REOCs, and SOC as applicable.</li> </ul>
<ul style="list-style-type: none"> <li>Activation of threat assessment organizations or agency.</li> </ul>	<ul style="list-style-type: none"> <li>Identification of areas to be evacuated</li> <li>Assessment of Consequences</li> <li>Implementation of Evacuation Plan</li> <li>First Responders deployed to evacuation site(s).</li> </ul>
<ul style="list-style-type: none"> <li>Activation of selected elements of the emergency response organization based upon the situation and in accordance with SEMS. May include partial activation of OA or city EOCs, REOCs, or SOC.</li> </ul>	<ul style="list-style-type: none"> <li>Unified Command activated at evacuation site(s).</li> </ul>
<ul style="list-style-type: none"> <li>Alerting of key first responders at the local level, if warranted by situation.</li> </ul>	<ul style="list-style-type: none"> <li>Stage emergency equipment outside of inundation area.</li> <li>Continued threat analysis.</li> </ul>
<ul style="list-style-type: none"> <li>Refresher training, if applicable.</li> </ul>	<ul style="list-style-type: none"> <li>Review tsunami procedures</li> </ul>
<ul style="list-style-type: none"> <li>Initiation of consequence management planning as applicable.</li> </ul>	<ul style="list-style-type: none"> <li>Mutual Aid System activated as necessary (law, coroner, fire and rescue, HazMat, medical/health, mental health, public works, utilities).</li> </ul>
<ul style="list-style-type: none"> <li>Issue public information bulletin.</li> </ul>	<ul style="list-style-type: none"> <li>Public information protocols and procedures activated.</li> </ul>

**CONSEQUENCES**

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	<b>Pre-Event</b>	<b>Consequence 1</b>	<b>Consequence 2</b>
Distant Earthquake	Watch/Warning Evacuation Access Control		
Near Source Event 15 min. - 2 hours	Warning Evacuation Access Control		
Near Source Event < 15 min.	No Action Possible	Situation Assessment	Response

## NOTIFICATION AND THREAT ANALYSIS

### Watch/Warning Issued

Law Enforcement  
Response

Evolution of Law Enforcement Response to a Tsunami Incident:

This information is included for illustration purposes only. Each situation is unique, as are local conditions and protocols.

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Receipt of Threat, Initial  
Local Response

A threat is received at the state level and transmitted to the operational area law enforcement agency. The threat information will be shared between law enforcement agencies and emergency services at appropriate operational and local levels.

This may range from waiting for further information to phased evacuation to total evacuation, as dictated by the situation.

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No Warning/Event  
Occurs

If there is no warning and an tsunami occurs, most of the steps indicated above occur in more rapid succession - or almost simultaneously. When the tsunami occurs, response is largely dependent on the nature of the damage and the dimensions of its impact. The critical distinction must be made: the location of the event is a still dangerous, more and or larger tsunami may occur, carrying debris. While lifesaving and life safety are always the pre-eminent considerations, every effort must be made to evacuate the area, limit access and preserve life safety of inhabitants and responders.

Assuming the scene is eventually stabilized, law enforcement, local government, or some combination thereof, will act to secure the perimeter of the area. These activities may be supported by other entities ranging from the fire service to public works. The overall emergency management organization, using the tenets of SEMS, will continue to work to deal with the consequences of the event.

**GENERAL NOTIFICATION PROCEDURES**

**Potential Notification Procedures**

This chart outlines potential notification procedures. This sequence will need to be modified any time there is a change in status, such as verification of a credible threat, information updates, and notification of an actual event. Additional agencies or organizations should be added as appropriate.

When received at	Notification Actions
State OES Warning Center	<ul style="list-style-type: none"> <li>• Notify potentially impacted jurisdictions through appropriate OAs</li> </ul>
OES Administrative Regions	<ul style="list-style-type: none"> <li>• <i>(Sacramento, Coastal, Inland, and Southern)</i></li> <li>• Verify receipt of information by OAs and Cities/Districts.</li> </ul>
County/Operational Area	<ul style="list-style-type: none"> <li>• Notify city or cities that may be impacted</li> <li>• Notify county departments: Sheriff, Fire, medical, and threat assessment unit as appropriate. Include other county/OA staff as necessary</li> <li>• Notification of State Parks, special districts within the county</li> <li>• Notification of other levels dependent upon nature of threat and security considerations.</li> </ul>
City/District	<ul style="list-style-type: none"> <li>• Notify city departments: Law enforcement, fire, medical, and threat assessment unit as appropriate. Include other city/district staff as necessary</li> </ul>



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## **Unified Command and SEMS**



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# **Unified Command And SEMS: A Guide for State & Local Government**

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**Gray Davis**  
Governor

**Dallas Jones**  
Director

Governor's Office of Emergency Services

## **Unified Command And SEMS: A Guide for State and Local Government**

### **Purpose And Scope**

This document clarifies how local, state, and federal agencies can successfully manage emergency incidents through the application of unified command at the field level of the Standardized Emergency Management System (SEMS).

SEMS is mandated for state agencies, voluntary for local governments (but necessary for reimbursement of response-related personnel costs), and not required for federal agencies.

### **General Concept**

#### **The Response Structure**

State and local agencies use the Incident Command System (ICS) as the structure to manage emergency incidents at the field level of SEMS. ICS incorporates the concept of unified command when more than one agency is responsible for the emergency incident. This system allows agencies to exercise their responsibilities without compromising jurisdictional authorities.

There are four elements to consider when applying unified command:

#### **A. Policies, Objectives, Strategies**

The responsibility to set joint policies, objectives, and strategies for an incident belongs to the various jurisdictional and agency administrators who set policy and are accountable to their agencies. This activity is done in advance of tactical operations and may be coordinated from a location other than where the field response is taking place.

#### **B. Representatives**

The unified command organization consists of the on-scene senior representatives (agency incident commanders) from the various agencies with responsibility for the incident.

**C. Resources**

Unified command resources are the personnel and equipment supplied by the jurisdictions and agencies that have responsibility for the incident or by cooperating agencies.

**D. Operations**

Unified command resources stay under the administrative and policy control of their agencies; however, operationally, resources are deployed by a single Operations Sections Chief based on the requirements of the consolidated action plan. Consolidated action plans identify objectives and strategy determinations for the incident made by the unified command. The incident objectives must adequately reflect the needs of all the jurisdictional agencies.

Unified command represents an important element in increasing the effectiveness of response to multi-jurisdictional or multi-agency incidents. As incidents become more complex and involve more agencies, the need for unified command is increased.

**Interagency  
Agreements**

Agencies that will be partners in a unified command situation should, whenever possible, establish agreements in advance of emergency incidents that identify jurisdictional and functional responsibilities and delineate the elements of the unified command structure. In addition, agencies should take every opportunity to exercise the provisions of these agreements through periodic training and simulation drills.

**SEMS Applied—Coordinating Diverse Authorities**

A cornerstone of SEMS is the application of ICS in emergency incident management at the field level. Under this system, unified command must be used when emergency incidents involve multiple agencies and/or jurisdictions. The basic precept of unified command is that all agencies with jurisdictional responsibility for the incident will manage an incident by establishing a common set of incident objectives and strategies. This is accomplished without losing or abdicating agency authority, autonomy, responsibility or accountability. Therefore, in order for state and local agencies to be consistent with SEMS, the unified command must include all the individual authorities with response jurisdiction over the incident.

Any process used by the unified command must permit the command team to develop a consolidated action plan that adequately reflects the jurisdictional needs of the agencies

with responsibility for the incident. Unified command is based on the presumption that all responsible agencies will cooperate in a collective effort to mitigate an incident.

### **Recommendations For “Best Practices”**

When addressing pre-existing mandates within SEMS, the following guidelines should be applied.

1) ***SEMS must be viewed as a structural system only, not a pre-emption authority.***

SEMS is an emergency response management structure designed to focus resources and effort in the most efficient fashion. It is an “overlay” to pre-existing mandates in statute and regulation. It does not re-direct or preempt these authorities.

2) ***Jurisdictional authorities must not be compromised.***

A basic precept of unified command is that jurisdictional authorities responsible for the incident are never excluded from the command structure. The legal requirements for federal, state, and local agencies must be taken into account when developing a consolidated action plan. Exactly how those jurisdictional authorities function in the unified command is a matter to be determined according to the details of the incident and the parties involved.

3) ***Jurisdictional mandates must be applied within SEMS in a flexible manner.***

SEMS is meant to be flexible and applicable to many disciplines involving many agencies. There will almost always be overlapping authorities subject to interpretation. Federal, state, and local agencies must coordinate with each other in applying and exercising their respective authorities within the unified command. Individual agencies do not exercise jurisdiction or authority that exceeds their legal limits or usurp the authority of another agency—there is no “vote” inside the unified command. It is incumbent upon the agencies involved to cooperate in order to allow for a successful resolution to a complicated emergency response organizational issue. Often, these issues can be dealt with through pre-planning.

4) ***Pre-planning and training must be continuous.***

It is essential to the success of efficient emergency management that jurisdictions and functional agencies pre-establish the unified command structure and conduct frequent drills to exercise the system.

5) ***Cooperation and consensus must be a priority.***

It is impossible to implement unified command unless the responsible agencies have agreed to participate in the process. Once this has been achieved, incident management goals, objectives and strategies are established through a consensus process.

6) ***Establishment of the unified command structure must be expedited.***

Implement unified command promptly when it is needed in a multi-jurisdictional or multi-agency incident. It is essential to begin joint planning as early as possible, especially on those incidents where there may be conflicting priorities based on agency responsibilities. Initially the participants should: identify statutory authorities for all agencies; determine a clear functional structure for the incident; coordinate initial activities; and open clear communication channels at all levels of the organization. Conversely, individual agencies in the unified command should not exit the response structure until their jurisdictional responsibilities have been resolved and an orderly transition has been orchestrated.

7) ***Proper integration into the ICS structure is essential.***

A member of the unified command is very different than an agency representative. The unified command consists of agencies with direct jurisdictional responsibility for the incident. Agency representatives are individuals assigned to an incident from assisting or cooperating agencies. Agency representatives are personnel other than those on direct tactical assignments or those involved in a unified command.

## Summary

SEMS provides the structure for managing the response to multi-agency and multi-jurisdiction emergencies in California and facilitates coordination among all responding agencies. Within SEMS, ICS provides a flexible structure at the field level for coordination of response activities which is geared to the needs of a specific incident. Unified command allows agencies that have responsibility for an incident to meet their statutory requirements through a coordinated process involving diverse jurisdictional authorities.



**GENERAL AUTHORITIES AND DEFINITIONS**

1. Pursuant to Government Code Section 8607(d) all state agencies are required to use the Standardized Emergency Management System (SEMS) to coordinate multiple jurisdiction or multiple agency emergency and disaster operations.
2. Government Code Section 8607(e) requires a local agency to use SEMS in order to be eligible for reimbursement of personnel-related response costs.
3. Under CCR, Title 19, Section 2403 there are five levels of the SEMS organization. The field response level “commands emergency response personnel and resources” to carry out “tactical decisions and activities in direct response to an incident or threat.”
4. Under CCR, Title 19, Section 2405 emergency response agencies operating at the field response level shall use the Incident Command System, incorporating the functions, principles and components of ICS.
5. Under CCR, Title 19, Section 2402 emergency response agencies include “any organization responding to an emergency....”
6. Pursuant to CCR, Title 19, Section 2407(c), “communications and coordination shall be established between a local government EOC, when activated, and any state or local emergency response agency having jurisdiction at an incident occurring within a local government’s boundaries.”
7. Pursuant to CCR, Title 19, Section 2407(d), local government is to “use multi-agency or inter-agency coordination to facilitate decisions for overall local government level emergency response activities.”
8. Pursuant to Government Code Section 8616, during a state of emergency, “outside aid” to a local government shall be rendered in accordance with approved emergency plans.
9. Pursuant to Government Code Section 8618, unless otherwise expressly provided by the parties, the responsible local official in whose jurisdiction an incident requiring mutual aid has occurred “shall remain in charge at such incident, including the direction of personnel and equipment provided him through mutual aid.”
10. CCR, Title 19, Section 2405(a)(3)(C), defines the Unified Command structure as, “...a unified team effort which allows all agencies with responsibility for the incident, either geographical or functional, to manage an incident by establishing a common set of incident objectives and strategies. This is accomplished without losing or abdicating agency authority, autonomy, responsibility, or accountability.”
11. The state has broad authority under the Emergency Services Act to address any local need in a declared emergency if the conditions warrant. Government Code Sec. 8614 states:
  - (a) Each department, division, bureau, board, commission, officer, and employee of each political subdivision of the state shall render all possible

- assistance to the Governor and to the Director of the Office of Emergency Services in carrying out the provisions of this chapter.
- (b) The emergency power which may be vested in a local public official during a state of war emergency or a state of emergency shall be subject or subordinate to the powers herein vested in the Governor when exercised by the Governor.
  - (c) Ordinances, orders, and regulations of a political subdivision shall continue in effect during a state of war emergency or a state of emergency except as to any provision suspended or superseded by an order of regulation issued by the Governor.
12. CCR, Title 19, Sec. 2405(a)(3)(D), defines consolidated action plans as ones that, "...identify objectives and strategy determinations made by the Incident Commander for the incident based upon the requirements of the jurisdiction. In the case of a unified command, the incident objectives must adequately reflect the policy and needs of all the jurisdictional agencies. The action plan for the incident covers the tactical and support activities required for the operational period."
  13. "Jurisdiction" describes a [legal] authority or responsibility, and can also mean a geographical area, e.g., a city, county, state, federal lands, etc. (SEMS Approved Course of Instruction Field Course, Module 13—Unified Command—August 1995 Instructor Guide.)
  14. "Agency" is used to describe organizations which have a legal and functional responsibility at an incident. These may be from the same jurisdiction, other jurisdictions, or represent functional governmental authorities which do not necessarily have a geographical influence. They can also represent industrial and commercial organizations from the private sector. Examples could include the coroners office, the FAA, the XYZ chemical corporation, etc. (SEMS ACI, Module 13, Instructor Guide.)

**Legal Guidelines for Controlling Movement of  
People and Property During an Emergency**



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# **Legal Guidelines for Controlling Movement of People and Property During an Emergency**

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**Approved by the Standardized Emergency Management System  
(SEMS) Advisory Board on July 28, 1999**

**Gray Davis  
Governor**

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The Governor's Office of Emergency Services would like to acknowledge the assistance of the following staff and agencies in the development of this guideline:

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**NOTICE:** This guideline is intended to provide information for State and local agencies for general planning purposes. This guideline is primarily concerned with legal authorities for the actual imposition of evacuation, curfew, or quarantines.

Many agencies or political subdivisions may provide input during an emergency situation under the authority of the Standardized Emergency Management System regulations (Cal. Code Regs. tit. 19, § 2400 et seq.). This guideline concentrates on those agencies or political subdivisions that have statutory or well-recognized authority to actually issue evacuation, curfew, or quarantine orders.

## **LEGAL GUIDELINES FOR CONTROLLING MOVEMENT OF PEOPLE AND PROPERTY**

### **I. BACKGROUND/ INTRODUCTION**

*Purpose*

The guidelines are intended to clarify and explain the legal authority that state and local political subdivisions and public safety agencies may use to initiate, maintain, and enforce restrictions on the movement of persons and property.

The guidelines focus on issues local government officials may face when evaluating the potential evacuation of their populations in the event of an emergency or disaster. As they face this decision, questions will arise as to a local government's authority to issue an evacuation order and the liabilities associated with such an order. The guidelines provide background to these questions.

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*Contents*

This guideline relates to evacuations, quarantines, and similar restrictions for all types of emergencies. Specific guidelines for flood-related evacuations may be found in *Legal Guidelines for Flood Evacuation*. This guideline expands upon *Legal Guidelines for Flood Evacuation* by including other types of emergency situations.

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*Guidelines*

This document is intended for use strictly as a guide, and should not be construed as providing legal advice. The guidelines are not inclusive of all legal issues that may arise during an emergency, and discuss only issues likely to arise during the course of an evacuation, quarantine, or similar action during an emergency. Before ordering an evacuation, quarantine, or other action, government officials or agencies should consult with appropriate legal counsel.

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*Update and  
Revision*

This document will be updated and reviewed periodically by the Governor's Office of Emergency Services in cooperation with the California Department of Justice.

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## II. DUTIES, RESPONSIBILITIES, AND POWERS

### Summary

To understand the duties and responsibilities that arise during an emergency, review of the various legal concepts that apply both prior to and during the emergency is necessary. Note that for the purposes of this guideline, the term “governing body” refers to that of a city, county, or city and county.

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*Q.*

### **WHAT ARE THE LEGAL AUTHORITIES TO ORDER AN EVACUATION?**

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*A.*

The primary authorities cited in this document are derived from the California Constitution, Government Code, Penal Code, Emergency Services Act, and case law.

A governing body may impose voluntary or mandatory evacuation orders pursuant to the general police power with which government is imbued. The preferred practice is to order an evacuation pursuant to statutory authority, e.g. the Emergency Services Act.

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*Q.*

### **WHAT IS THE POLICE POWER?**

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*A.*

The authority to control the movement of persons and property arises from the police power of the state. The police power enables governments to take action for the good of the public -- governing bodies may enact laws, ordinances, or regulations to protect the health, safety, morals, or general welfare of the population.<sup>1</sup> Of course, the police power is used everyday for building restrictions, licensing, and other similar activities. Similarly, the police power also provides governing bodies with flexibility to meet emergency situations.

*California Supreme Court—*

The Supreme Court of California has described the police power as the inherent power of the government to enact laws that protect the order, safety, and health of society.<sup>2</sup>

BASIS FOR AUTHORITY:

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<sup>1</sup> *Fitts v. Superior Court*, (1936) 6 Cal. 2d 230, 234.

<sup>2</sup> In re *Ramirez* (1924) 193 Cal. 633

**California Constitution**

Local governing bodies derive their basic powers from the state Constitution, just as the state entities do.<sup>3</sup> California’s Constitution expressly authorizes counties and cities to make and enforce all local, police, sanitary and other laws.<sup>4</sup>

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<i>California Constitution Article XI, § 7</i>	“A county or city may make and enforce within its limits all local, police, sanitary, and other ordinances and regulations not in conflict with general laws.”
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**Statutory Authority**

The state constitution expressly empowers local governments to create rules and to enforce any non-conflicting regulation. The legislature has codified this constitutional intent for the counties to have the powers of the state, including the power to regulate movement of people and property.

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<i>Government Code § 23002</i>	“The several existing counties of the State and such other counties as are hereafter organized are legal subdivisions of the State.”
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**Police Powers  
During an  
Emergency**

Pursuant to the police power, the Legislature has enacted specific statutes pertaining to the movement of persons and property. Even so, the police power does not require statutory enactment for authorities related to exigent circumstances.

The Courts of the United States and California have provided rulings defining the limits of the police power. Essentially, the extent of the police power is proportional to the extent of the emergency. Police powers flow from the law of necessity, and “in an emergency, the scope of permissible regulation may increase.”<sup>5</sup>

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<sup>3</sup> *Strumsky v. San Diego County Employees Retirement Assn.* (1974) 11 Cal.3d 28, 36.

<sup>4</sup> Cal. Const. art. XI, § 7.

<sup>5</sup> *Adkins v. State of California*, (1996) 50 Cal.App.4th 1802, 1810.

**WHAT CONSTITUTES AN EMERGENCY?****Q.****A.**

An “emergency” is well established in California as meaning “an unforeseen situation calling for immediate action.”<sup>6</sup> An emergency is also defined as a situation of ‘grave character and serious moment,’ which is evidenced by an ‘imminent and substantial threat to public health or safety.’<sup>7</sup>

**Emergency  
Services Act  
Definition**

The California Emergency Services Act” and the Standardized Emergency Management System have a specific definition of an “emergency.”<sup>8</sup>

“...conditions of disaster or of extreme peril to the safety of persons and property...”<sup>9</sup>

The conditions that cause an emergency may be natural or human caused. For example, the California Emergency Services Act specifically enumerates the following conditions:<sup>10</sup>

- air pollution,
- fire,
- flood,
- storm,
- epidemic,
- riot,
- drought,
- sudden and severe energy shortage,
- the Governor’s warning of an earthquake or volcanic prediction,
- probable or imminent enemy attack

**Penal Code  
Definition**

The Penal Code provides a further definition of emergency as “any condition which results in, or which could result in the response of a public official in an authorized emergency vehicle, or any condition which jeopardizes or could jeopardize public safety and results in or could result in, the evacuation of any area, building, structure, vehicle or of any other place which individuals may enter.”<sup>11</sup>

<sup>6</sup> *Los Osos Valley Associates v. City of San Luis Obispo*, (1994) 30 Cal. App. 4th 1670, 1681.

<sup>7</sup> *Los Osos* at 1673; *County Sanitation Dist. No. 2 v. Los Angeles County Employee’s Assn.* (1985) 38 Cal. 3d 564, 586, 592 *cert. denied* 474 U.S. 995 (1985).

<sup>8</sup> Cal. Govt. Code § 8558, Cal. Code Regs., tit. 19, § 2402(e).

<sup>9</sup> Cal. Govt. Code § 8558(b), (c) (Describing “state of emergency” and “local emergency.”).

<sup>10</sup> Cal. Govt. Code § 8558.

<sup>11</sup> Cal. Penal Code § 148.3(c) (defining false report of an emergency).

**Q. WHO HAS THE AUTHORITY TO USE POLICE POWERS TO RESTRICT THE MOVEMENT OF PEOPLE AND PROPERTY?**

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**A.** The Governor, delegates of the Governor, local governing bodies and their designated representatives, statutorily designated law enforcement agents, and statutorily authorized government employees have the authority to restrict the movement of people and property in an emergency situation.

Local government may enact legislation under the authority of the state's police power. Local law enforcement agencies may be used to enforce or assist in the implementation of the legislation.

Some of the legal subdivisions of the state that have the authority to restrict movement of people and property are:

- local governing body of counties, or whomever is authorized to act on their behalf;
- local governing body of cities, or whomever is authorized to act on their behalf;
- statutorily designated law enforcement officers;
- statutorily designated health and public safety employees; and
- Governor.

**Generally, the local governing body, or whomever the local governing body is authorized to restrict the movement of people and property during an emergency is primarily responsible for ordering an evacuation, quarantine, curfew, or restriction on travel. This authorization may be in the form of an ordinance, resolution, or order that the local governing body has enacted.**

**A. COUNTIES**

Authorities:

- All the counties of this state are deemed to be legal subdivisions of the state.<sup>12</sup>
- Case law establishes that a county exercises only those powers that are granted by the state.<sup>13</sup>
- Counties are not municipal corporations since counties are not, like municipal corporations, incorporations of the inhabitants of specified regions for purposes of local government.<sup>14</sup>

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<sup>12</sup> Cal. Const., Art. II, § 1; Cal. Govt. Code § 23002.

<sup>13</sup> *Marin County v. Superior Court of Marin County* (1960) 563 Cal. 2d 633.

<sup>14</sup> *In re Miller's Estate* (1936) 5 Cal. 2d 588; *Dillwood v. Riecks* (1919) 42 Cal. App. 602.

- Any county may make and enforce within its limits all local, police, sanitary and other ordinances and regulations not in conflict with the general laws.<sup>15</sup>
- All counties have the power to promote the public health and general welfare of its citizens.<sup>16</sup>

In addition, any county may disseminate information to the public concerning the rights, duties, properties and activities of the county.<sup>17</sup>

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*Charter  
county*

In those cases where the county has been granted a charter from the state and that charter has been approved by the state legislature, then those charter counties shall have all the powers that are provided by the state constitution or by statute for the counties.<sup>18</sup> In contrast, a general law county is created and granted only those powers set forth by statute and the common law.

Throughout the State, if there is a conflict between state law and a county charter provision, the local law generally prevails except where the intent of a general state law is to establish a state policy. In those instances, state law prevails.<sup>19</sup>

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County Sheriff

The Sheriff shall prevent and suppress any affrays, breaches of the peace, riots and insurrections which come to his knowledge, and investigate public offenses which have been committed.<sup>20</sup>

The Sheriff also has the responsibility for closing areas to the public<sup>21</sup> and consequently to order an evacuation. (see later discussion of Penal Code § 409.5).

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<sup>15</sup> Cal. Const. Art II, § 7.

<sup>16</sup> *Goodall v. Brite*, (1936) 11 Cal. App. 2d 540.

<sup>17</sup> Cal. Govt. Code §§ 25, 207.5.

<sup>18</sup> Cal. Const. Art. XI, §§ 4(g), (h).

<sup>19</sup> *Pearson v. Los Angeles County* (1957) 49 Cal.2d 624; *Shean v. Edmonds* (1948) 89 Cal. App. 2d 315.

<sup>20</sup> Cal. Govt. Code § 26602.

<sup>21</sup> Cal. Penal Code §§ 409, 409.5, 409.6.

*As county director of emergency services*

If the board of supervisors adopts a resolution by unanimous vote, electing that the sheriff hold the office of county director of emergency services, ex officio, the sheriff shall perform the duties prescribed by state law and executive order, the California Disaster and Civil Defense Master Mutual Aid Agreement, mutual aid operational plans adopted pursuant thereto and by county ordinances and resolutions.<sup>22</sup>

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**Note:**

Not all counties have elected to have the sheriff perform the duties of the county director of emergency services. Verify who has been given that responsibility for a county.<sup>23</sup>

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**B. CITIES**

Authorities:

- The state legislature is the entity that prescribes the procedures for city formation and provides for city powers.<sup>24</sup>
- A city charter may provide for that city having the power to make and enforce all ordinances and regulations in respect to municipal affairs, subject only to those restrictions and limitations provided in their charter and in respect to other matters, the city shall be subject to the general laws.<sup>25</sup>
- A city may make and enforce within its limits all local, police, sanitary, and other ordinances and regulations not in conflict with the general laws.<sup>26</sup>
- A city may adopt regulations designed to promote the health and welfare of the people.<sup>27</sup>

A state statute addressing an area of statewide concern is deemed applicable to charter and general law cities.<sup>28</sup>

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<sup>22</sup> Cal. Govt. Code §§ 22620-22623.

<sup>23</sup> Cal. Const. Art. XI, § 4.

<sup>24</sup> Cal. Const. Art. XI, § 2(a).

<sup>25</sup> Cal. Const. Art. XI, § 4(a).

<sup>26</sup> Cal. Const. Art. XI, § 7.

<sup>27</sup> *DeAryan v. Butler* (1953) 119 Cal. App. 2d 674; *cert. denied* 74 S.Ct. 863.

<sup>28</sup> *DeVita v. County of Napa* (1995) 9 Cal. 4th 763.

Chief of Police

“For the suppression of riot, public tumult, disturbance of the peace, or resistance against the laws or public authorities in the lawful exercise of their functions, the chief of police has the powers conferred upon sheriffs by general law and in all respects is entitled to the same protection.”<sup>29</sup>

The Chief of Police shall perform such other services as general law and the city ordinances require.<sup>30</sup>

Just like the Sheriff, the Chief of Police has the power to close areas to the public and consequently to order an evacuation. (See later discussion of § 409.5)

**Q.**

***WHAT POWERS DO LAW ENFORCEMENT HAVE REGARDING EVACUATIONS?***

**A.**

There are six specific statutes, in addition to the California Emergency Services Act, that provide methods for enforcing the restriction on movement of people and property.

*Penal Code § 148.2*

Provides for punishment of persons interfering with firefighters or rescue personnel during the discharge of their duties. Also makes it an offense to disobey orders given by firefighters or other public officers.

*Penal Code § 402*

Pertains to interfering with personnel at the scene of an emergency. Similar to Penal Code § 148.2, specifically broadens the conditions and types of personnel protected by the statute.

*Penal Code § 409*

Prohibits persons from remaining in the area of a riot or an unlawful assembly, after being warned to disperse.

*Penal Code § 409.3*

Provides that law enforcement has authority to control or manage an accident scene except for patient care.

*Penal Code § 409.5*

Allows specified law enforcement officers to close or restrict access to an area.

*Penal Code § 409.6*

Allows specified law enforcement officers to close or restrict access to an avalanche area, and provides for forcible removal from the area.

<sup>29</sup> Cal. Govt. Code § 41601.

<sup>30</sup> Cal. Govt. Code § 41611.



PENAL CODE § 148.2.

This section is primarily used when people interfere with emergency measures implemented by a public safety agency. There are four chargeable conditions under this section.

First, every person that intentionally resists or interferes with fire department personnel or emergency rescue personnel discharging their duties may be charged for this crime.<sup>31</sup>

Second, a person may be guilty under this section if he or she disobeys the order of any firefighter or public officer.<sup>32</sup>

Third, in case of a fire, a person who causes a fire's extinguishment to be postponed because of any act of disorderly conduct is also chargeable under this section.<sup>33</sup>

Fourth, a party who exerts influence on another person to delay or hamper the extinguishment of a fire may be charged under this section.<sup>34</sup>

Any volunteers or employees of a public firefighting agency are considered "emergency rescue personnel" when actively engaged in rescue of persons and property during an emergency.<sup>35</sup>

A private paramedic is not considered "emergency rescue personnel" for the purposes of § 148.2.<sup>36</sup>

***Exception to  
§ 148.2***

**PENAL CODE § 402.**

Penal Code section 402 provides that interfering with personnel at the scene of an emergency is a criminal act.

*"Every person who intentionally travels to, or stops at, an emergency scene for the purpose of viewing the scene or the actions of the public safety personnel and impedes the personnel from discharging their duties is guilty of a misdemeanor."*

Additionally, this section prohibits persons from interfering with rescues by impeding emergency vehicles or personnel while rescuers are traveling to or from an emergency scene for the purpose of protecting

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<sup>31</sup> Cal. Penal Code § 148.2.1.

<sup>32</sup> Cal. Penal Code § 148.2.2.

<sup>33</sup> Cal. Penal Code § 148.2.3.

<sup>34</sup> Cal. Penal Code § 148.2.4.

<sup>35</sup> Cal. Penal Code § 245.1

<sup>36</sup> *People v. Olsen* (1986) 186 Cal. App. 3d 257.

lives or property.

Traveling to, or stopping at, an emergency scene is permissible if a person's employment requires viewing of the scene. This exception is probably limited to members of the media. To avoid liability, each potential violator should be analyzed to determine whether viewing of the scene could be considered "part of the duties of their employment."

The term "emergency," as explained in section 402 (c), means any incident that involves injured persons, property damage, or a threat to the safety of persons or property.

*Causes of  
Emergencies*

Penal Code § 402 lists various causes of emergencies, including:

- fire,
- explosion,
- airplane crash,
- flooding,
- windstorm damage,
- railroad accident,
- traffic accident,
- power plant accident,
- toxic chemical spill, and,
- biological spill.

This list is merely illustrative. The code expressly includes any other natural or human-caused event.

**PENAL CODE § 409.**

Penal Code section 409 provides that failure to disperse from the area of a riot or an unlawful assembly is a criminal act.

*"Every person remaining present at the place of any riot, rout, or unlawful assembly, after the same has been lawfully warned to disperse, except public officers and persons assisting them in attempting to disperse the same, is guilty of a misdemeanor."*

The legislature intended that this section and related sections provide the means for officers to control any willful and malicious obstruction of the public's free use of a public way.<sup>37</sup>

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<sup>37</sup> *In re Bacon* (1966) 49 Cal. Rptr. 322.

***Offender's Guilt is Inferred***

Whether a person is guilty of the offense of assembling for the purpose of disturbing the peace or for failure to disperse does not depend on whether the assembly's purpose was consummated.<sup>38</sup> The offense of "remaining at place of riot" does not require that an individual actively participated in a riot or an unlawful assembly.<sup>39</sup>

**PENAL CODE 409.5**

Penal Code section 409.5 provides that specified law enforcement officers may close or restrict access to an area in the event of a disaster.

***Advantages/ Limitations***

The advantage of using Penal Code § 409.5 to restrict the movement of people or property is that it allows specified law enforcement officers to close an area by a verbal order on an immediate and/or selective basis. The disadvantage is that the announcement or orders may vary from officer to officer, increasing the likelihood of non-uniformity which could provide a basis for subsequent litigation. Close supervision and coordination are essential.

The agencies and persons that have the authority to restrict the movement of people and property under Penal Code § 409.5 are:

- California Highway Patrol,
- Sheriff's Office,
- Police Department,
- Marshal's Office,
- Any officer or employee of the Department of Forestry and Fire Protection designated a peace officer by subdivision (g) of Cal. Penal Code § 830.2,
- Any officer or employee of the Department of Parks and Recreation designated a peace officer by subdivision (f) of Cal. Penal Code § 830.2,
- Any officer or employee of the Department of Fish and Game designated a peace officer under subdivision (e) of Cal. Penal Code § 830.2,

Any publicly employed full-time lifeguard or publicly employed full-time marine safety officer while acting in a supervisory position in the performance of his or her official duties.

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<sup>38</sup> *People v. Anderson* (1931) 117 Cal. App. 763.

<sup>39</sup> *People v. Sklar* (1930) 111 Cal. App. Supp. 776.

**Note:** *Local health officer* If the calamity creates an immediate menace to the public health, the local health officer may close the area where the menace exists pursuant to the conditions set forth in this section.

*Other Subdivisions* Subdivisions (c) and (d) of section 409.5 pertain to unauthorized persons entering or refusing to leave a closed area. These sections also pertain to restricted entry into a closed area by members of the media, the general public, and affected residents.

*409.5(c) Unauthorized person entering a closed area or refusing to leave a closed area.*

“Any unauthorized person who willfully and knowingly enters an area closed pursuant to subdivision (a) or (b) and who willfully remains in the area after receiving notice to evacuate or leave shall be guilty of a misdemeanor.

*409.5(d) Restricted entry into a closed area for media and residents.*

“Nothing in this section shall prevent a duly authorized representative of any news service, newspaper, or radio or television station or network from entering the areas closed pursuant to this section.”

The media’s statutory right of access to disaster areas was clarified in the case of Leiserson v. City of San Diego in 1986. One of the issues in the case was whether a member of the media could have their access restricted because the area was “unsafe” to enter. The court reasoned that “press representatives must be given unrestricted access to disaster scenes unless police personnel at the scene reasonably determine that such unrestricted access will interfere with emergency operations.”<sup>40</sup>

**“...duly authorized representative...”**

The term “duly authorized representative” refers to individuals recognized by their employer and major city police or sheriff department as a working member of the press.<sup>41</sup> In 1984 the State Attorney General opined that the term “duly authorized” refers to a person authorized access by a news station, newspaper, radio or television network having duly authorized the individual to be its representative at the disaster location.<sup>42</sup>

<sup>40</sup> *Leiserson v. City of San Diego*, (1986) 184 Cal. App. 3d 41, 51.

<sup>41</sup> *L.A. Free Press v. City of Los Angeles* (1970) 9 Cal. App. 3d 448, 451.

<sup>42</sup> 67 Ops. Cal. Atty. Gen. 535 (1984).

*Order to evacuate*

Whether Penal Code § 409.5 permits law enforcement officers to forcibly evacuate an area is not clear.

*Issues*

Because of a variety of issues concerning the implementation of this approach, many jurisdictions decided to warn the person and either have that person sign a waiver form if the person refused to leave, or fully document the giving of the notice to leave and that person’s refusal to leave.

*Alternative*

Another alternative would be to have the officer order the evacuation, and should that person refuse to leave the area, the officer would arrest that person under Penal Code § 148.

*Evacuation order*

Rather than relying on Penal Code § 409.5, the local governing body should consider issuing an evacuation order that specifies the following:

- whether the order is for voluntary or mandatory evacuation;
- who is going to enforce the order (police, sheriff, director of emergency services, fire department, etc.);
- what they are authorized to do (evacuate, use reasonable force to remove someone from an area);
- the relevant time period; and
- that the evacuation is issued under provisions of the Emergency Services Act, thereby invoking the penalty provisions of the Act and affording the immunities accorded.

**PENAL CODE § 409.6**

Penal Code section 409.6 differs slightly from section 409.5, most noticeably in that it expressly authorizes the use of reasonable force to remove an unauthorized person from the closed area.

(a) Whenever a menace to the public health or safety is created by an avalanche, officers of the Department of the California Highway Patrol, police departments, or sheriff’s offices, any officer or employee of the Department of Forestry and Fire Protection designated a peace officer by subdivision (g) of Section 830.2, and any officer or employee of the Department of Parks and Recreation designated a peace officer by subdivision (f) of Section 830.2, may close the area where the menace exists for the duration thereof by means of ropes, markers or guards to any and all persons not authorized by that officer to enter or remain

within the closed area. If an avalanche creates an immediate menace to the public health, the local health officer may close the area where the menace exists pursuant to the conditions which are set forth above in this section.

***The media is allowed the same freedom of access to an area of avalanche danger that they have at any disaster scene:***

§ 409.6(d) Nothing in this section shall prevent a duly authorized representative of any news service, newspaper, or radio or television station or network from entering the areas closed pursuant to this section.

*Definition of an avalanche* An avalanche, for the purpose of this section, would include avalanches of snow and mudslides. Additionally, volcanic activity is also subject to the provisions of § 409.6.

Volcanoes are covered under this section because of the potential for avalanches resulting from a volcano’s pyroclastic flow. Pyroclastic flows are streams of hot ash and rock fragments, mixed with hot air and other gases, that move rapidly along the ground surface. Pyroclastic flows can occur when a large mass of rock avalanches from the side of a volcanic dome.<sup>43</sup>

Penal Code 409.6 may be used to facilitate an emergency area closure whenever a menace to the public health or safety is created by an avalanche.

The law enforcement officers may close the area that threatens the public, and may also close the area surrounding any emergency field command post or any other command post regardless of whether that command post is located near the avalanche.<sup>44</sup>

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*Differences between 409.5 and 409.6* Penal Code 409.6 is similar to section 409.5 except that it applies specifically to avalanches, including snow, mud, and volcanic. This section would also apply to mudslides and landslides. Unlike 409.5, the use of reasonable force to remove persons who were given notice to leave the area is expressly provided for in section 409.6.

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*Alternative* As with Penal Code § 409.5, the option remains to have the officer order the evacuation, and should that person refuse to leave the area, the officer could arrest that person under Penal Code § 148.

<sup>43</sup> *Volcanic Hazards* (1987) U.S. Govt. Print. Off. 194 - 389.

<sup>44</sup> Cal. Penal Code § 409.5(b).

*Evacuation order* Rather than relying on Penal Code § 409.6, the local governing body may issue an evacuation order that specifies the following:

- whether the order is for voluntary or mandatory evacuation;
- who is going to enforce the order (police, sheriff, director of emergency services, fire department, etc.);
- what they are authorized to do (evacuate, use reasonable force to remove someone from an area);
- the relevant time period; and
- that the evacuation is issued under provisions of the Emergency Services Act, thereby invoking the penalty provisions of the Act and affording the immunities accorded.

### **III. EMERGENCY SERVICES ACT / STANDARDIZED EMERGENCY MANAGEMENT SYSTEM**

*Q.* ***IS THE EMERGENCY SERVICES ACT A FACTOR IN CONTROLLING MOVEMENT OF PEOPLE AND PROPERTY?***

*A.* The various statutory provisions and the police power of the state that allow for controlling the movement of people and property during an emergency may be utilized independently or in conjunction with the Emergency Services Act. Immunity from liability is generally greater if the provisions of the Emergency Services Act are employed. To illustrate the differences, the discussion below explains the Emergency Services Act beginning with Government Code § 8550.

*State responsibility* Section 8550 codifies the legislative intent that the state is responsible to mitigate the effects of those emergencies “which result in conditions of disaster or in extreme peril to life, property, and the resources of the state, and generally to protect the health and safety and preserve the lives and property of the people of the state.” This section also confers emergency power on the Governor, the Director of the Office of Emergency Services, and the chief executives and governing bodies of political subdivisions of this state.

*“Political subdivision” defined* Government Code Section 8557(c) defines “political subdivision” to include “any city, city and county, county, district, or other local governmental agency or public agency authorized by law.”

By enacting the Emergency Services Act, the legislature merged civil defense, disaster response, and mutual aid into one operational concept. As a result, each political subdivision has the authority and obligation to plan and participate in emergency situations.

Q.

***HOW DOES MUTUAL AID RELATE TO CONTROLLING THE  
MOVEMENT OF PEOPLE AND PROPERTY?***

A.

Mutual Aid may be rendered under the authority and protection of the Emergency Services Act even though a local emergency has not been proclaimed. There must exist an emergency affecting life and property of such a magnitude that the local entity is unable to combat it with its available resources, and outside assistance is required. That outside assistance is termed “mutual aid”<sup>45</sup> for the purposes of the Emergency Services Act.

*Advantage*

If a local government renders mutual aid in the absence of a local emergency proclamation, it may do so and still be within the auspices of the Emergency Services Act. The advantage of proclaiming a local emergency is that it conclusively establishes the actions were within the Emergency Services Act. Compliance with the Act provides local government greater immunities such as immunity from liability for itself and its employees.<sup>46</sup>

*Master  
Mutual Aid  
Agreement*

The Emergency Services Act does not specifically define “mutual aid.”<sup>47</sup> Instead, the Act merely references the Master Mutual Aid Agreement, approved emergency plans, and the authority for rendering such aid during a war emergency or state of emergency.<sup>48</sup> Mutual aid must be consistent with the Master Mutual Aid Agreement and the Standardized Emergency Management System.<sup>49</sup>

In periods other than a state of war emergency, state of emergency, or local emergency, the Emergency Services Act refers to the Master Mutual Aid Agreement and local ordinances, resolutions, agreements, or plans as authority for the exercise of mutual aid powers.<sup>50</sup>

<sup>45</sup> Cal. Govt. Code § 8559

<sup>46</sup> *Soto v. California* (1997) 56 Cal. App. 4th 196.

<sup>47</sup> Cal. Govt. Code §§ 8615-8618.

<sup>48</sup> Cal. Govt. Code §§ 8560, 8561, 8615, 8616.

<sup>49</sup> Cal. Govt. Code § 8617, Cal. Code Regs. tit. 19, § 2415(c).

<sup>50</sup> Cal. Govt. Code §§ 8560, 8561, 8617.



The Master Mutual Aid Agreement suggests that mutual aid means the interchange of services and facilities on a local, county-wide, regional, state-wide and interstate basis to combat the effects of disasters which may result from such calamities as flood, fire, earthquake, pestilence, war, sabotage and riot, and is intended to be available in the event of a disaster of such magnitude that is, or is likely to be, beyond the control of a single political subdivision and requires the combined forces of several political subdivisions to combat.

***Q. WHAT ARE THE ADVANTAGES TO A LOCAL GOVERNMENT OF PROCLAIMING A LOCAL EMERGENCY PRIOR TO ENACTING ORDERS CONTROLLING THE MOVEMENT OF PEOPLE AND PROPERTY?***

**A.** The immunities of the “Emergency Services Act” provide more protection than those offered by the “State Tort Claims Act.” In the event of litigation, however, a local government will have to establish that it was acting in accordance with the Emergency Services Act” in order to use its protection.<sup>51</sup>

***Local Proclamation of Emergency***

The easiest way to prove a local governing body was acting underneath the protection of the Emergency Services Act is when a “state of local emergency” has been proclaimed by the local governing body.

*In-county resources* By proclaiming a state of local emergency, there is a finding that an emergency exists and that mutual aid is needed to assist that entity. Even if only in-county resources are utilized, the Master Mutual Aid Agreement and any local agreements to provide mutual aid should be sufficient to establish that the Emergency Services Act applies.<sup>52</sup>

*Out-of-county resources* If out-of-county assistance is needed, requests for mutual aid should follow the procedures set forth by the Office of Emergency Services, including obtaining mission numbers from OES for responding agencies. This is particularly important for possible reimbursement of extraordinary expenses in the event of a proclaimed “State of Emergency” or in the event of a presidential declaration of disaster when state or federal disaster relief funds become available.

*Proclaim* If there are grounds for proclaiming a “local emergency,” for a number of

<sup>51</sup> *Adkins v. State of California* (1996) 50 Cal. App. 4th 1802.

<sup>52</sup> Cal. Govt. Code §§ 8615-8617, 8631.

early

reasons, proclaim it at the earliest possible time. By doing so, the proclamation provides for the following:

- alerting and activating the mutual aid system;
- invoking and disseminating emergency orders at the earliest possible time; and
- meeting the requisites for seeking the Governor’s proclamation of a “State of Emergency.”

*Issue orders  
and  
regulations*

Another advantage to proclaiming a local emergency is authorization of the local governing body to issue “orders and regulations necessary to provide for the protection of life and property.”<sup>53</sup>

This provision is particularly important because enhanced control over the movement of people and property during an emergency is available.

For example:

- The local governing body may expand the category of persons who are authorized to announce and enforce the orders;
- the failure to obey the order is a misdemeanor subject to fine and/or imprisonment;<sup>54</sup>
- The use of an order avoids the legal ambiguities that exist in using Penal Code section 409.5 when used to restrict movement into or out of a disaster area.

*Q.*

***WHAT ARE THE CONSEQUENCES OF NOT PROCLAIMING A  
LOCAL EMERGENCY?***

***No Local  
Proclamation***

If a state of local emergency is not proclaimed, then the only remaining authorities that would allow restrictions on the movement of people and property would be statutorily authorized officials, and the governing body’s use of the police power. Additionally, in order for a local agency to receive the immunity afforded by the Emergency Services Act, the parties would have to establish that mutual aid was provided in accordance with the act. This would require proving that the emergency response was accomplished in accordance with the State Emergency Plan, the Master Mutual Aid Agreement, or local mutual aid

<sup>53</sup> Cal. Govt. Code § 8634.

<sup>54</sup> Cal. Govt. Code § 8665.

agreements or plans.<sup>55</sup>

***Actions under  
the ESA***

If a local government entity were to be sued, it would have to establish that it was acting under the provisions of the Emergency Services Act in order to receive the protection offered by the Emergency Services Act. Although a proclamation of an emergency is not a prerequisite to establish that actions occurred pursuant to the ESA, such a proclamation facilitates establishing that the ESA applies.

***Q.***

***WHAT IS THE BEST WAY TO RECEIVE EXPANDED IMMUNITY  
PURSUANT TO THE EMERGENCY SERVICES ACT?***

***A.***

The best way to insure that a local government or agency is protected by the immunities of the Emergency Services Act is to:

- Establish a local plan,
- Have the plan approved by the local governing body,
- Have the plan reviewed by OES,
- Verify that the plan is consistent with the State Emergency Plan as adopted by the Governor.<sup>56</sup>

A second method for claiming the expanded immunities of the California Emergency Services Act is to establish that mutual aid was provided in accordance with the Emergency Services Act, the Master Mutual Aid Agreement, the Standardized Emergency Management System, and the procedures set forth by the Office of Emergency Services.

*“All mutual aid systems and agreements shall be consistent with SEMS and the Master Mutual Aid Agreement.”<sup>57</sup>*

***Mutual aid  
outside OES  
procedures***

On occasion, there may be assistance rendered according to local agreement, or merely a request for assistance, without utilizing the formalized OES mutual aid procedures. This often occurs within an operational area.

***Operational  
Area***

“An intermediate level of the state emergency services organization, consisting of a county and all political subdivisions within the county area.”<sup>58</sup>

<sup>55</sup> Cal. Govt. Code §§ 8560 et seq.

<sup>56</sup> Cal. Govt. Code §§ 8560, 8568, 8569.

<sup>57</sup> Cal. Code Regs., tit. 19, § 2415(c).

<sup>58</sup> Cal. Govt. Code §8559(b).

*Make  
reference to  
the ESA*

If a formal agreement is drafted, or an ordinance or regulation enacted requiring mutual aid to combat an emergency, it is recommended that reference to the mutual aid provisions of the Emergency Services Act be incorporated into those documents.<sup>59</sup> These approaches will at least allow for an arguable position that there was substantial compliance with the Emergency Services Act.

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***WHAT AGENCIES ARE REQUIRED TO IMPLEMENT SEMS?***

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*Q.*

*A.*

All state agencies are required to use the Standardized Emergency Management System for coordination during either multiple jurisdiction or multiple agency emergency and disaster operations.<sup>60</sup> The use of SEMS is not mandatory for local agencies, however, the use of SEMS is required to be eligible for reimbursement of disaster related personnel response expenses.<sup>61</sup>

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***HOW IS SEMS APPLIED IN AN EMERGENCY?***

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*Q.*

*A.*

The State of California has developed the Standardized Emergency Management System (SEMS) for responding to and managing multi-agency and/or multi-jurisdictional emergencies and disasters within California's territorial area.

***DESCRIPTION OF SEMS***

The Standardized Emergency Management System incorporates a broad range of emergency management practices to effectively respond to disasters. Between disasters, SEMS builds connections to integrate management, communications, and resources at the local, regional, and statewide levels to maximize the responsiveness of emergency personnel.

***Emergency Response Organization***

The Standardized System is multi-level and designed to manage disasters anytime and anywhere in the State. It is intended to facilitate priority setting, interagency cooperation, and the efficient flow of resources and information, but does not alter statutory authorities or responsibilities of emergency responders.

SEMS provides the framework for coordinating state and local government emergency response in California using the existing incident command system

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<sup>59</sup> Cal. Health & Safety Code § 13863.

<sup>60</sup> Cal. Govt. Code § 8607(d).

<sup>61</sup> Cal. Govt. Code § 8607(e).

and mutual aid agreements. It consists of five organizational levels, five main functions, mutual aid, the Incident Command System, multi/inter-agency coordination, and the operational area concept.

***Five Organizational Levels:***

**Field level** - includes those entities which manage and coordinate response at the emergency scene.

**Local level** - manages and coordinates county, city, or special districts (which in turn manage and coordinate the field levels).

**Operational areas** - manage and coordinate at the local level (essentially all local governments within the geographic boundary of a county).

**Regional levels** - manage and coordinate information and resources among operational areas.

**State level** - provides statewide regional level resource coordination integrated with federal resource coordination.

***Five Main Functions of the SEMS Structure***

**Management** -provides the overall direction and sets priorities for an emergency, limited by the jurisdiction roles and responsibilities.

**Operations** - implements priorities established by the management function.

**Planning/Intelligence** - gathers and assesses information.

**Logistics** -obtains the resources to support the operations.

**Finance/Administration** - tracks all costs related to the operations.

Most local jurisdictions have "mutual aid" agreements. These agreements provide a means for a community, that has fully committed all of its available resources to a local emergency, to obtain additional resources from surrounding communities and counties. Mutual aid agreements are used daily and during disasters by fire, law enforcement, health care, and other disciplines. SEMS incorporates existing, and newly developed mutual aid systems. The Incident Command System provides standardized procedures and terminology, a unified command structure, a manageable span of control, and an action planning process that identifies overall incident response strategies. Within SEMS, the general concepts of the ICS are translated to each level of the statewide response system--from a local field incident to statewide coordination. This allows seamless communication among all responding agencies and levels of government.

## IV. ROUTE AND AREA CLOSURES

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### *IS RESTRICTING TRAVEL ROUTES PERMITTED?*

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**Q.**

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#### ROADS & HIGHWAYS.

**A.**

*General  
Concept*

Under the police powers of the state and by statutory authority, emergency response and law enforcement agencies are empowered to close roads to general traffic under the authority of the police powers.

Because the state has preempted the entire field of traffic control, any right of a local authority to interfere with the free flow of traffic, such as closing a street, must be derived from an express delegation of authority from the Legislature.<sup>62</sup>

The same police power that allows for the closure of a road also imposes a duty to allow the movement of people and property as soon as possible, because that is the primary purpose of the roadway.<sup>63</sup>

Authorities:

- Police Power
- Vehicle Code
- Health and Safety Code
- Street and Highways Code

*General rule*

A local legislative body having authority to adopt local police regulations may close a street when the local authority that has jurisdiction determines it is necessary for the safety and protection of persons using the street during the closure.<sup>64</sup> Signs must be posted at all entrances of the affected section before the closure may take effect.<sup>65</sup>

*State  
Highways*

The California Department of Transportation is statutorily authorized to restrict traffic or close any state highway whenever necessary for the protection of the public or for protection of the highway during storms.<sup>66</sup>

*Note:*

The Department of Transportation, sometimes referred to as “CalTrans,” often performs traffic restrictions and road closures in conjunction with the Highway Patrol. It is important to note that each agency has independent statutory authority to close a state highway.

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<sup>62</sup> Cal. Vehicle Code § 21; 75 Ops. Cal. Atty. Gen. 80 (1992).

<sup>63</sup> *People v Uffindell* (1949) 90 Cal. App. 2d Supp. 881, 883, 202 P.2d 874, 876.

<sup>64</sup> 78 Ops. Cal. Atty. Gen. 65, fn. 2 (1995).

<sup>65</sup> Cal. Health & Safety Code § 21103

<sup>66</sup> Cal. Streets and Highways Code § 124.

**County  
Highways**

The Board of Supervisors of a county may restrict traffic or close any county highway whenever the board determines those actions are necessary to protect the public or to protect the highway from damage during a storm.<sup>67</sup> The Board of Supervisors may delegate their authority to the county road commissioner.<sup>68</sup>

**Highway  
Patrol**

The California Highway Patrol, police departments, and sheriff's office may close any highway to traffic if there is a threat to public health or safety caused by dangerous substances.<sup>69</sup> Additionally, the Highway Patrol may also restrict traffic or close down any highway if visibility poses a significant safety hazard.<sup>70</sup>

**WATERWAYS.**

A state may exercise its police powers in regulating the use of navigable waters within its borders in the absence of federal preemption.<sup>71</sup> The California Department of Boating & Waterways is one state agency possessing authority to close waterways during an emergency.<sup>72</sup>

Regulations that restrict or prohibit traveling on federally designated navigable waterways normally are considered to be an infringement on the public's rights. However, in an emergency situation, reasonable regulations are permitted in the interests of the safety and welfare of the public.<sup>73</sup>

The Department of Water Resources is vested with the authority to supervise reservoirs as necessary to safeguard life and property. The Department also has the power to take remedial measures necessary to protect the health, safety, convenience and welfare of the general public during times of extraordinary stress and of disaster resulting from storms, floods, or where damage to watershed lands by forest fires has created an imminent threat of floods or damage.<sup>74</sup>

**FIRES.**

It is a criminal offense to disobey the lawful order of any firefighter or public officer at a forest fire,<sup>75</sup> or a firefighter in the course of his/her duties he/she is protecting personnel or equipment.<sup>76</sup>

Roads or other areas may be closed to vehicle or conveyances to prevent

<sup>67</sup> Cal. Streets and Highways Code § 942.5

<sup>68</sup> Cal. Streets and Highways Code § 942.6

<sup>69</sup> Cal. Vehicle Code § 2812

<sup>70</sup> Cal. Vehicle Code § 2812.5

<sup>71</sup> 80 Ops. Cal. Atty. Gen. 311 (1997).

<sup>72</sup> See *Protocol for Closure of Delta Waterways*, State of California, Office of Emergency Services, November 1997

<sup>73</sup> 45 Ops. Cal. Atty. Gen. 122, 128 (1965)

<sup>74</sup> Cal. Water Code §§ 128, 6100.

<sup>75</sup> Cal. Pub. Res. Code § 4165(a).

<sup>76</sup> Cal. Vehicle Code § 2801.

damage to firefighting apparatus or to prevent firefighting efforts from being interfered with.<sup>77</sup>

**OFF SHORE.**

The United States Coast Guard has exclusive jurisdiction over incidents occurring at sea. The Coast Guard may also act in supporting roles to assist other jurisdictions in inland or near shore responses.

**AIRPORTS.**

Congress' whole purpose in creating the Federal Aviation Administration was to promote safe air travel, and to protect the lives and property of people on ground as well as air travelers.<sup>78</sup> Further, Congress has impliedly preempted state and territorial regulation of aviation safety because the nature of aviation safety permits only one uniform system of regulation.<sup>79</sup>

Many airports have memorandums of understanding or similar instruments with local public safety agencies for the purpose of providing rapid and efficient response in the event of a disaster or an emergency.

***National Transportation Safety Board***

The National Transportation Safety Board is the federal entity responsible for investigating aviation crashes.<sup>80</sup>

**OFF-HIGHWAY AREAS**

In order to protect natural resources, among other reasons, the United States Bureau of Land Management may temporarily prevent public use of federal lands within the State of California.<sup>81</sup>

**EARTHQUAKE DAMAGED AREAS<sup>82</sup>**

Local law enforcement officers may restrict entry to an area damaged by an earthquake while a threat exists to the public health and safety, as determined on a case by case basis. However, media representatives may not be denied access to the area.

**NUCLEAR INCIDENTS<sup>83</sup>**

State law is the primary authority relating to precautionary evacuations due to a nuclear incident. Reimbursement for evacuation costs under the Price-

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<sup>77</sup> Cal. Pub. Res. Code § 4165(b), (e).

<sup>78</sup> *NORML v. Mullen* (1985) 796 F.2d 276.

<sup>79</sup> United States Const., art. VI, cl. 2; 49 U.S.C § 40101 et seq.

<sup>80</sup> 49 U.S.C § 1101 et seq.

<sup>81</sup> 63 Ops. Cal. Atty. Gen. 115 (1980).

<sup>82</sup> 67 Ops. Cal. Atty. Gen. 535 (1984).

<sup>83</sup> See generally, Price-Anderson Act, 42 U.S.C. § 2011 et seq.



Anderson act requires that the evacuation be authorized by State law, and be necessary to protect public health and safety.<sup>84</sup>

Q.

**WHAT IS THE AUTHORITY FOR CLOSING PUBLIC BEACHES?**

A.

Authorities:

- Police Power
- Health and Safety Code § 115885
- Penal Code § 409.5

The local health officer may restrict the use of, or close all or a portion of a public beach if they find violations of department standards exist. The health officer must inform the agency responsible for the beach within 24 hours of a closure or restriction.<sup>85</sup>

In the event of an untreated sewage release adjacent to a public beach, the local health officer shall close the beach and waters until the area is within safe standards.<sup>86</sup>

## V. EVACUATIONS

For the purpose of this guideline, an evacuation is considered a control on the movement of people and their property. An evacuation may be a voluntary evacuation, where the governing body recommends but does not require the evacuation of an area. Alternately, an evacuation may be mandatory, where the governing body determines that under its police power it can require the citizens of an area to leave that area in order to protect life, safety, or the general welfare of the population during an emergency. In either event, an evacuation is best ordered pursuant to either statutory authority or the Emergency Services Act.

***Penal Code §  
409.5***

Section 409.5 provides that specified law enforcement officers may close or restrict access to an area in the event of a disaster. This is the most common method used to initially order an evacuation, and is usually used prior to a resolution by the local governing body.

***Penal Code  
§409.6***

Penal Code Section 409.6 provides law enforcement officers with the same powers as allowed under § 409.5, however, § 409.6 expressly allows the use of reasonable force to remove an unauthorized person from a closed avalanche area.

<sup>84</sup> 42 U.S.C. §§ 2014(w), (gg), 2210(q).

<sup>85</sup> Cal. Health & Safety Code § 115880, 115885.

<sup>86</sup> Cal. Health & Safety Code § 115880, 115885.

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*Issues* Instead of forcibly removing persons from an area ordered evacuated, many jurisdictions merely warn the person and either have them sign a release of liability or fully document the notice given and the citizen’s refusal to leave. There are potential problems with this method, such as questions of whether “duress” could be construed when a citizen signs the release under emergency conditions, and whether a mere waiver is adequate to relieve the governing body of its obligation under the police powers of the state.

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*Alternative* An alternative to the use of a signed waiver would be to have an officer order an evacuation. This would permit the officer to arrest that person under Penal Code § 148 or § 148.2.

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*Another Alternative* Occasionally a person may refuse to evacuate an area, and may advise others to do the same. Under some circumstances, that person may be subject to arrest for violation of criminal statutes such as child endangerment, cruelty to animals, suicide, and others.<sup>87</sup>

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***ARE THERE ALTERNATIVES TO EVACUATING UNDER § 409.5?***

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*Q.*

*A.* The local governing body may impose voluntary or mandatory evacuation orders pursuant to their police powers. The preferred practice is to proclaim a local emergency under provisions of the Emergency Services Act and then issue any evacuation order pursuant to that authority.

***WHAT ARE THE MEANS FOR IMPOSING A MANDATORY EVACUATION?***

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*Q.*

*A.* There are four different means for imposing a mandatory evacuation.

*Penal Code § 409.5* Penal Code section 409.5 authorizes officers of the highway patrol, police departments, marshal’s office or sheriff’s office and certain other statutorily designated law enforcement officers to close an area whenever there is a menace to public health or safety.

Although section 409.5 is often utilized during emergencies, it is not clear whether it authorizes law enforcement to remove persons who were within the area prior to its closure. Further, only those officers specifically named in the statute may enforce it.

*Penal Code § 409.6* Penal Code section 409.6 authorizes officers of the highway patrol, police departments, marshal’s office or sheriff’s office and certain other statutorily

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<sup>87</sup> Cal. Penal Code §§ 273a, 273d, 401, 597.

designated law enforcement officers to close an area whenever there is a menace to public health or safety caused by an avalanche or the potential for an avalanche.

Section 409.6 expressly provides for the use of reasonable force to remove persons from an area that has been ordered closed pursuant to section 409.6.

*State of local  
emergency*

Even though a local governing body has inherent policy powers to protect the health and safety of its people, Government Code § 8558(c) and § 8630 authorize the local governing body to proclaim a “state of local emergency” pursuant to the Emergency Services Act.

When a “state of local emergency” has been proclaimed, the local governing body may issue orders and regulations “necessary to provide for the protection of life and property.”<sup>88</sup> An order for mandatory evacuation would be authorized under that section. Failure to comply with such an order is a misdemeanor providing imprisonment for up to six months and/ or a fine of up to \$1,000.<sup>89</sup>

The advantage of this approach is that local control and coordination are maintained.

*Enacting  
local  
ordinances*

Although the police power are primarily legislative, a governing body of a political subdivision is not required to promulgate specific rules or ordinances to be enacted prior to a particular incident. The reason for this is twofold: First, it is neither practical or possible to envision every type of incident that would require a restriction on the movement of people or property. Second, the proclamation of an emergency by the local governing body allows for flexibility in enacting rules. For example, an official designated by the governing body may proclaim a local emergency, after which it does not need to be ratified by the governing body for seven days.<sup>90</sup>

If the local governing body wishes to empower a particular official with the authority to proclaim an emergency, this should be done by ordinance prior to a potential emergency. This provides for a smoother transition than would otherwise normally exist under emergency circumstances.

In preparation for an emergency response, a governing body could adopt, by ordinance, emergency standby orders for evacuations, quarantines, curfews and other restrictions on the right to travel. These ordinances may be drafted to become effective upon the proclamation of a local emergency.

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<sup>88</sup> Cal. Govt. Code § 8634.

<sup>89</sup> Cal. Govt. Code § 8665.

<sup>90</sup> Cal. Govt. Code § 8630.

One advantage offered by this method is that the appropriate authorities will immediately be empowered to act upon the proclamation of a local emergency, reducing response time, and allowing for pre-planning of an emergency response.

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*Example:* For example, the local governing body can, by emergency standby order, authorize the local director of emergency services to evacuate or close areas under certain conditions. In the emergency standby order the local governing body would specify who they have designated to act on their behalf, and what that person's authority is.

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If the governing body operates under an ordinance when no local emergency has been proclaimed, the ordinance may be deemed by the courts as complementing Penal Code § 409.5 rather than the Emergency Services Act, and consequently limit the immunities afforded by the Emergency Services Act.<sup>91</sup>

### *State of Emergency*

The Governor may proclaim a "state of emergency."<sup>92</sup> During a "state of emergency" the Governor has complete authority over all state agencies and the right to exercise all police powers vested in the State, including the issuance of such orders and regulations as deemed necessary.<sup>93</sup>

The Governor may also amend or rescind existing orders and regulations.<sup>94</sup> The Governor may suspend any regulatory statute, any statute prescribing the procedure for conducting state business, or the orders, rules, or regulations of any state agency.

Local public officials and employees are required to render all possible assistance to the Governor during a "state of emergency."<sup>95</sup> The ordinances, orders, and regulations of a political subdivision continue in effect during a state of emergency unless suspended or superseded by an order issued by the Governor.<sup>96</sup>

Thus, the Governor may choose to either assume responsibility for the issuance of mandatory evacuation orders or abide by the mandatory evacuation orders issued by the affected political subdivision.

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<sup>91</sup> Cal. Govt. Code §§ 8655 et. seq.

<sup>92</sup> Cal. Govt. Code §§ 8558(b), 8625.

<sup>93</sup> Cal. Govt. Code §§8567, 8627, 8627.5, 8628.

<sup>94</sup> Cal. Govt. Code § 8567.

<sup>95</sup> Cal. Govt. Code § 8614.

<sup>96</sup> Cal. Govt. Code § 8614.

*Proclaim early* If a governing body issues a local proclamation of emergency, it is preferable to issue the proclamation at the earliest possible time since this will authorize the local governing body to issue “orders and regulations necessary to provide for the protection of life and property.”<sup>97</sup>

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*Note:* Review the city charter to determine what powers the local government possesses. The city may already have independent powers to take certain emergency response actions, providing that those actions do not conflict with any state statutes.

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*Ordinances remain in effect* Local ordinances remain in effect even if a “State of Emergency” is proclaimed by the Governor unless the Governor orders the local ordinance suspended or superseded.<sup>98</sup> The Governor may permit local governing bodies to continue to exercise their emergency powers and to issue orders and regulations even though a “State of Emergency” is proclaimed.

## **VI. CURFEWS**

For the purpose of this guideline, a curfew is a restriction on movement of persons or property based on time of day factors. Usually restrictions on the freedom to travel in public areas are considered intrusions by the state that are protected against by the Due Process Clause of the Fourteenth Amendment.<sup>99</sup> However, the government may limit an individual’s freedom under exigent circumstances if necessary to promote the general public’s safety. For example, an insurrection or riot is an instance where the government’s interest in safety outweighs a person’s right to assemble, speak or travel in public areas as long as the imminent peril of violence exists.<sup>100</sup>

Curfews may also be justified after natural or manmade disasters for other public safety reasons:

- Imminent threat of violence,
- Protecting the health of citizens,
- Protecting private property,
- Protecting government services,
- other interests relating to public welfare during or following a disaster.

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*Q.*

### **ARE THERE CONSTITUTIONAL CONCERNS WITH CURFEWS?**

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<sup>97</sup> Cal. Govt. Code § 8634.

<sup>98</sup> Cal. Govt. Code § 8614(c).

<sup>99</sup> *Papachristou v. Jacksonville*, (1972), 405 U.S. 156.

<sup>100</sup> *In re Juan C.* (1994) 28 Cal. App. 4th 1093, 1101, 33 Cal. Rptr. 2d 919, 923.

- A. There are several immediate Constitutional concerns. For example, because a curfew imposes restrictions on the time, place, and manner in which speech may be exercised, discretionary determinations by a public official of who may be heard or not heard encourages censorship and discrimination, and is constitutionally suspect.<sup>101</sup>

Further, there is judicial concern that "...unless there is a genuine emergency, a curfew aimed at all citizens could not survive constitutional scrutiny."<sup>102</sup>

Citywide or countywide curfew laws enacted or promulgated at a time of riot or civil disorder have been held valid, as against various constitutional objections.<sup>103</sup>

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**WHO HAS THE AUTHORITY TO ORDER A CURFEW?**

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Q.

- A. There are several statutory authorities that expressly allow for the implementation of a curfew. These authorities are in addition to the inherent police powers delegated to the local political subdivisions by the state legislature.<sup>104</sup>

**EMERGENCY SERVICES ACT.**

The Emergency Services Act provides that during a local emergency, the local government, or a designated agent, may impose a curfew. Additionally, the Governor has the authority to exercise "all police powers vested in the State...", which would include the power to order a curfew.<sup>105</sup>

*Govt. Code*  
§ 8634

"During a local emergency the governing body of a political subdivision, or officials designated thereby, may promulgate orders or regulations necessary to provide for the protection of life and property, including orders or regulations imposing a curfew within designated boundaries where necessary to preserve the public order and safety."

Under § 8634 of the Emergency Services Act, there are three sources of a

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<sup>101</sup> *In re Juan C.* (1994) 28 Cal. App. 4th 1093, 1099.

<sup>102</sup> *Bykofsky v. Borough of Middletown* (1976) 429 U.S. 964, 965 cert. denied (*dissent* Justices Marshall and Brennan)

<sup>103</sup> *United States v Chalk* (4th Cir. 1971) 441 F. 2d 1277. *cert. denied* 404 U.S. 943.

<sup>104</sup> Cal. Govt. Code § 8634.

<sup>105</sup> Cal. Govt. Code §§ 8567(a), 8627.

curfew proclamation. These sources include: the local governing body, an official designated by the local governing body, or the Governor.

### **Local Governing Body**

A local governing body is the legislative body, trustees, or directors of any city, city and county, county, district, or other local government agency or public agency authorized by law.<sup>106</sup>

The local governing body may order a curfew, after a local emergency has been proclaimed, if the curfew is necessary to preserve public order and safety.

### **Designated Official**

The designated official should be determined by an ordinance adopted by the local governing body.<sup>107</sup> The designated official of the local governing body usually means the mayor, city manager, or other person whose chief function is the administration of an area. Depending upon the particular circumstances of the situation, power may be vested in an officer of a law enforcement agency, fire suppression agency, or health department.

The designated official of the local governing body may order a curfew after a local emergency has been proclaimed, if the curfew is necessary to preserve public order and safety.

### **Governor**

The Governor has the authority to make, amend, and rescind regulations. The Governor has the power to impose a curfew if necessary to carry out the provisions of the Emergency Services Act.

During a state of emergency, the Governor has complete authority over all of the state government and the right to exercise all police powers of the state.<sup>108</sup> The Governor has the authority to make, amend, or rescind a curfew initiated by a local government under a local emergency, because a local government's authority flows from the state. California Govt. Code § 8627 vests all of the state's police power in the Governor during a state of emergency.

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<sup>106</sup> Cal. Govt. Code § 8557(c), (d).

<sup>107</sup> Cal. Govt. Code § 8630.

<sup>108</sup> Cal. Govt. Code § 8627.

<sup>109</sup> Cal. Govt. Code § 8625(a).

<sup>110</sup> Cal. Govt. Code § 8558(b).

<sup>111</sup> Cal. Govt. Code § 8567(a).

All local governments must “follow the lawful orders of the Governor” during a “state of emergency,” as well as during a “state of war emergency.”

“The Governor is [ ] empowered to proclaim a state of emergency in an area affected or likely to be affected thereby when...he finds that local authority is inadequate to cope with the emergency.”<sup>109</sup> This indicates that the Governor can determine when an emergency is or is likely to be “beyond the control of the services, personnel, equipment, and facilities of any county, city and county, or city and requires the combined forces of a mutual aid region or regions to combat...”<sup>110</sup>

Additionally, the Governor also has the authority to make, amend and rescind orders and regulations to carry out the provisions of the California Emergency Services Act.<sup>111</sup> Under this section, there are no restrictions limiting the Governor’s authority over local jurisdictions to “state of war emergency.”

**HEALTH AND SAFETY CODE.**

**Department of Health Services**

*Health &  
Safety  
§ 120140*

The department of Health Services may take measures as necessary to determine the nature of any contagious, infectious, or communicable disease and prevent the disease from spreading. Additionally, the department may take possession or control of any living person.

Because of the various methods of spreading disease, it is possible that a curfew might become necessary. It may become necessary to enforce a curfew to prevent the unnecessary spread of a disease to surrounding regions.

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***HOW IS A CURFEW ORDERED?***

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***Q.***

***A.***

A curfew is allowed as a function of the state’s police power. Because of the tenuous relationship between a curfew and restrictions on a person’s constitutional rights, the ordering of a curfew on a local level should be done by legislation.

For local governments, an emergency curfew may be imposed following the proclamation of a local emergency, since this offers increased protection from liability, in addition to express statutory authorization under Govt. Code § 8634. A curfew may be ordered under circumstances other than those in the Emergency Services Act.<sup>112</sup>

A curfew on a state level should be imposed by the Governor following proclamation of a state of emergency, or a state of war emergency. Exceptions

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<sup>112</sup> Cal. Govt. Code § 8634.



to this would be when the exigency of the potential problem to be avoided or alleviated would make it necessary for an interim curfew to be imposed prior to the Governor's proclamation of a curfew.

**EMERGENCY SERVICES ACT REQUIREMENTS**

*Must be written*

A curfew must be in writing. This includes all orders and regulations regarding the curfew, and amendments to the original curfew. Additionally, when the curfew restriction is lifted, the rescission of the curfew must also be in writing.<sup>113</sup>

*Must provide widespread publicity*

An additional requirement of a curfew order is that the orders and regulations concerning the curfew must be given "widespread publicity and notice."<sup>114</sup>

*Note:*

Methods of notice should include local media. Care should be used to ascertain if alternative methods are necessary due to power outages, or other exigent circumstances.

**GENERAL REQUIREMENTS (CASE-LAW)**

*Careful Drafting*

Because restricting a person's freedom to travel is such an important concept in our society, a curfew must be carefully drafted to avoid later constitutional and due process claims.

During a local emergency, the county, city or city and county may impose a curfew within a designated boundary to preserve public order and safety.

*Must not be vague*

For an emergency curfew regulation to withstand a facial vagueness challenge under the due process clause, there are two basic requirements:

**1. NOTICE TO THE PUBLIC.**

The statute or regulation must be sufficiently definite to provide adequate notice

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<sup>113</sup> Cal. Govt. Code § 8634.

<sup>114</sup> Cal. Govt. Code § 8634.

of conduct proscribed.<sup>115</sup>

## **2. CLEAR INSTRUCTIONS FOR ENFORCEMENT.**

The regulation must provide sufficiently definite guidelines for the police in order to prevent arbitrary and discriminatory enforcement.<sup>116</sup> In other words, concern that law enforcement might exercise their discretion in an unlawful manner, such as based on a person's race or economic status, would render an otherwise well defined statute unconstitutionally vague.<sup>117</sup> Concern would be caused on a showing of evidence that the curfew law was discriminatorily or arbitrarily enforced.<sup>118</sup>

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*Explanation:* A regulation is not unconstitutionally vague merely because an officer can, when presented with probable cause, exercise his discretion and decide whether or not to arrest someone.<sup>119</sup>

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**Legislation should not be inclusive** Because some persons and activities are required and necessary during a curfew, such as police activity, firefighting, media reporting, these categories should be specified. However, if an inclusive list is created, the curfew might be found to be unconstitutional because of people that have good cause to be on the streets are not included in the list of examples, such as homeless people.

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### **HOW SHOULD THE CURFEW ORDER BE DRAFTED?**

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**Q.**

**A.** While the Emergency Services Act does not provide any requirements in excess of those listed in Govt. Code § 8634, general rules derived from non ESA curfews should be used for guidance.

First, the curfew order must be carefully drafted to prevent being invalidated or later found to be unconstitutional.

#### **Narrow Emphasis**

Because a curfew significantly interferes with a person's protection under the 14<sup>th</sup> amendment, the State or the local political subdivision that is responsible for promulgating the curfew regulations must be able to demonstrate that the curfew

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<sup>115</sup> *People v Richardson* (1994) 33 Cal. App. 4th Supp. 11.

<sup>116</sup> *Id.*

<sup>117</sup> *People v. Superior Court* (1998) 46 Cal. 3d 381, 397-398.

<sup>118</sup> *People v Richardson* (1994) 33 Cal. App. 4th Supp. 11, 17.

<sup>119</sup> *People v Monroe* (1993) 12 Cal. App. 4th 1174, 1193.

order is “narrowly drawn” to further a “compelling state interest,” which would presumably be the health, safety, or general welfare of the affected citizens.<sup>120</sup>

A curfew may be deemed unconstitutional on the face of the document if it seeks to prohibit “an overly broad range” of constitutionally protected conduct.<sup>121</sup>

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*Suggested Practice:* Specify the emergency or possible problem that the curfew is being imposed to prevent or decrease. Do not attempt to solve subsidiary or ancillary problems that are not the specific target of the proposed curfew. An emergency curfew should only be ordered when there is a heightened need to protect the public health, safety, or to protect the constitutional rights of citizens.<sup>122</sup>

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### **Clear Language**

Second, the order should clearly describe what conduct is to be prohibited, and must sufficiently define the offense so that ordinary people can understand the order.<sup>123</sup> The language of the curfew order should clearly define:

- The action sought to be prohibited:
  - The people affected by the order,
  - The geographic area where the curfew is in effect,
  - The excepted classes of people, (public safety),
  - The dates and time of the curfew, including beginning and ending dates,
- The instructions for enforcement that will be given to law enforcement agencies,
- The conditions under which a person will be prosecuted for a violation of the curfew
- that the curfew is mandatory

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*Suggested Practice:* Avoid use of gratuitous “legalese” when drafting curfew orders. Use concise and specific language when describing the restricted area. Use language that is readily understood by the majority of the population, consider the educational level of the population sought to be restrained. The curfew order should “speak for itself” and it is advisable to avoid public comment that could be considered contradictory of the curfew order.

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<sup>120</sup> *Roe v. Wade* (1973) 410 U.S. 113, 155-156.

<sup>121</sup> *In re Juan C.* (1994) 28 Cal. App. 4th 1093, 1100.

<sup>122</sup> See generally, *In re Juan C.* (1994) 28 Cal. App. 4th 1093.

<sup>123</sup> *Nunez v. City of San Diego* (9th Cir. 1997) 114 F.3d 935.

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For example, when describing a boundary, use “the area bounded by the Caldera river on the south, H street on the north, 22<sup>nd</sup> street on the east, and 47<sup>th</sup> street on the west”, rather than “The Hollyhock neighborhood.”

When describing the restrictions of time, do not use military time such as “1800 hours through 0600”, rather use the measurements used by the general population: “From Six O’clock, Friday night, to Six O’clock, Saturday Morning.

### **Enforcement Standards**

Third, the curfew order should provide definite standards concerning enforcement of the curfew. These standards must permit law enforcement to enforce the law in a nonarbitrary, nondiscriminatory manner.<sup>124</sup>

To prevent claims of discrimination or censorship, a “blanket” curfew should be imposed. A curfew that covers all segments of the population except for those necessary to preserve order or extinguish fires “falls into [the] category of systematic, consistent, and just order of treatment” especially with reference to presence on streets or highways.<sup>125</sup>

### **Designated Boundary**

The boundary must be clearly defined in order to allow for adequate notice of expected conduct.

## **VII. QUARANTINES**

### ***Duties and Responsibilities***

In order to understand the duties and responsibilities that arise prior to and during a quarantine, one must first review the relationships between the restriction of personal freedom compared with the health, safety, and welfare of the public in general.

For the purposes of these guidelines, “quarantine” is the prevention or restriction of movement of persons or property for the purposes of protecting public health.<sup>126</sup>

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### ***IS A QUARANTINE CONSTITUTIONAL?***

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***Q.***

**A.** The quarantine of persons or property is a power allowed the states under the Constitution.<sup>127</sup> A quarantine remains constitutional even if it affects foreign and

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<sup>124</sup> *Nunez v. City of San Diego* (9th Cir. 1997) 114 F.3d 935.

<sup>125</sup> *In re Juan C.* (1994) 28 Cal. App. 4th 1093, 1100.

<sup>126</sup> Cal. Code Regs. Tit. 17, § 2500 (similar definition).

domestic commerce.<sup>128</sup>

Even though the right to travel within the United States is constitutionally protected, that right may be limited when a community's safety and welfare is threatened because of disease.<sup>129</sup>

**Q.**

**WHAT ARE THE LEGAL AUTHORITIES FOR A QUARANTINE?**

**A.** The primary authorities cited in this document include the following: The United States Constitution, Health and Safety Code, Food and Agriculture Code, Harbors and Navigation Code, and case law. The legal bases for establishing, maintaining and enforcing a quarantine vary depending on the specific threat, and are discussed accordingly.

For the purposes of these guidelines, discussion is limited to state law authorities.

**Q.**

**WHY ESTABLISH A QUARANTINE?**

**A.** The state of California has a duty to take all necessary steps for the promotion and protection of the health of its citizens, and may take actions to achieve that goal.<sup>130</sup>

A quarantine could also be established to enforce regulations regarding:

- Contagious, infectious, or communicable diseases;<sup>131</sup>
- Sexually transmitted diseases;<sup>132</sup>
- A disease detrimental to the animal industry;<sup>133</sup>
- Hazardous waste;<sup>134</sup>

**Q.**

**WHO IS RESPONSIBLE FOR ORDERING A QUARANTINE?**

**A.** Generally, health officers are responsible for a threat to the human population, while agricultural officials are responsible for threats to agriculture or commerce.

<sup>127</sup> *Morgan's L. & T.R. & S.S. Co. v. Bd. of Health* (1886) 118 U.S. 455; *Compagnie Francaise de Navigation a Vapeur v. State Bd. of Health* (1902) 186 U.S. 380.

<sup>128</sup> *Compagnie Francaise de Navigation a Vapeur v. State Bd. of Health* (1902) 186 U.S. 380.

<sup>129</sup> *In Re Juan C.* (1994) 28 Cal. App. 4th 1093; United States Const., amds. I, V, XIV.

<sup>130</sup> *Patrick v. Riley* (1930) 209 Cal. 350.

<sup>131</sup> Cal. Health & Safety Code § 120175.

<sup>132</sup> Cal. Health & Safety Code § 120585.

<sup>133</sup> Cal. Food & Agric. Code §§ 9568-9569(a).

<sup>134</sup> Cal. Health & Safety Code § 25187.6.

**WHO HAS THE AUTHORITY TO ORDER A QUARANTINE?****Q.****A.**

Which official has authority to order a quarantine depends upon whether the danger is a threat to agriculture or commerce, or a threat to the human population.

Generally, health officials have the power to “quarantine, isolate, inspect, and disinfect persons, animals, houses, rooms, other property, places, cities or localities.”<sup>135</sup> Agricultural officials have similar powers and may also establish quarantines that affect people movement as well as commerce. Because of the overlap in authority, they will be discussed together.

Specific examples of statutorily authorized persons who may order a quarantine are discussed below. They include:

- The state Department of Health Services;
- The county health officer, under the direction of the Department of Health Services;
- The director of the department of Food and Agriculture;
- The county veterinarian;<sup>136</sup>
- The board of health or the health officer of a county that has commercial access to the ocean;<sup>137</sup>
- Governor.<sup>138</sup>

Other agencies or personnel may also be authorized under the “police powers” of the state to enforce regulations to protect the public health and the public safety.<sup>139</sup>

**Duration of a quarantine**

Once a quarantine is ordered, it remains until all affected property is treated or destroyed, and until all isolated persons are considered noninfectious.<sup>140</sup>

<sup>135</sup> Cal. Health & Safety Code § 120145.

<sup>136</sup> Cal. Food & Agric. Code § 2343.

<sup>137</sup> Cal. Harb. & Nav. Code § 4160.

<sup>138</sup> Cal. Food & Agric. Code § 9572.

<sup>139</sup> *Henning Jacobsen v. Commw. of Massachusetts* (1905) 197 U.S. 11.

<sup>140</sup> Cal. Health & Safety Code § 120235.

**A. COUNTIES & CITIES.**

*Health Officers and Health Boards*

Authorities:

- “Health Officer” refers to county, city, and district health officers, and city and district health boards, except for advisory boards.<sup>141</sup>
- The health officer shall take measures to control the spread or further occurrence of any contagious, infectious, or communicable disease that he is aware of.<sup>142</sup>
- The health officer may inspect any place or person when necessary to enforce health regulations.<sup>143</sup>
- After being informed of the need for quarantine to isolate diseases, the health officer shall ensure the adequacy of isolation and determine procedures for the premises and contacts.<sup>144</sup>

*Limitations on Authority* In some instances where the health officer has determined that a quarantine is necessary, the officer may be required to receive approval from the Department of Health Services prior to establishing a quarantine zone.<sup>145</sup>

*County Veterinarian*

Authorities:

- The county veterinarian may establish such quarantine regulations as he deems necessary.<sup>146</sup>

*Limitations of County Officials* “A quarantine shall not be established by one county or city against another county or city on account of the existence of any disease of domestic animals without the written consent of the director [of Department of Health Services].”<sup>147</sup>

<sup>141</sup> Cal. Health & Safety Code § 120100.

<sup>142</sup> Cal. Health & Safety Code § 120175.

<sup>143</sup> Cal. Health & Safety Code § 120585.

<sup>144</sup> Cal. Health & Safety Code §120215, (a), (b).

<sup>145</sup> Cal. Health & Safety Code § 120200, 120210(a), 120210(b), 120215, 120135, 120415.

<sup>146</sup> Cal. Food & Agric. Code § 5763.

<sup>147</sup> Cal. Food & Agric. Code § 9573.

**A. STATE.**

***Department of Health Services***

Authorities:

- The functions and duties of the Department of Health are to quarantine, isolate, inspect, and disinfect persons, animals, houses, rooms, or other property, places, cities, or localities, whenever it deems it necessary to protect or preserve the public health.<sup>148</sup>
- Department of Health Services promulgates general and specific rules regarding quarantine and disinfection of persons and property, and may require the local health officer to enforce the regulations;<sup>149</sup>

***Department of Food and Agriculture***

Authorities:

- The Director of the Department of Food and Agriculture may summarily disinfect, remove, destroy, or take any other action thought necessary to eradicate a public nuisance.<sup>150</sup>
- The director may establish and enforce quarantine regulations to protect the agricultural industry from pests.<sup>151</sup>
- The director shall set a quarantine district upon discovery of an infectious disease deemed detrimental to the animal industry.<sup>152</sup>
- The Director may restrict movement of persons, vehicles and commodities from entering or leaving the quarantine district.<sup>153</sup>

***Governor***

Authorities:

- The Governor may proclaim quarantine regulations which apply to any state or country and the animals or diseases from that region.<sup>154</sup>

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<sup>148</sup> Cal. Health & Safety Code § 120145.

<sup>149</sup> Cal. Health & Safety Code § 120210(a).

<sup>150</sup> Cal. Food & Agric. Code § 5763.

<sup>151</sup> Cal. Food & Agric. Code § 5301.

<sup>152</sup> Cal. Food & Agric. Code § 9568.

<sup>153</sup> Cal. Food & Agric. Code § 9569(a).



- The Emergency Services Act

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**WHAT ACTIONS ARE STATUTORILY AUTHORIZED?**

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**Q.**

- A.** The local health officer may be authorized by the Department of Health Services to protect or preserve the public health. A city health officer is authorized to enforce local, state, and federal regulations concerning the public health.<sup>155</sup>

The director of the Department of Food and Agriculture may also impose quarantine measures. These measures include:

- Preventing or restricting persons from entering or leaving a quarantined area;
- Preventing or restricting movement of vehicles, commodities, household goods, and animals from entering or leaving a quarantined area;
- Preventing or restricting direct communication between persons under the quarantine and those not affected;
- Disinfecting of persons, animals, houses or rooms;
- Destruction of beddings, carpets, household goods, furnishings, materials, clothing, or animals when disinfecting would be unsafe;
- Any other action considered necessary to eradicate a public nuisance;
- Any other action considered necessary to prevent spread or additional occurrences of a disease;
- Any other action necessary to preserve the public health.

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**WHAT ARE THE OBLIGATIONS OF CITIZENS UNDER  
QUARANTINE?**

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**Q.**

- A.** A person lawfully placed in quarantine by health authorities is obligated to stay within the prescribed bounds, whether guarded or not.<sup>156</sup> Persons who fail to follow rules, regulations or orders authorized by the Department of Health are guilty of a misdemeanor.<sup>157</sup>

It is unlawful for any person to violate any quarantine order which regulates, restricts, or restrains the movement of persons, vehicles, farm equipment, farm and dairy products, into from, or from place to place within a quarantined district,

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<sup>154</sup> Cal. Food & Agric. Code § 9572.

<sup>155</sup> Cal. Health & Safety Code § 101470.

<sup>156</sup> *In Re Vaughan* (1922) 189 Cal. 491; Cal. Health & Safety Code § 120225.

<sup>157</sup> Cal. Health & Safety Code § 120275.

area, or premises.<sup>158</sup>

**Q.**

**WHAT POWER DOES LAW ENFORCEMENT HAVE WITH RESPECT  
TO QUARANTINES?**

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**A.**

<i>Govt. Code</i> § 202	“The state may imprison or confine for the protection of the public peace or health or of individual life or safety.”
<i>Health &amp; Safety Code</i> § 120140	To determine the nature of a disease, and to prevent its spread, the Department of Health Services may take possession or control of the body of any living person.
<i>Penal Code</i> § 409.5	Allows closing of an area because of an emergency. Describes power that is granted to certain law enforcement groups.

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## VIII. RIOTS / UNLAWFUL ASSEMBLY

Even though the first amendment of the Constitution expressly provides the right to peaceably assemble and the freedom of speech, police powers and public policy define limitations to the exercise of the rights.

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<i>1<sup>st</sup> Amendment, United States Constitution</i>	“Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof; or abridging the freedom of speech, or of the press; or the right of the people peaceably to assemble, and to petition the Government for a redress of grievances.”
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There are three activities which fall under the general description of riots or unlawful assembly:

- Riots
- Routs
- Unlawful Assembly

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<sup>158</sup> Cal. Food & Agric. Code § 9698.

Q.

**WHAT IS THE DEFINITION OF A RIOT?**

A.

**PENAL CODE § 404(a)**

This section defines what actions are statutorily required in order for the actions of individuals to constitute a riot. The purpose of this definition allows for officers to control any wilful and malicious obstruction of the citizens' free use of a public way.<sup>159</sup>

In order to establish the existence of a riot, the following conditions must be met:

- Two or more persons acting together,
- disturbing the public peace,
- without authority of law,
- use of any force or violence, or threat and immediate capability of force or violence

Disturbance of public peace extends even to any place of confinement, such as prisons, jails, work camps, and juvenile ranches.<sup>160</sup>

*Note:*

Q.

**WHAT IS THE DEFINITION OF A ROUT?**

A.

**PENAL CODE § 406**

This section defines a "rout" as the joint actions of two or more persons in any attempt to advance toward the commission of an act that would constitute a riot.

For example, member of demonstration warned to disperse that threw rocks at officers was found guilty of rout.<sup>161</sup> Because actions of one member of an assembly may cause or compel another person to act in concert to create a public nuisance, this attempt is defined as a "rout."

<sup>159</sup> *Rees v. City of Palm Springs* (1961) 10 Cal. Rptr. 386.

<sup>160</sup> Cal. Penal Code § 404(b).

<sup>161</sup> *In re Wagner* (1981) 119 Cal. App. 3d 90.

**WHAT IS THE DEFINITION OF AN UNLAWFUL ASSEMBLY?***Q.**A.* **PENAL CODE § 407**

An unlawful assembly occurs whenever two or more persons assemble together to do a lawful act in a violent, boisterous, or tumultuous manner, such assembly is an unlawful assembly.

A person is considered to take part in an unlawful assembly by “knowingly joining or remaining with the group after it has become unlawful.”<sup>162</sup>

*Q.***WHAT ARE THE DUTIES THAT ARISE DURING A RIOT, ROUT, OR UNLAWFUL ASSEMBLY?**

*A.* The governing body of the affected town or city, the town justices, or the county sheriff must command the assembled persons to disperse.

*Penal Code § 726*

“Where any number of persons, whether armed or not, are unlawfully or riotously assembled, the sheriff of the county and his or her deputies, the officials governing the town or city, or the judges of the justice courts, or any of them, must go among the persons assemble, or as near to them as possible, and command them, in the name of the people of the state, immediately to disperse.”

*Note:*

Penal Code § 726 includes police officers among those that are required to order unlawfully or riotously assembled persons to disperse.<sup>163</sup> This means that law enforcement officers may arrest persons without giving the § 726 dispersal command, however, those persons may not be charged with a violation of § 409 because no dispersal command had been given.

*Dispersal command must be heard*

The courts have interpreted that the requirement to “go among the persons unlawfully or riotously assembled and command them to disperse” is satisfied when delivered from an amplification device on a police helicopter flying over the area in such a manner as to reasonably assure that the persons involved heard the command.<sup>164</sup>

This section does not apply to Penal Codes § 415 or § 416 regarding disturbances of the peace.<sup>165</sup>

*Penal Code §*

<sup>162</sup> *In re Wagner* (1981)119 Cal. App. 3d 90, 104.

<sup>163</sup> *People v. Sklar* (1930) 111 Cal. App. Supp. 776.

<sup>164</sup> *People v. Cipriani* (1971) 95 Cal. Rptr. 722.

<sup>165</sup> *People v. Anderson* (1931) 117 Cal. App. Supp. 763.

727 TO ARREST RIOTERS IF THEY DO NOT DISPERSE. If the assembled persons do not immediately disperse, they must be arrested. Any person present at the riot or within that county may be commanded to assist in the arrests.

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*Q. WHAT ARE THE CONSEQUENCES OF FAILING TO ORDER A DISPERSAL?*

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A. Magistrates or officers having knowledge of an unlawful or riotous assembly that neglect to command the people to disperse or to exercise their vested authority in suppressing or arresting the offenders are guilty of a misdemeanor.<sup>166</sup>

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*Q. WHAT ARE THE DUTIES OF THE CITIZENS?*

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A. It is the duty of citizens to obey the commands that a peace officer gives in the line of duty. A purported rioter may not use alleged unlawful attacks as a defense for not obeying the otherwise lawful order of a peace officer. This is because a citizen's recourse is in the courts, as opposed to open resistance.<sup>167</sup>

*Persons to aid in the dispersal*

Additionally, if requested, all persons present or within the county must aid the magistrates or officers in arresting rioters who do not immediately disperse.<sup>168</sup>

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*Q. WHAT ARE THE CONSEQUENCES OF NOT FOLLOWING A DISPERSAL ORDER?*

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A. **Penal Code § 409**

Every person remaining present at the place of any riot, rout, or unlawful assembly, after the same has been lawfully warned to disperse, except public officers and persons assisting them in attempting to disperse the same, is guilty of a misdemeanor.

*Q. IS THE USE OF DEADLY FORCE PERMITTED TO RESTRICT RIOTERS?*

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A. *By Public Safety Officers*

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<sup>166</sup> Cal. Penal Code § 410.

<sup>167</sup> *People v. Yuen* (1939) 32 Cal. App. 2d 151, cert. denied 60 S.Ct. 115; Cal. Penal Code § 416.

<sup>168</sup> Cal. Penal Code § 727.

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Public officers and those acting under their command for aid and assistance are allowed to use deadly force in the discharge of a legal duty.<sup>169</sup>

***By the General Public***

Homicide is justifiable when committed against a person who manifestly intends and endeavors, in a riotous manner, to enter the habitation of another for the purpose of committing violence on a person inside that habitation.<sup>170</sup>

**IX. HAZARDOUS MATERIALS**

Hazardous material incidents may occur without warning at any location in California and may often appear at unexpected places. For example, residue from illegal pharmaceutical enterprises are often discarded in public areas such as parks or rivers, further increasing the chance of exposure to the general population or environmental damage.

Hazardous material incidents often occur along transportation routes such as railroads, highways, and waterways. The vast quantities and types of chemicals transported pose a major threat of exposure to the general public traveling and living near transportation routes.

When a hazardous situation endangers the public, two primary options are available to emergency responders:<sup>171</sup>

1. Evacuation, or
2. Sheltering-in-place.

Use of the Hazardous Materials Incident Contingency Plan along with this guideline is recommended. Legal authorities providing for evacuation of persons in a potentially dangerous area may be accomplished through use of the evacuation authorities provided in Section II of this guideline, “Duties, Responsibilities & Powers,”

specifically the powers that law enforcement has relative to evacuations. Similarly, the “Quarantine” section may provide guidance for certain types of evacuations, as well as providing some authority for “sheltering-in-place.”

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**Q.**

***WHAT CONSTITUTES A HAZARDOUS MATERIAL INCIDENT?***


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<sup>169</sup> Cal. Penal Code § 196.

<sup>170</sup> Cal. Penal Code § 197.

<sup>171</sup> Hazardous Materials Incident Contingency Plan, Attachment 7, Draft Version (April, 1999).

- A. Generally a release, or threatened release, of hazardous materials that could threaten public health and safety is considered a hazardous material incident. This includes the discharge or threatened discharge of substances and materials designated as hazardous by the United States Department of Transportation for the purposes of Parts 172, 173, and 177 of Title 49 of the Code of Federal Regulations. For the purposes of this document, the guidelines presented are not intended to address problems associated with non-hazardous or long-term non-emergency site mitigation.

Also included in the category of an acute release of hazardous material are oil spills and radiological incidents because of their adverse impacts on public health and the environment. Because of the unique technical requirements, policy considerations, and national security issues that surround these materials, planning issues are usually covered under a separate plan.

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***Q. WHO IS RESPONSIBLE FOR A HAZARDOUS MATERIAL INCIDENT?***

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- A. The person with custodial responsibilities for the material is usually the responsible party, and is ultimately responsible for abating the release or threatened release of the material, damage to the public health, and environmental concerns.<sup>172</sup>

First Responders, such as Sheriff, Police, or Fire Departments have the authority to begin initial emergency procedures as necessary, such as evacuating the area, quarantining the area, or closing down the transportation route.<sup>173</sup>

Following the initial emergency response, many governmental agencies may also have concurrent responsibility and authority to control and mitigate damage. Additionally, most of these agencies provide information necessary for the Incident Commander to decide whether restrictions on movement of people or property should be implemented.<sup>174</sup>

The Incident Commander or Unified Command will generally make the decision whether to evacuate based on technical advice provided from public health officers, technicians, or other qualified personnel.

“All state agencies shall use SEMS to coordinate multiple jurisdiction or multiple agency emergency and disaster operations.”<sup>175</sup> In order for local governments to be eligible for partial reimbursement of response costs, SEMS must be utilized when responding to an incident.<sup>176</sup>

*Use of SEMS*

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<sup>172</sup> HazMat Contingency Plan at 1-6.

<sup>173</sup> Cal. Penal Code §§ 148.2, 409.3, 409.5; Cal. Health & Safety §§ 1798.6(c), 25187.6, Cal Govt. Code §§ 22620-22623.

<sup>174</sup> See e.g. Cal. Govt. Code § 8670.7 (authority over oil spills).

<sup>175</sup> Cal. Code Regs., tit. 19 § 2443. See also Cal. Code. Regs., tit. 19 § 2407

<sup>176</sup> Cal. Code Regs., tit. 19 § 2407, 2443. See also Cal. Code. Regs., tit. 19, § 2402(i) (defining “incident”).

required

Hazardous Material Incidents often involve jurisdiction or technical expertise of various state and local agencies. Always refer to a current copy of the State Hazardous Materials Incident Contingency Plan for information about the various authorities.

## X. TSUNAMIS / OFF SHORE INCIDENTS

A tsunami is a series of sea waves most commonly caused by an earthquake beneath the sea floor. The waves can kill and injure people and cause great property damage when they come ashore. Tsunamis can occur at any time of day or night, under any and all weather conditions, and in all seasons. Areas especially vulnerable to tsunamis are beaches open to the ocean, bay mouths or tidal flats, and river delta areas.<sup>177</sup>

Further, the potential exists for the occurrence of either an airplane crash or a ship disaster in the ocean or navigable waterways of the state that would give cause for an immediate quarantine, evacuation, or decontamination of that area.

### WHAT IS THE TERRITORIAL JURISDICTION OF THE STATE?

Q.

A. California's territorial claims in the coastal channels and straits are limited to three-mile belts off the mainland shore and surrounding the coastal islands. This boundary is established for all purposes domestic, political and proprietary, as between the federal and state government.<sup>178</sup> For practical purposes, whenever the jurisdiction is relevant to the operation of federal law, the congressional delineation of the boundary will prevail over a conflicting state assertion.

Even so, the State may enforce laws that are not in conflict with federal law in adjacent waters of the State.<sup>179</sup>

### WHAT IS THE COAST GUARD'S RESPONSIBILITY?

Q.

A. The Coast Guard is permitted to render aid to persons, vessels, or aircraft on or under waters within federal jurisdiction.<sup>180</sup> The Coast Guard may also assist in the protection of persons and property wherever and whenever it is feasible.

<sup>177</sup> *Tsunami! How To Survive the Hazard On California's Coast*, (1996) Cal. Off. Emerg. Serv.

<sup>178</sup> *People v. Weeren*, (1980) 26 Cal. 3d 654; 43 U.S.C. § 1301 (Submerged Lands Act).

<sup>179</sup> *People v. Weeren*, (1980) 26 Cal. 3d 654.

<sup>180</sup> 14 U.S.C. § 88.



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**14 U.S.C. § 88 Saving Life and Property**

(a) In order to render aid to distressed persons, vessels, and aircraft on or under the high seas, and on and under the waters over which the United States has jurisdiction and in order to render aid to persons and property imperiled by flood, the Coast Guard may:

(1) perform any and all acts necessary to rescue and aid persons and protect and save property;

(b)(1) Subject to paragraph (2), the Coast Guard may render aid to persons and protect and save property at any time and at any place at which Coast Guard facilities and personnel are available and can be effectively utilized.

(2) The Commandant shall make full use of all available and qualified resources, including the Coast Guard Auxiliary and individuals licensed by the Secretary pursuant to § 8904(b) of title 46 USC, in rendering aid under this subsection in non emergency cases.

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*Authority over navigable waters*      As far as may be necessary for the regulation of interstate and foreign commerce, the United States has the paramount right to control the navigable waters within the several states.<sup>181</sup>

This means that the Federal government may regulate navigable waters for the purpose of commerce, but that they have no specific authority over non-navigable rivers, streams, and lakes.

## **XI. DOMESTIC TERRORISM**

Terrorism generally involves a violent act, or an act dangerous to human life, in violation of the criminal laws of the United States or of any State, to intimidate or coerce a government, the civilian population, or any segment thereof, in furtherance of political or social objectives.

The State of California and local governments exercise preeminent authority to make decisions regarding the consequences of terrorism, including authority to make decisions regarding protective actions of the community. This authority will ordinarily rest with the incident commander and local emergency services organization. State and federal governments provide assistance as required.

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<sup>181</sup> *Forestier v. Johnson* (1912) 164 Cal. 24.

## XII. POTENTIAL LIABILITIES AND IMMUNITIES

The potential for liability-related lawsuits exists for the responding emergency agency, for public employees, and for impressed disaster workers. The two primary sources of protection are the Emergency Services Act and the State Tort Claims Act.

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*Q.* **WHAT PROTECTION IS OFFERED UNDER THE EMERGENCY SERVICES ACT?**

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- A.* The majority of the actions discussed in this guideline may be executed under the provisions of the Emergency Services Act.<sup>182</sup> The primary reason that restrictions on the movement of people or property during an emergency should be performed under the Emergency Services Act is because this will provide greater immunity from liability than the State Tort Claims Act.<sup>183</sup>

The Emergency Services Act expressly grants immunity from liability based on an agency's actions during a proclaimed emergency:

*Government liability* “The state or its political subdivisions shall not be liable for any claims based upon the exercise or performance, or the failure to exercise or perform, a discretionary function or duty on the part of a state or local agency or any employee of the state or its political subdivisions in carrying out the provisions of this chapter.”<sup>184</sup>

*Volunteer liability* Government Code Section 8657 extends the immunities of the Emergency Services Act to include disaster service workers (DSW) and persons impressed into service during a state of war emergency, a state of emergency, or a local emergency.

*Comparison between ESA and Tort* The Emergency Services Act grants immunity for both discretionary and ministerial duties, while the “Tort Claims Act” generally provides immunity only for discretionary acts.<sup>185</sup>

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<sup>182</sup> Cal. Govt. Code §§ 8550 et seq.

<sup>183</sup> Cal. Govt. Code § 810 et seq.

<sup>184</sup> Cal. Govt. Code § 8655.

<sup>185</sup> *Macias v. State of California* (1995) 10 Cal. 4th 844.

## Claim Act

**Tort Claims Act**

In 1961, the California Supreme Court abrogated the doctrine of governmental tort immunity.<sup>186</sup> In response to that ruling, in 1963 the California legislature enacted the “Tort Claims Act.”<sup>187</sup>

*Defines liability and immunities*

The “Tort Claims Act” is the primary source for defining the liabilities and immunities of public entities and public employees. This guideline will briefly discuss the general principles of the “Tort Claims Act.”

*“Public Agency” defined*

For the purposes of the Tort Claims Act, a “public agency” is defined as the State, the Regents of the University of California, a county, a city, a district, public authority, public agency and any other political subdivision or public corporation in the state.<sup>188</sup>

*“Employee” defined*

The term “employee” includes an officer, a judicial officer, an employee, or a servant, whether compensated or not, but does not include an independent contractor.”<sup>189</sup>

*Tort liability*

Even though Government Code § 815 appears to establish immunity of public entities as the rule and liability as the exception, the courts generally have taken the opposite approach.<sup>190</sup> For example, statutes which impose tort liability in general terms have been found to be applicable to public entities even though public entities were not named.<sup>191</sup> Nor is liability based upon contractual arrangements affected.<sup>192</sup>

However, Government Code § 815(b) indicates that liabilities established under the “Tort Claims Act” are subject to any statutory immunities, including immunities created by statutes other than the “Tort Claims Act,” such as those in the Emergency Services Act. For example, Government Code § 855.4 provides that neither a public entity nor its employees are liable for injury resulting from a decision to perform or not perform any act to prevent disease or to control the spread of the disease.<sup>193</sup> However, this section probably does not remove the responsibility that a governing body or an agency may have in the event an area is proclaimed a diseased area, such as a rabies area.<sup>194</sup>

<sup>186</sup> *Muskopf v. Corning Hospital District* (1961) 55 Cal. 2d 211.

<sup>187</sup> Cal. Govt. Code §§ 810 et seq.

<sup>188</sup> Cal. Govt. Code § 811.2.

<sup>189</sup> Cal. Govt. Code § 810.2

<sup>190</sup> *Ramos v. County of Madera* (1971) 4 Cal. 3d 685, 692.

<sup>191</sup> *Levine v. City of Los Angeles* (1977) 68 Cal. App. 3d 481, 487.

<sup>192</sup> *Aubry v. Tri-City Hospital District* (1992) 2 Cal. 4th 962.

<sup>193</sup> Cal. Govt. Code § 855.4.

<sup>194</sup> 63 Ops. Cal. Atty. Gen. 8 (1980).

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**Q. WHAT PROTECTIONS DOES THE TORT CLAIMS ACT OFFER TO PUBLIC ENTITIES WHEN AN EVACUATION IS NOT ORDERED UNDER THE EMERGENCY SERVICES ACT?**

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**A.** Even though the “Tort Claims Act” is statutory in nature, the courts have referred to common law and general principles of negligence. This approach usually arises when determining an employee’s liability and the possible vicarious immunity accorded the public entity employer.<sup>195</sup>

*Circumstances for liability* Even though the “Tort Claims Act” states that except as otherwise provided by statute, a public entity is not liable for an injury, whether the injury arises out of an act or omission of the public entity, a public employee, or any other person, the exceptions to immunity are numerous. Essentially, a public entity may be liable under the following circumstances:

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<i>Act or omission</i>	Where there is a duty of care owed the injured party, a reasonable reliance upon the performance of that duty and the public employee’s act or omission would be the proximate cause of injury so that such act or omission would make the employee personally liable. When viewed under general negligence principles, then the public entity may be found vicariously liable for the act of its employee. <sup>196</sup>
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This has often arisen in the context of the employee promising to do an act such as warn a particular person of some danger, the person reasonably relies upon that promise, the employee fails to carry out the promise and the failure to give the warning resulted in damage to the promisee. In essence, the employee created a duty to a person with a special relationship, and then performed negligently, causing the injury.<sup>197</sup>

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*Example* The situation could arise under the provisions of Penal Code Section 409.5. where a peace officer promised to notify a person in a disaster area of a future need to evacuate. If the officer fails to warn the promisee, then liability may attach if a “special relationship” could be found between the officer’s promise and the promisee’s detrimental reliance on that promise.

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*Avoid “created”* A public entity and its employees should pay particular attention to the phrasing of orders that control the movement of people and property in order to avoid

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<sup>195</sup> *California v. Superior Court* (1984) 150 Cal. App. 3d 848.

<sup>196</sup> *California v. Superior Court* (1984) 150 Cal. App. 3d 848.

<sup>197</sup> *Connelly v. State of California* (1970) 3 Cal. App. 3d 744.

*duties*” “created” duties. Generally policy decisions are accorded immunity, while ministerial acts are not.<sup>198</sup>

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*Failure to discharge duty* Liability may be incurred for an injury proximately caused by a public entity’s failure to discharge a mandatory duty imposed by statute or regulation.<sup>199</sup> Where a public entity fails to perform a mandatory duty, it has the burden of establishing that it exercised reasonable diligence to assure that the duty was performed.

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*Liabilities not included* Liability is imposed by statute or constitutional provisions other than those set forth by the “Tort Claims Act.” For instance, the constitutional provision governing a taking of property for public use (condemnation),<sup>200</sup> negligent or wrongful act or omission in the operation of any motor vehicle<sup>201</sup> or maintaining a nuisance<sup>202</sup> are examples of liabilities that may not be protected by either the State Tort Claims Act or the Emergency Services Act.

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*Qualifying principles* Although most of the discussion has centered on areas of potential liability, two qualifying principles may be applicable in emergency evacuation situations.

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*Doctrine of imminent peril* The first qualifying principle is known as the “imminent peril doctrine”, the “sudden peril rule”, or the “emergency doctrine.” This doctrine allows the jury in a civil trial to be instructed that “a person who, without negligence on his or her part, is suddenly and unexpectedly confronted with apparent or actual imminent danger, that person is not required to use the same judgment and prudence as would be required under ordinary circumstances.”<sup>203</sup>

This instruction will be given only if the evidence supports that.<sup>204</sup>

- the party invoking the doctrine was in fact confronted by a sudden and unexpected peril,
- That the perilous situation was not brought about by the

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<sup>198</sup> *Johnson v. State of California* (1996) 50 Cal. App. 4th 1802.

<sup>199</sup> *California v. Superior Court* (1984) 150 Cal. App. 3d 848.

<sup>200</sup> Cal. Const., art. I, § 19.

<sup>201</sup> Cal. Vehicle Code §§17001, 17004. But see *Soto v. California* (1997) 56 Cal. App. 4th 196. (negligent operation of a motor vehicle found protected under Emergency Services Act).

<sup>202</sup> *Nestle v. City of Santa Monica* (1972) 6 Cal. 3d 920.

<sup>203</sup> *Leo v. Dunham* (1953) 41 Cal. 2d 712, 714-715. See also *Damele v. Mack Trucks, Inc.* (1990) 219 Cal. App. 3d 29.

<sup>204</sup> Cal. Civil BAJI 4.40, 8th ed. 1995.

party's own negligence,

- That at least two courses of action were available after the perilous situation was perceived,
- That the course of action taken after confrontation by the peril was a course of action which would have been taken by a reasonably prudent person under similar circumstances.

If these conditions are met, the person is not necessarily negligent if that person makes a choice that ultimately proves to have been the wrong one, provided that that person chose a course of action that a person of ordinary prudence would have chosen under the circumstances. If such is the case, that person will not be liable even if an alternative course of action would have avoided the action.<sup>205</sup>

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*State's police  
power*

The other governing principle is that the State may take property by virtue of its police powers when there is an urgency sufficiently important to override the policy of compensation.<sup>206</sup>

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<sup>205</sup> *Leo v. Dunham* (1953) 41 Cal. 2d 712, 714-715.

<sup>206</sup> *Teresi v. State of California* (1986) 180 Cal. App. 3d 239; see *Adkins v. State of California*, supra; *Holtz v. Superior Ct.* (1970) 3 Cal. 3d 296, 305; *Farmer's Ins. Exchange v. State of California* (1985) 175 Cal. App. 3d 494, 501-502; *Freeman v. Contra Costa County Water District* (1971) 18 Cal. App. 3d 404, 408.

### **XIII. APPENDIX OF SELECTED STATUTES**

#### *Government Code*

##### **Cal. Govt. Code § 8558 Conditions or degrees of emergency.**

Three conditions or degrees of emergency are established by this chapter:

- (a) “State of war emergency” means the condition which exists immediately, with or without a proclamation thereof by the Governor, whenever this state or nation is attacked by an enemy of the United States, or upon receipt by the state of a warning from the federal government indicating that such an attack is probable or imminent.
- (b) “State of emergency means the duly proclaimed existence of disaster or of extreme peril to the safety of persons and property within the state caused by such conditions as air pollution, fire, flood, storm, epidemic, riot, drought, sudden and severe energy shortage, plant or animal infestation or disease, the Governor’s warning of an earthquake or volcanic prediction, or an earthquake, or other conditions, other than conditions resulting from a labor controversy or conditions causing a “state of war emergency,” which conditions, by reason of their magnitude, are or are likely to be beyond the control of the services, personnel, equipment, and facilities of any single county, city and county, or city and require the combined forces of a mutual aid region or regions to combat, or with respect to regulated energy utilities, a sudden and severe energy shortage requires extraordinary measures beyond the authority vested in the California Public Utilities Commission.
- (c) “Local Emergency” means the duly proclaimed existence of conditions of disaster or of extreme peril to the safety of persons and property within the territorial limits of a county, city and county, or city caused by such conditions as air pollution, fire, flood, storm, epidemic, riot, drought, sudden and severe energy shortage, plant or animal infestation or disease, the Governor’s warning of an earthquake or volcanic prediction, or an earthquake, or other conditions, other than conditions resulting from a labor controversy, which conditions are or are likely to be beyond the control of the services, personnel, equipment, and facilities of that political subdivision and requires the combined forces of other political subdivisions to combat, or with respect to regulated energy utilities, a sudden and severe energy shortage requires extraordinary measures beyond the authority vested in the California Public Utilities Commission.

##### **§ 8630. Proclamation by local governing body; review; termination**

- (a) A local emergency may be proclaimed only by the governing body of a city, county, or city and county, or by an official designated by ordinance adopted by that governing body.
- (b) Whenever a local emergency is proclaimed by an official designated by ordinance, the local emergency shall not remain in effect for a period in excess of seven days unless it has been ratified by the governing body.
- (c)(1) The governing body shall review, at its regularly scheduled meetings until the local emergency is terminated, the need for continuing the local emergency. However, in no event shall a review take place more than 21 days after the previous review.
- (2) Notwithstanding paragraph (1), if the governing body meets weekly, it shall review the need for continuing the local emergency at least every 14 days, until the local emergency is terminated.
- (d) The governing body shall proclaim the termination of the local emergency at the earliest possible date that conditions warrant.

**§ 23002. Counties as legal subdivisions**

The several existing counties of the State and such other counties as are hereafter organized are legal subdivisions of the State.

**§ 26602. Prevention and suppression of disturbances**

The sheriff shall prevent and suppress any affrays, breaches of the peace, riots, and insurrections which come to his knowledge, and investigate public offenses which have been committed.

***California Penal Code***

**Cal. Pen. Code § 148.2 Illegal conduct at burning of building; misdemeanor.**

Every person who willfully commits any of the following acts at the burning of a building or at any other time and place where any fireman or firemen or emergency rescue personnel are discharging or attempting to discharge an official duty, is guilty of a misdemeanor:

- (1) Resists or interferes with the lawful efforts of any fireman or firemen or emergency rescue personnel in the discharge or attempt to discharge an official duty.
- (2) Disobeys the lawful orders of any fireman or public officer.
- (3) Engages in any disorderly conduct which delays or prevents a fire from being timely extinguished.
- (4) Forbids or prevents others from assisting in extinguishing a fire or exhorts another person, as to whom he has no legal right to protect or control, from assisting in extinguishing a fire.

**§ 148.3. False report of emergency; punishment**

(a) Any individual who reports, or causes any report to be made, to any city, county, city and county, or state department, district, agency, division, commission, or board, that an "emergency" exists, knowing that such report is false, is guilty of a misdemeanor and, upon conviction thereof, shall be punishable by imprisonment in the county jail, not exceeding one year, or by a fine, not exceeding one thousand dollars (\$1,000), or by both such fine and imprisonment.

(b) Any individual who reports, or causes any report to be made, to any city, county, city and county, or state department, district, agency, division, commission, or board, that an "emergency" exists, knowing that such report is false, and great bodily injury or death is sustained by any person as a result of such false report, is guilty of a felony and upon conviction thereof shall be punishable by imprisonment in the state prison, or by a fine of not more than ten thousand dollars (\$10,000), or by both such fine and imprisonment.

(c) "Emergency" as used in this section means any condition which results in, or which could result in, the response of a public official in an authorized emergency vehicle, or any condition which jeopardizes or could jeopardize public safety and results in, or could result in, the evacuation of any area, building, structure, vehicle or of any other place which any individual may enter.

**§ 245.1. Fireman, firefighter and emergency rescue personnel defined**



As used in Sections 148.2, 241, 243, 244.5, and 245, "fireman" or "firefighter" includes any person who is an officer, employee or member of a fire department or fire protection or firefighting agency of the federal government, the State of California, a city, county, city and county, district, or other public or municipal corporation or political subdivision of this state, whether this person is a volunteer or partly paid or fully paid.

As used in Section 148.2, "emergency rescue personnel" means any person who is an officer, employee or member of a fire department or fire protection or firefighting agency of the federal government, the State of California, a city, county, city and county, district, or other public or municipal corporation or political subdivision of this state, whether this person is a volunteer or partly paid or fully paid, while he or she is actually engaged in the on-the- site rescue of persons or property during an emergency as defined by subdivision (c) of Section 148.3.

**Cal. Pen. Code § 402 Interference with personnel at scene of emergency.**

- (a) Every person who goes to the scene of an emergency, or stops at the scene of an emergency, for the purpose of viewing the scene or the activities of police officers, firefighters, emergency medical, or other emergency personnel, or military coping with the emergency in the course of their duties during the time it is necessary for emergency vehicles or those personnel to be at the scene of the emergency or to be moving to or from the scene of the emergency for the purpose of protecting lives or property, unless it is part of the duties of that person's employment to view that scene or activities, and thereby impedes police officers, firefighters, emergency medical, or other emergency personnel or military personnel, in the performance of their duties in coping with the emergency, is guilty of a misdemeanor.
- (b) Every person who knowingly resists or interferes with the lawful efforts of a lifeguard in the discharge or attempted discharge of an official duty in an emergency situation, when the person knows or reasonably should know that the lifeguard is engaged in the performance of his or her official duty, is guilty of a misdemeanor.
- (c) For the purposes of this section, an emergency includes a condition or situation involving injury to persons, damage to property, or peril to the safety of persons or property, which results from a fire, an explosion, an airplane crash, flooding, windstorm damage, a railroad accident, a power plant accident, a toxic chemical or biological spill, or any other natural or human-caused event.

**§ 409. Riot, rout, or unlawful assembly; remaining present after warning to disperse**

Remaining present at place of riot, etc., after warning to disperse. Every person remaining present at the place of any riot, rout, or unlawful assembly, after the same has been lawfully warned to disperse, except public officers and persons assisting them in attempting to disperse the same, is guilty of a misdemeanor.

**§ 409.5. Authority of peace officers, lifeguard or marine safety officer to close disaster area; exclusion from police command post area; unauthorized entry; exception**

- (a) Whenever a menace to the public health or safety is created by a calamity including a flood, storm, fire, earthquake, explosion, accident, or other disaster, officers of the Department of the California Highway Patrol, police departments, marshal's office or sheriff's office, any officer or employee of the Department of Forestry and Fire Protection designated a peace officer by subdivision (g) of Section 830.2,

any officer or employee of the Department of Parks and Recreation designated a peace officer by subdivision (f) of Section

830.2, any officer or employee of the Department of Fish and Game designated a peace officer under subdivision (e) of Section 830.2, and any publicly employed full-time lifeguard or publicly employed full-time marine safety officer while acting in a supervisory position in the performance of his or her official duties, may close the area where the menace exists for the duration thereof by means of ropes, markers, or guards to any and all persons not authorized by the lifeguard or officer to enter or remain within the enclosed area. If the calamity creates an immediate menace to the public health, the local health officer may close the area where the menace exists pursuant to the conditions set forth in this section.

(b) Officers of the Department of the California Highway Patrol, police departments, marshal's office or sheriff's office, officers of the Department of Fish and Game designated as peace officers by subdivision (e) of Section 830.2, or officers of the Department of Forestry and Fire Protection designated as peace officers by subdivision (g) of Section 830.2 may close the immediate area surrounding any emergency field command post or any other command post activated for the purpose of abating any calamity enumerated in this section or any riot or other civil disturbance to any and all unauthorized persons pursuant to the conditions set forth in this section whether or not the field command post or other command post is located near to the actual calamity or riot or other civil disturbance.

(c) Any unauthorized person who willfully and knowingly enters an area closed pursuant to subdivision (a) or (b) and who willfully remains within the area after receiving notice to evacuate or leave shall be guilty of a misdemeanor.

(d) Nothing in this section shall prevent a duly authorized representative of any news service, newspaper, or radio or television station or network from entering the areas closed pursuant to this section.

**§ 409.6. Avalanche danger; areas closed; unlawful entry**

(a) Whenever a menace to the public health or safety is created by an avalanche, officers of the Department of the California Highway Patrol, police departments, or sheriff's offices, any officer or employee of the Department of Forestry and Fire Protection designated a peace officer by subdivision (g) of Section 830.2, and any officer or employee of the Department of Parks and Recreation designated a peace officer by subdivision (f) of Section 830.2, may close the area where the menace exists for the duration thereof by means of ropes, markers, or guards to any and all persons not authorized by that officer to enter or remain within the closed area. If an avalanche creates an immediate menace to the public health, the local health officer may close the area where the menace exists pursuant to the conditions which are set forth above in this section.

(b) Officers of the Department of the California Highway Patrol, police departments, or sheriff's offices, or officers of the Department of Forestry and Fire Protection designated as peace officers by subdivision (g) of Section 830.2, may close the immediate area surrounding any emergency field command post or any other command post activated for the purpose of abating hazardous conditions created by an avalanche to any and all unauthorized persons pursuant to the conditions which are set forth in this section whether or not that field command post or other command post is located near the avalanche.

(c) Any unauthorized person who willfully and knowingly enters an area closed pursuant to subdivision (a) or (b) and who willfully remains within that area, or any unauthorized person who willfully remains within an area closed pursuant to subdivision (a) or (b), after receiving notice to evacuate or leave from a peace officer named in subdivision (a) or (b), shall be guilty of a misdemeanor. If necessary, a peace officer named in subdivision (a) or (b) may use reasonable force to remove from the closed area any unauthorized person who willfully remains within that area after receiving notice to evacuate or leave.

(d) Nothing in this section shall prevent a duly authorized representative of

any news service, newspaper, or radio or television station or network from entering the areas closed pursuant to this section.

*California Health and Safety Code*

Health & Safety Code § 115885.

The health officer having jurisdiction over the area in which a public beach is created shall:

- (a) Inspect the public beach to determine whether the standards established pursuant to Section 115880 are being complied with. If the health officer finds any violation of the standards, he or she may restrict the use of, or close, the public beach or portion thereof in which the violation occurs until the standard is complied with.
- (b) Investigate any complaint of a person of a violation of any standard established by the department pursuant to Section 115880. If the health officer finds any violation of the standards prescribed by the department, he or she may restrict the use of, or close, the public beach or portion thereof until the standard is complied with. If the person who made the complaint is not satisfied with the action taken by the health officer, he or she may report the violation to the department. The department shall investigate the reported violation, and, if it finds that the violation exists, it may restrict the use of or close the public beach or portion thereof until the standard violated is complied with.
- (c) (1) Whenever a beach is posted, closed, or otherwise restricted in accordance with Section 115915, the health officer shall inform the agency responsible for the operation and maintenance of the public beach within 24 hours of the posting, closure, or restriction.
- (c) (2) The health officer shall establish a telephone hotline to inform the public of all beaches currently closed, posted, or otherwise restricted. The hotline shall be updated as needed in order to convey changes in public health risks.
- (d) Report any violation of the standards established pursuant to Section 115880 to the district attorney, or if the violation occurred in a city and, pursuant to Section 41803.5 of the Government Code, the city attorney is authorized to prosecute misdemeanors, to the city attorney.
- (e) In the event of a known untreated sewage release, the local health officer shall immediately test the waters adjacent to the public beach and to take action pursuant to regulations established under Section 115880.
- (f) Notwithstanding any other provision of law, in the event of an untreated sewage release that is known to have reached recreational waters adjacent to a public beach, the local health officer shall immediately close those waters until it has been determined by the local health officer that the waters are in compliance with the standards established pursuant to Section 115880.
- (g) Any duty imposed upon a local public officer or agency pursuant to this section shall be mandatory only during a fiscal year in which the Legislature has appropriated sufficient funds, as determined by the State Director of Health Services, in the annual Budget Act or otherwise for local agencies to cover the costs to those agencies associated with the performance of these duties. The State Director of Health Services shall annually, within 15 days after

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enactment of the Budget Act, file a written statement with the Secretary of the Senate and with the Chief Clerk of the Assembly memorializing whether sufficient funds have been appropriated.

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