



Communicating Retesting Protocol During and After Subsurface Disturbing Disasters

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Anchorage 2019 Earthquake Outline

- Anchorage's siting and the event
- History of radon testing in Anchorage
- MAHB re-testing procedures and EPA's stance
- Public service announcements from Extension
- Following up future years of tremors

Protect Your Family from Radon

Radon is a gas that you can't **see**, **smell**, or **taste** — but it can be dangerous. It's the second leading cause of lung cancer in the U.S.

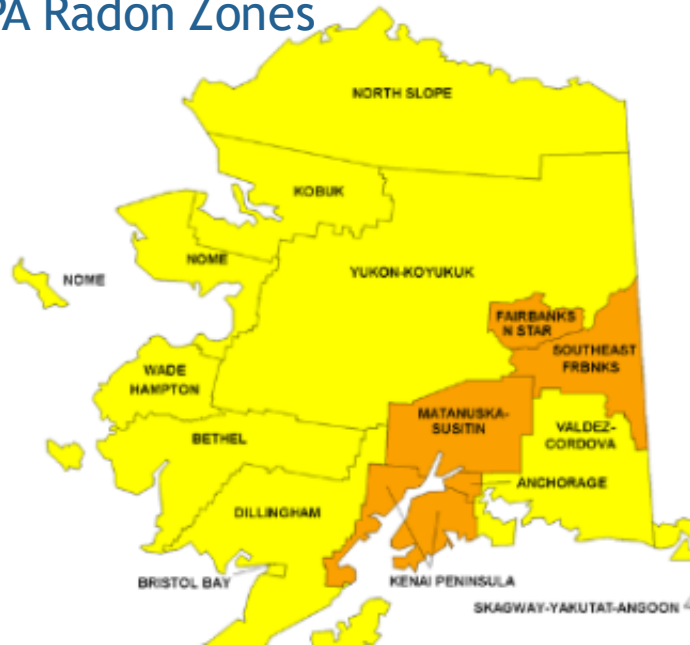


Radon is in the ground naturally. But sometimes it gets into homes **through cracks in the floors or walls.**

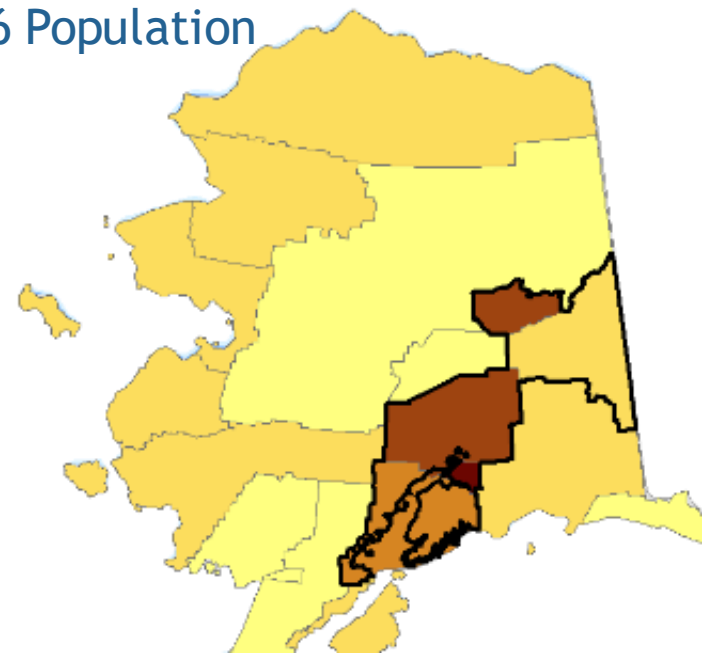
Learn more about radon and how it can affect your health.

http://www.cdc.gov/nceh/radiation/brochure/profile_radon.htm

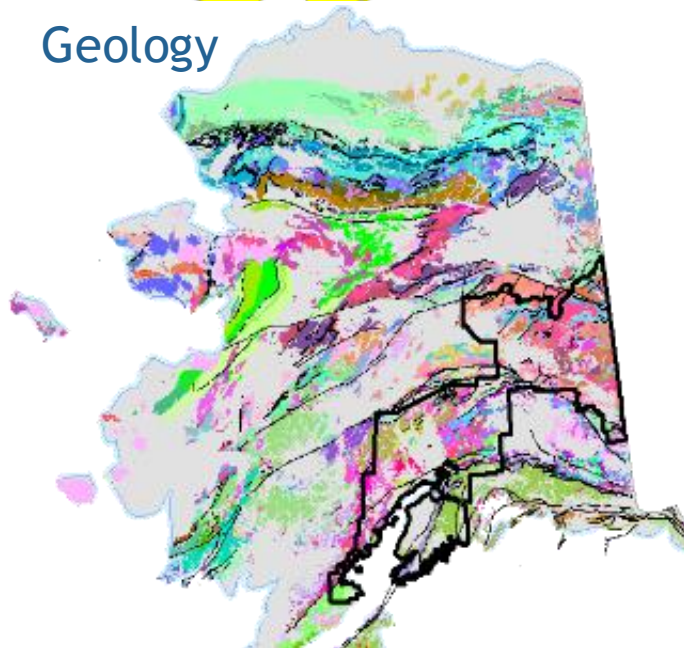
EPA Radon Zones



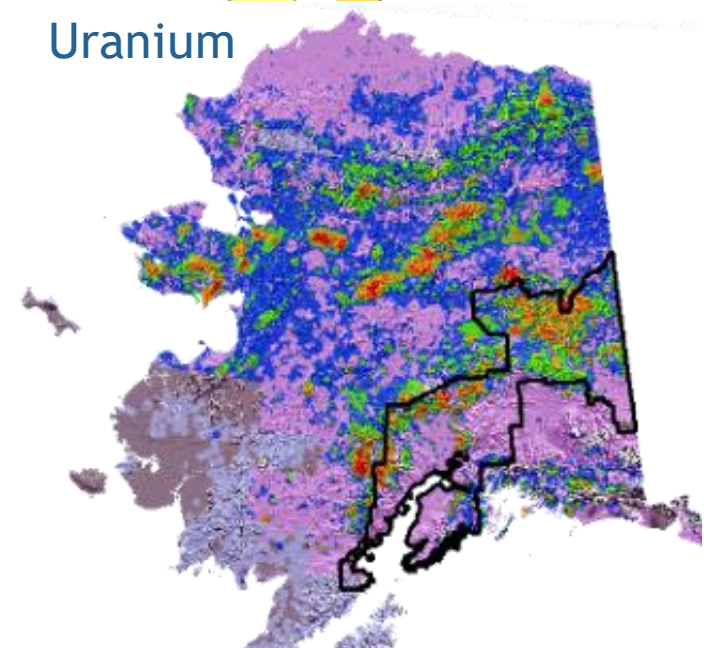
2016 Population



Geology



Uranium



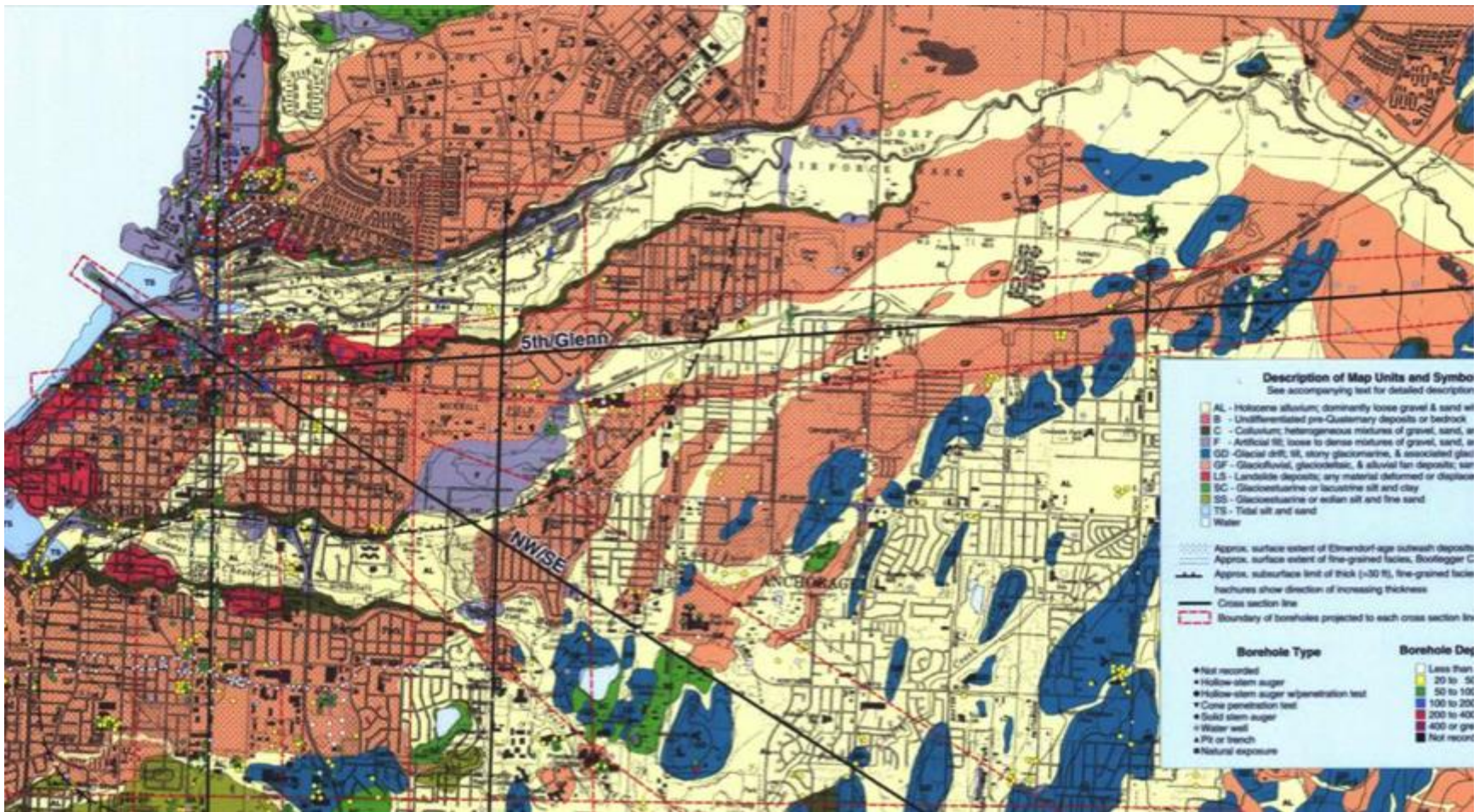
Where is Anchorage?



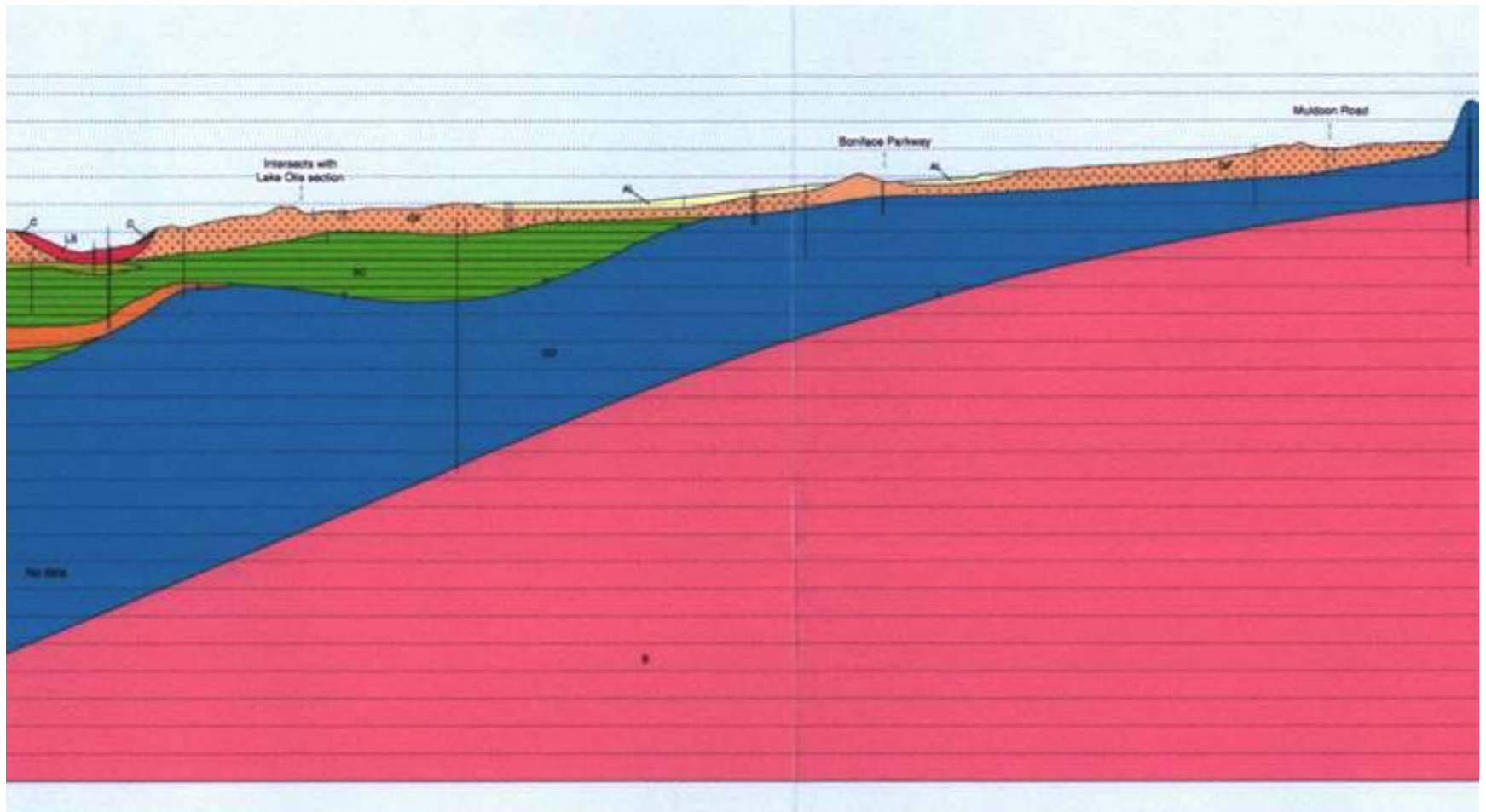
Geologic considerations

- Uranium, the parent element of radon gas, is found in different amounts in rocks and sediments
- Fractures (cracks) in bedrock and spaces around sediment grains are the routes of delivery
- Earthquakes, water levels, melting permafrost, and seasons can alter the routing through ground and rock without any apparent surface change

Geology of Anchorage



Simplified geologic map and cross sections of central and east



Past radon testing in Anchorage- Some residential, mostly schools

In 2015-16 six hillside schools were tested and found to be negative

Homes have been tested mostly with long term alpha track kits

Many federal employees and the military relocate and their agencies are more often asking local realtors about testing before closings

No state or municipal regulations on testing, yet the national recommendation is to test every five years -OR SOONER- IN THE CASE OF GROUND/WATER TABLE EVENT

On the last day of November of 2018...

A shallow $M7.0$ earthquake rattled Anchorage 30, 2018 during rush hour:

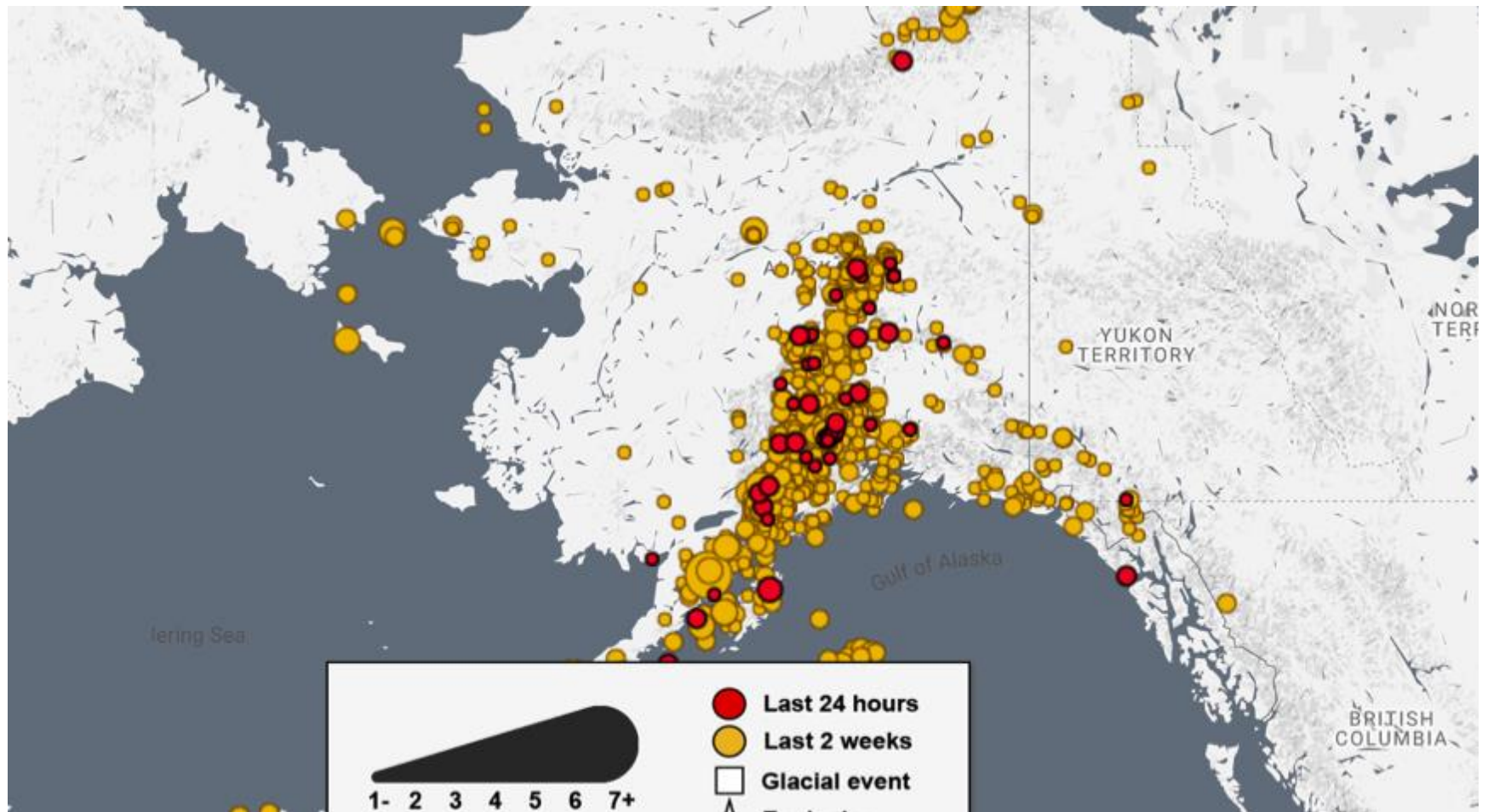
- Power immediately went out for much of the city
- Traffic was impeded downtown and into the city
- Gas stations were left helpless in distributing fuel
- Repeated tsunami warnings were heard on the AM radio
- Attention was immediately focused on the port and docks of Anchorage

Messaging throughout

- Possible new fissures in home foundations
- May have been enlarged soil voids
- Earth fissures well below the surface of the ground floor could act as gas release avenues

The only way to know if there is a problem is to test

Two months after the quake



Work in process and future efforts

Workshops and articles to test for radon and arsenic were given as tremors continue.....We are continuing with:

- Testing protocol now in place through disaster response
- Creating an Alaska radon database
- Testing more homes in the earthquake area
- Analyzing additional datasets to extrapolate radon potential
- Designing a web map to communicate with property owners

Contact us

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