SCR
16

SENATE COMMITTEE REPORT

FIRST COMMITTEE OF REFERRAL

Date of 5-DAY NOTICE 2-9-89
IN ACCORDANCE WITH UNIFORM RULE 23

FURTHER

**FISCAL NOTE(S) MUST BE ATTACHED
IN ACCORDANCE WITH AS 24.08.035

DATE TURNED INTO OFFICE 2-15-89

2/6/89

Mr. President:

Resources Committee considered SCR 16

Commemorating the 1964 Great Alaska Earthquake

and recommended:

[ ] replace with CS ______ [ ] same title [ ] new title

[ ] attached amendment(s) and

[ ] ______ letter of intent adopted

[✓] do pass

[ ] do not pass

[ ] no recommendation

[ ] individual recommendations

[ ] further referral to ______

FISCAL NOTE(S) attached [✓] zero [ ] fiscal impact

[ ] appropriation no FN attached [ ] Gov. FN introduced w/ bill

MEMBERS SIGNING DO PASS	OTHER RECOMMENDATIONS
Rick Halford	
Arliss Sturgulewski	
[illegible signature]	
[illegible signature]	
[illegible signature]	

Bettye Fahrenkamp do pass

Chairman signature and recommendation

[✓] Committee backup attached

STATE OF ALASKA
1989 LEGISLATIVE SESSION

BILL VERSION: SCR 16
PUBLISH DATE:

FISCAL NOTE

REQUEST:

Revision Date: 13-Feb-89
Agency Affected: Natural Resources
Title: Commemerating the 1984 Great Alaska Earthquake
BRU: Management & Administration
Sponsor: Sturgelewski,Zharoff,Kelly Fischer,Faiks & Szymanski
Components: Commissioners Office
Requestor: Senate Resources

EXPENDITURES/REVENUES: (Thousands of Dollars)

OPERATING	FY 89	FY 90	FY 91	FY 92	FY 93	FY 94
PERSONAL SERVICES						
TRAVEL						
CONTRACTUAL						
SUPPLIES						
EQUIPMENT						
LAND&STRUCTURES						
GRANTS,CLAIMS						
MISCELLANEOUS						
TOTAL OPERATING	0.0	0.0	0.0	0.0	0.0	0.0
CAPITAL						
REVENUE						

FUNDING: (Thousands of Dollars)

GENERAL FUND						
FEDERAL FUNDS						
OTHER						
TOTAL	0.0					

POSITIONS:

FULL-TIME						
PART-TIME						
TEMPORARY						

ANALYSIS: (Attach a separate page if necessary)

Prepared by: Carol Wilson
Phone: 465-2400
Division: Commissioner's Office
Date: 13-Feb-89

Approved by Commissioner: Lennie Gorsuch
Date: 13-Feb-89
Agency: Department of Natural Resources

Distribution (by preparer):
Legislative Finance
Legislative Sponsor
Requestor
Office of Management and Budget
Impacted Agency(ies)

January 1989

1989 marks the 25th year since the Great Alaska Earthquake. A planning committee, sponsored by the Alaska Academy of Engineering and Sciences, is coordinating activities in remembrance of the disaster. The theme is 1964/1989--25 Years Later.

Four kinds of events are scheduled:

I. Preparation for disasters

Public awareness of the nature and dangers of large-scale disruptions will be emphasized. Displays will show steps that can be taken to prepare the home and workplace. Prevention and mitigation plans already in place, that serve as models of readiness, will be given special recognition. Programs for particular groups, for instance preparing public workers for quick responses, will also be conducted.

II. Commemorative

Events in remembrance of 1964 are planned. A dinner reunion of Alaskans involved in the Earthquake and recovery was a high point of the 20th anniversary and a similar get-together is anticipated in 1989. A display centering on the 1964 events is planned for the Anchorage Museum of History and Art. Efforts are underway to set up an archive where information can be centralized. We hope to be able to give special recognition to people who were critical in 1964.

III. Historical and educational

Information about the Great Alaska Earthquake will be assembled and made available to the public. Where information has not been collected, it will be sought; we hope to preserve the data in the archive. The 25th Anniversary provides a chance to look back to see what effects the 1964 events had on individuals and groups. Special attention will be given to the lessons that were learned in 1964, particularly those having to do with mitigation and prevention.

IV. Scientific and technical

A series of meetings dealing with current information about natural disasters is planned. A public workshop on how decision-makers can use scientific and technical data is scheduled. Other possibilities include a sectional at the Alaska Science Conference and in conjuction with professional meetings.

A schedule of events is attached.

P.O. Box 107844 • Anchorage, AK 99510-3844 • Telephone (907) 276-3499

January 7, 1989

SCHEDULE OF EVENTS

February 23, 1989 - 10:30 A.M. — MEDIA BRIEFING

A press conference to provide information about the earthquake commemoration activities. Sponsored by the '64/'89 Committee. 3rd floor conference room, Frontier Building, 36th and C St, Anchorage.

February 23-25, 1989 — TEACHER WORKSHOP

Quake and Shake- Earthquakes in Perspective. A teacher workshop for graduate credit sponsored by the Alaska Division of Emergency Services, Anchorage School District, and Alaska Pacific University. Further information: Mike Webb, 249-1370.

March 1989 — EARTHQUAKE AWARENESS MONTH

Earthquake Retrospective. Anchorage Museum of History and Art. Exhibit featuring photographs documenting the 1964 disaster. Sponsored by the '64/'89 Committee and the Cook Inlet Historical Society. Further information: W. E. Davis, 276-3499.

March 4 and 18, 1989 — PREPAREDNESS DISPLAYS

March 4 -- Northway Mall. March 18 -- Dimond Mall. Practical advice on getting ready for a natural disaster. Displays by groups, like the American Red Cross, that deal with emergency services. Sponsored by the '64/'89 Committee. Further information: Sara McCullough, 277-1538.

March 16, 1989 - 8 P.M. — HISTORY OF EARTHQUAKES

Pacific Rim Tectonic Events. Anchorage Museum of History and Art. Talk, with slides, on the major earthquakes, volcanic eruptions, and associated events in the history of the North Pacific. Sponsored by the Cook Inlet Historical Society and the '64/'89 Committee. Further information: W. E. Davis, 276-3499.

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March 20 - 23, 1989 — PUBLIC POLICY WORKSHOP

Seminars and discussions on making scientific and engineering information more useful to decision-makers. Times, locations, and speakers to be announced. Sponsored by the '64/'89 Committee. Further information: Walt Parker, 333-5189.

May 23 - 24, 1989 — UTILITY WORKERS' COURSE

Earthquake Hazard Mitigation for Utility Lifeline Systems. A two-day course for public and private utility officials emphasizing ways to reduce earthquake hazard risks. Conducted by the Emergency Management Institute; sponsored by the Alaska Division of Emergency Services. Advance registration required. Further information: Mike Webb, 249-1370.

June 1 - 2, 1989 — HEALTH CARE FACILITIES COURSE

Non-structural Earthquake Hazard Mitigation. A two-day course for hospital and other health care facility workers stressing ways to reduce risks from non-structural dangers. Conducted by the Emergency Management Institute; sponsored by the Alaska Division of Emergency Services. Advance registration required. Further information: Mike Webb, 249-1370.

September 1989 — U.S.G.S. EARTHQUAKE CONFERENCE

Scientific conference reviewing current data on seismic events. Times, locations, and speakers to be announced. Further information: Mike Webb, 249-1370.

Over 20 million waterfowl and shorebirds, including almost the entire world population of western sandpipers, pass through the Copper River Delta between April 25 and May 20 each year.

Birds from every other continent come to Alaska to nest.

Some birds migrating to Alaska travel great distances. Our smallest bird, the Rufous Hummingbird, migrates over 1,000 miles. Several warblers travel 6,000 to 8,000 mile from the jungles of South America, flying mainly at night at altitudes of 2,000 to 12,000 feet.

American golden plovers find their way to Alaska from Hawaii and Polynesia, apparently making the 2,000 mile trip in a nonstop flight.

Alaska has more seabirds than the rest of the United States put together. More than 80 to 124 million seabirds occur in Alaska waters in summer.

Single flocks of over 10 million shearwaters, a medium-sized member of the albatross family, have been observed gliding over the waves of the Gulf of Alaska and Bering Sea.

There is little question the large number of migrant and resident birds affect the lives of humans living in Alaska. A great portion of the migrant birds are insect eaters, and though they do not decimate Alaska's insect populations, they must consume literally tons of insects each year.

Source: Department of Fish and Game.

Corrections

Alaska ranked fourth among all states and the District of Columbia in the number of sentenced prisoners per 100,000 population, as of June 30, 1985. Alaska's rate was 252 per 100,000. The District of Columbia was highest with 720 per 100,000. North Dakota was lowest with 53 per 100,000. The national average was 201 per 100,000.

Source: State Department of Corrections.

Education

Alaska ranked first in public elementary and secondary expenditures (1982-83) per student with $7,325, compared to the national average of $3,430.

Alaska ranked first in percent of high school graduates in 1980 with an 82.5% rate, compared to the national average of 66.5%.

Source: Center for Statistics, U.S. Department of Education.

Earthquakes

Since the turn of the century, 25% of all earthquake energy released in the world has been released by earthquakes occurring in Alaska.

There have been 37 earthquakes recorded with a magnitude greater than 7.25 in Alaska during this century.

Each year in Alaska there are approximately 1,000 earthquakes that measured more than 3.5 on the Richter scale.

Of the ten strongest earthquakes ever recorded in the world, three have occurred in Alaska: 2nd highest in 1964 in Prince William Sound rated 9.2 as the result of recent recalculations; 3rd highest in 1957 in the central Aleutians measuring 9.1; and the 6th highest in 1965 in the western Aleutians measuring 8.7.

Source: John Davies, Department of Natural Resources, Division of Geological and Geophysical Services.

ALASKA BLUEBOOK -1987

STATE OF ALASKA

Executive Proclamation

by

Steve Cowper, Governor

The State of Alaska is highly susceptible to major earthquakes, tsunamis and other natural hazards. However, there is no reason to live in fear of these natural events if preparations and precautions are taken.

The loss of lire and property can be greatly reduced if preparedness measures are taken before, during and after a damaging quake, tsunami or other natural event. This preparedness information is important to all people since many live in or travel to areas of the State of Alaska with high potential for major earthquakes and/or tsunamis.

1989 marks the 25th Anniversary of the March 27, 1964, Great Alaska Earthquake.

The State of Alaska has learned and applied many lessons from these devastating events. The month of March will focus on these lessons and how to better prepare the State and its people for future catastrophic natural events through the assistance of governmental agencies, service organizations, educational institutions and the business community. It is important to implement the results of these lessons throughout the year.

NOW, THEREFORE, I, Steve Cowper, Governor of the State of Alaska, do hereby proclaim the month of March 1989 as:

EARTHQUAKE AWARENESS MONTH

in Alaska, and urge all Alaskans to recognize the importance of being prepared for future catastrophic natural events.

DATED: December 5, 1988

Done by

Steve Cowper, Governor, who has also authorized the seal of the State of Alaska to be affixed to this proclamation.

FACT SHEET ON THE GREAT ALASKA EARTHQUAKE OF 1964:

DATE - March 27, 1964 AST (March 28, 1964 GMT)

ORIGIN TIME - 5:36 PM AST (03:36:14.0 ± 0.2 GMT)

MAGNITUDE - 9.2 on the Richter scale. Note: In 1977 the magnitude of this and many other great earthquakes were recalculated to take into account energy released at long wavelenghths which was not measurable with seismographs in use in 1964. As a result of this recalculation, the magnitude of the great Alaska earthquake of 1964 was increased from initial estimates of 8.4-8.6 to 9.2, making it the second largest earthquake ever recorded (the largest was a 9.5 earthquake in Chile in 1960).

EPICENTER - 6 mi east of the mouth of College Fiord
61.04°N ± 0.05 & 147.73°W ± 0.07
55 mi west of Valdez
73 mi east of Anchorage

DEPTH - 17 mi ± 4

INTENSITY - The maximum intensity reported was XI (major damage) on the 12-point Modified Mercalli Intensity Scale. The damage zone covered about 50,000 sq. miles. Intensities of IV-V (felt by most people, minor damage) were reported as far away as Cold Bay, Bethel, McGrath, Kotzebue, Deadhorse, Ft. Yukon, Eagle, and Skagway. The felt area was about 500,000 sq. miles. The strong ground motion in the Anchorage area lasted about four minutes and probably reached peak accelerations of 0.2 g (1.0 g is the force of gravity at the earth's surface). This long duration of shaking triggered many landslides and avalanches. Most of the damage in Anchorage was due to landslides from the bluffs along Knik Arm and Ship Creek.

LOSSES - Deaths: 115 in Alaska, 16 in Oregon and California.
Damage: 300-400 million dollars (1964).

CAUSE - The inexorable northwestward motion of the Pacific plate at about 2-3 in. per year causes the crust of southern Alaska to be compressed and warped, with some areas along the coast being depressed and other areas inland being uplifted. After periods of tens to hundreds of years this compression is relieved by the sudden southeastward motion of portions of coastal Alaska as they move back over the subducting Pacific plate.

As a result of the 1964 quake, the Latouche Island area moved about 60 feet to the southeast. Also, the patterns of uplift and subsidence which had been slowly developing prior to the earthquake were suddenly reversed with areas around Montague Island being uplifted 15-30 feet and areas around Portage down-dropped as much as 9 feet. The hinge line (line of no vertical change separating the uplift and subsidence zones) extended from near the epicenter in Prince William Sound to the SE coast of Kodiak Island. This vertical deformation affected an area of approximately 100,000 sq. miles.

TSUNAMI - The tsunami (seismic sea wave) generated was the second largest ever recorded, again following only the 1960 Chile earthquake. The largest amplitudes recorded at tide gauges were (in feet): 7.6 at Yakutat; 14.3 at Sitka; 8.9 at Prince Rupert, B.C., Canada; 8.1 at Tofino, B.C., Canada; 13.0+ at Crescent City, California; 7.4 at San Francisco, California; 7.8+ at Ensenada, Mexico; and 12.5+ at Hilo, Hawaii. Of the 122 deaths attributable to the effects of the ocean, about half were due to the open-ocean tsunami: 4 at Newport Beach, Oregon; 11 at Crescent City, California; and about 51 in Alaska.

Local waves caused by underwater landslides claimed at least 56 lives (and may have been responsible for others): 31 in Valdez, 13 in Whittier, and 12 in Seward. Maximum heights reported for these waves were 220 feet in Valdez Arm, 104 feet in Whittier, and about 30 feet in Seward.

Heights for other waves of uncertain origin were reported as follows (in feet): 90 at Chenega, 50-70 at Port Nellie Juan, 40 at Point Nowell, and 5 at Cordova. These heights are not all referenced to the same stage of the tide, but at these and many other communities the wave arrived near high tide, causing the most possible damage.

Seiches (waves excited in a closed basin of water whose period is near the fundamental resonant period of the basin) were observed as far away as Louisiana where a number of fishing boats were sunk. Changes in water wells were reported from as far away as South Africa.

AFTERSHOCKS - The aftershock zone of this earthquake was about 150 mi wide (NW-SE) and extended about 490 mi from Prince William Sound to the SW end of Kodiak Island. The main shock and its aftershocks occurred on a fault which is part of the boundary between the Pacific and North American plates. This fault surface extends from the trench in the Gulf of Alaska and dips at about 10 degrees to the NW reaching a depth of about 21 mi under Anchorage and increases in dip under Cook Inlet to reach a depth of 67 mi under the volcanos of the easternmost Aleutian Arc. The aftershocks ranged along this surface at depths from 12 mi beneath the Gulf of Alaska to 18 mi beneath the Kenai Peninsula and Kodiak Island.

Thousands of aftershocks were recorded in the months following the mainshock. In the first day there were 11 aftershocks with magnitude greater than 6.0 on the Richter scale; in the next three weeks there were 9 more. Smaller aftershocks continued for more than a year.

Prepared by: Dr. John N. Davies, State Seismologist
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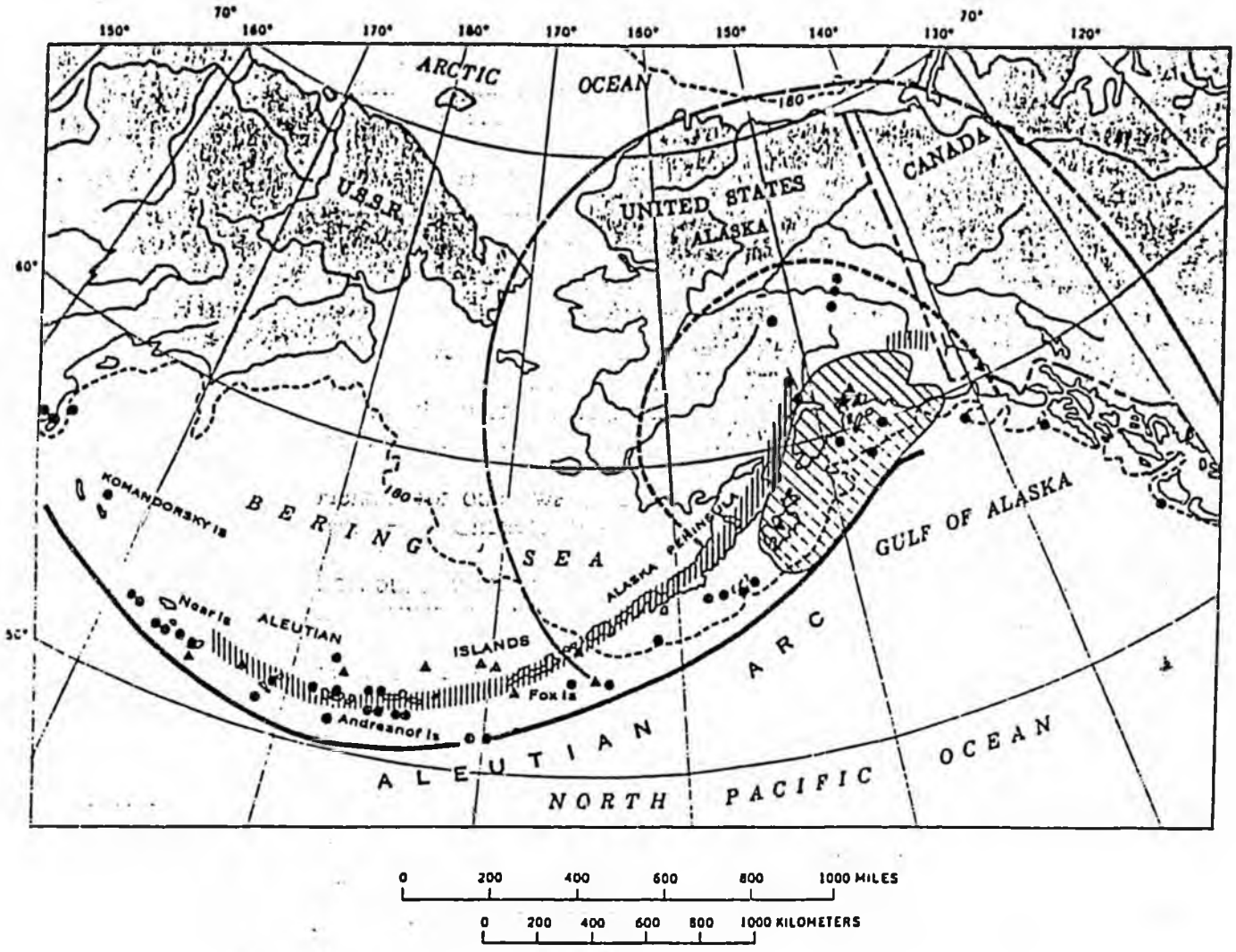

EXPLANATION

★ Epicenter of the 1964 earthquake

Approximate limit of human perceptibility
Dashed where inferred

Approximate limit of landslides, avalanches, and ground cracks

Approximate area of major tectonic deformation
Dashed where inferred

● Shallow depth (<70 km)
▲ Intermediate depth (70–200 km)
Large earthquake epicenters ($M > 7$) for period 1904–52
(From Gutenberg and Richter, 1954)

Aleutian Trench

Aleutian volcanic arc

180 Approximate outer edge of continental shelf
Depth in meters

1.—Map of Alaska and adjacent areas showing the location of the 1964 earthquake, the area affected by the earthquake, epicenters of previous major earthquakes, belts of active volcanism, and the Aleutian Trench.

GEORGE PLAFKER
U.S. GEOLOGICAL SURVEY

Reprinted with minor changes from
U.S. Geological Survey Professional Paper 543-I,
"Tectonics of the March 27, 1964, Alaska Earthquake"

Alaska State Legislature

SENATE

Special Committee on International Trade

P.O. Box V
State Capitol
Juneau, Alaska 99811

AGENDA

SENATE COMMITTEE ON INTERNATIONAL
TRADE AND TOURISM

February 8, 1989

The SITT meeting to hear SJR 16 (a resolution encouraging the acquisition, preservation and development of the Kennecott Mine site) and SRJ 16 and SCR 17 (resolutions supporting the development of the Hatcher Pass Ski Resort) will begin at 3:30 p.m. in the Senate Finance Room .

I. Call to Order

II. Introduction of Guests and Those Presenting Testimony on SJR 16 ALL SUPPORT

A. Neil Johannsen, Director, Division of Parks and Recreation, DNR

B. Judy Bittner, Chief, Office of History and Archaeology

C. Janet McCabe, Special Assistant, National Park Service

D. La Vonne Branshaw, Pat Jones and Dick Groff of the Cordova Historical Society

E. Hugh Gellert, Director, Division of Tourism

F. Bill Glude, Environmental Lobby

III. Introduction of Guests and Those Presenting Testimony on SR 6 and SJR 17

A. Paula Terrel representing Senator Jay Kerttula

B. Gary Gustafson, Director; Veronica Gilbert; Rick Thompson, Hatcher Pass Project Coordinator, Division of Land and Water Management

C. Wolfgang Rood, PKS

IV. Conclusion