



AGENCY: City Council  
MEETING DATE: February 8, 2021  
DEPARTMENT: City Manager  
PRESENTED BY: Tabatha Miller  
EMAIL ADDRESS: [tmiller@fortbragg.com](mailto:tmiller@fortbragg.com)

## AGENDA ITEM SUMMARY

### **TITLE:**

**Receive Report from Redwood Coast Tsunami Work Group, California Geological Survey and California Governor's Office of Emergency Services California Tsunami Program Representatives on Tsunami Hazard Updates and Consider Adoption of City Council Resolution Adopting Updated Tsunami Hazard Maps**

### **ISSUE:**

The California Tsunami Program, led by the California Governor's Office of Emergency Services and the California Geological Survey, is responsible for updating the state's tsunami inundation maps for evacuation planning and public safety. Communities use the State inundation maps to develop and update their evacuation maps and local response plans. The State is constantly evaluating tsunami events, sources, and analysis techniques to ensure that coastal communities are safe from tsunami hazards.

The State completed the current statewide tsunami inundation maps in 2009. Based on more recent information from tsunamis that have occurred since 2009, the State has determined that an update of the 2009 maps is warranted to protect the public from tsunami hazards.

The Tsunami Hazard Evacuation Maps for Emergency Planning are a new product from the State of California and are based on the Redwood Coast Tsunami Work Group (RCTWG) tsunami hazard map brochures first published in 2010. These new maps were produced via a process led by the RCTWG mapping subcommittee and have been vetted by emergency managers, first responders, and other important local stakeholders.

### **ANALYSIS:**

The State completed the previous set of statewide tsunami inundation maps in 2009. Lessons learned from the 2011 Japan tsunami and new tsunami hazard data and mapping tools developed over the past 10 years indicate that some areas of the California coastline may have a higher tsunami hazard than is represented in the 2009 maps. Based on this more recent information, the State has determined that an update of the 2009 maps is warranted to protect the public from tsunami hazards. The following steps summarize the plan for updating the tsunami hazard maps, and provide guidance and a timeline for communities to update their emergency response plans, tsunami sign locations, etc.

### **Process for the State to update tsunami hazard maps:**

- The updated tsunami hazard maps encompass the tsunami model flood areas (inundation areas) for maximum considered events and include a logical inland buffer which typically extends to the nearest streets and landmarks and/or to a set elevation.
- These maps could be used directly for evacuation purposes if a community so chooses.

- The State will meet with communities to discuss the new tsunami hazard maps and, if needed, help identify where community response plans may require updating.
- To allow time for communities to digest and accommodate changes in the State tsunami hazard maps, the maps will be made available to community planners at least one month prior to the State updating them in the “California Tsunami Preparedness Guide” on the [www.tsunami.ca.gov](http://www.tsunami.ca.gov) website.
- The State will update the tsunami response decision-support tools/products (Playbooks) to include the new tsunami hazard area map (or an associated community tsunami evacuation map) as the updated maximum phase evacuation maps.

Over the past 10 years, tsunami science has significantly improved, with a better understanding of tsunami sources and enhancements to computer modeling. Tsunami events such as 2010 Chile, 2011 Japan, and 2018 Indonesia have taught scientists and planners a number of lessons about how to better plan for and respond to tsunamis. A new type of tsunami hazard map, the probabilistic tsunami hazard analysis (PTHA) map, represents all potential tsunami events with a 1000-year average return period, which translates to a 5 percent change of flood exceedance over a 50-year period. Overall, the new State tsunami inundation maps best characterize the state of tsunami science in California, and conservatively represent safe evacuation from all realistic tsunami events.

**RECOMMENDED ACTION:**

Adopt a resolution recognizing the necessity of updated tsunami inundation maps and adopting them for local use.

**ALTERNATIVE ACTION(S):**

Do not adopt the updated tsunami inundation maps.

**FISCAL IMPACT:**

There is no fiscal impact for Council to adopt the tsunami inundation maps.

**GREENHOUSE GAS EMISSIONS IMPACT:**

Adopting the tsunami inundation maps will not impact GHG emissions.

**CONSISTENCY:**

Using the most up to date and complete information on the impact of a tsunami to the City of Fort Bragg and greater Mendocino Coast, allows the City to better plan for and respond more responsibly in the event of a tsunami. Adopting the updated tsunami maps is consistent with the following Coastal General Plan Chapter 7 – Safety Element policies and programs.

Policy SF-2.4 Tsunami: Minimize development in areas subject to tsunami.

Program SF-2.4.1: Request FEMA conduct the necessary studies to accurately map areas within the City that are subject to tsunamis.

Policy SF-2.5: Review development proposals to ensure that new development is not in an area subject to tsunami damage and if such development is otherwise allowable that it is designed to withstand tsunami damage.

Program SF-2.5.1: Review local- and distant-source tsunami inundation maps for Fort Bragg and adjacent coastal communities as they are developed to identify susceptible areas, plan evacuation routes or locations suitable for vertical evacuation and make evacuation plans available to all emergency responders and other appropriate parties.

Program SF-2.5.2: Identify and map potential tsunami inundation zones for land use planning. Maps should identify generalized tsunami inundation zones on a probabilistic basis (e.g., 100-year event).

Program SF-2.5.3: Review and update tsunami preparation response policies/practices to reflect current inundation maps and design standards, and submit these updated policies to the Coastal Commission for certification.

Policy SF-2.6: Avoid siting new critical facilities, including fire and police stations and hospitals in tsunami inundation zones to the maximum extent feasible. If it is necessary to site such facilities in tsunami inundation zones to provide adequate population protection, facilities shall be located and configured to be functional immediately after a 100-year tsunami event.

Program SF-2.6.1: Develop a local response plan and/or participate in any regional effort to develop and implement workable response plans for distribution of information on tsunami alerts, watches, and warnings, to appropriate emergency responders and City personnel.

Program SF-2.6.2: Include tsunami evacuation route information as part of any overall evacuation route sign program implemented in the City. Evacuation routes shall be clearly posted. An evacuation route traffic monitoring system that provides real-time information on the traffic flow at critical roadways should be considered.

Program SF-2.6.3: Develop and implement a tsunami educational program for residents, visitors, and people who work in the susceptible areas.

Policy SF-2.7: Require that overnight visitor-serving facilities in susceptible areas provide tsunami information and evacuation plans.

**IMPLEMENTATION/TIMEFRAMES:**

Staff will use the updated maps once completed by the State of California.

**ATTACHMENTS:**

1. Resolution
2. FAQs on 2020-2021 California Tsunami Hazard Area Map Updates

**NOTIFICATION:**

1. Brent Blaser, Mendocino County Office of Emergency Services (OES)