

# SCHOOL COMMITTEE

Members:

Laura Kelly (Chair), John Aho, Gary Carver, Dave Cole, Mark Roberts

Meeting Summary  
April 30, 2008

## School Committee Mission:

### **Ensure the Structural Stability and Functionality of Alaska's Schools in the Event of a Major Earthquake or Tsunami**

#### **Talking Points:**

- Taken from the 2008 ASHSC Annual Report
- Does not distinguish children from other occupants
- Acknowledges the fact that even though school buildings might be “Life Safe”, the structures are not necessarily guaranteed to be operable as an Emergency Shelter, even though nearly all schools are designated as such by the State and local communities.
- Members recognize that retrofitting existing schools to operate as emergency shelters as defined by current code may be economically unfeasible.

## School Committee Goal:

**Suggest a program or system to provide guidance, technical expertise, support, and resources for Alaska's school districts to address at-risk facilities.**

### Talking Points:

- Taken from the 2008 ASHSC Annual Report
- Tasks/Focus Groups (asked to identify deliverables):
  1. Information Gathering - Kelly
  2. Inventory Methodology - Cole
  3. Recommended Next Steps - Carver
  4. Implementation Strategies & Policies - Roberts
  5. Develop Draft Legislation (w/ funding) - Hicks
  6. Foster Relationships with Others - Aho (Chair of Partnership Committee)

“A person with a clear picture of his or her possible losses must quickly be offered suggestions and directions for how to reduce them. Without these blueprints, people can fall prey to fatalistic inertia,” Natural Hazards Informer, “Public Education for Earthquake Hazards”, Number 2, November, 1999.

- **Task 1 – Information Gathering**
  - **Seismic Surveys/Studies Previously Accomplished**
    - » Kodiak Schools – includes costs (provided by Ken Smith, Kodiak Island Borough Project Manager), see PowerPoint Presentation, LKelly, 09/2007.
    - » “Seismic Safety Inventory of California Public Schools”, 11/15/02
    - » Oregon Seismic Safety Surveys, 7/30/07 [www.oregongeology.com](http://www.oregongeology.com)
  - **Legislation**
    - » 100 Years of Seismic Safety, Alfred E. Alquist Seismic Safety Commission – [www.seismic.ca.gov/about.html](http://www.seismic.ca.gov/about.html)
    - » See White Paper, “Legislation Pertaining to Seismic Safety of Schools”, LKelly, 08/2006.
  - **Identify & Interview Stakeholders**
    - » Larry LeDoux, newly appointed Commissioner of Education (no fixed term, member of the Governor’s Cabinet) advocated for Kodiak school mitigation, very proactive regarding seismic safety of schools
    - » Gary Stevens – pro-education, helped Kodiak schools
    - » Gabrielle LeDoux? – sponsored ASHSC/tsunami language
  - **Identify Building Code Provisions Relating to Schools**
  - **Identify At-Risk Facilities**
    - » See map with AK Schools/PGA, DOE database with school construction year.
  - **Develop Conclusions & Recommendations**
    - » Kodiak Schools are being recognized as major success story, recognized as such by FEMA, ASHSC, others state-wide. Short (2 page) summary needs to be written to summarize process.

- **Task 2 – Inventory Methodology**
  - **Identify Seismic Inventory Process**
  - **Review Construction Records & Files of At-Risk Facilities**
  - **Choose Building Classification Process**
  - **Develop Seismic Vulnerability Categories**
  - **Develop Summary/Interpretation of Inventory Data**
  - **Prioritize At-Risk Facilities**
  - **Review Potential Funding Sources**

## Determination of Identification Strategy

### Rapid Visual Screening

- Geologic Hazards
- Building Information
- Age
- Type (15 types/ combinations)
- Materials
- Lateral Force Resisting System
- Layout
- Non-Structural Concerns
- Falling Hazards
- Emergency Utility Services
- Occupancy

### ASCE Tier 1 Screening

- Building Description (size, materials, age, layout, structural composition)
- Site Visit, As-Built Drawing Verification
- Level of Performance Determination
- Level of Seismicity
- Building Type
- Benchmark Evaluation for Bldg. Type
- Basic Structural Evaluation
- Supplemental Evaluation Based On Bldg. Type
- Geologic Site Hazards & Foundation Evaluation
- Basic Nonstructural Evaluation
- Intermediate Nonstructural Evaluation

### Other

- **Structural**
  - Fragility & Damage State Curves
- **Non-Structural**
  - Within the Building Envelope Exits, Fuel Systems, Ceiling Tiles, Books, Computers, etc.
  - Geologic Investigation
    - Ground Motion
    - Tsunami
    - Active Faults
    - Liquefaction
    - Landslide
    - Differential Settlement
  - Geotechnical
    - Site Soils
    - Groundwater Table
    - Slope Stability
    - Foundations

- **IDENTIFICATION**
  - Recognition of Problem
  - **Identification of Structures at Risk**
  - Prioritization of Mitigation
  - Final Determination of Remediation Project



- **Task 3 – Recommended Next Steps**
  - **Provide an Overview of Seismic Evaluation Procedures**
  - **Foster Relationship with Department of Education**
  - **Develop Cost Estimate to Evaluate At-Risk Schools**
  - **Identify Funding Sources of Detailed Studies of At-Risk Facilities**
  - **Develop RFQ Process for Consultant Selection**

**Deliverable Priorities:**

**Contact Larry LeDoux, newly appointed Commissioner of the Department of Education, identify member and have them attend an ASHSC meeting (ask them to become member of School Committee).**

**Produce Kodiak Schools Summary (previously discussed)**

**List and prioritize exposure/risk level of state schools**

## Task 4 – Implementation Strategies & Policies

- **Develop Rehabilitation Strategies for Priority Facilities**
- **Develop Rehabilitation Costs for Priority Facilities**
  - » Kodiak provides good data. Almost \$8 Million received in grant monies; 75% provided by the Federal Govt. (FEMA), 25% provided by the State)
- **Identify Future Actions**

**Deliverable Priorities:**

- **IDENTIFICATION**
  - Recognition of Problem
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  - **Prioritization of Mitigation**
  - Final Determination of Remediation Project

- **Prioritization of Mitigation**

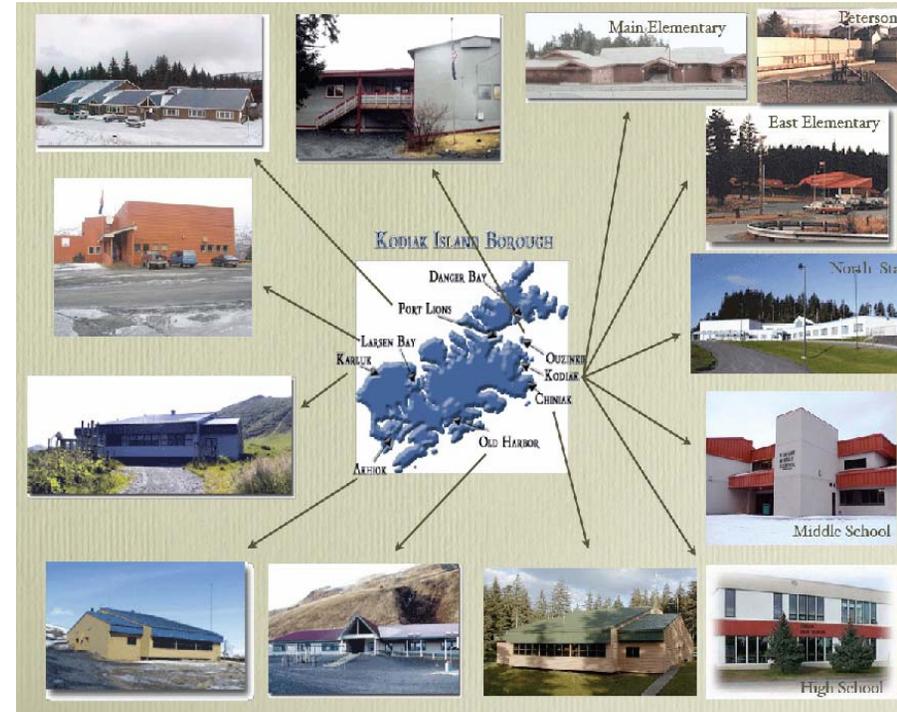
- Risk
  - » Further Geologic Site Hazard Evaluation
  - » Full-Building Evaluation
- Cost
  - » RS Means
  - » Average Local Cost
  - » Professional
- Benefit/Cost Analysis
  - » Value of Existing Buildings
  - » # occupants/#days/#hrs per day
  - » FEMA Software

# Preliminary Identification of Structures at Risk

- General Knowledge
  - Level of Seismicity
  - Age/type of structures
  - Prior/scheduled renovations
  - Building configuration/Number of stories/Square footage
  - Student Body Size
  - Other Uses (Emergency Shelter?)
    - » Life Safety
    - » Immediate Occupancy

## IDENTIFICATION

- Recognition of Problem
- **Identification of Structures at Risk**
- Prioritization of Mitigation
- Final Determination of Remediation Project



- Risk

- **IDENTIFICATION**

- Recognition of Problem
- Identification of Structures at Risk
- **Prioritization of Mitigation**
- Final Determination of Remediation Project

## Life Safety Risk

Hazard	Deaths per 1,000,000 people	Statistical Average Deaths Per Year
Vehicle Accident	186	
Middle School	469	0.100
Peterson School	400	0.021
Ouzinkie School	293	0.010
KHS Library	238	0.053
KHS Gym	30	0.001

## Life Safety Risk

Hazard	US Deaths per Year	Deaths per 1,000,000 people	Middle school (old wings) Earthquake Life Safety Risk	
Tornado	44	0.18	School day occupancy	213
Lightning	90	0.36	Statistical Deaths per Year	0.0998
Flood	97	0.39	Deaths per 1,000,000	469
Assault by knife	2,074	8	About 2.5 times vehicle death rate	
Fire	3,380	14		
Assault by firearm	11,829	47		
Falls	16,257	65		
Vehicle Accident	46,466	186		

- **IDENTIFICATION**
  - Recognition of Problem
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  - **Prioritization of Mitigation**
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- Benefit / Cost Ratio (FEMA Benefit Cost Toolkit 2.0, 2005)

## Key Findings

School	Cost	Benefits	BCR
Middle	\$1,192,000	\$8,010,000	6.72
Ouzinkie	\$149,000	\$975,000	7.55
Peterson	\$509,000	\$1,862,000	3.66
HS Library	\$465,000	\$4,453,000	9.59
HS Gym	\$410,000	\$417,000	1.02
Non-Structural	\$363,000	-	
<b>Total</b>	<b>\$3,088,000</b>	<b>\$15,717,000</b>	<b>5.09</b>

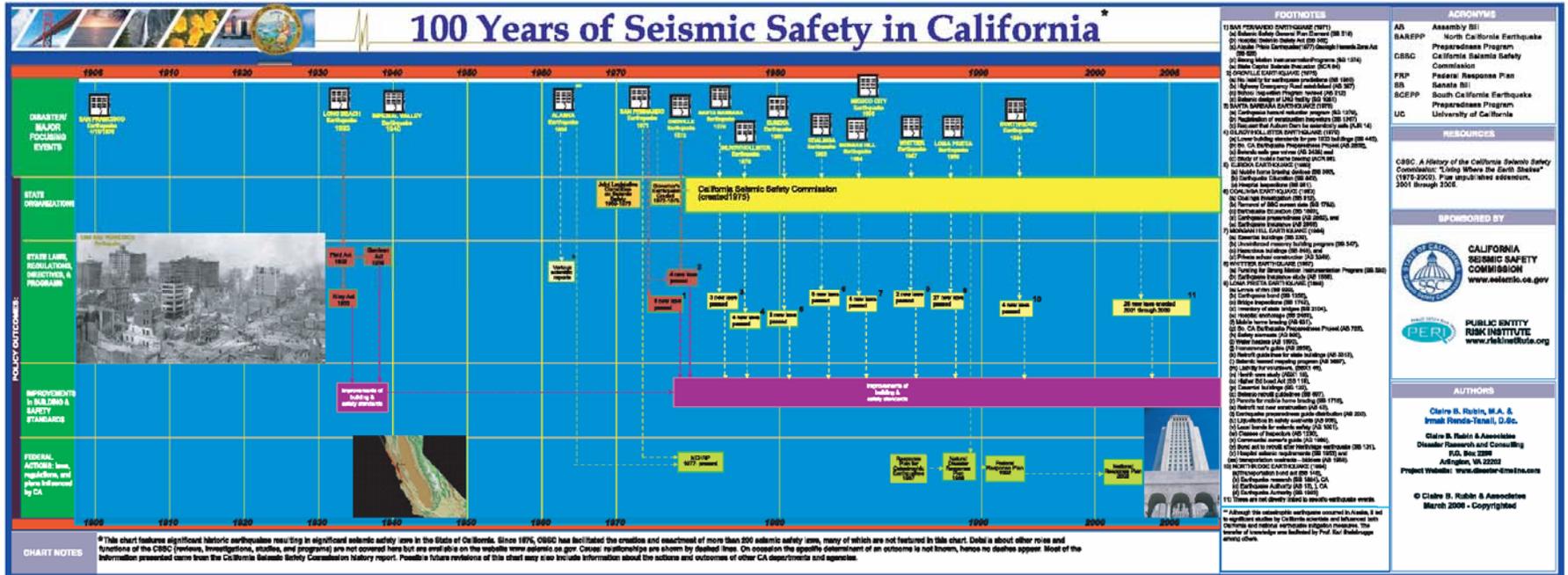
**BENEFITS =**  
Reduction in  
losses due to  
damage,  
casualties, &  
economic impacts

**NOTE:**  
FEMA does  
not fund  
projects with  
a BCR < 1.0

- **Task 5 – Develop Draft Legislation (w/ Funding)**
  - **Identification (Hazard & Risk)**
  - **Mitigation**
  - **Plan Review & Inspection**
  - **Potential Sponsors/Contacts**

**Deliverable Priorities:**

- Task 5 – Develop Draft Legislation (w/ Funding)
  - California:
    - » 100 Years of Seismic Safety, Alfred E. Alquist Seismic Safety Commission – [www.seismic.ca.gov/about.htm](http://www.seismic.ca.gov/about.htm)



## Task 5 – Develop Draft Legislation (w/ Funding)

### – Oregon

- Oregon 2005 Senate Bill 2  
[www.oregongeology.com](http://www.oregongeology.com)

## Enrolled Senate Bill 2

Sponsored by Senator COURTNEY

CHAPTER \_\_\_\_\_

AN ACT

Relating to seismic safety; appropriating money; and declaring an emergency.

Whereas the Seventy-first Legislative Assembly recognized that public buildings were at risk from seismic events; and

Whereas the Seventy-first Legislative Assembly adopted several measures relating to seismic safety for educational buildings, hospitals, fire stations and police stations; and

Whereas the people of the State of Oregon adopted Articles XI-M and XI-N of the Oregon Constitution at the November 5, 2002, general election for the purpose of allowing the state to incur indebtedness in the form of general obligation bonds for the planning and implementation of seismic rehabilitation of these public buildings; and

Whereas the purpose of this 2005 Act and Senate Bills 3, 4 and 5 (2005) is to assess specific needs, to provide for the issuance of bonds and to fund seismic rehabilitation; now, therefore,

Be It Enacted by the People of the State of Oregon:

**SECTION 1.** (1) The State Department of Geology and Mineral Industries, in consultation with the Seismic Safety Policy Advisory Commission, the Office of Emergency Management, the Department of Human Services, the State Board of Education, the State Board of Higher Education and any grant committee established pursuant to a statewide grant program for seismic rehabilitation, shall develop a statewide seismic needs assessment that includes seismic safety surveys of:

(a) Buildings that have a capacity of 250 or more persons and are routinely used for student activities by kindergarten through grade 12 public schools, community colleges and education service districts;

(b) Hospital buildings that contain an acute inpatient care facility;

(c) Fire stations; and

(d) Police stations, sheriffs' offices and similar facilities used by state, county, district and municipal law enforcement agencies.

(2) The statewide seismic needs assessment shall consist of:

(a) Rapid visual screenings of the buildings specified in this section, conducted in accordance with the standards for rapid visual screening procedures established in "Rapid Visual Screening of Buildings for Potential Seismic Hazards: A Handbook," FEMA-154, 2002 Edition, or an equivalent standard adopted by the State Department of Geology and Mineral Industries;

(b) The ranking of the rapid visual screening results in risk categories based on need, importance of the building to the community, risk to the building posed by its location, risk posed to the community by the collapse of the building during a seismic event, projected cost

## Task 5 – Develop Draft Legislation (w/ Funding)

### – Oregon

- Oregon Seismic Safety  
Surveys, 7/30/07

[www.oregongeology.com](http://www.oregongeology.com)

# OREGON DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES

Vicki S. McConnell, State Geologist

NEWS RELEASE: July 24, 2007

## Oregon Statewide Seismic Needs Assessment Final Report released

Portland, Oregon: The Statewide Seismic Needs Assessment: Implementation of Oregon 2005 Senate Bill 2 Relating to Public Safety, Earthquakes, and Seismic Rehabilitation of Public Buildings By Don Lewis, Oregon Department of Geology and Mineral Industries (DOGAMI) has been released. This report is Open-File Report O-07-02 and is released in its final form.

Preliminary results of this report were released to the state legislature on Tuesday, May 22, 2007.

The report is available free online at: <http://www.OregonGeology.com> or a CD-ROM copy of the report can be purchased for \$10 from the Nature of the Northwest Information Center (NNW), 800 NE Oregon Street, Suite 177, Portland, Oregon, 97232. You may also call NNW at (503) 872-2750 or order online at <http://www.naturenw.org>. There is a \$4 shipping and handling charge for all mailed items.

A comprehensive website that includes the complete report, all data, spreadsheets, frequently asked questions, individual site summary reports and additional information can be accessed online at:

<http://www.oregongeology.com/sub/projects/rvs/default.htm>

The Statewide Seismic Needs Assessment covers public school buildings, acute inpatient care facilities, fire stations, police stations, sheriffs' offices and other law enforcement agency buildings. Over 1,000 K-12 schools qualified for the assessment, covering 90% of enrolled public school students in every county and 100% of the vulnerable coastal community schools were surveyed.

Minor data errors and errata have been corrected for the release of the final report.

The result of the assessment is a list of the above mentioned buildings that are ranked for the "probability of collapse" due to the maximum possible earthquake for any given area. The rankings range from Very High, High, Moderate to Low.

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# Funding

## • Federal

- FEMA Hazard Mitigation Grant Program (HMGP) – Post Disaster

Federal HMGP funds made available following a disaster can provide a federal share of up to 75% of the costs of an approved project. The remaining 25% must be met through non-federal funds such as local government funds, community development block grants, etc.

- FEMA Pre-Disaster Mitigation Program (PDM)
  - » Mitigation planning: \$1M cap on Federal share, not to exceed 3 years
  - » Mitigation projects: \$3M cap on Federal share, not to exceed 3 years
  - » Information dissemination activities not to exceed 10%, must directly relate to planning or project sub-application
  - » Applicant management costs not to exceed 10%
  - » Sub-applicant management costs not to exceed 5%
- US Senators
- US Representatives

## • State

- School Facilities Capital Improvement Project Grant (Dept. of Education)
- State Capital Projects
  - » State Senators
  - » State Representatives
- Governor

## • Local

- Bonds
- Maintenance
- Special Capital Projects/Special Funds (Sale of Shuyak Island)
- General Fund (Mill Rate/Property Taxes/Severance Taxes/Intergovernmental Sources)
- Local Government Representatives
- Local Government Employees

## • Private (In-Kind Donations)

- Services
- Materials/Supplies
- Benefactors

- **Task 6 – Foster Relationships with Others**
  - **Legislative**
  - **Existing Government Agencies**
    - » **Dept. of Education**
    - » **State**
    - » **FEMA**
  - **Schools**
  - **Communities**
  - **Articles/Interviews/Misc. Media**
  - **Others**

**Deliverable Priorities:**