



**June 20, 2011**

**I. OPENING BUSINESS** 10:30 a.m.

- Call to Order (John Aho, Chairperson); Roll call: Commission members John Aho, Gary Carver, Laura Kelly, Rich Koehler, Dan Mahalak, David Miller, Mark Roberts, Robert Scher and Gayle White were present. Commissioner Hansen had to take a late flight and was delayed.
- The meeting agenda was approved with additions.
- Introductions-Guests: Major Devereaux of the U. S. Army (present for the afternoon session on June 20) and April Woolery, Administrative Assistant with the Alaska Division of Geological & Geophysical Surveys (DGGS), was also present.
- Review and Approval of Minutes for the May 5 & 6, 2011 meeting: The minutes were not completed and will be reviewed at the next meeting.

**II. BRIEFINGS** 10:45 a.m.

- Commissioner Hansen's briefings were moved to 3:35 p.m. due to his having to take a later flight from Fairbanks.
- Municipality of Anchorage Geotechnical Advisory Commission (MOA/GAC) Activity Update-Scher: The commission is reviewing possible modifications to code requirements in some seismic zones. Construction on the Port of Anchorage facility is currently on hold.

**IIA. DISCUSSION** 10:55 a.m.

- Seismic Risk Mitigation in Schools-Mary Lou Zoback: This discussion will be rescheduled for a later date.
- Legislative Audit Report Conclusions-Aho: In summary, the report recommends that the Alaska Seismic Hazards Safety Commission be extended through June 30, 2016, at which time the Commission would be audited again. The administration will introduce a bill in the 2012 legislative session to extend the Commission in accordance with the report. When the final report comes out, Chairman Aho will forward copies to Commission members. There were four recommendations for the Commission to follow up:
  1. The ASHSC should develop a strategic plan to guide its efforts to mitigate seismic hazard risk in Alaska.
  2. The ASHSC should develop procedures to ensure meetings are published on the Alaska Public Notice System in a timely manner.
  3. The ASHSC should follow the adopted rules of procedure and recommend immediate replacement of habitually absent members.
  4. The Office of the Governor and the ASHSC should work to fill appointments to all commission seats in a timely manner.

**III. EARTHQUAKE SCENARIOS** 11:20 p.m.

- A Discussion to Determine Mission, Goals, and Measures of Success-Carver: Commissioner Carver gave an overview of the geology of the Cascadia region. This region includes northern California and areas of Oregon, Washington, and British Columbia. Many of Alaska's supplies, as well as our exported oil, are routed through this region. There is plentiful evidence of past major subduction zone events in this area, including tsunamis with widespread coastal inundation. This area is capable of generating events of magnitude 9-plus, and it is probable that another large event is due. [White paper agenda and assignments are appended to the end of these minutes.]

LUNCH BREAK

12:00 – 1:00 p.m.

- Continuation of Earthquake Scenario discussion: The impact that a major Cascadia event would have on Alaska is significant. Even if Alaska escaped tsunami damage, our supply lines would suffer disruption for days, possibly weeks. Commissioner Kelly reported that the military has backup supplies, including fuel. The freight companies that she spoke to were optimistic that they could continue operations using different ports if needed. Some companies are very resourceful and have some flexibility, but they may not realize how disruptive a major event in the Cascadia region could be. Commissioner Scher pointed out that the time of year of an event could affect resiliency in dealing with the aftermath. For example, winter would slow ground transportation, and if ports and coastal areas are disrupted, this would slow the flow of supplies. Commissioner Kelly added that ports would be hit hard. Commissioner Mahalak reported that, according to tanker traffic logs for the past year, 50-60% of Alaska's exported crude oil is shipped to Puget Sound. Puget Sound is located in the heart of the Cascadia region. He would like to find out if the in-state refinery at Nikiski could refine more oil for in-state use if needed. Commissioner Carver wondered what the minimum flow through the Trans-Alaska Pipeline has to be before it must be shut down. Commissioner Miller reported on impacts to communication. Satellite phone service should be able to continue. One of the big providers, Iridium, is headquartered in Arizona, so should not be impacted by a Cascadia event. However, many cell, wireless, and land line providers have their headquarters in Oregon due to favorable laws and taxes in that state, so they might be affected. Undersea fiber optic cables that run through this area could be damaged by a large event. HAM and ALMR radio would still be useable for emergency purposes. Commissioner White discussed the potential effects on Alaska's mining, tourism and seafood industries. Tourism and seafood have definite seasons, so the timing of an event would determine how much it would disrupt those industries. Most cruise ships to Alaska depart from Seattle or Vancouver, with some departing from Portland. If the industry were forced to use more distant ports, the time spent in Alaska would probably have to be cut short. Most of Alaska's fishing fleets are based in the Puget Sound and might be severely impacted. Commissioner Roberts believes that an event of this type would be a large inconvenience to Alaska; that it would be expensive as increased shipping costs would be passed on to consumers, but that our state would still be functional.

BREAK

2:50 – 3:00 p.m.

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- Continuation of Earthquake Scenario discussion: Major Devereaux of the U.S. Army was present for the afternoon session. He asked how a strong seismic event in south central Alaska would affect the local airfields. Commissioner Scher replied that both Elmendorf and Anchorage International Airport should perform well. Buildings might sustain damage, but the runways should remain intact. The Port of Anchorage would probably be non-functional, however, according to the Municipality of Anchorage.

IV. BRIEFINGS (Postponed from earlier) 3:35 p.m.

- Recent Seismic Activity of Interest-Hansen: Recent seismic events in the northwest part of Alaska (near Huslia and Nome) show that this area is more active than was once thought.
- Health of the Weak and Strong Motion Networks-Hansen: He reported on the ongoing Earthscope project: 400 portable seismic stations are being moved across the United States, recording activity as they go. The project started on the east coast and will reach Alaska in 2014. The stations can be “adopted,” purchased for the cost of the equipment.
- Shake Map Update-Hansen: Nothing new to report.

V. DISCUSSION (Continued) 3:50 p.m.

- Continuation of Earthquake Scenario discussion: An outline was drafted and the sections were assigned to Commission members following the previous assignments by Commissioner Carver.
- Commissioner White motioned, and Commissioner Mahalak seconded, to recess the meeting until the following day. All in favor: at 4:20 p.m. the meeting was recessed until 8:00 a.m. on Tuesday, June 21. Commissioner Roberts announced that he would have to be excused for the morning on June 21 due to a disaster declaration in Crooked Creek, Alaska. He will try to attend the afternoon session of the meeting.

June 21, 2011

I. OPENING BUSINESS 8:00 a.m.

- Call to Order (John Aho, Chairperson); Roll call: Commission members John Aho, Gary Carver, Roger Hansen, Laura Kelly, Rich Koehler, Dan Mahalak, David Miller, Robert Scher and Gayle White were present. Commissioner Roberts was excused.
- There were no additions to the agenda.
- Introductions-Guests: April Woolery was present.

II. MISCELLANEOUS 8:10 a.m.

- Items of General Interest-Aho: Craig McBroome of the U.S. Forest Service contacted Chairman Aho regarding a former warehouse in Anchorage that the Forest Service is going to renovate and use. They plan to make it into office space, so there will be many workers in the building during office hours. Mr. McBroome’s wanted to know if the overpass next to the building would be safe in a seismic event. Chairman Aho referred him to the Municipality of Anchorage’s Department of Public Safety. Commissioner Scher suggested that Mr. McBroome also contact Elmer Marx of the Alaska Department of Transportation and Public Facilities, as Mr. Marx specializes in bridges.

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- Tsunami mapping and modeling in Kodiak-Carver: Because private property values are affected by potential tsunami flooding, some private property owners are protesting where the inundation lines are to be drawn on the maps.

III. EARTHQUAKE HAZARDS IDENTIFICATION 8:35 a.m.

- Commission members discussed and suggested changes to the outline and draft of the white paper. Commissioner Koehler reported that DGGs staff are continuing to finish the meta-data for the Alaska quaternary faults map. Once that is complete, the database can be published and used to generate figures that will be useful for the white paper. The draft will be tentatively due by the next teleconference. Commissioners Koehler and Carver will further discuss the paper and make suggested changes.

BREAK 10:15-10:30 a.m.

IV. ASHSC STRATEGIC PLAN 10:35 a.m.

- Power Point presentation by Chairman Aho, followed by in-depth discussion regarding the Commission's goals and metrics. Members generated a list of possible goals and measures of success.

LUNCH BREAK 12:10 p.m.

V. ASHSC STRATEGIC PLAN (Continued) 1:00 p.m.

- Commission members continued their discussion. They reviewed the list generated before lunch and further refined and prioritized the Commission's goals.

VI. ADJOURNMENT 2:15 p.m.

Commissioner Hansen moved, and Commissioner White seconded to adjourn. All in favor. Meeting adjourned at 2:15 p.m.



Scenario Committee Meeting  
June 20, 2011  
Cascadia earthquake White Paper  
Agenda and Assignments

Below are assignments for the Scenario Committee and other commission members in preparation for the June 20-21 face-to-face meeting. **Note that all commissioners are asked to work on this project, not just the members of the scenario committee.**

The project is to define the ramifications of a major earthquake in the Pacific Northwest that generates widespread severe damage in the Puget Sound and/or Cascadia region. The objective is to produce a White Paper that characterizes the consequences and impacts of such events on the State of Alaska, and identifies strategies to prepare for and/or mitigate these impacts.

Two scenarios should be considered:

1. A M9 Cascadia Subduction zone earthquake and tsunami.  
As a general guideline, let's consider this event will have serious effects and generate substantial damage along the entire coastal region from Vancouver BC to San Francisco. This event will result in strong shaking damage throughout the western half of Northern California, Oregon, Washington and southern British Columbia and generate a widespread tsunami (comparable to that in Japan) that causes catastrophic damage to coastline facilities. The effects of the impacts will require three months for 50 % recovery and one year for 90% recovery.
2. A M7.5 earthquake and tsunami originating on the Seattle or other crustal fault in the Puget Sound area. This event will be localized to the Puget Sound Region. It will result in severe shaking damage in the Seattle-Tacoma area and produce a local tsunami in Puget Sound that will cause very heavy damage to shoreline facilities. The impacts will require three months for 50% recovery and one year for 90% recovery.

Homework prior to meeting – all commission members should research your assigned topic and make notes to bring to the meeting. Make a list of references. Use the Internet to gather information regarding your topic.

June 20 Meeting schedule:

First 2 hours – Each member presents a brief report on what you have found in your research of your assigned topic. Each report should be geared for a 5 minute summary

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presentation followed by 5 to 10 minutes of discussion by the commission. Please bring printed copies of key points covered in your report for each commission member.

Second 2 hours – workshop – each commissioner will write a draft outline and/or first rough draft summary text for a White Paper covering assigned topic. Try to keep it to no more than two to three pages of text.

Everyone, prior to meeting – do research and make notes re: the following assignments.

Aho – No homework assignment – During meeting John will co-ordinate the process.

Carver – Introduction and overview statement describing the two scenarios. Also Conclusions and Recommendations.

Koehler – Draft section on tsunamis hazards from Cascadia and Puget Sound crustal fault sources to the Puget Sound area.

Hansen - Draft section on the seismic (shaking, ground failure, etc) hazards from Cascadia and Puget Sound crustal fault sources to the Puget Sound area.

Kelly – Impact to marine shipping facilities, Ports of Seattle, Tacoma, and Portland and other west coast ports and significance to Alaska.

Scher – Impact of Cascadia subduction zone and Puget Sound crustal fault earthquakes to ground transportation in the Puget Sound and the Cascadia region and significance to Alaska.

Miller – Impacts on communications and communication links between Alaska and the Puget Sound and Cascadia regions.

Roberts – Governmental response at the Federal and States Levels for the two scenarios.

Mahalak – Economic and other impacts on the Alaska oil industry – TAPS and tanker shipping to lower 48.

White - Economic impacts on Alaska's tourism, fishing, and other industries – other than oil.

Many of these topics are inter-related. If you need information about a topic that is assigned to another commissioner please call or email them with your question. If you cannot find what you need call or email me and I will do my best to help. Keep in mind that this is the initial phase of this effort and many aspects will require assumptions that are not yet well defined. However, we need to have a starting draft document. We all need to be interactive to do this multi-faceted project.

gc

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Alaska Seismic Hazard Safety Commission  
Hazards Identification Committee  
June 21, 2011 ASHSC meeting

At the June 21, 2011 face-to-face meeting of the ASHSC, the Hazards Identification Committee held a 1-hour break out session to discuss finalization of the draft white paper entitled "Earthquake Sources in Alaska". This break out session was designed to have committee members actively participate in writing the paper including the incorporation of several assignments given out by Koehler at the May 5, 2011 meeting.

Several important items were discussed and it was determined that addressing these items in the white paper was necessary prior to its completion. It was determined that the map of Quaternary fault traces should be updated with a modern DEM and faults from the recently completed DGGs Quaternary fault database. Specific information related to seismic regulations related to hydroelectric dams was notably absent from the current draft and it was determined that this information would be of interest to legislatures. Koehler presented a revised and shortened outline for the white paper. The committee agreed that the shortened format would be more effective in communicating the distribution of seismic sources in Alaska. As such the new outline includes a section on major plate boundary faults followed by other sources organized by major regions of Alaska including southeast, southcentral, southwest and the Aleutian Islands, Interior, and Northern Alaska. Hansen submitted a summary of seismicity for each of the regions which will be incorporated into each section.

Committee members Koehler and Carver reviewed maps of faults for each region and created a list of sources that should be included in each section. In addition to active faults in each region, other pertinent information that could provide clues to the locations of active faults was also discussed. It was noted that there may be many faults that are yet undiscovered due to limited access, few researchers, and a short historic record. This is an important point that must be made very clear in the final version of the paper.

It is expected that an improved draft version of this paper will be available for the Commission's review in late November, 2011.