

ASHSC Alaska Seismic Hazards Safety Commission

STRATEGIC PLAN, V3



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V2 Adopted November 2013

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Abbreviations for Federal and Alaska Agencies named in the Plan:

ASHSC	Alaska Seismic Hazards Safety Commission
AEC	Alaska Earthquake Center
APDC	Alaska Professional Design Council
DGGS	Division of Geological & Geophysical Surveys
DNR	Department of Natural Resources
FEMA	Federal Emergency Management Agency
GAC	Municipality of Anchorage Geotechnical Advisory Commission
DEED	Department of Education & Early Development
DHS&EM	Division of Homeland Security & Emergency Management
DMVA	Department of Military & Veterans' Affairs
DOT&PF	Department of Public Transportation & Public Facilities
DPS	Department of Public Safety
SEOC	State Emergency Operations Center
UA	University of Alaska
USCG	U.S. Coast Guard
USGS	U.S. Geologic Survey

EXECUTIVE SUMMARY

The Alaska Seismic Hazards Safety Commission is charged with increasing seismic safety in Alaska. This is accomplished by implementing seismic safety studies, drafting policy recommendations, and promoting coordination between public and private entities.

Commissioners include members from the public and private sector representing a broad cross-section of public safety, engineering, and scientific voices. This diversity in viewpoints provides a unique understanding of the current state of seismic safety in Alaska.

The Commission leverages this strength to identify gaps and to mitigate seismic risks thereby improving the resilience of the State of Alaska.

This Strategic Plan has been developed to guide the Commission for the next one to three years in their efforts to address seismic risk mitigation issues.

1.0 INTRODUCTION

The ASHSC is charged by Alaska Statute (AS 44.37.067) to recommend goals and priorities for seismic hazard (e.g. strong ground shaking, landslide, avalanche, liquefaction, tsunami inundation, fault displacement, and regional uplift/subsidence) mitigation to the public and private sectors; recommend policies to the governor and the legislature, including needed research, mapping, and monitoring programs; review the practices for recovery and reconstruction after a major earthquake; recommend improvements to mitigate losses from similar future events; and to gather, analyze, and disseminate information of general interest on seismic hazard mitigation, among other duties, to reduce the state's vulnerability to earthquakes. The ASHSC is administered by the Alaska DNR-DGGS.

The ASHSC consists of eleven members appointed by the Governor for three-year terms. ASHSC members include: a representative from the UA, three representatives from local government; a representative from the DNR; a representative of the DMVA; a representative from an appropriate federal agency; a representative of the insurance industry; and three members of the public who are experts in the fields of geology, seismology, hydrology, geotechnical engineering, structural engineering, emergency services, or planning. The ASHSC has no executive director, although DGGS provides administrative, travel, and publication support.

The ASHSC developed this *Strategic Plan* to guide its efforts for the next one to three years to address seismic risk mitigation issues. While some of the strategies identified in the Plan can be addressed and solved quickly, others will take many years to resolve. Therefore, the plan is dynamic and will be reviewed, modified, and updated every few years as experience is gained and additional information is obtained. The ultimate goals of the ASHSC are to provide advice that will result in the development of an earthquake-resilient society—one that can recover relatively quickly after a damaging seismic event.

Time is required to introduce and educate the public and decision-makers about the benefits of seismic safety advocacy. Repeated efforts are necessary to make the case that earthquakes are truly a threat and that cost-effective actions can be taken to mitigate risk. The ASHSC is committed to assuring policy makers that effective steps should be taken to reduce exposure to risk because additional damaging earthquakes are inevitable. The ASHSC believes that many of these solutions can be relatively easy to implement and should therefore become high-priority initiatives.

1.1 History of the ASHSC

In 2002, the 22nd Alaska Legislature passed, and the Governor signed into law, House Bill (HB) 53 establishing the ASHSC with nine members. This legislation originally placed the ASHSC under the Office of the Governor, but in January 2003, Governor Frank Murkowski issued Executive Order Number 105 transferring the ASHSC to the DNR. In 2005 Governor Murkowski appointed the first nine members to the ASHSC. In 2006, HB 83 was passed which added two additional local government positions, bringing the total number of members to 11, and extended the ASHSC through June 30, 2012.

The ASHSC first met on October 28, 2005, at which time it elected a Chair and Vice Chair, listened to briefings from the California Seismic Safety Commission and various state and local agencies in Alaska with responsibilities in earthquake-risk mitigation, and began developing goals and priorities for its activities. Since then, the ASHSC has held eight to ten meetings annually, generally all but two via teleconference. Since 2005, the ASHSC has submitted an annual report to the Governor and Legislature summarizing its accomplishments and near-term plans. The ASHSC posts basic information about its mission, earthquake risk in Alaska, meeting agendas, minutes, presentations, annual reports, policy recommendations, and appropriate links on its website <http://seismic.alaska.gov/>.

1.2 Earthquake Hazard in Alaska

Alaska has more earthquakes than any other region of North America and is one of the most seismically active areas of the world. The second largest instrumentally recorded earthquake, the Great Alaska Earthquake, occurred on the Prince William Sound and Kodiak segments of the Alaska-Aleutian subduction zone in southern Alaska on March 27th, 1964 (M_w 9.2). The largest on-land earthquake in North America in almost 150 years occurred on the Denali fault (M_w 7.9) in central Alaska on November 3rd, 2002.

In addition to the Alaska-Aleutian subduction zone and Denali fault, there are other active sources of potentially damaging earthquakes in Alaska that have each produced strong earthquakes over the past few hundred years. These sources include the Castle Mountain fault in lower Matanuska-Susitna valley; the active belt of faulting beneath northern Cook Inlet; the Fairbanks, Minto Flats, and Salcha area seismic zones; the Yakataga seismic gap near Yakutat; and the Fairweather-Queen Charlotte fault in southeast Alaska; among others.

Noteworthy earthquake statistics for Alaska include:

- Eleven percent of the world's recorded earthquakes have occurred in Alaska.
- Alaska has more frequent earthquakes than the entire rest of the United States.
- Two of the eight largest instrumentally recorded earthquakes in the world were in Alaska.
- The ten largest instrumentally recorded earthquakes in the United States were in Alaska.
- Approximately 3,000 earthquakes are recorded in Alaska each month.
- Since 1900, Alaska has had an average of: one "great" (magnitude 8 or larger) earthquake every 13 years; one magnitude 7 to 8 earthquake every two years; six magnitude 6 to 7 earthquakes per year; 50 magnitude 5 to 6 earthquakes per year; 300 magnitude 4 to 5 earthquakes per year.

Alaska has changed significantly since the Great Alaska Earthquake. The population has more than doubled since 1964 and building codes have continued to improve design

provisions to prevent collapse during intense shaking. Further, some older buildings have been reinforced, and development has been discouraged in some particularly hazardous areas.

Building on this history, there are many ways we can work to improve seismic safety. The 2018 Mw 7.1 Anchorage Earthquake served as a strong reminder of the risks we face and the need to seek areas of improvement.

While it is not possible to predict the time or location of the next big earthquake, the active geology of Alaska guarantees that major, potentially damaging earthquakes will continue to occur. Further, while advancements in seismic hazard analyses now provide better estimates of how future earthquakes may affect our built environment and population centers, the age and structural resilience of buildings and infrastructure vary across the state, especially in areas of higher seismicity. Therefore, risks to public safety and infrastructure from these future events can be greatly reduced through proper planning, design, construction, and continuing education and outreach.

2.0 COMMISSION CHARTER

Purpose

To provide a vehicle through which statewide seismic risk issues can be addressed and solutions can be proposed that will increase resilience and reduce life and property losses from future damaging earthquakes.

Vision

Promote public and government awareness of Alaska's seismic hazards and seismic risk mitigation.

Mission

To be an effective body in the mitigation of potential damaging effects of major seismic events by:

Acting in an Advisory Capacity - Make recommendations to the Governor and Legislature for reducing the State's vulnerability to seismic hazards. Advise the public and private sectors on approaches for mitigating earthquake and tsunami risk.

Provide Information and Technical Guidance - Recommend studies, policies, and programs that will mitigate the risks associated with seismic hazards.

Recommend Educational Programs - Recommend and participate in programs that will disseminate information to government agencies and the public.

Encourage Seismic Hazards Risk Mitigation Efforts - Encourage efforts to address issues related to seismic hazards risk mitigation.

Core Values

- Service to the State;
- Advocate for Seismic Risk Mitigation Efforts;
- Recognize Exemplary Seismic Risk Mitigation Efforts
- Honesty; Integrity; Trust; Diligence;
- Responsibility for One's Own Work;
- Support to Other Commission Members;

3.0 STRATEGIC OBJECTIVES

The Alaska Seismic Hazards Safety Commission has identified several strategic objectives through which we will fulfill our Mission. These objectives focus efforts where the Commission has identified a need and where our activities can bring about improvement.

Additional tasks may be taken on over time and this plan will be updated periodically to reflect the direction of the Commission.

The current strategic objections of the Alaska Seismic Hazards Safety Commission are:

Objective #1: School & Public Building Safety

Long-Term Goals for Alaska:

- State to identify, prioritize and retrofit at-risk structures
- State-wide building inventory identifying seismic risk levels
- Establish state grant for seismic retrofits

Commission Actions:

- Develop specific requests to legislature (Capital Budget request)
- Coordinate with Alaska Professional Design Council
- Identify potential contacts in Legislature
- Meet with media
- Research and connect with Hazard Mitigation Grant (AK DHS&EM)
- Research grant programs in CA, OR, WA, etc

Mission Objectives Addressed:

- Acting in an Advisory Capacity
- Provide Information and Technical Guidance
- Encourage Seismic Hazards Risk Mitigation Efforts

Objective #2: Enhance and improve Alaska seismic monitoring network

Long-Term Goals for Alaska:

- AEC adoption of USArray project sites
- Development of earthquake early warning system in Alaska

Commission Actions:

- Support UA capital request in FY2020 budget
- Publish policy recommendation on earthquake early warning

Mission Objectives Addressed:

- Acting in an Advisory Capacity
- Recommend Educational Programs
- Provide Information and Technical Guidance

Objective #3: Enhance Post-Event Inspection Efficiency

Long-Term Goals for Alaska:

- Local/state governments have plan for when to launch inspection effort
- Raise awareness of AEC/USGS ShakeMaps
- Established relationship between SEOC/DOT and professional engineering/design organizations (ATC-20)
- Use Rapid Visual Screening (RVS) type information to inventory and prioritize facilities prior to an event

Commission Actions:

- Develop one-pager on ShakeMap and share with agencies
- Policy recommendation to agencies on planning for post-event inspections
- Policy recommendation on ATC-20 inspection planning
- Present at emergency management conference Fall 2019 (Michelle Torres)
- Establish regular information sharing between DHS&EM and professional organizations regarding ATC-20 etc training opportunities

Mission Objectives Addressed:

- Acting in an Advisory Capacity
- Provide Information and Technical Guidance

Objective #4: Providing Post-Earthquake Information

Long-Term Goals for Alaska:

- Compile, summarize, and distribute information on significant earthquake events in Alaska

Commission Actions:

- Publish 1-pagers after events after the dust settles

Mission Objectives Addressed:

- Provide Information and Technical Guidance

Objective #5: Connecting People to Mitigation and Recovery Funds

Long-Term Goals for Alaska:

- Remove uncertainty around Earthquake Insurance
- Publicize seismic risk mitigation grant opportunities

Commission Actions:

- Assist DHS&EM with research into the status and performance of earthquake insurance
- Develop guide for homeowners on earthquake insurance
- Coordinate with DHS&EM on grant opportunities—send out letters to entities we feel can benefit
- Follow-up with communities where RVS completed to inform about mitigation grant opportunities

Mission Objectives Addressed:

- Provide Information and Technical Guidance
- Recommend Educational Programs
- Encourage Seismic Hazards Risk Mitigation Efforts

Objective #6: Building code Adoption, Inspection, & Enforcement

Long-Term Goals for Alaska:

- Increase awareness on benefit of inspection/code design
- State Fire Marshal: structural Plan Review & Inspections

Commission Actions:

- Research what would need to change at Fire Marshal office (2018 IBC update?)
- Talk to banking/insurance industries
- Collect and distribute findings from other organizations (UAA, FEMA, EERI)

Mission Objectives Addressed:

- Acting in an Advisory Capacity
- Provide Information and Technical Guidance

- Encourage Seismic Hazards Risk Mitigation Efforts

Objective #7: Design Engineering Requirements (PE)

Long-Term Goals for Alaska:

- Educate engineers/architects on basic seismic requirements of AK

Commission Actions:

- Policy recommendation to supplement Arctic Engineering course with seismic information
- Policy recommendation on seismic-specific CEUs

Mission Objectives Addressed:

- Acting in an Advisory Capacity
- Recommend Educational Programs