



You can Survive the Big One!

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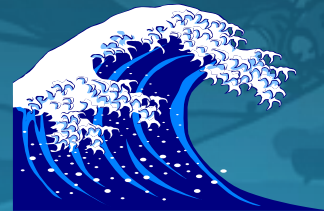
Tsunamis Happen ~ Are You Ready?



What is a Tsunami?

A tsunami is a series of waves in the ocean, most often caused by an earthquake or landslide.

- 1ST wave may not be the largest one
- It can generate a surge of water along the shoreline causing dangerous inundation and serious infrastructure damage and casualties



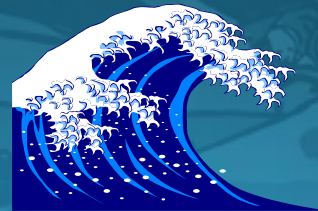
Distant vs Local Tsunamis

Local Tsunamis: The first waves could reach the Washington coast within 15 to 20 minutes.

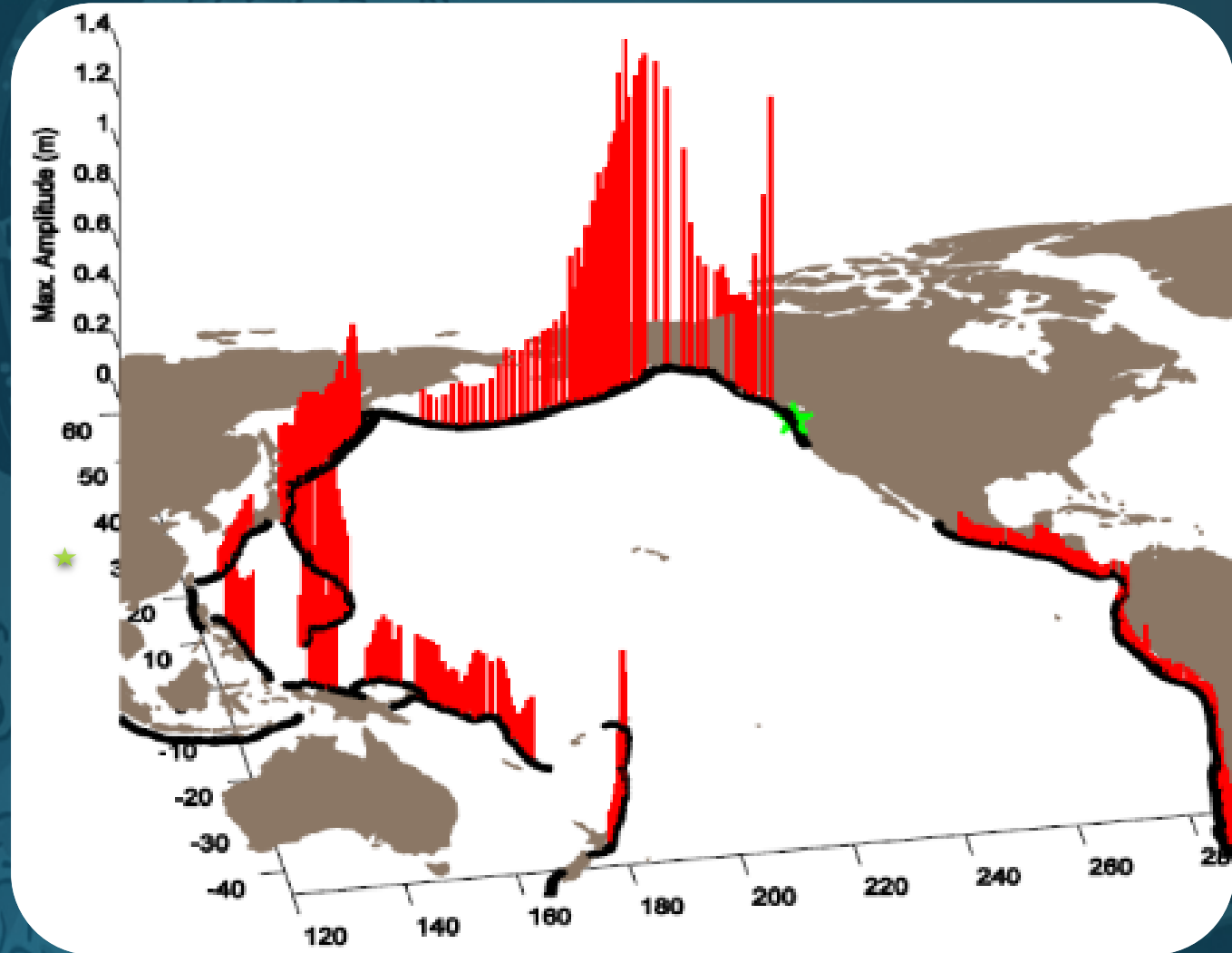
- *Cascadia Subduction Zone Fault*
- *Seattle and Tacoma Faults*

Distant Tsunamis: Waves higher than 3 feet could reach the Washington coast within 3 hours or more.

- *Alaska 1964*
- *Tohoku 2011*



Distant Tsunamis



Waves only a couple feet high...



Tsunami Alerts

Alert Name

Actions

Potential Hazards



WARNING

Get to high ground or inland
IMMEDIATELY
Follow tsunami evacuation signage

Danger! Tsunami imminent!
Flooding/powerful currents
Wave heights > 3 ft. or unknown



ADVISORY

Stay out of the water and
away from the shore

Strong currents and dangerous
waves in or very near water
Wave heights of 1 - 3 ft.



WATCH

Be prepared to take action
Stay tuned to local radio/TV/
NOAA "alert" weather radios

Tsunami possible
Alert level may change once more
information is known



INFORMATION STATEMENT

No action needed

No tsunami impact expected
Alert level may change once more
information is known

THREAT Message: Intended to alert international partners only. Not applicable to U.S. coasts

**Tsunamis affect wide areas & alerts are issued for specific locations. Always read the full alert.
For information on current alerts, check: tsunami.gov**

All Hazard Alert Broadcast Sirens

- OUTDOOR Tsunami Warning System
- **Activated** upon receipt of a Tsunami **WARNING** from the NTWC
- Wailing Tone followed by verbal warning in English and Spanish





- There are currently 68 sirens on the coast of Washington State.
- Coverage areas focus on major population centers
- From Neah Bay and Point Roberts in the North, all the way down to Cape Disappointment State Park and the Port of Chinook in the South

Regular Siren Tests

- Daily silent diagnostic checks
- Monthly test on the first Monday of every month at noon: chimes
- Shakeout (third Thursday of every October) only day we exercise the wail sound
- English and Spanish languages used (capable of more)

Are You Prepared?



- How will I know a tsunami is coming?
- Do I know my evacuation routes?
- Do I have a “Family Emergency Plan”?
- Do I have a go bag ready to take with me?
- How will I communicate/reunite with my family?
- Am I involved in Neighborhood / Community Preparedness?

Know the Warning Signs

FEEL

- If you FEEL the ground shaking severely

SEE

- Tsunamis may be preceded by a rapid fall in the sea level
- If you SEE fast receding water, or a wall of water coming towards you

HEAR

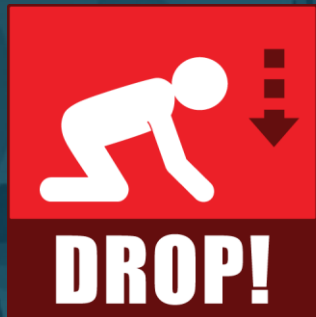
- If you HEAR a loud roar like a train or jet

RUN

- Move quickly inland to high ground!



First, Survive the Earthquake



DROP!



COVER!



HOLD ON!

The Great
Washington

**Shake
Out**
TM



It could save your life!

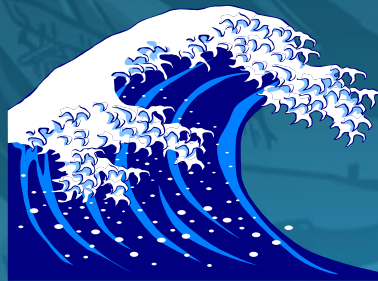
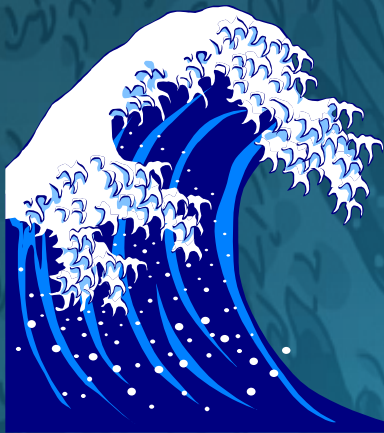
You are in a tsunami inundation zone and you've just survived an earthquake by following the drop cover and hold on steps. What do you do next?

- A. Check on your neighbors and call 911 for help**
- B. Wait to hear if the tsunami siren goes off before you evacuate**
- C. Grab your go bag and quickly walk your tsunami evacuation route to high ground**
- D. Listen to your TV or radio or check social media to see what is happening and what to do.**
- E. Grab your go bag and attempt to drive your car to safety**

Get Moving

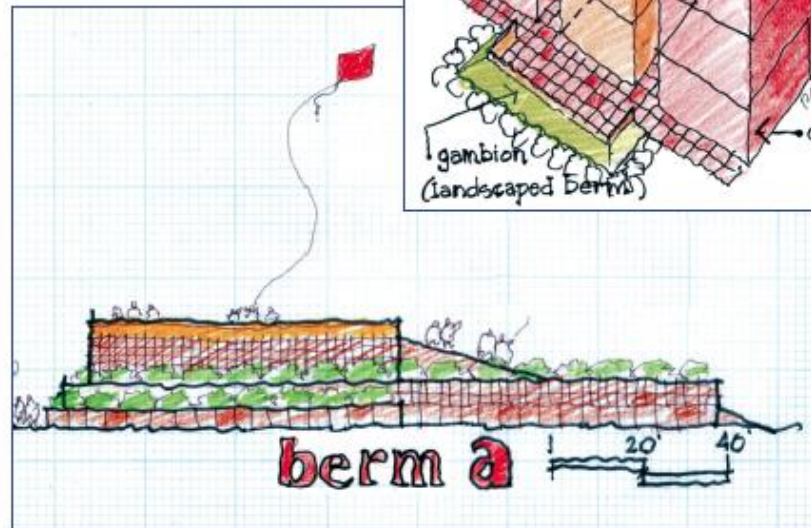
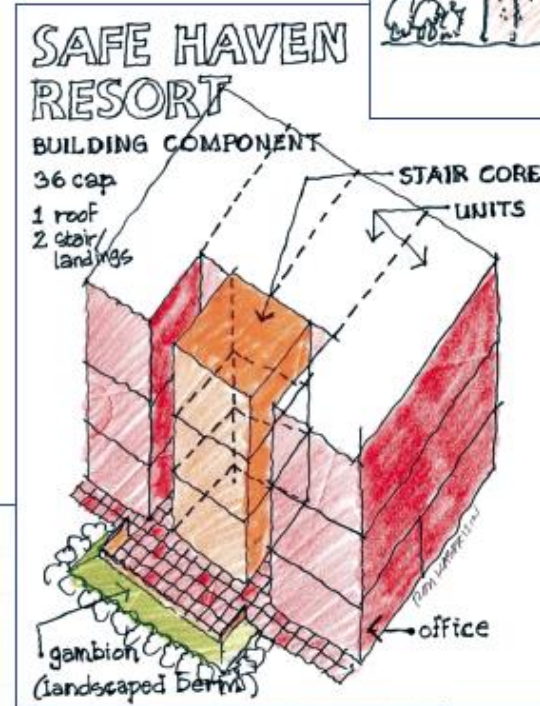
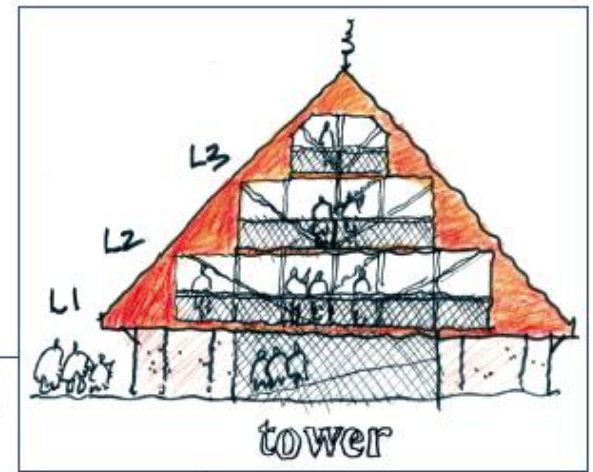
- When shaking stops get to high ground, fast!
- Tsunamis come in a series of waves
- The first wave is often not the highest wave

Get Off and Stay Off the beach



PROJECT SAFE HAVEN:

VERTICAL
EVACUATION
STRUCTURES
CONCEPTUAL
COST
ANALYSIS



52 structure
locations identified
in Grays Harbor and
Pacific Counties

Guidance for Safe Minimum Offshore Depth for Vessel Movement

State/Territory	Distant Source (ships in harbor)*	Local Source (ships at sea)*	Notes
California	30 fathoms	100 fathoms	Evaluated; may add potential safe areas within large bays and ports
Oregon	30 fathoms	100 fathoms	Evaluated, but is re-evaluating based on new data; also evaluating Columbia River
Alaska	30 fathoms	100 fathoms	Evaluated; ships should be at least 1/2 mile from shore for all scenarios
Washington	30 fathoms	100 fathoms	Evaluated; special conditions exist inside Puget Sound
Hawaii	50 fathoms	50 fathoms	Evaluated; implemented in Coast Guard plan in some locations

* Ships also recommended to be a minimum of 1/2 mile from shore or fringing reef

Plan to be on your own



Help will be slow in coming

Preparedness Kits

- 1 Gallon of Water per Person per Day (14 Day Minimum)
- First Aid Kit / Book
- Food
- Non-Electric Can Opener and multi-tool
- Portable NOAA Radio
- Flashlights, & Batteries
- Firestarter



- Extra Glasses, House/Car Keys
- Essential Medications and Medical Equipment
- ABC Fire Extinguisher
- Warm Clothes / Blanket
- Water Purification Kit
- Essentials for Infants, Elderly, or Pets
- Important documents
- Comfort Items
- Personal hygiene



Think of your feet

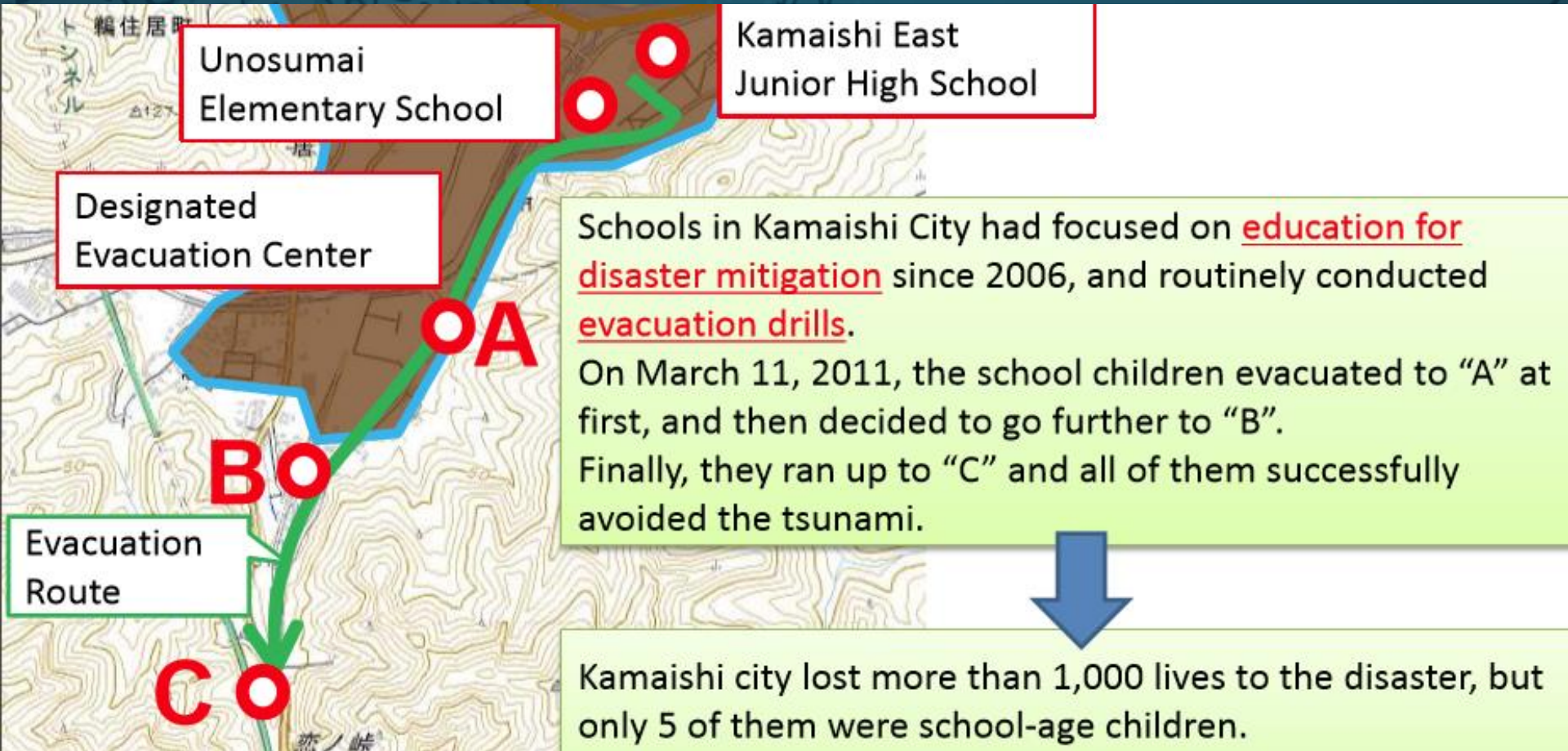
- After a nighttime earthquake the number one injury at emergency rooms is cut feet
- Keep the following in a bag tied to your bed:
 - Slip on shoes
 - Flashlight
 - Extra pair of glasses
 - Crowbar



Tragedy: Okawa Elementary School

- Okawa Elementary School in Japan did not conduct evacuation drills
- **72 of 76 children were killed** by the tsunami

Success: Kamaishi City Schools





OCTOBER 18, 2018

@ 10:18 a.m.

*Join us for the largest statewide
Earthquake Drill & Tsunami Siren Test*



REGISTER: www.shakeout.org/washington



2018 Youth Video Contest

Submit by Oct. 5, 2018



Open to: Washington State Students in the grade categories listed below

Categories: Middle School (Grades 6-8) and High School (Grades 9-12)

- *Individual, class & other group submissions are permitted*

Prizes provided by the Cascadia Regional Earthquake Workgroup

1st place \$300

2nd place \$100

- *1st and 2nd prizes will be awarded in both Middle School and High School categories*



You can Survive the Big One!

Know the 'natural warning signs'

FEEL, SEE, HEAR, RUN!!

Know what areas are at risk

Practice evacuations (**Walking**)

Know your evacuation routes,

Have multiple routes,

Walk the routes

Do not count on being able to drive

Be prepared to be on your own for a while!



Don't Wait - Prepare Today



Resources

Washington State Emergency Management Division

- mil.wa.gov/preparedness
- mil.wa.gov/tsunami

Washington State Department of Natural Resources

- geologyportal.dnr.wa.gov

National Oceanic and Atmospheric Administration

- www.tsunami.gov

USGS

- earthquake.usgs.gov/ens/register

THANK YOU FOR ATTENDING THE

Tsunami Roadshow

Enter
To Win!

Don't forget to submit *this* completed questionnaire for your chance to win a NOAA Weather "Alert" Radio (see back for details)

