

Senate Education Committee

February 7, 2019

Michael West

State Seismologist

Research Professor

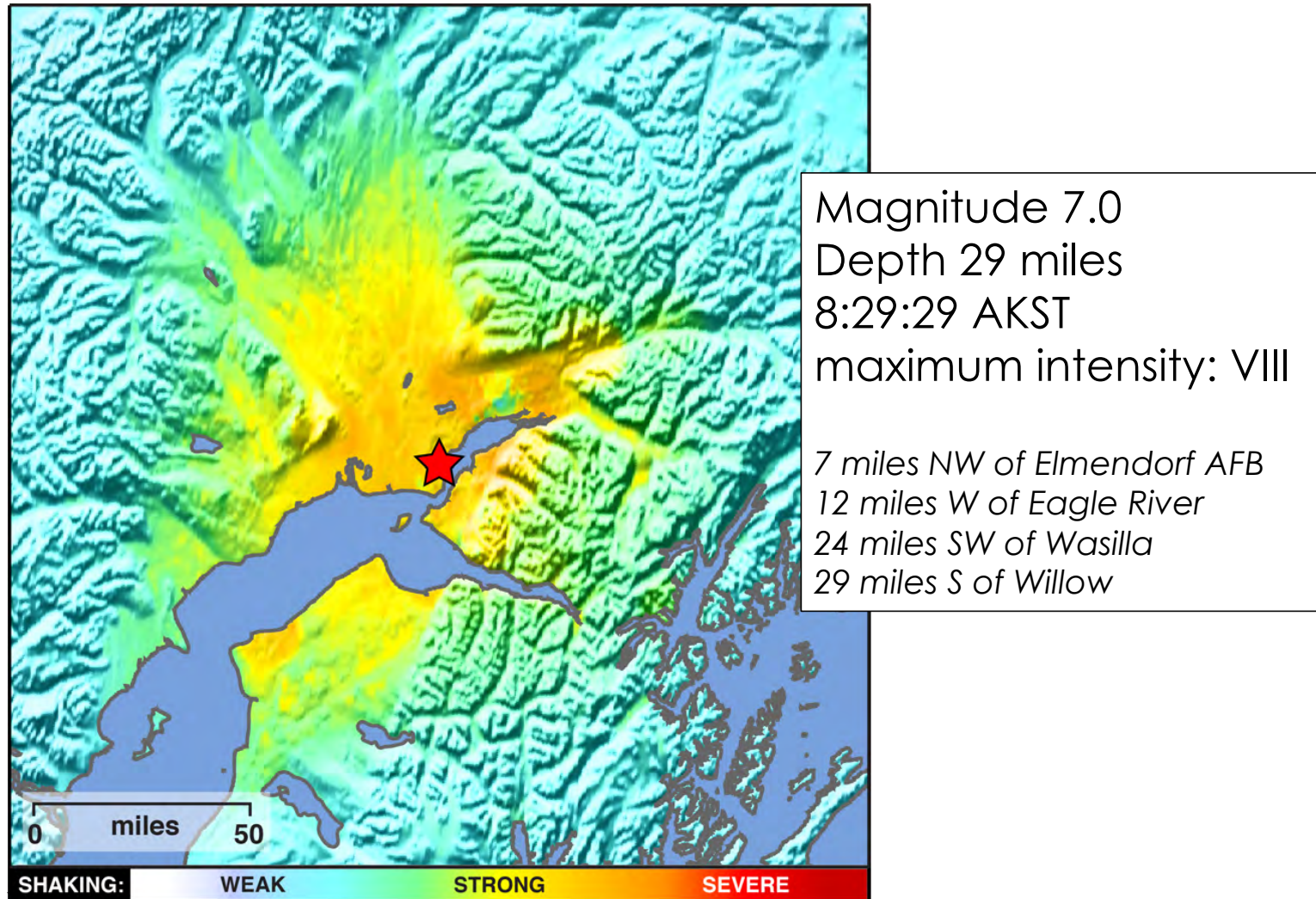
University of Alaska Fairbanks



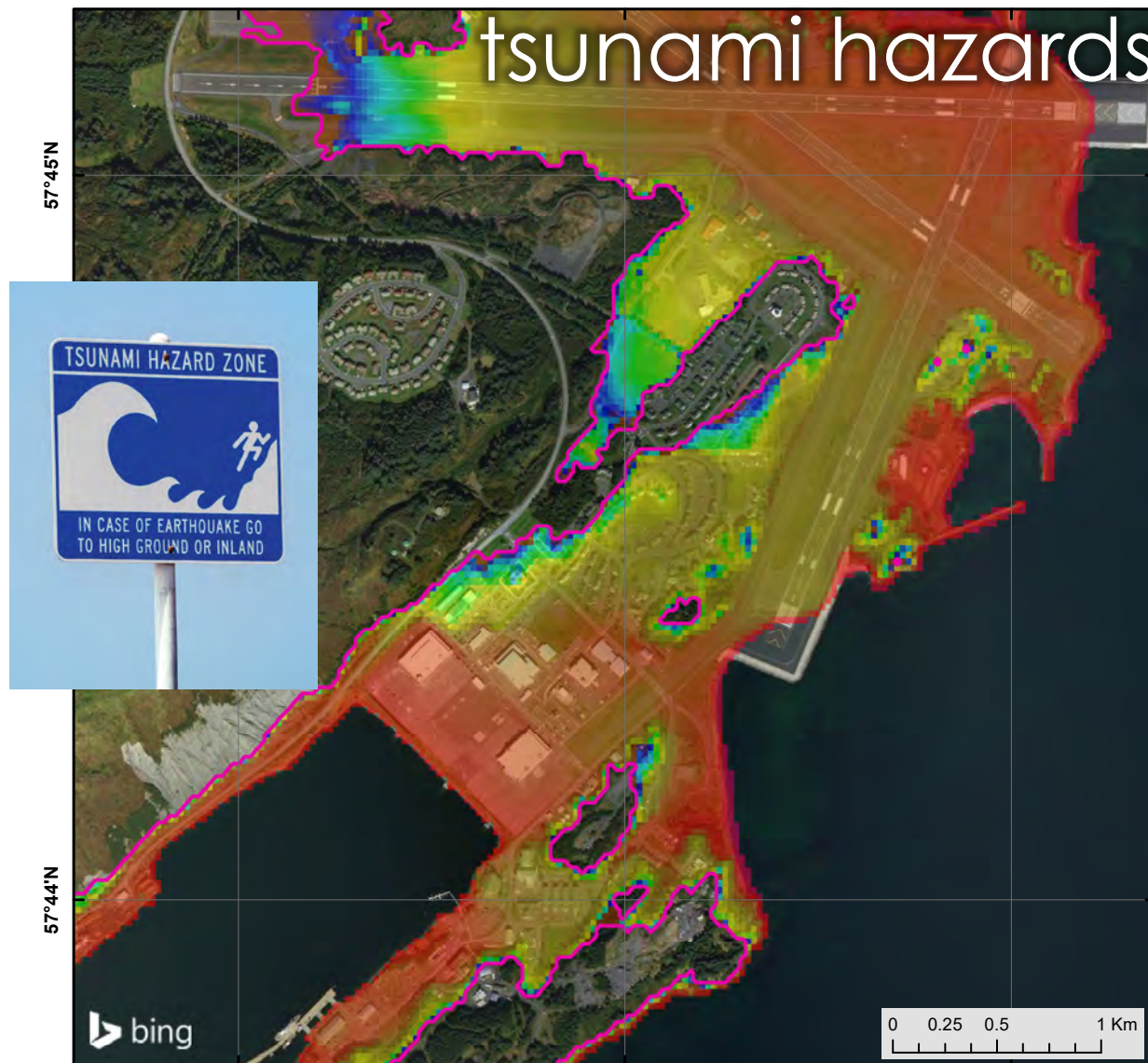
ALASKA
EARTHQUAKE
CENTER



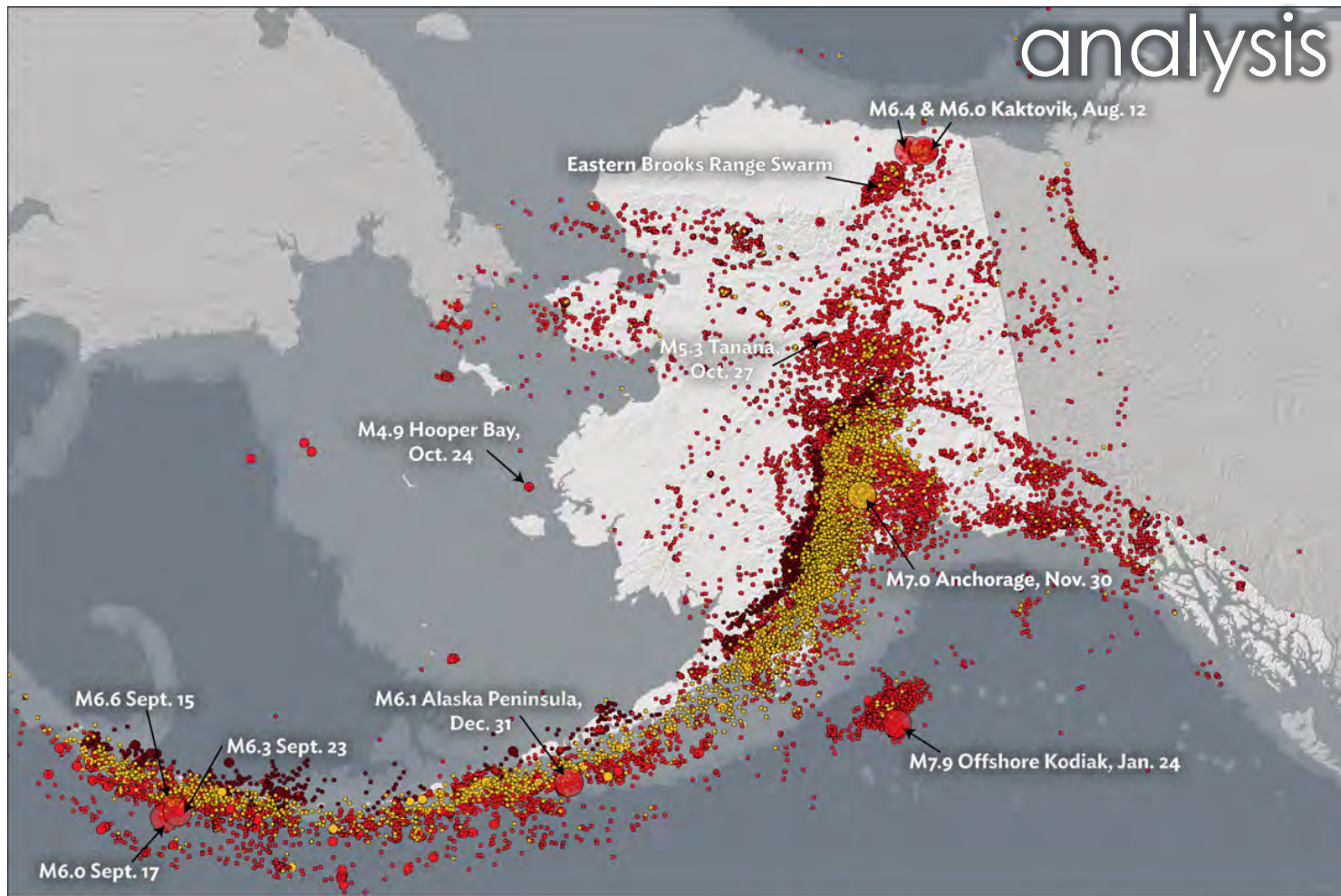
rapid assessment



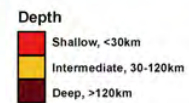
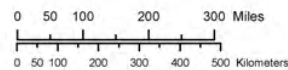
tsunami hazards



analysis



2018 Seismicity



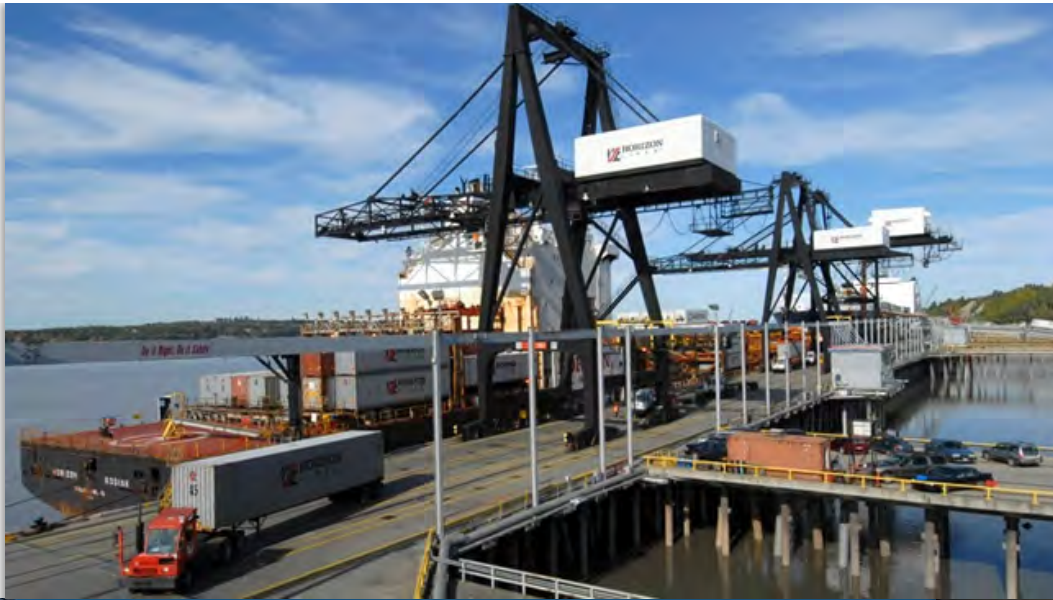
who cares?

- building codes
- environmental review
- insurance rates
- evacuation routes & shelters
- hazard mitigation plans



M. Tunseth, ADN

who cares?



why we do it?

The Alaska State Legislature

HOME SENATE HOUSE BILLS & LAWS SEARCHES MEDIA CENTER PUBLICATIONS GET STARTED

29th Legislature(2015-2016)
Alaska Statutes 2015
[AS 14.40.075](#)

SEARCH Display ?

Sec. 14.40.075. Alaska Earthquake and Volcanic **Hazards Assessment** Project; state seismologist.

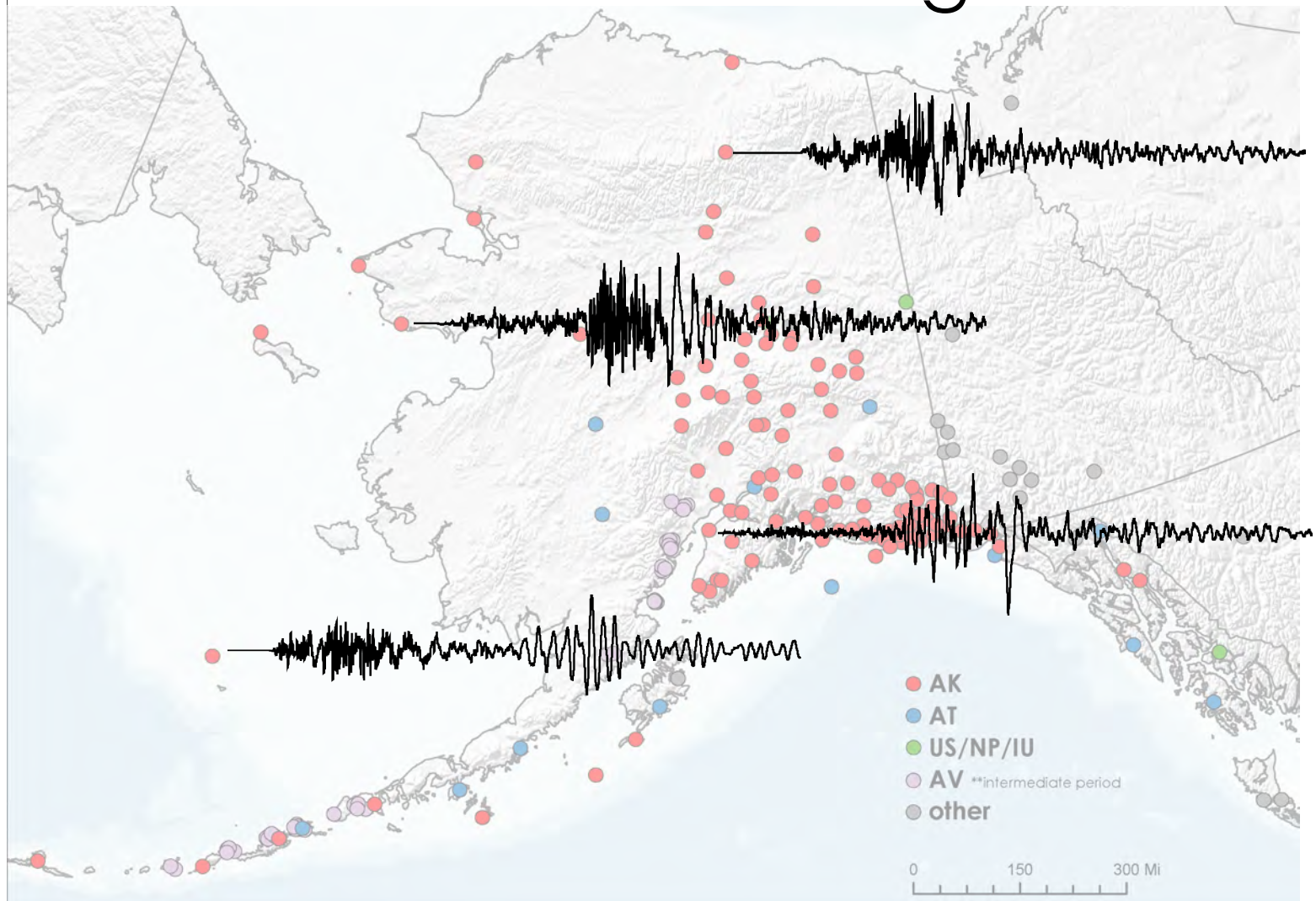
(a) The University of Alaska shall establish an Alaska Earthquake and Volcano **Hazards Assessment** Project within the seismology program of the geophysical institute. The project shall

- (1) collect, record, process, and archive seismic data on earthquakes and volcanic eruptions in the state;
- (2) **conduct seismological studies** relating to earthquake assessment;
- (3) evaluate earthquake and volcanic seismic data, identification and assessment of earthquake and volcanic hazards, and significant risk to lives and property in the state;
- (4) inform public officials, industry, and private citizens of potential earthquake or volcanic risks and assist in **planning to reduce risks to lives** and property; and
- (5) coordinate its activities with other organizations and agencies that monitor, collect, assess, and **conduct research** on earthquake and volcano hazards in order to avoid duplication of effort.

(b) The administration and management of the project are under a university employee designated the state seismologist. The state seismologist shall provide timely **information concerning earthquake and volcano hazards** to public officials, industry, and private citizens and serve as liaison to state and federal agencies in the event of emergencies due to seismic and volcanic activities.

Information and management of the state seismologist concerning earthquake and

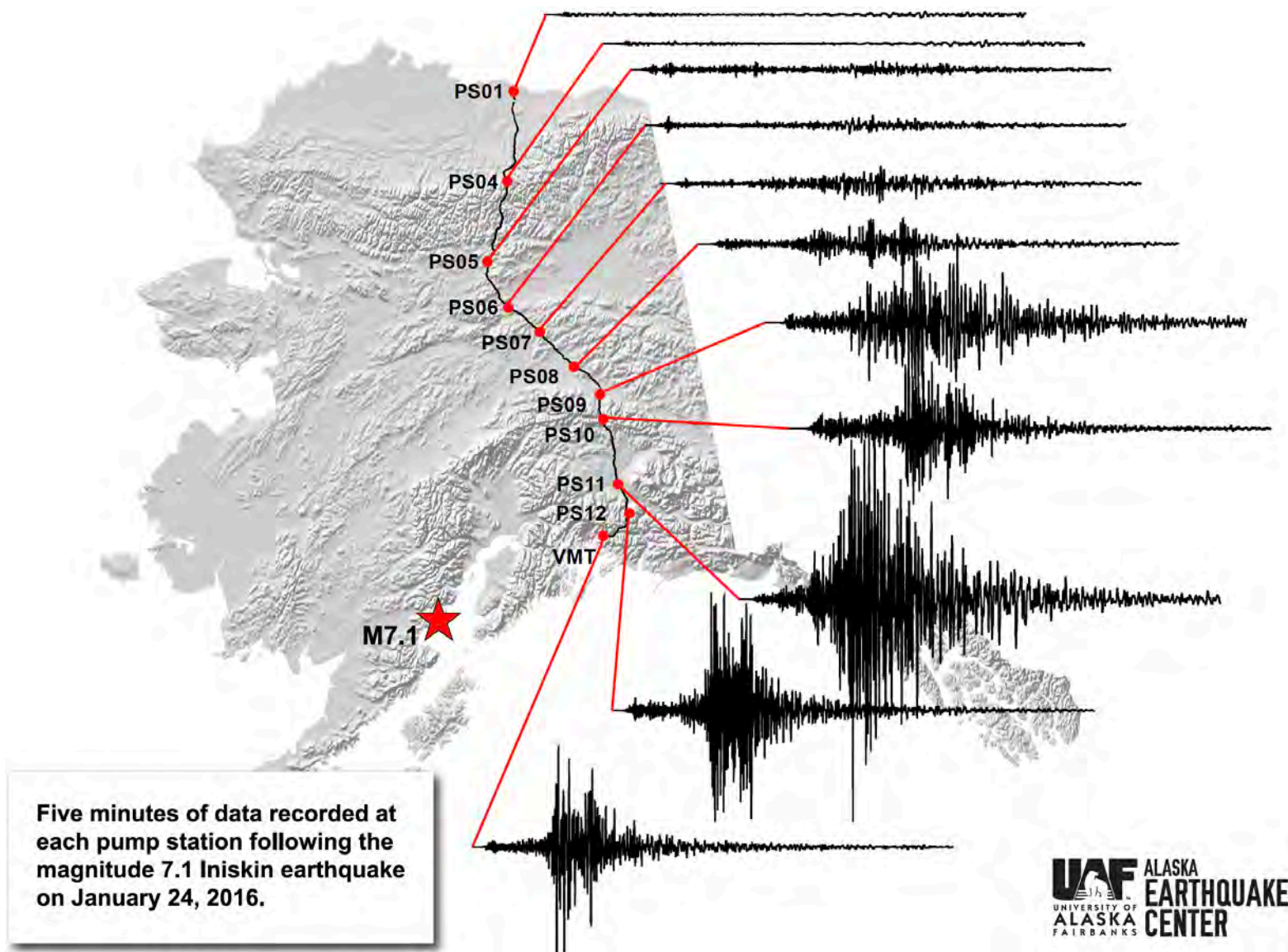
monitoring network



seismic station



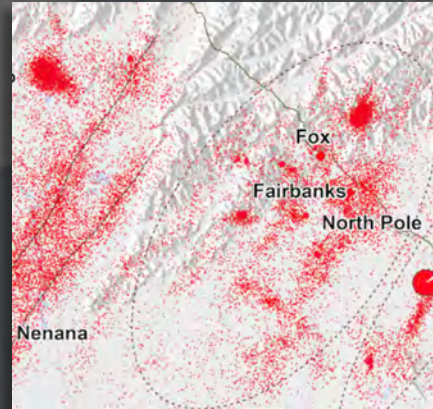
decision
support



worst
case?

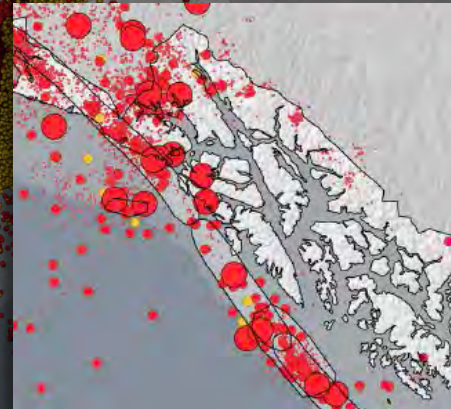


Fairbanks?

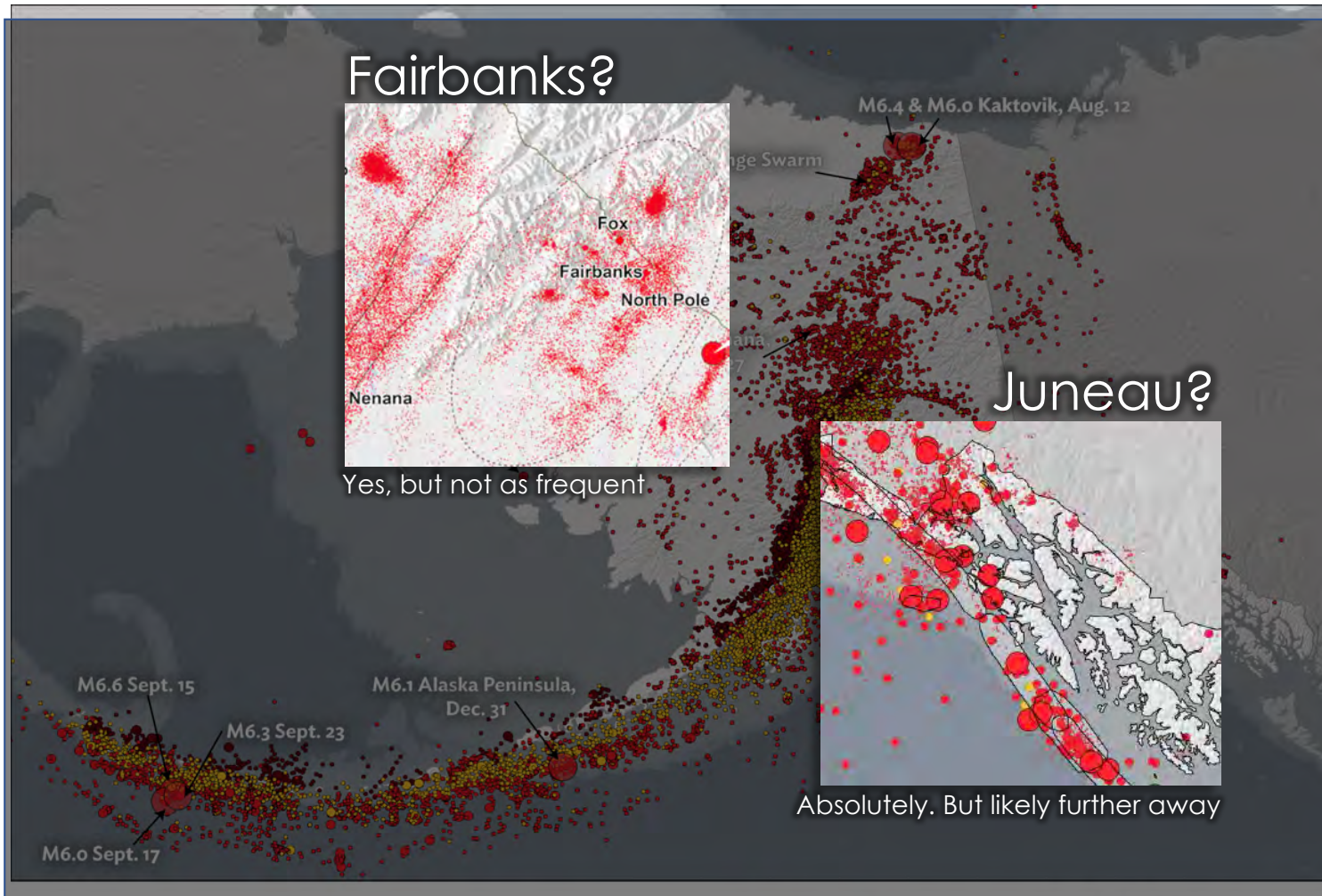


Yes, but not as frequent

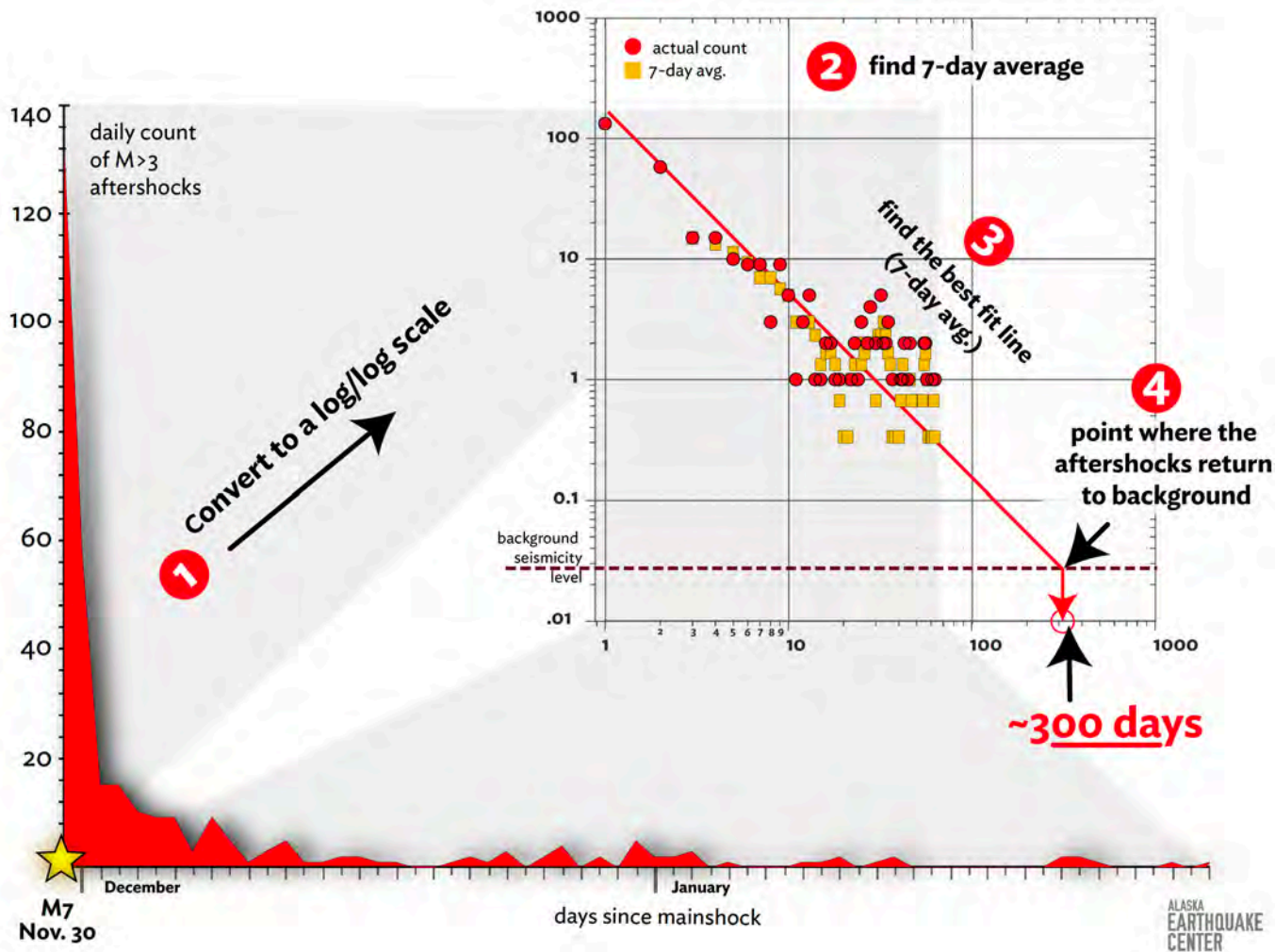
Juneau?



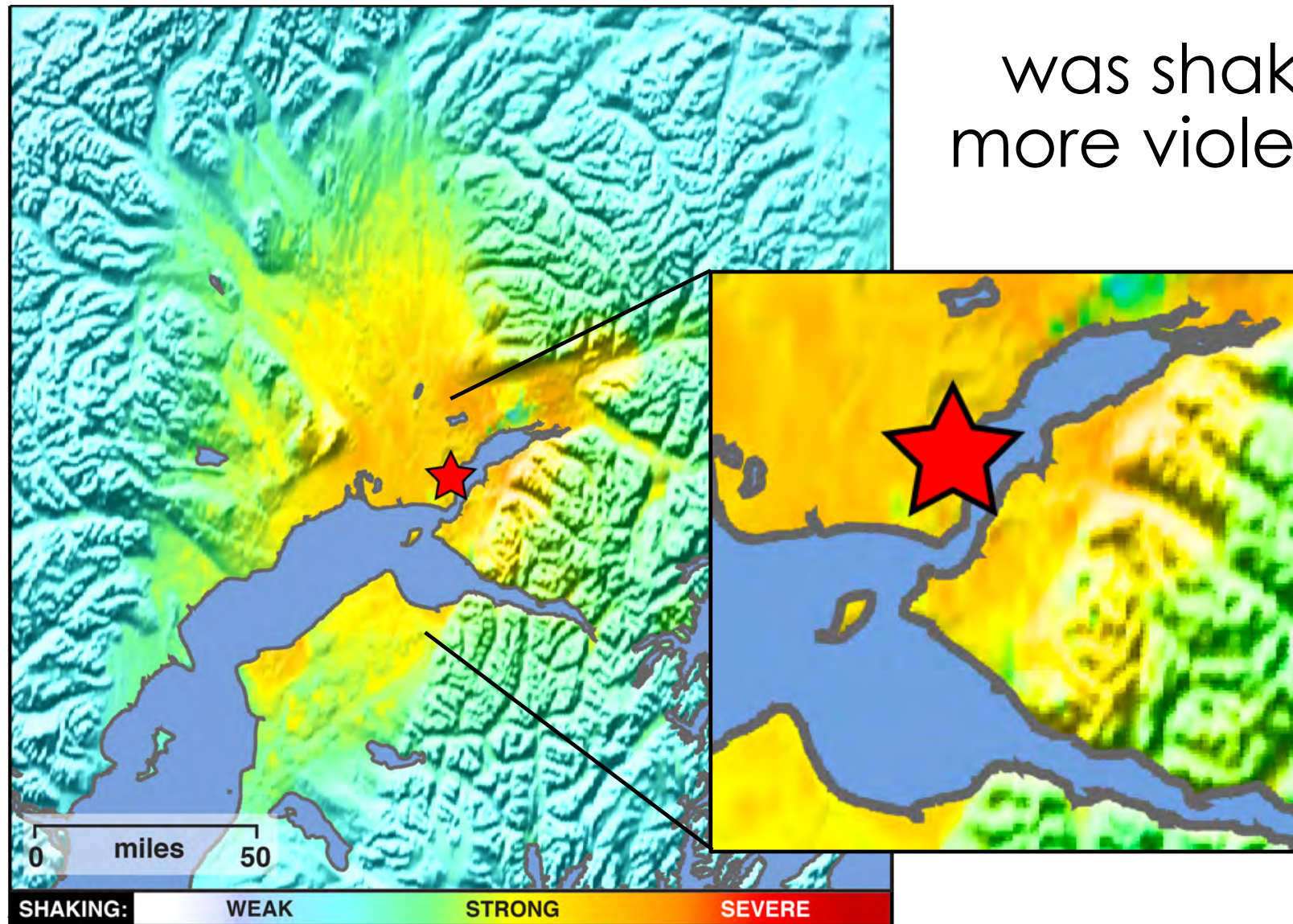
Absolutely. But likely further away



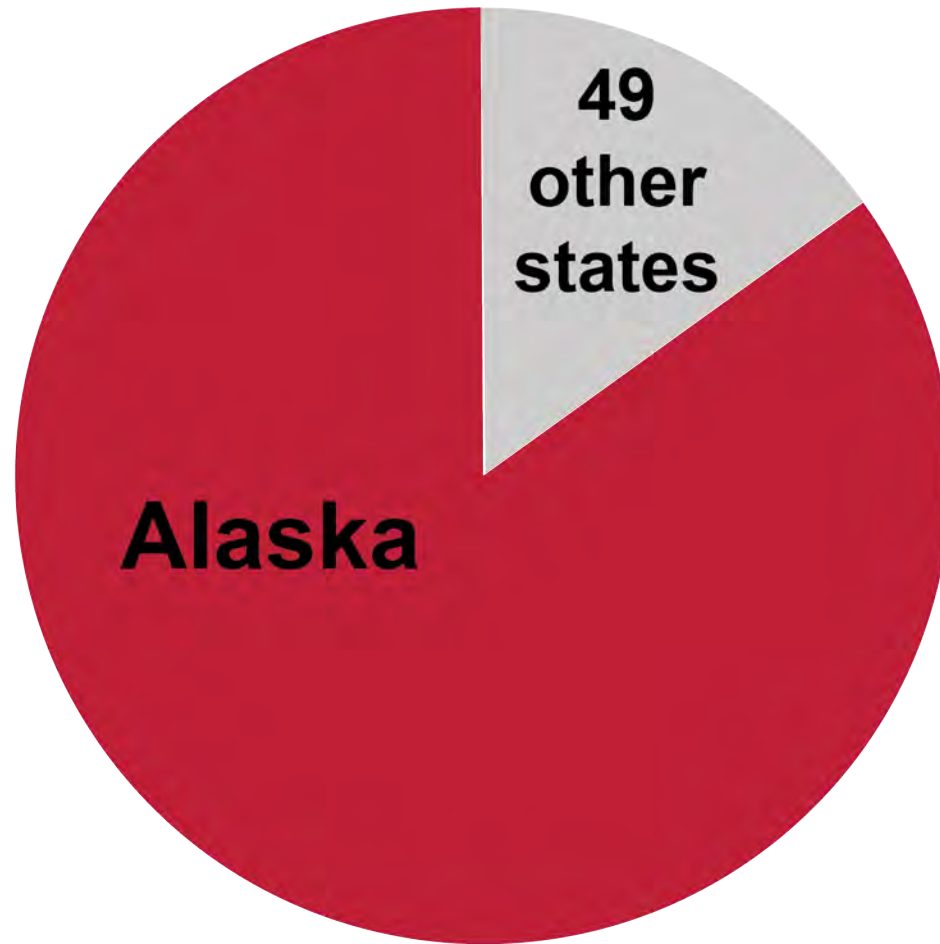
when will aftershocks end?



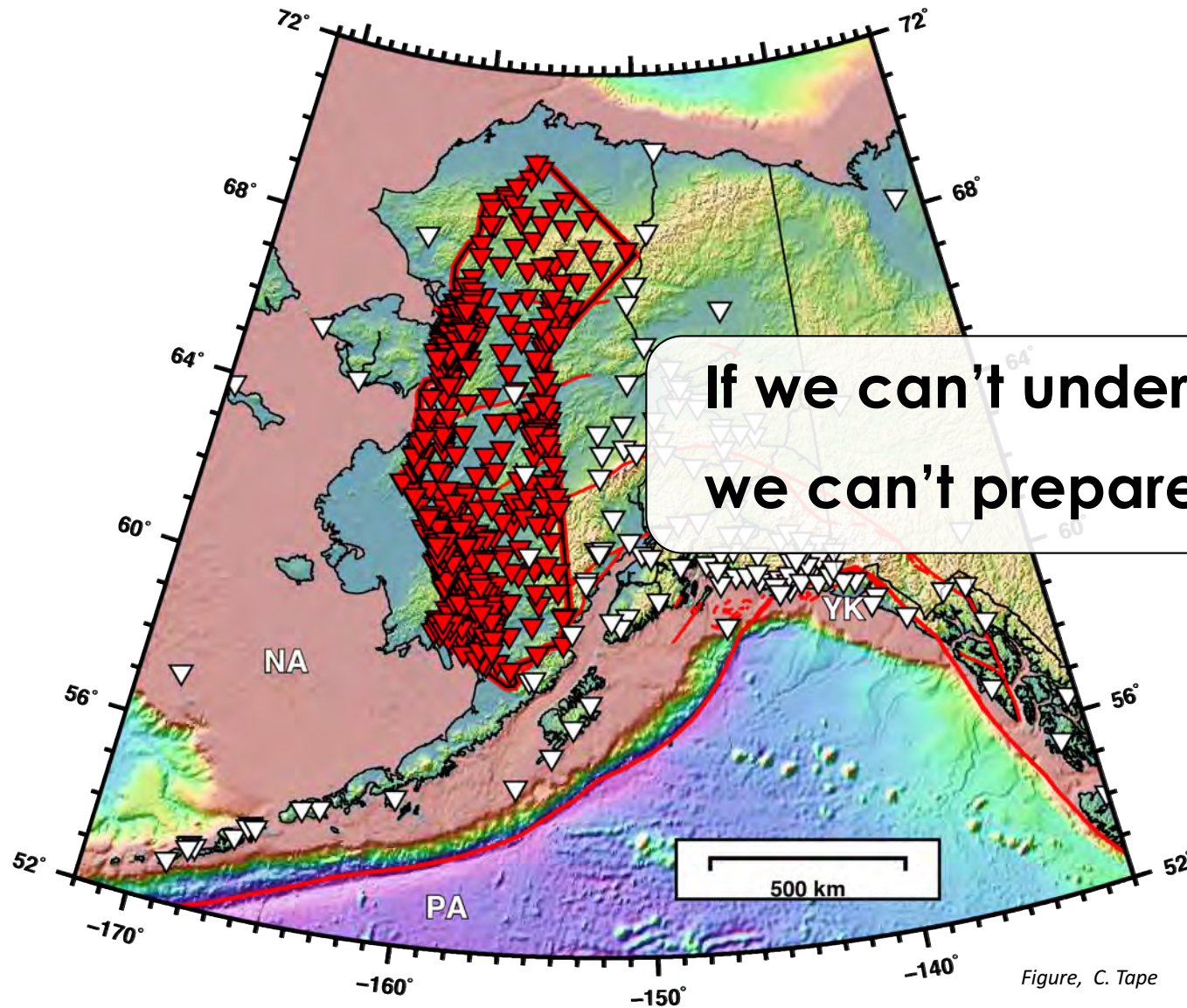
was shaking
more violent?



4 out 5 earthquakes

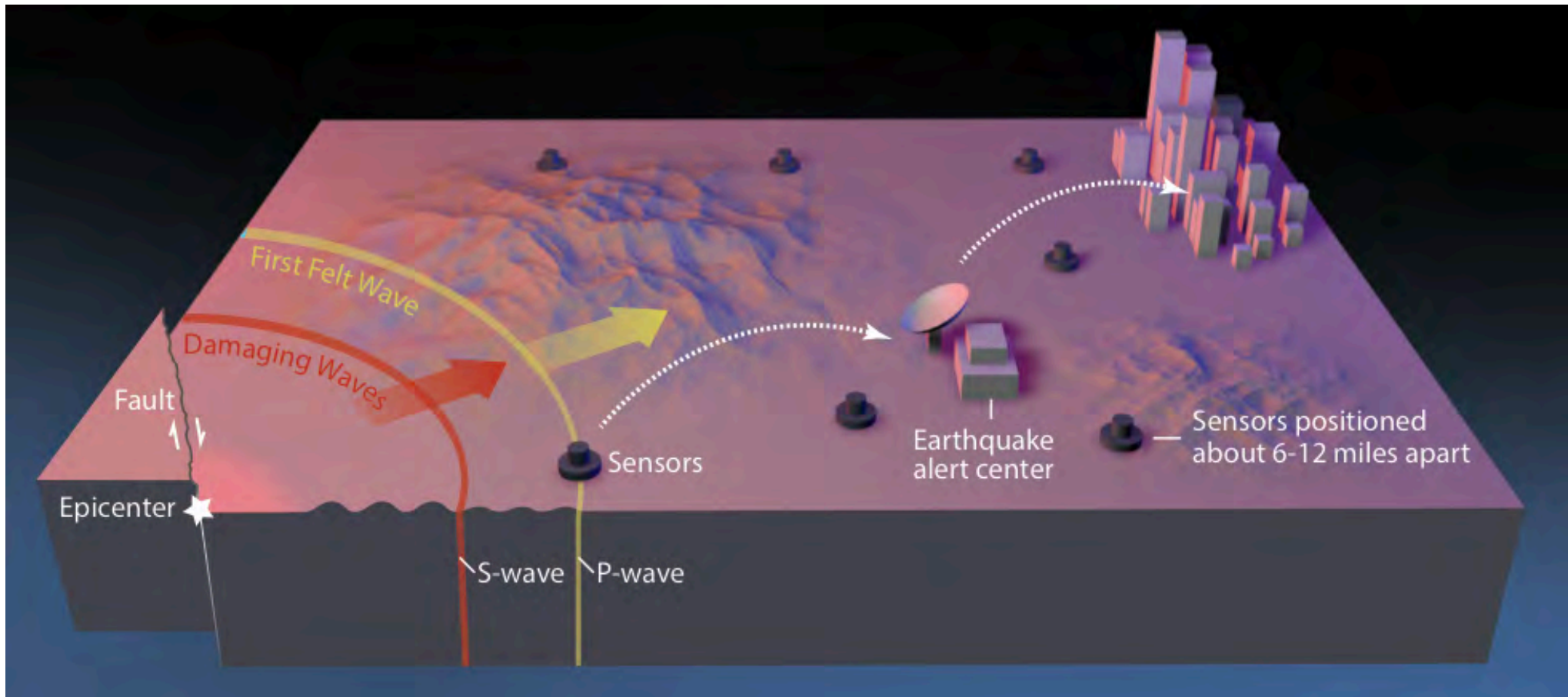


Alaska & lower 48

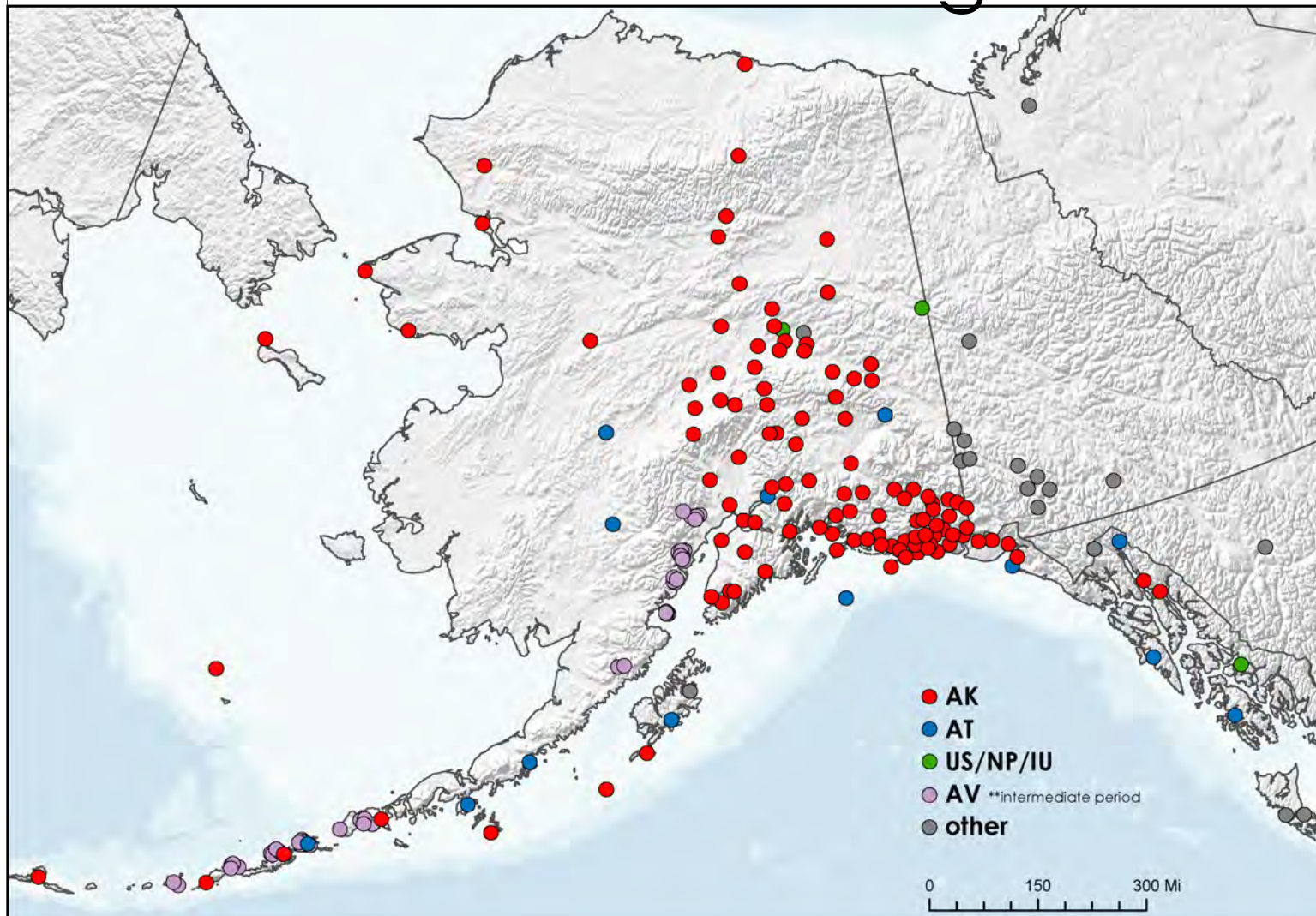


Figure, C. Tape

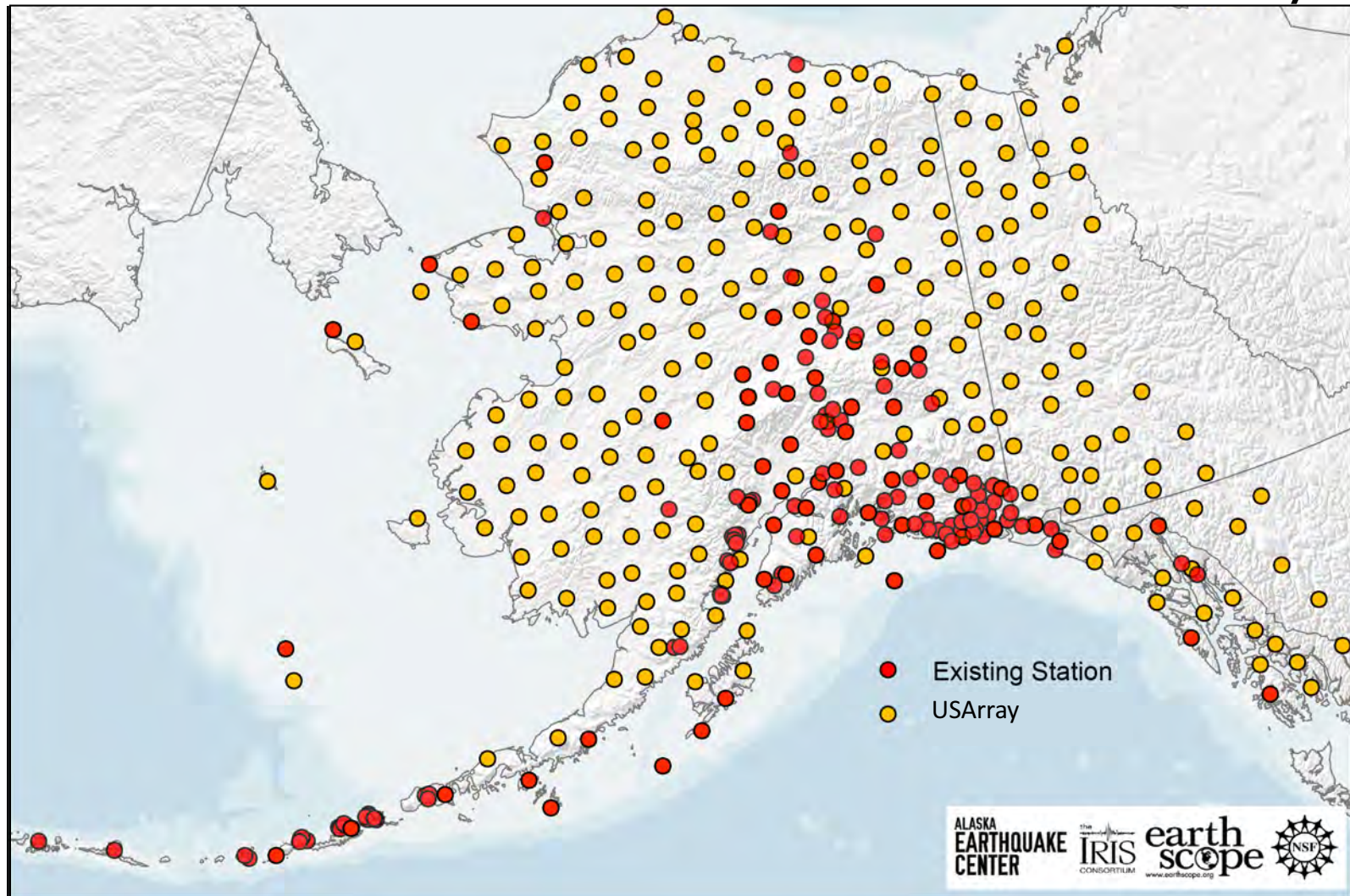
earthquake early warning



monitoring network



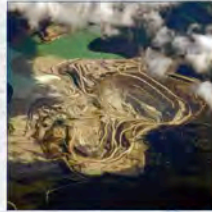
with USArray



CRITICAL EARTHQUAKE AND WEATHER MONITORING

HOW TO RETAIN CAPABILITIES:

This capital project would activate long-term federal support for this network of monitoring stations



Help Alaska build safely

Accurate earthquake information allows major development projects, bridges, utilities and private residences to be built safely. This information is the foundation for building codes, insurance rates and environmental reviews.



Leverage the sensor backbone across the state

Agencies access the meteorological sensors, cameras, and surveying equipment to enhance weather forecasts and support aviation, marine, military and private sector interests across Alaska and surrounding waters.



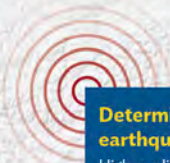
Earthquake early warning

Alaska is the only high-hazard state that is not pursuing an early warning system. USArray will make it feasible to consider this.



Issue reliable tsunami warnings

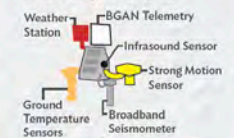
Reliable tsunami warnings require a comprehensive network that can remain operational during a damaging earthquake.



Determine how earthquakes happen

High-quality seismic data enables the research necessary to forecast future earthquake activity.

USArray Stations



● Existing Stations



Demonstrated success

Precise earthquake data helped calibrate building codes, limiting the catastrophic potential of the M7 earthquake in Nov. 2018.

Learn more online at:
<https://earthquake.alaska.edu/usarray-sustainability>

Fort Knox Gold Mine photo by Brian Wetherpoon; plane photo by Giffoto; mobile photo courtesy Powers; tsunami sign photo by Tony Webster; Anchorage road damage photo by Nathaniel Wilder, Reuters. UAF is an AA/EEO employer and educational institution and prohibits illegal discrimination against any individual: www.alaska.edu/fondiscrimination/

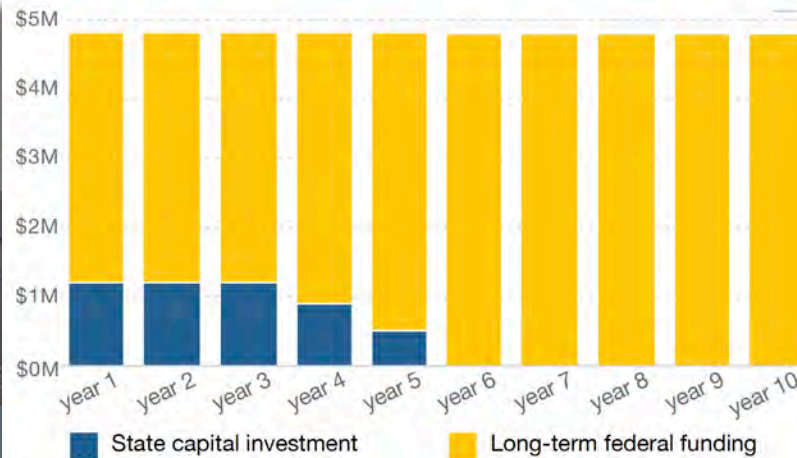
UAF
UNIVERSITY OF
ALASKA
FAIRBANKS
**ALASKA
EARTHQUAKE
CENTER**

CRITICAL EARTHQUAKE AND WEATHER MONITORING

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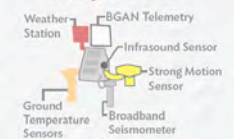
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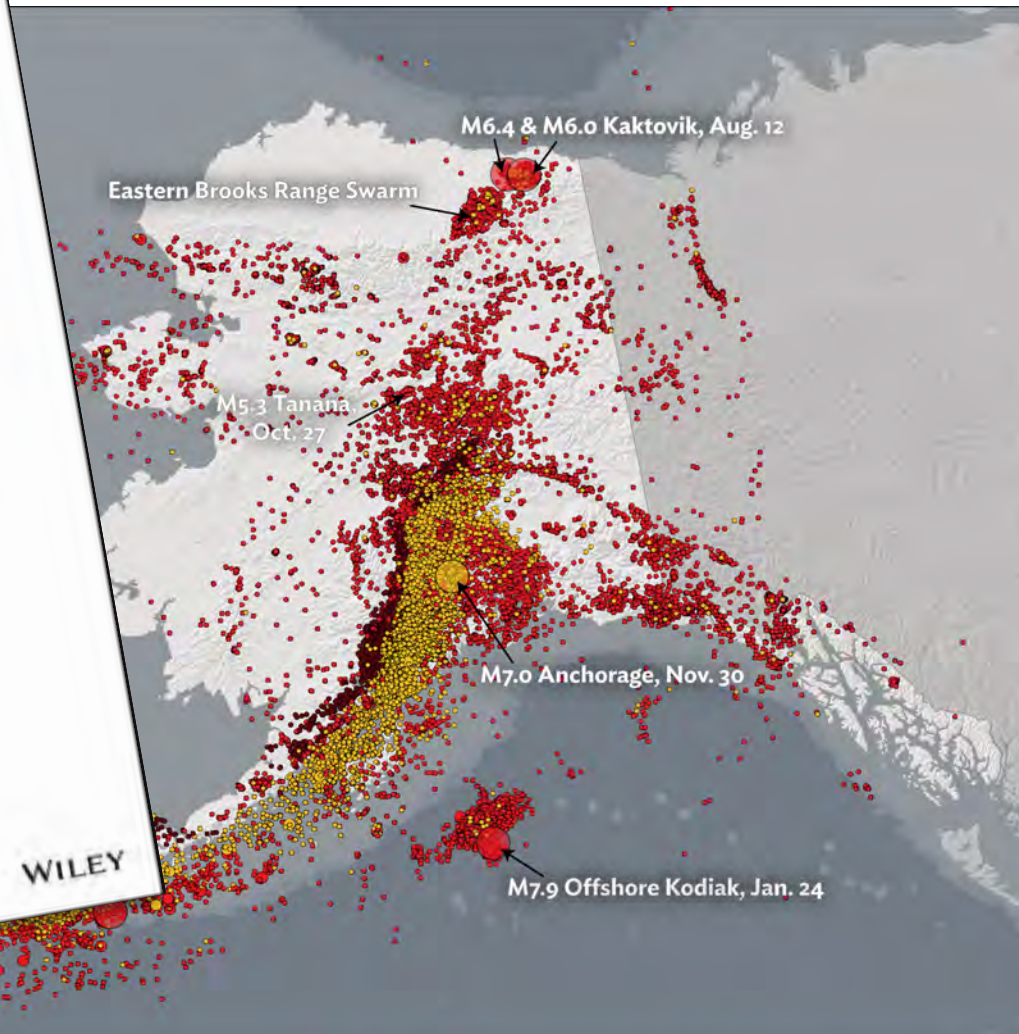
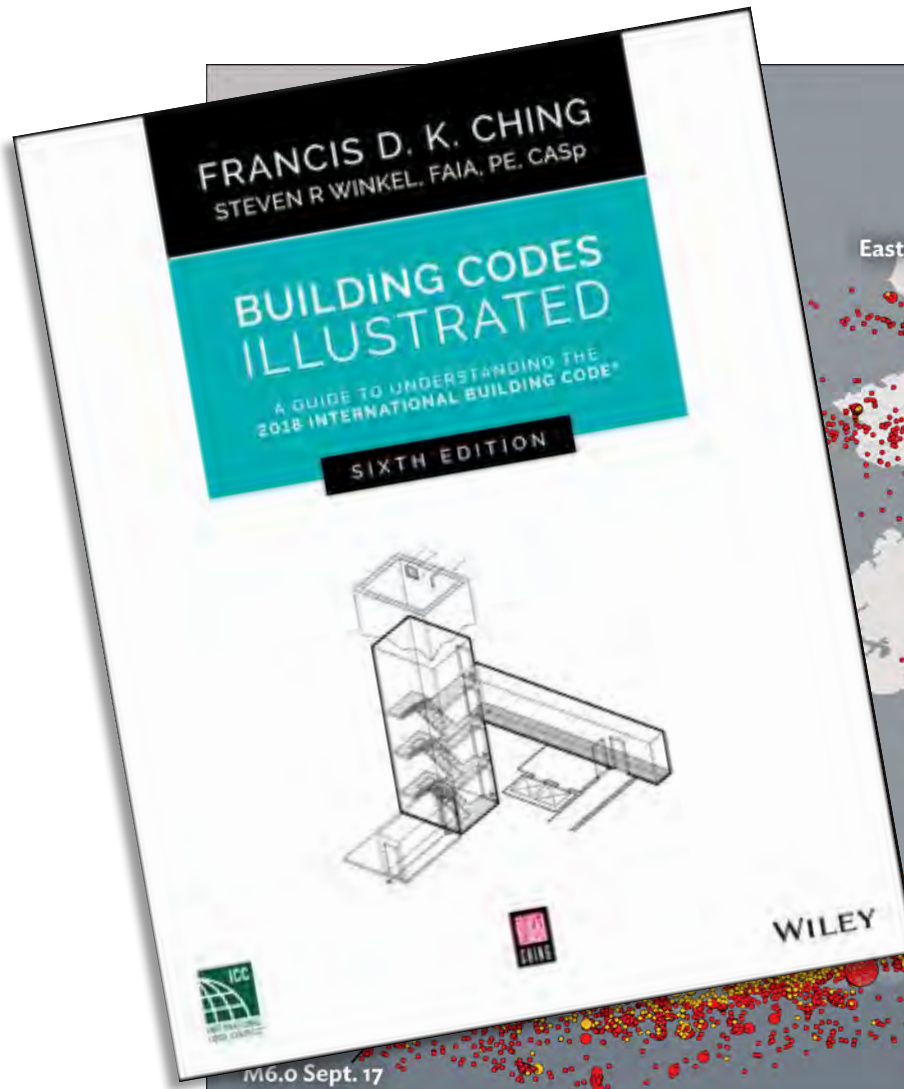
Learn more online at:

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UNIVERSITY OF
ALASKA
FAIRBANKS
ALASKA EARTHQUAKE CENTER

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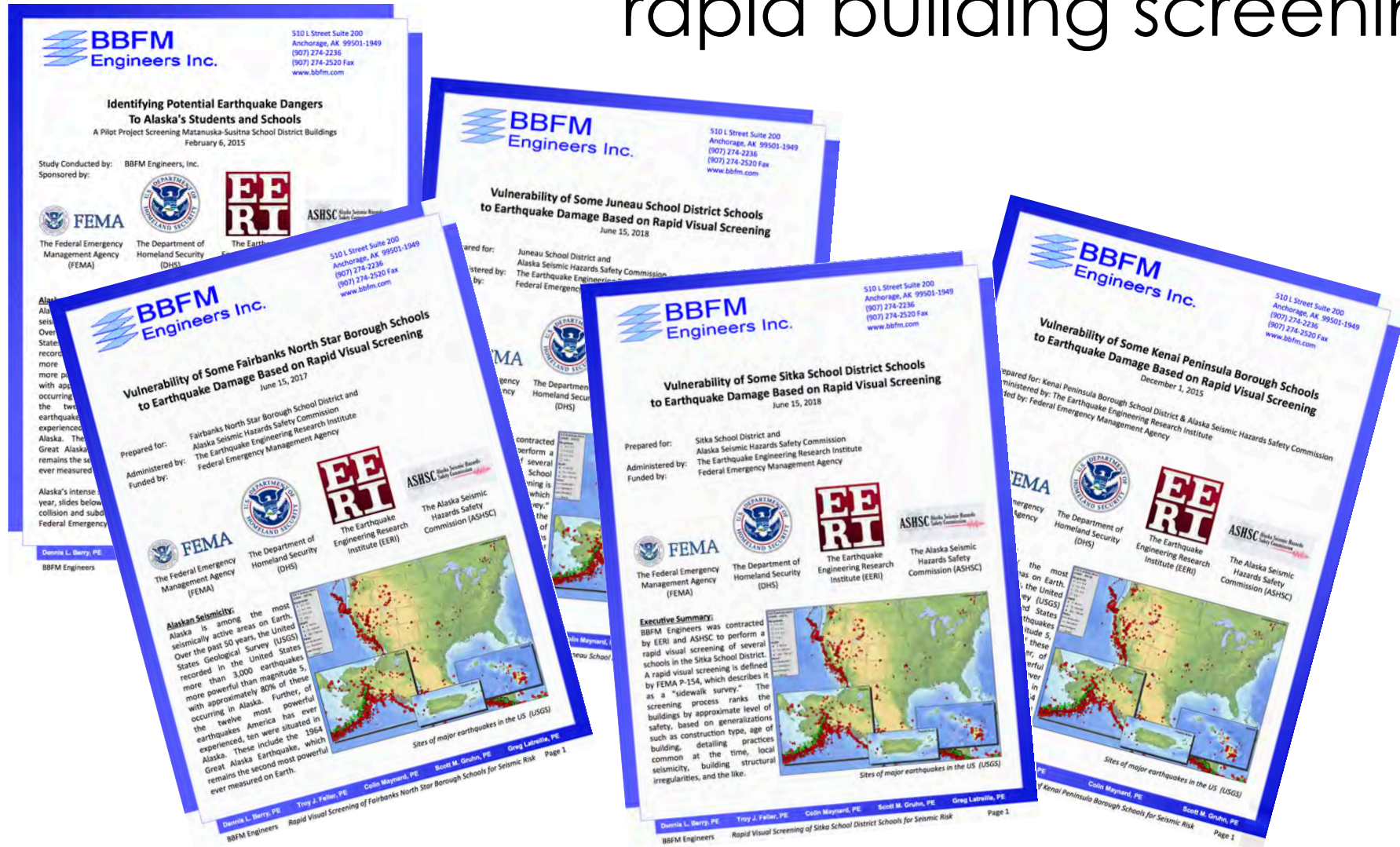
building codes



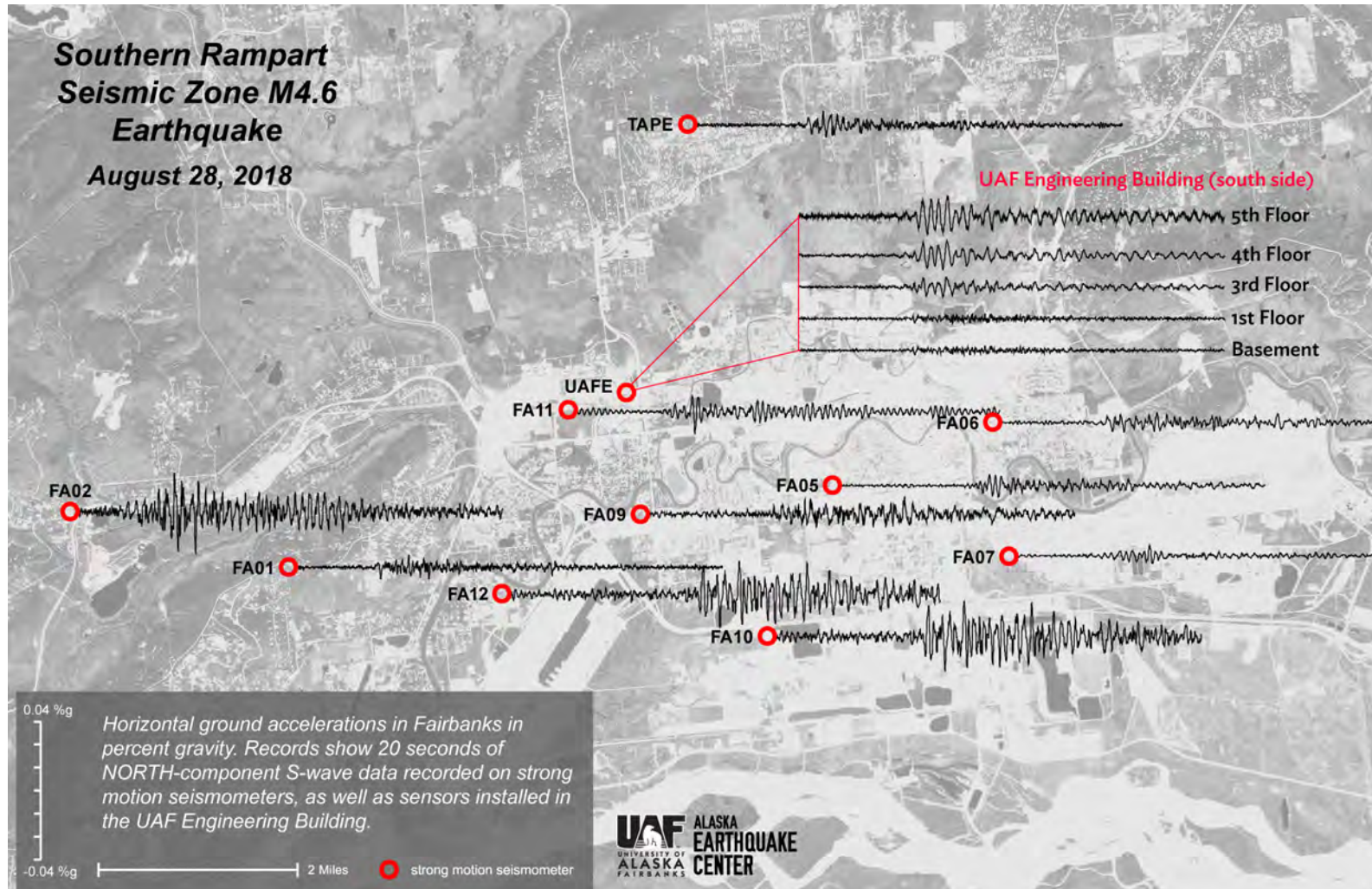
drop, cover, hold exercises



rapid building screening



seismometers in schools



ASHSC policy recommendations

