

Report of September 20, 2007
Education and Outreach Committee
Alaska Seismic Hazards Safety Commission

This report incorporates the discussions of education and outreach by the full Commission on September 18, 2007, and the subsequent preliminary thoughts of the writer following that discussion. Hopefully, this report will serve as an outline for further discussion and decision by the Education and Outreach Committee.

During the committee meeting I expressed the opinion that the E & O Committee needs a mission statement to give purpose and direction to program development. In this report, I begin that search for a mission statement by reviewing the ASHSC statutory directives and the ASHSC Charter provisions. I then discuss educational tools and strategies for pre-disaster mitigation. With these two subjects crystallized in mind and context, I then discuss the realm where one might find a possible “niche” for the ASHSC E&O Committee in seismic hazard mitigation. Finally, I offer one person’s list of potential “deliverables,” as a starting point for Committee discussions and decisions.

The analyses and suggestions in this report are intended to be no more than a thought-provoking starter for committee members in deciding (i) whether to craft a mission statement, (ii) what that mission statement should say, (iii) what niche the ASHSC E&O Committee should carve for itself in the plethora of existing seismic education materials and programs, and (iv) what “deliverables” the E&O Committee can propose to the full Commission for performance efficiently and effectively in given timeframes.

1. Statutory and Charter Mandates Pertaining to Education and Outreach

For purposes of education and outreach, the easiest way to view the statutory role of ASHSC is through its relationships with other people and other entities. In one sense and another, ASHSC is charged with responsibility to:

- the governor, to
 - recommend issuance of formal “seismic hazard” notifications when appropriate¹
- the governor and legislature, to
 - recommend policies including needed research, mapping and monitoring programs;²
 - advise and recommend improvements in “disaster preparedness”;³
 - advise and recommend improvements of “seismic hazard mitigation”;⁴
and
 - advise on budgeting of “disaster preparedness” and “seismic hazard mitigation”⁵

¹ AS 44.37.067(a)(7).

² AS 44.37.067(a)(2).

³ AS 44.37.067(b)(1).

⁴ Id.

- state agencies, to
 - review and evaluate possible socioeconomic consequences of proposed seismic hazard notifications and supporting information⁶
- state and local agencies, to
 - advise of appropriate responses to seismic hazard notifications and supporting information; suggest appropriate responses to predictions and warnings from every source⁷
- public and private sector, to
 - establish and maintain necessary working relationships;⁸
 - recommend goals and priorities for seismic hazard mitigation;⁹
 - review predictions and warnings from public or private sectors.¹⁰

In addition, ASHSC possesses general statutory powers (not addressed to any specific person or entity) to:

- advise regarding coordination of disaster preparedness of government at all levels;¹¹
- advise regarding coordination of seismic hazard mitigation activities of government at all levels;¹²
- gather, analyze and disseminate information of general interest on seismic hazard mitigation;¹³
- review practices for recovery and reconstruction after a major earthquake;¹⁴
- recommend improvements to mitigate losses from similar future major earthquakes.¹⁵

The ASHSC Charter provides that the “mission” of this Commission is to

- advise the public and private sectors on approaches for mitigating seismic risks
- make recommendations to the governor and legislature for reducing the state’s vulnerability to seismic risks
- act in an advisory capacity to all
- recommend studies and programs that will mitigate seismic risks
- recommend and participate in programs that will disseminate information to government agencies and the public, and
- support efforts to address the issues related to seismic risks

⁵ Id.

⁶ AS 44.37.067(a)(7).

⁷ AS 44.37.067(a)(6).

⁸ AS 44.37.067(a)(5).

⁹ AS 44.37.067(a)(1).

¹⁰ AS 44.37.067(a)(6).

¹¹ AS 44.37.067(a)(3).

¹² Id.

¹³ AS 44.37.067(a)(4).

¹⁴ AS 44.37.067(a)(3).

¹⁵ Id.

The Charter also provides success factors and measures of success that help identify the role of the E & O Committee:

- advocate seismic risk mitigation
 - provide advocacy
 - create opportunities
 - become familiar with current programs
 - develop stakeholder support
- advocate public outreach programs
 - encourage social environment of acceptance of risk mitigation
 - examine existing programs
 - be available for presentations
- promote seismic hazard identification
 - promote improved monitoring
 - promote identification, mapping and characterizing seismic sources and induced hazards
- facilitate partnerships for seismic risk reduction
 - identify potential partners
 - become involved with public and private entities addressing ASHSC goals

Some conclusions are quite clear from the above surveys of legal authority and Charter commitments. First, the mission of the E&O Committee clearly will be found in mitigation, not in immediate response. Secondly, the mission will entail both partnering and initiating programs. Stated another way, the Committee should facilitate the efforts of other entities as well as generating new materials itself.

Melding the statutory authority with the Charter, it also appears to this writer that the mission of this Committee will be found more frequently in relationships with the non-technical community, which generally will be local governments and the lay public. The governor, legislators and some state agencies are also non-technical audiences, and there may be some education and outreach programs addressed to these individuals and entities. However, when defining the role of the E & O Committee, it is important to distinguish between “education” and “advocacy.” The former is purely teaching, instructing in an improving or edifying manner. The latter is support and promotion of policies and programs. The E & O Committee should explore programs to educate the governor, legislators and state agencies, but policy-advocacy and program-advocacy is the realm of other ASHSC committees and of the Commission as a whole.

2. Tools and Strategies for Public Education

The following comments and ideas come from Nathe, et al., Public Education for Earthquake Hazards in “Natural Hazards Informer,” No. 2, Nov. 1999.

The goal of public education is seismic hazard mitigation should be to change people's behavior by raising questions, by offering fairly simple answers, and by providing a variety of credible authorities to reinforce the message.

The lay public does not normally think in probabilities, but rather in modes more like binary perceptions: It will happen; it won't happen. But people receiving continuous, credible probability estimates of seismic hazards can be inspired to question, and to seek a better factual understanding.

However, developing a heightened awareness of probabilities is not enough. "Perceived risk does not contribute directly to taking action." An effective educator must teach to the specific, personal and social characteristics of the audience. Those individual and distinguishable factors for consideration in the development of curricula include formal education, age groups, family connections, gender, cultural background and prior disaster experience.

Effective public education occurs when complicated phenomena are explained in non-technical terms; when information comes from various credible sources; when information is repeated through various media; and when people have an opportunity to engage in peer discussions toward belief and action.

3. Finding the Niche for ASHSC Education and Outreach

Many agencies and institutions today are already creating large quantities of quality, credible earthquake-education materials. The list includes DHS&EM, WC/ATWC, DGGG, UAF-GI, AEIC, USGS and American Red Cross. There is a plethora of websites and links-to-links-to-links for information and educational materials.

As noted above, ASHSC education and outreach clearly should be focusing on "disaster preparedness" and "seismic hazard mitigation," which is the Commission's mandate by statute.¹⁶ Beginning with definitions of these two terms, we then can determine which of the many educational products and programs of other agencies and entities already exist within those subject matter. We then can find and implement our role in two niches: (i) "facilitating" these programs of others, and (ii) developing quality, credible earthquake and tsunami educational materials and programs in the areas of "disaster preparedness" and "seismic hazard mitigation" not already targeted by other agencies and institutions.

First, the statutory definitions: "Disaster preparedness" in the ASHSC enabling legislation means establishing plans and programs for responding to and distributing funds to alleviate losses from a "disaster" as defined at AS 26.23.900(2).¹⁷ However, a "disaster" is defined in the referenced Title 26 statute extremely broadly, and includes many natural and anthropogenic calamities clearly outside the purview of the

¹⁶ AS 44.37.067.

¹⁷ AS 44.37.069(2).

ASHSC.¹⁸ Hence, despite what AS 44.37.069(2) seems to say by reference to AS 26.23.900(2), the true range and scope of ASHSC is found only in “seismic hazard” preparedness, and not in “disaster” preparedness.

The enabling statute says that a “seismic hazard” is an earthquake-induced *geologic condition* that is a potential danger to life and property.¹⁹ “Geologic condition” includes strong ground shaking, landslide, avalanche, liquefaction, *tsunami* inundation, fault displacement and subsidence.²⁰ “Tsunami” means a large ocean wave produced by an earthquake, landslide, or volcanic eruption.²¹

Finally, in the ASHSC enabling statute, “seismic hazard mitigation” means activities that prevent or alleviate harmful effects of seismic hazards to persons and property including

- Identification and evaluation of seismic hazards
- Assessment of risks
- Implementation of measures to reduce potential losses before a damaging event occurs²²

¹⁸ In 26.23.900(2), a “disaster” is defined as “the occurrence or imminent threat of widespread or severe damage, injury, loss of life or property, or shortage of food, water, or fuel resulting from

”(A) an incident such as storm, high water, wind-driven water, tidal wave, tsunami, earthquake, volcanic eruption, landslide, mudslide, avalanche, snowstorm, prolonged extreme cold, drought, fire, flood, epidemic, explosion, or riot;

”(B) the release of oil or a hazardous substance if the release requires prompt action to avert environmental danger or mitigate environmental damage;

”(C) equipment failure if the failure is not a predictably frequent or recurring event or preventable by adequate equipment maintenance or operation;

”(D) enemy or terrorist attack or a credible threat of imminent enemy or terrorist attack in or against the state that the adjutant general of the Department of Military and Veterans' Affairs or a designee of the adjutant general, in consultation with the commissioner of public safety or a designee of the commissioner of public safety, certifies to the governor has a high probability of occurring in the near future; the certification must meet the standards of AS 26.20.040(c); in this subparagraph, "attack" has the meaning given under AS 26.20.200; or

”(E) an outbreak of disease or a credible threat of an imminent outbreak of disease that the commissioner of health and social services or a designee of the commissioner of health and social services certifies to the governor has a high probability of occurring in the near future; the certification must be based on specific information received from a local, state, federal, or international agency, or another source that the commissioner or the designee determines is reliable;

¹⁹ AS 44.37.069(3). (Emphasis added.)

²⁰ *Id.* (Emphasis added.)

²¹ AS 44.37.069(5).

²² AS 44.37.069(4).

These above paragraphs describe the statutory context for ASHSC education and outreach. Within that context, one must ask the practical question of how ASHSC can best apply its limited resources: Where among these subject-areas have other agencies and entities already developed effective educational material and programs for the non-technical public?

My personal research indicates that much of the credible educational materials, and many of the programs for the non-technical public, exist in the subject area generally referred to as “individual preparedness.” This includes such topics as:

1. Assessing a site for faults, settlement, slide, shake and tsunami potential
2. Developing an earthquake/tsunami “Plan” for the home, the school, and work
3. Compiling and caching earthquake/tsunami supply kits
4. Securing, anchoring and supporting furniture, equipment and other object
5. Determining structural resistance and safety of home, school and workplace

However, while the available literature provides much detailed information for “how” the lay public should perform Nos. 2, 3 and 4 above, most of the literature only admonishes the lay public to perform Nos. 1 and 5 above, without offering much detail on “how” to make site assessments and “how” to determine structural resistance and safety. (Our ASHSC Schools Committee is presently engaged in a project of assessing school sites and determining structural resistance of schools in Alaska, Nos. 1 and 5 above.)

Hence, as a preliminary conclusion – an opening step for further discussion by the full E & O Committee – one can say that the **substantive projects and programs** of the ASHSC Education and Outreach Committee should

- Focus on “seismic hazard mitigation” activities that prevent or alleviate harmful effects of seismic hazards to persons and property including identification and evaluation of seismic hazards, assessment of risks, implementation of measures to reduce potential losses before a damaging event occurs, but
- Exclude some elements of “individual preparedness” where others have already developed credible educational materials and programs such as developing personal and family disaster plans, caching disaster supplies and anchoring/securing furniture and equipment, but
- Include those elements of “individual preparedness” pertaining to assessing sites for faults, settlement, slide, shake, tsunami potential; and determining structural resistance and safety of homes, schools and workplaces.

Also, as a preliminary conclusion – an opening step for further discussion by the full Committee – one can say that the **focal stakeholder groups** for the ASHSC

Education and Outreach Committee should be the non-technical officials, agencies and private sector, with emphasis on the following statutory mandates:

- Public and Private Sectors
 - Establish and maintain necessary working relationships
 - Recommend goals and priorities for seismic hazard mitigation
 - Review predictions and warnings from public and private sectors

- General Powers
 - Advise regarding coordination of disaster preparedness of government at all levels
 - Advise regarding coordination of seismic hazard mitigation activities of government at all levels
 - Gather, analyze and disseminate information of general interest on seismic hazard mitigation
 - Review practices for recovery and reconstruction after a major earthquake
 - Recommend improvements to mitigate losses from similar future major earthquakes

The governor, legislators and governmental agencies are not excluded from the purview of the E&O Committee, to the extent they too are non-technical or “lay” persons, but this committee must clearly distinguish between education and policy-advocacy when addressing these stakeholders.

4. Some Ideas on Potential “Deliverables” by the E & O Committee

a. Potential deliverables to the governor and to legislators:

1. Educational information (as distinguished from policy advocacy) in the ASHSC Annual Report
2. A program of continuous (monthly? quarterly?) encapsulated information pertaining to seismic hazard mitigation²³

b. Potential deliverables to State and local agencies:

1. Draft and offer model earthquake/tsunami ordinances for land use planning, zoning and building codes
2. Develop working relationships with LEPA and LEPCs
3. Encourage and assist (through appropriate channels) re-activating dormant LEPCs

²³ Caveat: Funding and policy communiqués must be cleared through DNR and the Governor’s Office.

c. Potential deliverables to public and private sector

1. Continue to develop ASHSC website and links to educational sources
2. Promote public support for adoption of model earthquake/tsunami ordinances
3. Facilitate public education with existing materials
 - (i) AMEREF inserts
 - (ii) AEIC/ATEP K-12 science curriculum
 - (iii) Pamphlet racks in libraries, city halls, C of C and tourist info centers
4. Speakers Bureau: facilitate presentations and programs for
 - (i) Local public
 - (ii) Local elected officials
 - (iii) Local government/school administrators
 - (iv) School children
5. Program of regular, continuous dissemination of information
 - (i) Press releases re public readiness
 - (ii) Legislators' education on technical matters in layman's words
6. "Packages" Shelved for Opportunistic Event; distributed pro-actively
 - (i) Model legislation
 - (ii) Model ordinances
 - (iii) Media education
 - (iv) Directory of seismic experts
 - (v) Directory of speakers

5. Conclusions

The ASHSC Education and Outreach Committee needs a mission statement that focuses on seismic hazard mitigation, targets primarily the lay, non-technical community, and incorporates partnering and facilitating as well as initiating new programs. To whatever extent the targeted audience includes lay government officials, the role of this Committee should be sharply defined as "education," and distinguished from the "policy-influencing" role of the Commission as a whole.

Effective seismic hazard mitigation education to this audience requires use of non-technical terminology, citations to a variety of credible sources, a consistent and continuous stream of information, and opportunities for peer discussions.

The "niche" of the ASHSC Education and Outreach Committee will most likely be found in facilitating the dissemination of that rich supply of existing materials and programs pertaining to individual preparedness, and in generating materials and programs that are not focused on individual preparedness.

The full E & O Committee should adopt specific “deliverables,” assign specific responsibilities to specific committee members, and establish realistic timelines for performance.