

**Committee Mission: Ensure the Survival and Functionality of  
Alaska's Schools in the Event of a Major Earthquake or  
Tsunami**

**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 FEMA and local communities.
- Members recognize that existing schools can seldom be economically retrofitted to meet the standard of operating as an emergency shelter as defined by current code.

## 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)

- **Task 1 – Information Gathering**
  - **Seismic Surveys/Studies Previously Accomplished**
  - **Legislation**
    - » “Seismic Safety Inventory of California Public Schools”, 11/15/02
    - » Oregon Seismic Safety Surveys, 7/30/07 [www.oregongeology.com](http://www.oregongeology.com)
    - » 100 Years of Seismic Safety, Alfred E. Alquist Seismic Safety Commission – [www.seismic.ca.gov/about.html](http://www.seismic.ca.gov/about.html)
    - » Kodiak Schools – includes costs (provided by Ken Smith, Kodiak Island Borough Project Manager)
  - **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**
  - **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

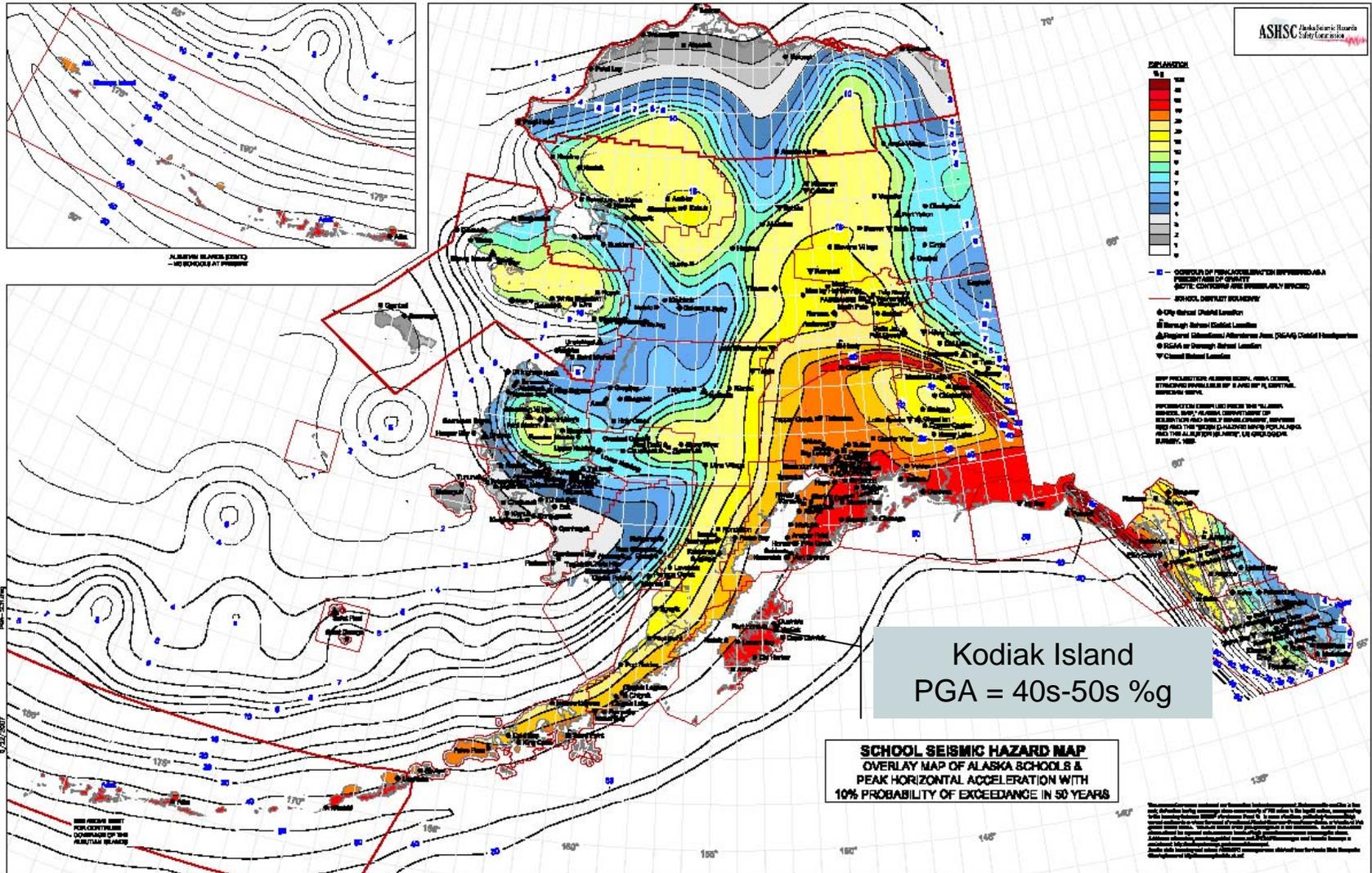
## IDENTIFICATION

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

# TASK 2 – INVENTORY PROCESS – Not there yet

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

(2000 IBC Seismic Risk/ Peak Ground Acceleration)



- **Task 3 – Recommended Next Steps**
  - **Provide an Overview of Seismic Evaluation Procedures**
  - **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:**

**Establish Partnership with 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)
- **Identify Future Actions**

**Deliverable Priorities:**



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

- **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 6 – Foster Relationships with Others**

- **Legislative**
- **Schools**
- **Communities**
- **Existing Government Agencies**
  - » **Dept. of Education**
  - » **FEMA**
- **Articles/Interviews/Misc. Media**
- **Others**

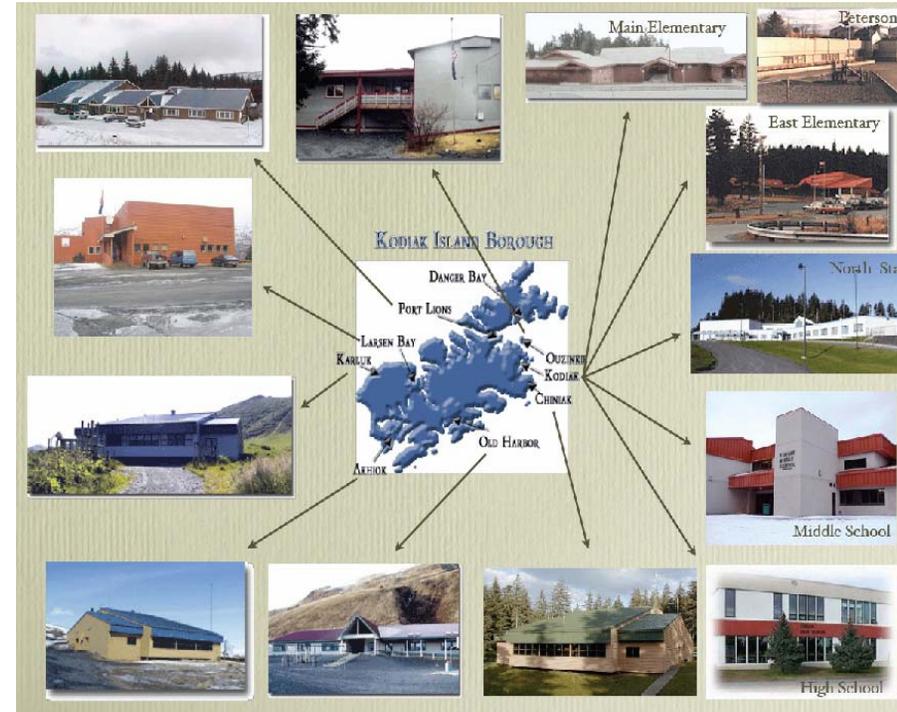
**Deliverable Priorities:**

# 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

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- IDENTIFICATION

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- **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

- Risk

- **IDENTIFICATION**

- Recognition of Problem
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## 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, **Funding**, Staffing & Project Implementation

## • 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

# Identification, Funding, **Staffing** & Project Implementation

ITEM NO. 12.A

## PROJECT IMPLEMENTATION

- **Seismic Only**
- **Combined**
  - Maintenance Upgrade (Roof, Mechanical, Electrical)
  - Energy Efficiency
  - Expansion
- **Phased/Unphased**
- **Unanticipated Issues**
  - Existing Conditions
    - » Lead (paint, plumbing, etc.)
    - » Asbestos (flooring, insulation, roofing, etc.)
    - » Non-Code Compliant Electric, Plumbing, Fire, Fuel/Heat
    - » Unknown Existing Conditions (Structural/Non-Structural)
  - Funding Difficulties
    - » Long Stretches of Time between Identification & Construction
    - » Multiple Agencies
    - » Rising Construction Costs
    - » Unaccounted Local Cost Factors

Kodiak Island Borough

### AGENDA STATEMENT

Meeting of: September 21, 2006

Contract No. FY 2007- 11

RFP# 1 Architectural and Engineering Services for KMS Seismic Upgrade, KHS Library Seismic Upgrade, KHS Gym Seismic Upgrade, KHS/KMS Complex IRMA Roof Upgrade, KHS Learning Center, KHS Exterior Insulation and Window Replacement, KHS Vocational Center Renovation & KHS Pool Reclamation.

#### **THIS AGENDA ITEM WAS POSTPONED FROM THE LAST MEETING.**

Kodiak Island 3.16.020 "Limitation on Manager's Authority" states that a contract exceeding \$25,000 requires Assembly approval.

The Architectural/Engineering Review Board (ARB), through an RFP process, has selected the firm of Jensen Yorba Lott Inc. of Juneau, Alaska to perform the Services specified in RFP# 1.

Funds are in place through voter approved Bonds in the amount of \$7,141,648 to accomplish the KHS/KMS Complex IRMA Roof Upgrade, Renovation of the KHS Learning Center, KHS Insulation and Window Replacement, and the KHS Voc-Ed Renovation and Pool Reclamation Projects. The Legislature approved \$910,000 for Seismic Upgrades. Grant funds are also pending from FEMA in the amount of \$1,000,000 for a PDM-C grant to fund the KMS Seismic Upgrade and \$478,000 from an Alaska HMGP award to fund the KHS Library Seismic Upgrade.

The Borough Engineering and Facilities Department's Bond Projects Office has negotiated an AIA Standard Form of Agreement Between Owner and Architect for Architectural and Engineering Services in the amount of \$733,484 for the above work with an estimated Total Value of \$9,268,000.

The Borough Engineering and Facilities Department recommends awarding the A&E Design Services contract to Jensen Yorba Lott Inc.

FISCAL NOTES	ACCOUNT NO. 420 515 452 140 05013 5, 420 515 452 140 05014 5, 420 500 452 140 05015 5, 420 515 452 140 05017 5, 410 523 452 140 05022 4
<input type="checkbox"/> N/A	Expenditure \$ 733,484.00      Amount

APPROVAL FOR AGENDA:

Manager



**RECOMMENDED MOTION:** Move to authorize the manager to execute Contract No. FY 2007-11 to Jensen Yorba Lott of Juneau, Alaska in an amount not to exceed \$733,484.00.

# Identification, Funding, Staffing & Project Implementation

Item No. **3.B**

## PROJECT IMPLEMENTATION

- **Seismic Only**
- **Combined**
  - Maintenance Upgrade (Roof, Mechanical, Electrical)
  - Energy Efficiency
  - Expansion
- **Phased/Unphased**
- **Unanticipated Issues**
  - Existing Conditions
    - » Lead (paint, plumbing, etc.)
    - » Asbestos (flooring, insulation, roofing, etc.)
    - » Non-Code Compliant Electric, Plumbing, Fire, Fuel/Heat
    - » Unknown Existing Conditions (Structural/Non-Structural)
  - Funding Difficulties
    - » Long Stretches of Time between Identification & Construction
    - » Multiple Agencies
    - » Rising Construction Costs
    - » Unaccounted Local Cost Factors

Kodiak Island Borough

### AGENDA STATEMENT

Special Meeting of June 26, 2007

Contract No. FY2007-50

Authorizing the Manager to Execute Contract No. FY2008-01 for Phase I of the Seismic Upgrades to the Kodiak Middle School.

Kodiak Island 3.16.020 "Limitation on Manager's Authority" states that a contract exceeding \$25,000 requires Assembly approval.

This Contract is for work at the Kodiak Middle School shown on the construction documents prepared by Jensen Yorba Lott, Inc. titled "Kodiak Middle School Seismic Upgrade", dated April 27, 2007, and includes structural, mechanical, electrical, and architectural work. The construction documents, bid documents and associated addendum are available for review on the KIB website. The work will be phased over two (2) years.

The Project is funded in part by monies from a FEMA PDM-c Grant; Bond Projects for Floor Covering Replacement and KHS/KMS Roof Upgrade; and Legislative funds. Additional funding sources are to be identified.

Bids received in response to KIB's Invitation to Bid dated April 2007 are:

	Base Bid Phase 1	Alt Bid 1 Phase 2	Total
Brechan Enterprises	\$2,340,000	\$3,175,000	\$5,515,000
F & W Construction	\$2,469,667	\$3,011,917	\$5,481,584
Engineers Estimate			\$3,465,000
% Difference			58% Over

The E/F Department has reviewed the bids and, as both bids received are substantially higher than the engineers estimate, recommends that a Contract for Seismic Upgrades at the Kodiak Middle School be awarded to Brechan Enterprises, Inc. in an amount not to exceed \$2,340,000 for Phase 1 work only. Phase 2 is to be re-bid at a later date.

Fiscal Notes:	<input type="checkbox"/> n/a	Acct No. 420 515 452 150 05014 6 410 523 452 150 05022 5 410 531 452 150 07015 6
Expenditure Required: \$	<input type="checkbox"/> n/a	Amount Budgeted: <input type="checkbox"/> n/a

APPROVAL FOR AGENDA:



**Recommended motion: Move to authorize the manager to execute Contract No. FY2007-50 with Brechan Enterprises, Inc of Kodiak in an amount not to exceed \$2,340,000.**