2017 M6.2 and M6.3 Haines Highway Earthquakes, Alaska: Points to Ponder

ASHSC Alaska Seismic Hazards Safety Commission

Magnitude alone does not determine whether an earthquake is fatal

- The Haines Highway earthquakes occurred in a remote location. Distance effectively adds a buffer between the earthquake and people, lessening the potential impact of the shaking.
- An equivalent earthquake located in a developed area can be far more damaging. The August 2016 M6.2 earthquake in central Italy killed 299 people. It was shallow like the Haines Highway earthquakes, but occurred in a highly populated area.

Earthquakes ignore national boundaries

- Although these earthquakes occurred in Canada, they had significant impacts in the U.S.
- Much of the monitoring and information about these earthquakes came from the U.S., and particularly from the National Science Foundation's temporary USArray project.
- Existing international relationships proved valuable in the hours after the earthquakes.

The earthquake potential of the eastern Denali fault is poorly understood

- These are the largest well-recorded earthquakes in this region. They appear to have occurred near, but not on, the Denali fault. Significant questions remain about whether the Denali fault system is capable of much larger earthquakes.

About the Earthquakes

Date and Time: May 1, 2017, 4:31:54 am and 6:18:17 am AKDT

Location: N 59.844°, W 136.695° and N 59.771°, W 136.689° (60 miles northwest of Haines, 72 miles SW of Whitehorse, 135 miles NW of Juneau)

Area of Effect: Strong to very strong shaking in Haines, Skagway, and in British Columbia and Yukon; weak to moderate shaking felt in Southeast Alaska from Yakutat to Juneau

Fatalities: 0

Damage: Power was disrupted in Whitehorse and concerns over cracking and structural integrity closed the Lynn Building. Two Whitehorse schools and the school in Ross River were closed until a structural engineer could inspect them. The Blanchard River highway maintenance camp was closed due to quake damage. Some plumbing was rattled in the 11-story Juneau Federal Building, springing minor leaks in fixtures and dirtying water with disturbed material in pipes. Some new minor cracks were reported in the structure. Items fell from shelves and glassware was broken in Haines and Whitehorse. A series of avalanches was triggered near the epicenter.

Shaking damaged the Yukon government's Lynn Building in Whitehorse, necessitating its closure until it could be inspected for safety. (Photo credit: Philippe Morin/CBC)