

## Tsunami Impacts in Seward

There have been several tsunami evacuations in recent years, but fortunately no tsunami damage. Evacuation decisions need to be made quickly, often before tsunami size is known. Any evacuation, even one that in hindsight may be deemed unnecessary, provides a real-life opportunity to practice and improve community response to tsunamis.

1960: On May 22 a magnitude 9.5 earthquake, the largest earthquake ever instrumentally recorded, occurred off the coast of southern Chile. The tsunami generated from this earthquake reached a maximum height of about 2 feet in Seward, arriving roughly 18 hours after the earthquake occurred.

1964: On March 27 a magnitude 9.2 earthquake occurred in the Gulf of Alaska. The ground subsided about 3.6 feet in Seward. Water receded about 30 seconds after shaking started; exploding fuel tanks covered the retreating water in burning oil. A landslide-generated wave of roughly 27 feet flooded in about 2 minutes after shaking started. About 25 minutes after the earthquake the first tectonic tsunami wave arrived, sweeping across the bay and coated with burning oil. This event caused more than \$14.6 million in damage and 12 deaths in Seward.

2011: The March 11 magnitude 9.1 Tohoku Earthquake offshore of Japan caused a tsunami that had a wave height of about 1.5 feet when it reached the Seward tidal station.

## Check Your Community Hazard

Knowing your risk before disaster hits could save your life. Explore the online tool at [tsunami.alaska.edu](http://tsunami.alaska.edu) to determine whether your house, workplace, or school is in the inundation/flood zone.

## Historical Tsunamis

Of the roughly 20 tsunamis recorded near Seward in the past century, only 4 reached wave heights of more than 1 foot. Some tsunamis were from earthquakes as far away as Samoa and Chile. The most damaging was the 1964 magnitude 9.2 earthquake in the Gulf of Alaska, which caused several types of waves in Resurrection Bay: landslide-generated, a tectonic tsunami wave train, and seiches (waves sloshing back and forth).

## Keeping Alaska Safe

Tsunami researchers use cutting-edge science to examine historical tsunamis and earthquakes, along with geologic records from prehistoric tsunamis, then generate possible worst-case scenarios. This information is visualized in maps showing potential flood zones to help communities create emergency plans.

## Learn More about Tsunami Hazards in Seward

### Emergency and disaster preparedness

Seward community preparedness  
<https://www.cityofseward.us/community/residents/emergency-preparedness>  
907-224-3331

Local Public Radio  
91.7 FM KIBH

City of Seward Facebook  
<https://www.facebook.com/cityofsewardak>

Register for Nixle alerts  
<https://local.nixle.com/register/>

Full scientific community report and maps  
<https://dggg.alaska.gov/pubs/id/21001> **Update coming in 2022**

Maritime response report  
<https://scholarworks.alaska.edu/handle/11122/10918>



Explore the online tool  
[tsunami.alaska.edu](http://tsunami.alaska.edu)

## Learn More about Tsunami Safety in Alaska

### Preparing for tsunamis

Alaska Division of Homeland Security and Emergency Management  
[www.ready.alaska.gov](http://www.ready.alaska.gov)



### Tsunami warning information

National Tsunami Warning Center  
[www.tsunami.gov](http://www.tsunami.gov)

National Tsunami Hazard Mitigation Program  
[nws.weather.gov/nthmp/](http://nws.weather.gov/nthmp/)

To request brochures, contact 907-474-7320 or [uaf-aec@alaska.edu](mailto:uaf-aec@alaska.edu)

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# Know Your Tsunami Hazard in Seward



**UAF** ALASKA  
UNIVERSITY OF ALASKA  
FAIRBANKS **EARTHQUAKE CENTER**



[tsunami.alaska.edu](http://tsunami.alaska.edu)

## Big Waves in the Biggest State

In Alaska, tsunamis can strike within minutes of an earthquake. Tsunami awareness and safety are crucial to anyone who lives, works, or travels along Alaska's coast.

Earthquakes frequently rumble coastal Alaska. Just offshore, the Pacific Ocean plate scrapes under the continental plate of mainland Alaska, causing much of this activity. Many places along Alaska's rugged coast are poised for landslides above or below the ocean's surface. A major earthquake or landslide near the coast could generate a tsunami.

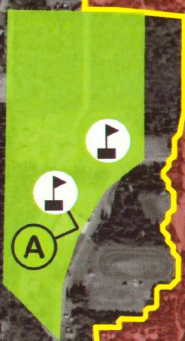
## High-risk Areas

If the ground shakes for more than 20 seconds and it is difficult to stand, and/or the tsunami siren is heard, anyone within the tsunami hazard zone should move to higher ground or a tsunami shelter (see map).

Pay attention to unusual sounds and sights when on or near the ocean. Tsunami impacts are greatest near ocean beaches, low-lying coastal areas, and waterways such as harbors and estuaries. Always avoid these areas during tsunamis. A tsunami can be a series of waves that may last for hours, so wait for local authorities to announce when these areas are safe. In addition to wave action, tsunamis can stir up currents that threaten harbors, facilities, and boats.



This area has been designated by the city as a safety zone, with a shelter at the high school.



First Ave. safety zone.



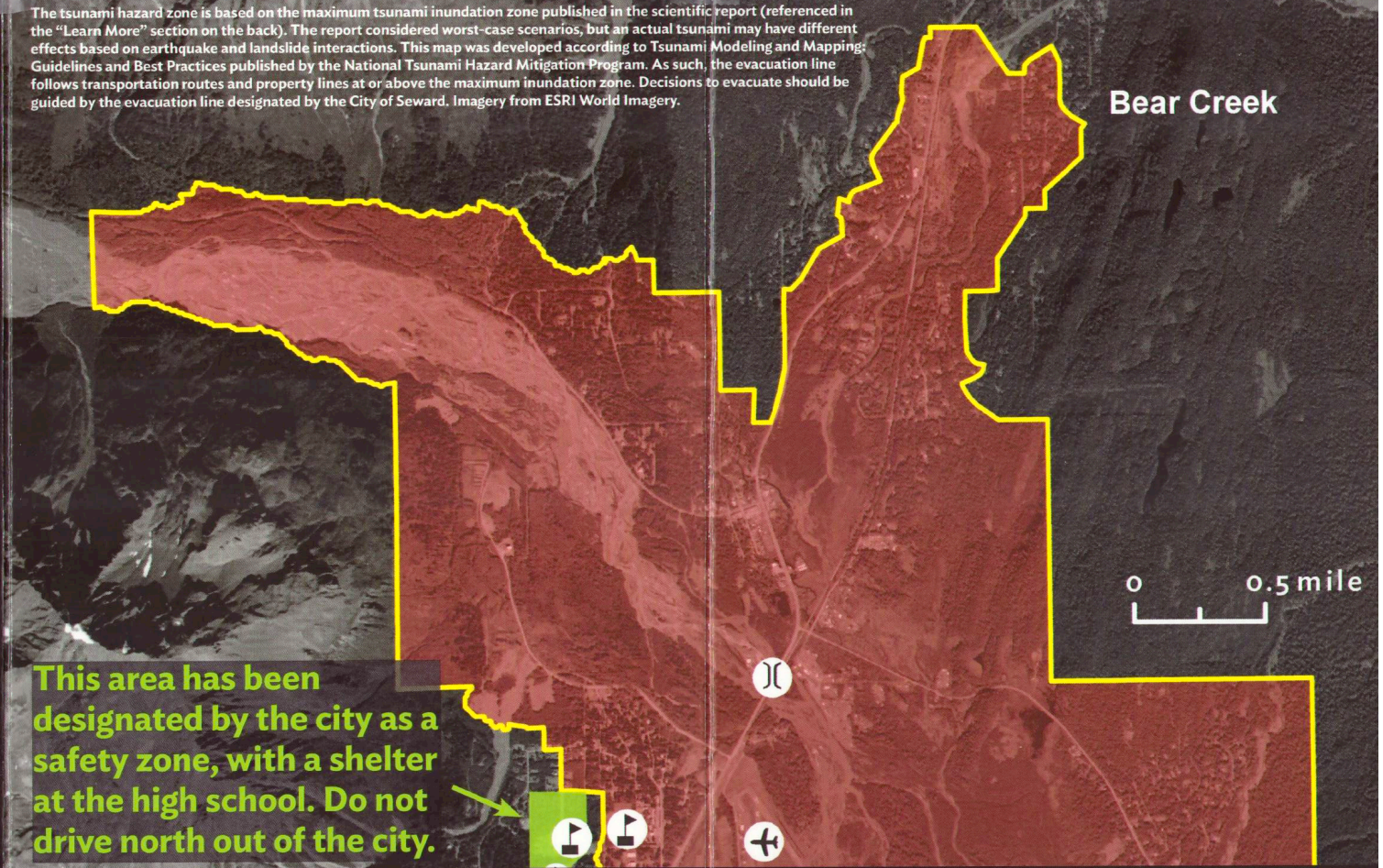
- Airport
- Hospital
- City Office
- School
- Fire Services
- Ferry
- Bridge

- Tsunami hazard zone
- Areas with dangerous eddies and whirlpools
- Probable locations of unstable sediment buildup that could cause underwater landslides
- Evacuation line designated by the City of Seward
- Assembly area or safe zone designated by the City of Seward

0 0.5 mile



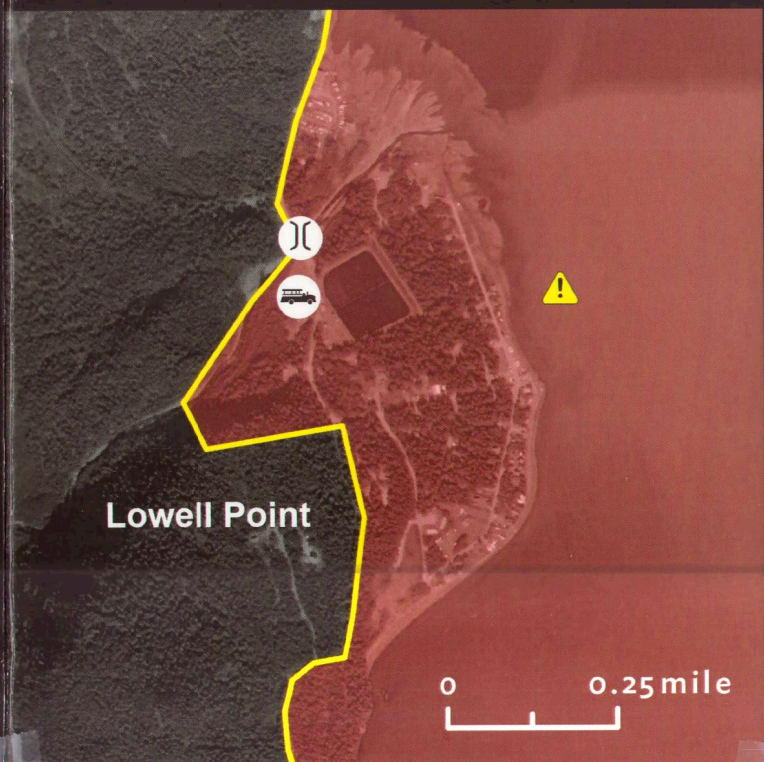
This area along the road has been designated by the city as a safety zone.



Bear Creek

0 0.5 mile

This area has been designated by the city as a safety zone, with a shelter at the high school. Do not drive north out of the city.



Lowell Point

0 0.25 mile



Seward Marine Industrial Center

0 0.5 mile

This area along the road has been designated by the city as a safety zone.

The tsunami hazard zone is based on the maximum tsunami inundation zone published in the scientific report (referenced in the "Learn More" section on the back). The report considered worst-case scenarios, but an actual tsunami may have different effects based on earthquake and landslide interactions. This map was developed according to Tsunami Modeling and Mapping: Guidelines and Best Practices published by the National Tsunami Hazard Mitigation Program. As such, the evacuation line follows transportation routes and property lines at or above the maximum inundation zone. Decisions to evacuate should be guided by the evacuation line designated by the City of Seward. Imagery from ESRI World Imagery.