



Municipality of Anchorage
Geotechnical Advisory Commission
A G E N D A

Tuesday, January 26, 2021
12:00 Noon – 1:30 p.m.

Regular Meeting

Virtual Meeting via Microsoft Teams

Join by Link: [Click here to join the meeting](#)
and/or

Join by Conference Call:
Teams Meeting Dial-in Number: (907) 519-0237
Meeting Conference ID: 173 679 645#

- I. CALL TO ORDER
 - A. Establishment of Quorum
 - B. Disclosures
- II. MINUTES
 - A. December 22, 2020
- III. OLD BUSINESS
 - A. Resolutions
 - B. Memo regarding Harding-Lawson Report White Paper
- IV. NEW BUSINESS
 - A. Local Amendments to the IBC
- V. PERSONS TO BE HEARD (3-minute limit)
- VI. COMMITTEE REPORTS
 - A. New Seismic Stations in Eagle River
 - B. FEMA Discussion
- VII. OTHER BUSINESS
 - A. USGS Alaska Seismic Hazard Update Meeting, May 25, 2021
- VIII. STAFF REPORTS
- IX. ADJOURNMENT

Next Regular Meeting: February 23, 2021, via Teams



**Municipality of Anchorage
Geotechnical Advisory Commission**

ACTION SUMMARY

Virtual Teams Meeting

12:00 Noon
Tuesday, December 22, 2020

Regular Meeting

I. CALL TO ORDER

Meeting called to order at 12:04 p.m.

A. Establishment of Quorum

A quorum was present.

Present: John Aho
Dennis Berry
Kyle Brennan, Vice Chair
David Hemstreet
Thomas Krzewinski
John Thornley, Chair

Excused: Zhaohui (Joey) Yang

Two vacancies

Staff: Thede Tobish, Senior Planner, Planning Department
Timothy Huntting, Geotechnical Lab Manager, Project Management &
Engineering Department

Guests: Keri Nutter, DOWL
Steve Halcomb, CRW Engineering

B. Disclosures

No disclosures.

II. MINUTES

A. November 17, 2020

Commissioner Hemstreet moved to approve the minutes. *Commissioner Aho* seconded.

Commissioner Berry noted that the E needed to be added to ASCE 7-22 guidelines... in Other Business.

The November 17, 2020 minutes were approved as amended.

III. OLD BUSINESS

A. Harding-Lawson Report, Briefing Paper

The Chair recapped the previous meeting discussions on this Briefing Paper concept. The Commission took up additional discussion on consideration for fine-tuning the content of the briefing paper for the public. This explanatory text will be attached to this report's map links to better inform users.

Discussion focused on how best to attach the paper, including as a web pop-up and/or as a technical handout at the Building Safety public counter. It was decided that the Briefing Paper will be conveyed in memo format to the Planning Department, the GDIC group, and the Development Services Department to be properly disseminated by all.

Commissioner Brennan moved to approve the Commission's draft Harding-Lawson Report Briefing Paper and convey it in memo format to the Planning Department, GDIC, and to Development Services.

Commissioner Berry seconded and requested as a friendly amendment to include language that identifies the code sections, which refer to the Report. The Chair agreed to include those. *Commissioner Brennan* accepted the additional language.

The motion was approved as amended.

IV. NEW BUSINESS

The Chair suggested the Commission convene a subcommittee to track how and if GAC local code amendments are incorporated into Assembly ordinances and ultimately into the Code. This would verify problems or differences or omissions that could be corrected or otherwise resolved.

V. PERSONS TO BE HEARD (3-minute limit) (none)

VI. COMMITTEE REPORTS (none)

VII. OTHER BUSINESS

VIII. STAFF REPORT (none)

IX. ADJOURNMENT

Commissioner Brennan moved to adjourn. *Commissioner Berry* seconded.

The meeting adjourned at 12:51 p.m.

III.B.

The information below will be conveyed to the Planning Department, Development Services Department, and Geographic Data Information Center (GDIC) as an attachment to a memo from GAC staff.

Seismically Induced Ground Failure Map of Anchorage – Background for the User:

The map shows the relative potential for ground failure across the Municipality of Anchorage caused during or as the result of an earthquake, such as land sliding, land spreading, surface cracking and liquefaction. The relative potential for such earthquake-induced ground failure is rated on a scale of one (lowest susceptibility) to five (very high susceptibility).

These criteria were developed by consideration of observed and expected seismic response for the various combinations of soil, geologic and topographic conditions existing across the Municipality. In general, the susceptibility for earthquake-induced ground failure is least in areas of exposed bedrock; moderate in areas underlain by dense, coarse-grained, unconsolidated sediments (such as glacial till); and greatest in areas that are underlain by saturated, fine-grained, unconsolidated deposits.

The boundaries of these five ground failure zones as drawn on the original maps (circa 1979, <https://www.muni.org/Departments/OCPD/Planning/Publications/Pages/GeotechHazStudy.aspx>) were based heavily on the types, magnitude and extent of ground failure that actually occurred in Anchorage during the 1964 Great Alaska Earthquake; but also considered the geologic mapping available at that time, and interpretation of historic, pre-1964 ground failures interpreted from aerial photographs and/or reported in literature. It is important to understand that the authors of this original map did not perform any new field explorations or numeric analysis. Further, the 1979 report that accompanied the original maps clearly points out the major data gaps which existed at that time, as well as the need for future updates to the maps with new information as available.

The map reflects the relative potential for earthquake-induced ground failure qualitatively; e.g., the potential for and/or magnitude of ground failure in Zone 1 is very low versus Zone 5 where the potential for and/or magnitude of ground failure is very high. Further, it is important to understand that there is no absolute type or quantitative magnitude (e.g., specific dimension of movement) of ground failure associated with any single hazard zone; although Zone 5 generally delineates the areas that experienced significant and destructive translational ground failures during the 1964 and pre-1964 earthquakes, and Zone 4 generally delineates the lateral extent of notable ground spreading observed behind Zone 5.

These maps were and still are intended for general land use and develop planning – the map is not a substitute for engineering. The map is also referenced in Chapter 18 of the local amendments to the building code. As stated in the 1979 report, the map should be updated as new information becomes available; and that property owners and developers should have the opportunity to demonstrate, though on-site investigations, whether or not the level of risk described on the map actually exists on individual sites.

For reference, the definitions of the zones, as provided on the original maps each zone has been provided below:

Zone 1: Lowest Ground Failure Susceptibility. Includes exposed bedrock, thin alluvium and colluvium over bedrock, generally coarse and fine-grained glacial deposits overlying bedrock in upland areas. May experience minor ground cracking and acceleration of normal mass wasting processes in unconsolidated material such as rock falls and snow avalanches.

Zone 2: Moderate Ground Failure Susceptibility. Mixed coarse and fine-grained glacial deposits in lowland areas, thick deposits of channel, terrace, flood plain, and fan alluvium. The thickness of alluvium in the upland areas is variable, and some areas are rated as 1. May have very low susceptibility; may experience minor ground cracking, localized settlement due to consolidation, and perhaps liquefaction or lurching of localized saturated zones of fine-grained material.

Zone 3: Moderate Ground Failure Susceptibility. Fine-grained surficial and subsurface deposits, including the Bootlegger Cove Clay, and other silt, clay, and peat deposits. Where coarser material (alluvium of fill) overlies these deposits, the seismic-related ground failure susceptibility is controlled by the fine-grained material. May experience ground cracking and horizontal ground movement due to landspreading or lurching, and subsidence due to consolidation.

Zone 4: High Ground Failure Susceptibility. Fine-grained, surficial and subsurface deposits within the vicinity of steep slopes. Includes areas above and below the slope, the width of which is approximately 10 times the slope height in the slide area. Highly susceptible to all types of seismically-induced ground failure, including liquefaction, translational sliding, lurching, landspreading, cracking and subsidence.

Zone 5: Very High Ground Failure Susceptibility. Areas of previous seismically-induced landslides. Includes the zone of tension cracks above the headward scarp, and the toe bulge or pressure ridge areas. Although portions of these previous slides may remain relatively undisturbed from strong shaking, these slides will be the more likely site of future seismically-induced sliding.