RESPONSE TO DISASTER

ALASKAN EARTHQUAKE - MARCH 27, 1964

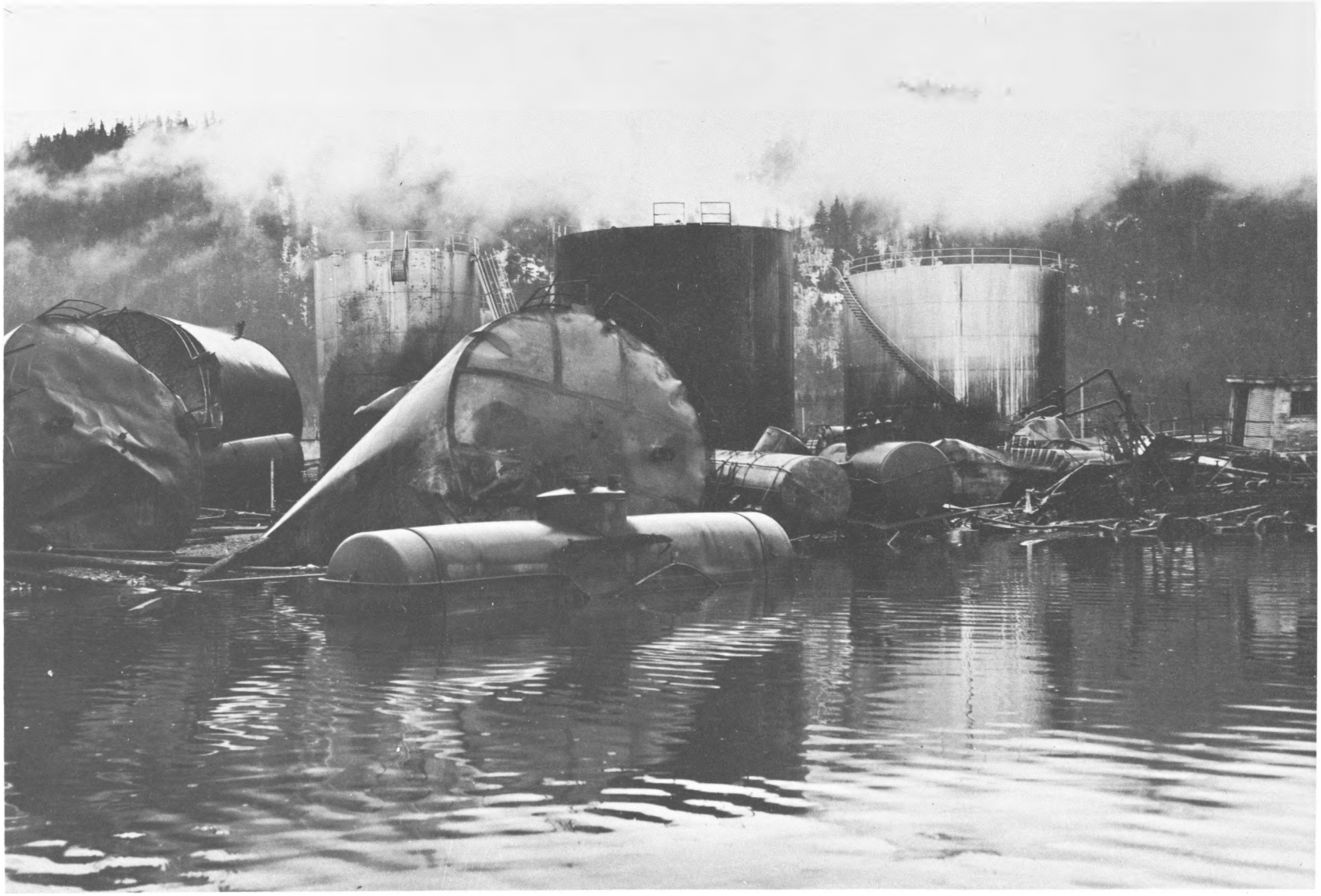
FEDERAL RECONSTRUCTION AND DEVELOPMENT
PLANNING COMMISSION FOR ALASKA

WASHINGTON, D.C. • SEPTEMBER, 1964

RESPONSE
TO
DISASTER

Report of the
Federal Reconstruction and Development Planning
Commission for Alaska

Washington, D.C.—September 1964



Seward, Alaska——Petroleum tanks on an oil tank farm ruptured and caught fire.

THE
FEDERAL RECONSTRUCTION AND DEVELOPMENT PLANNING COMMISSION FOR ALASKA

SENATOR CLINTON P. ANDERSON, Chairman

The Honorable Robert S. McNamara
Secretary of Defense

The Honorable Stewart L. Udall
Secretary of the Interior

The Honorable Orville L. Freeman
Secretary of Agriculture

The Honorable Luther H. Hodges
Secretary of Commerce

The Honorable W. Willard Wirtz
Secretary of Labor

The Honorable Anthony J. Celebrezze
Secretary of Health, Education, and Welfare

The Honorable Edward A. McDermott
Director, Office of Emergency Planning

The Honorable Najeeb E. Halaby
Administrator, Federal Aviation Agency

The Honorable Joseph C. Swidler
Chairman, Federal Power Commission

The Honorable Robert C. Weaver
Administrator, Housing and Home Finance Agency

The Honorable Eugene P. Foley
Administrator, Small Business Administration

Dwight A. Ink
Executive Director

Frank C. Di Luzio
Assistant to the Chairman

EXCERPT FROM EXECUTIVE ORDER 11150[1]

. . . the people of the State of Alaska have experienced death, injury, and property loss and damage of staggering proportions as a result of the earthquake of March 27, 1964 . . .

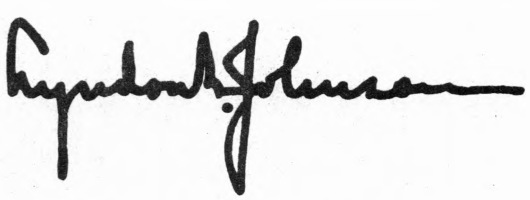
The President . . . has declared a major disaster in those areas adversely affected by the earthquake . . .

The Federal Government and State of Alaska desire to cooperate in the prompt reconstruction of the damaged Alaska communities . . .

The Federal and State Governments have a common interest in assuring the most effective use of Federal and State programs and funds in advancing reconstruction and the long-range development of the State . . .

Such effective use is dependent upon coordination of Federal and State programs, including emergency reconstruction activities, which affect general economic development of the State and the long-range conservation and use of natural resources . . .

There is hereby established the Federal Reconstruction and Development Planning Commission for Alaska . . .



[1] April 2, 1964.

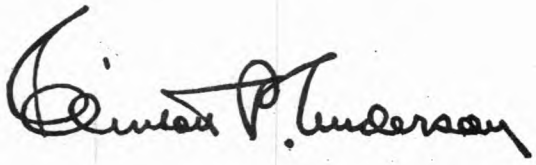
FOREWORD

It has been said that the Federal Government has grown so large that it has lost its capacity to function quickly and effectively in response to domestic problems and that its great size has left it cold to the needs of the American people.

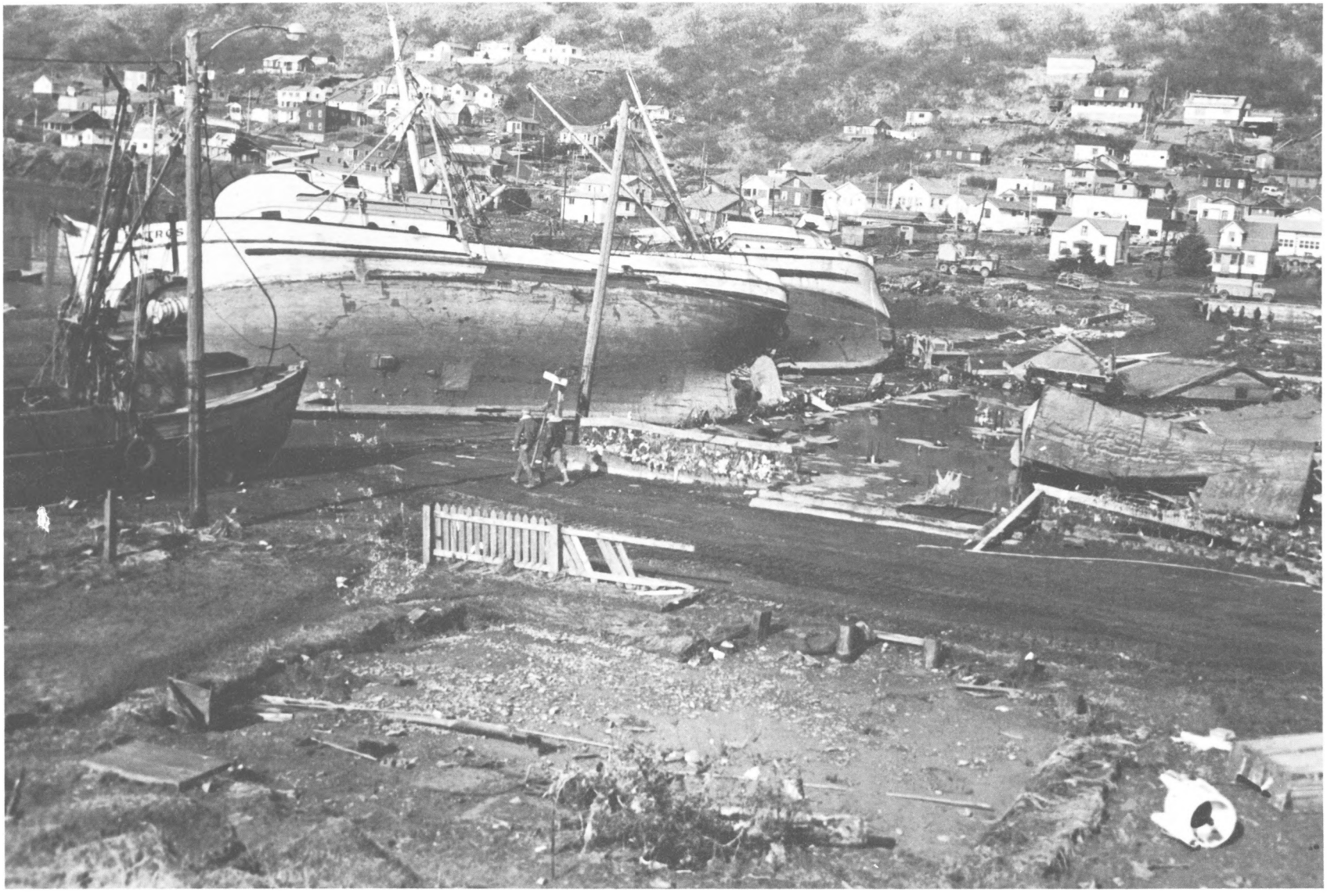
No surer refutation of this misconception comes to my mind than the manner in which the Government acted in the aftermath of the Alaska earthquake. Under existing laws, Federal agencies moved immediately to protect life and health from further harm and took steps to begin the Herculean task of rebuilding what nature had laid waste.

The degree of assistance was unparalleled and yet, even though this aid exceeded any previously provided a disaster-stricken State, the Federal Government looked beyond the immediate catastrophe toward providing a firm base for rebuilding an even better Alaska—a vigorous economy to match a vigorous spirit. The responsibility for this undertaking was assigned by the President to the Federal Reconstruction and Development Planning Commission for Alaska.

The Federal Commission staff and the Federal departments and agencies represented on the Commission have had the finest degree of cooperation from the State of Alaska, from State agencies and local governments, from private Alaskan institutions, from the citizens of Alaska, and from a small army of individuals who volunteered their experience and unique talent for the reconstruction effort. Theirs is a story of which all Americans can be proud.



Kodiak, Alaska——Boat harbor two hours before the earthquake.



Kodiak, Alaska——Thirty to thirty-five foot waves which followed the earthquake carried ships into residential areas, and destroyed homes and businesses.

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INTRODUCTION

At dusk on March 27, 1964, 50,000 square miles of south-central Alaska were severely shaken by one of the most violent earthquakes ever recorded. The intensity of the shock was recorded between 8.4 and 8.7 on the Richter scale. Only the low density of the State's population and the hour—5:35 p.m.—when schools were empty, business areas uncrowded and tides low, prevented the death toll from exceeding 115. The initial estimates of property damage, however, exceeded $400 million.

Geologists have determined that the earthquake tilted an area of at least 52,000 square miles in south-central Alaska. East of a line extending northeastward from the southeast coast of Kodiak Island through the western part of Prince William Sound, land masses were thrust up locally as high as 33 feet. To the west of this imaginary line, the land sank as much as eight feet. Uplift and subsidence of the land seriously disrupted many navigable waterways and harbors, as well as rail and auto routes along the coast line. Large underwater slides carried away many port facilities in several communities.

Violent ground motion that accompanied the earthquake triggered numerous rockslides, snow avalanches and landslides throughout southern Alaska. Fractures or cracks developed, chiefly in the unconsolidated deposits; mud spouts, slumping and subsidence resulted from compaction. Cracks and pressure ridges developed in lake and river ice.

Extensive damage in coastal areas resulted from submarine landslides, slide-induced waves and destructive tsunami effects. Especially vulnerable were the coastal towns of Valdez, Seward and Whittier, located where glacial outwash and alluvial streams had built deltas of water-saturated, poorly-consolidated sediments.

The earthquake-generated waterwaves, or tsunamis, struck with devastating force all along the coast of southern Alaska between the southern tip of Kodiak and Cordova. Tsunamis were recorded on tide gauges as far away as Japan, Hawaii and southern California.[1]

The disaster area contains 60 percent of Alaska's population, produces over 55 percent of the State's revenues and contains the State's key transportation complex. In a State with a broader-based economy, such a blow would have been awesome. For Alaska, it was calamitous.

RESPONSE TO DISASTER

During the first 48 hours following the earthquake, while the Federal Government was organizing its relief effort and bringing assistance into Alaska, the military components in

[1] See App. II.

Anchorage, Alaska——Cooks from the 521st Transportation Company serve Army rations to residents at one of the emergency mess areas established by Army units from Fort Richardson.

Alaska initiated emergency relief measures to supplement State and local efforts.

The earthquake had completely disrupted normal civilian communications in the disaster area. Within minutes after the earthquake, the Command Post of the Alaskan Military Command at Anchorage became the center through which communications were re-established between Alaska and Washington and between State and City Civil Defense Headquarters in south-central Alaska.

The Military Affiliate Radio System (MARS) on Elmendorf Air Force Base went into operation on emergency power in less than one hour after the earthquake, and maintained a 24-hour schedule until April 15. MARS handled 9,379 messages.

Military communications personnel and signal battalions worked with civilian companies to restore communication service and to assure continuous service.

Assistance to the Greater Anchorage area began immediately. Military water trailers were supplying water to the Greater Anchorage area within 3 hours after the earthquake. Within 48 hours, four water purification units were flown in from the 4th Infantry Division at Fort Lewis, Washington.

At dawn, on the morning after the earthquake, a massive airlift began. Seventeen Provider (C–123) military transports of the Alaska Air Command carried relief supplies and equipment (provided largely from military stocks) to Seward, Valdez, Kodiak, and other isolated communities.

Also that same morning, Fort Richardson opened four field mess halls operating around the clock. One mess alone served 7,462 meals and used 198 pounds of coffee. Elmendorf's 5040th Food Service Squadron also went on 24-hour shifts, and during the 4 days following the earthquake served 44,487 regular meals and 11,820 C-ration meals.

Both Elmendorf and Richardson arranged emergency housing for displaced personnel. Within 2 hours, structures at those bases still safe for occupancy were identified; and bedding, rations, and field kitchens were available for about 5,000 people.

In response to a request from Anchorage officials, military authorities assigned troops to assist in security and travel control. Assignments were completed within 2 hours after the earthquake. By the second day after the earthquake, there were approximately 1,000 Army troops manning guard posts 24 hours a day in Anchorage.

In addition to the extensive assistance given by the military to the major urban area of Greater Anchorage, aid was given to virtually all other stricken areas. For example, at Kodiak, the Navy committed 1,135 men for 190,374 manhours of emergency assistance work. The Navy distributed about 1,000 blankets which were flown in from Seattle and Whidbey Island; served 12,000 meals to evacuees during the first 48 hours; and supplied generators, pumps, medicine, rope, sleeping bags and similar items urgently needed in Kodiak.

Additional materials and supplies made available by the military to civilian communities and Government

agencies included hundreds of sleeping bags, beds, cases of C-rations, mattresses, blankets, wire, lime, sanitation kits, radio receivers, and arctic gear.

Military doctors and nurses assisted local medical authorities. The morning following the earthquake, a military medical team of 5 doctors, 10 nurses, 2 anesthetists and 20 medical specialists were flown to Alaska from Fort Lewis, Wash.

Local fuel distributors were provided 244,000 gallons of fuel oil from military stocks for relief of the local populace.

Military trucks, cranes, wreckers, bulldozers and mobile radio units with drivers and operators were sent to assist civilian authorities.

This was the military community responding to the civilian community in a time of need.[2]

In the meantime, as the first reports of the earthquake reached Washington, Edward A. McDermott, Director of the Office of Emergency Planning, sent his Director of Region 8 to Anchorage to consult with State officials concerning assistance under P.L. 81–875, the Federal Disaster Act.[3]

The President, Cabinet officers and agency heads were advised of the seriousness of the situation and the probable need for large-scale assistance.

On the morning of March 28, Governor Egan requested the President to declare a "major disaster" in Alaska under the authority of P.L. 81–875.

On the same day, after the initial assessment of the casualties and property losses, the President declared the State a major disaster area. This set in motion a series of emergency measures executed by the Office of Emergency Planning. Although a number of major disasters have occurred in the United States since P.L. 81–875 was enacted in 1950, the amount of aid given to Alaska under this law is unprecedented.

In administering P.L. 81–875, OEP has a major responsibility to assist the State and its local subdivisions in making emergency repairs to restore public facilities. OEP has performed its mission in Alaska with speed and efficiency. Assistance under P.L. 81–875 has been supplied, in the words of Mr. McDermott, "as broadly and as flexibly as we can, consistent with the spirit and intent of the legislation."

Immediately after Alaska was declared a disaster area, OEP assigned specific missions to Federal agencies. With the concurrence of the Department of Defense, the Corps of Engineers contracted for debris clearance, emergency restoration of public utilities, and the repair of docks and other community facilities. The Navy Department's Bureau of Yards and Docks performed similar functions on Kodiak Island. The Federal Aviation Agency assessed the damage and planned the repair of State and municipal airports.

The Department of the Interior surveyed damages and initiated repairs to the Alaska Railroad.[4] Similar functions were performed by the Bureau of Public Roads and by the State Highway Department on the Federal-

[2] For a more comprehensive report of the military effort, see *Operation Helping Hand*, Headquarters Alaskan Command publication.

[3] Act of Sept. 30, 1950, as amended (42 U.S.C., sec. 1855 *et seq.*) which authorizes Federal assistance to a "major disaster area" as designated by the President.

[4] The Alaska Railroad is owned by the Federal Government.

Anchorage, Alaska——Residents pass the ruins of the Four Seasons apartment house while looking for temporary shelter.

Aid System roads. The Departments of Health, Education, and Welfare; Labor; Agriculture; Commerce; and Treasury (Coast Guard); as well as a number of independent agencies, also participated in the emergency recovery effort.

While the immediate emergency work was getting under way in Alaska, OEP recommended an initial $5 million allocation from the President's Disaster Relief Fund. The President signed this allocation on April 3. Additional funds were required, and on June 12, the President made a second allocation of $12 million. This money was used primarily to reimburse Federal agencies performing emergency work at the request of OEP and under P.L. 81–875. OEP advised the President that further allocations would be recommended as needed.

In the disaster area, a wide range of relief and repair work moved rapidly forward under direct assignment from OEP and from other Federal agencies using their regular authorities as well as special authorities triggered by the President's declaration of a "major disaster."

Under coordination of OEP, emergency work authorized in the disaster area—e.g., debris clearance, temporary repairs to water and sewer systems, etc.—proceeded on an accelerated basis.

While the various government actions were numerous and necessary, much of the success of the emergency recovery effort is due to the numerous fraternal, social service, religious, and civic organizations which have worked so efficiently, unselfishly and effectively in cooperation and harmony with Federal, State and local officials.[5]

[5] See app. IV for details.

ESTABLISHMENT OF THE FEDERAL COMMISSION

Within a few days after the earthquake, President Johnson decided that, because Alaska had experienced property loss and damage of such staggering proportions in relation to the resources of Alaska, and that because existing machinery would be insufficient for the task of rebuilding, therefore, a special Federal Commission should be established to develop coordinated plans and recommendations for the reconstruction and economic development of Alaska. The President signed Executive Order 11150 establishing the Federal Reconstruction and Development Planning Commission for Alaska on April 2, 1964.[6]

This Executive order created a unique executive Commission because, while the Commission was responsible to the President, it was chaired by Senator Clinton P. Anderson, the only member of the legislative branch serving on the Commission. The President indicated that his choice of Senator Anderson as Chairman was based on the Senator's experience with relief programs during the 1930's, his service as Secretary of Agriculture during the post-World War II international food emergency, and his membership on the Senate's Interior and Insular Affairs Committee where the Senator conducted the hearings on Alaska Statehood.

Other members (also designated by the President) were: the Secretary of Defense, the Secretary of the Interior, the Secretary of Agriculture, the Secretary of Commerce, the Secretary of Labor, the Secretary of Health, Edu-

[6] See app. III.

Portage, Alaska——Highway after the earthquake.

cation, and Welfare; the Administrators of the Federal Aviation Agency, the Housing and Home Finance Agency, and the Small Business Administration; the Chairman of the Federal Power Commission; and during the period in which Alaska remains a major disaster area, the Director of the Office of Emergency Planning.

The President, upon recommendation of Senator Anderson appointed Mr. Dwight A. Ink as Executive Director of the Commission staff. The staff was principally comprised of personnel on loan from Federal departments and agencies. The Commission established a Field Committee in Alaska, composed of representatives of Federal departments and agencies engaged in the reconstruction effort.

The departments and agencies represented on the Commission contributed $90,200 for the Commission's operating expenses during fiscal year 1964. Before the end of June, $29,500 in unused funds were returned to contributing agencies. Commission funds for fiscal year 1965 were appropriated by the Congress.

The Commission established nine task forces which were instructed to make special studies and prepare recommendations. These task forces were: transportation, ports and fishing, financial institutions, community facilities, housing, industrial development, natural resources development, economic stabilization, and scientific and engineering.[7]

The composition of the Commission facilitated decision-making. With a Member of Congress and with agency heads and Cabinet officers working closely with representatives from the Bureau of the Budget, legislative recommendations and major policy decisions by departments and agencies could be agreed to at Commission meetings.

Because the members of the Commission had authority to act with broad areas of responsibility, agreements reached at Commission meetings could be implemented by the various departments and agencies without further approvals or other time-consuming procedures. The only exceptions were the few policy matters requiring Presidential approval—a step involving little time. Thus, the time involved in the normal process of interagency and Bureau of the Budget clearance of proposed legislation was drastically reduced.

Agencies with divergent responsibilities frequently worked in close harmony in a common cause. Yet the environment of the Commission encouraged agencies to try out new and novel solutions to some of the problems faced in Alaska.[8]

Frequently, members of the Commission staff, together with the State coordinator, members of the Field Committee and representatives of participating Federal agencies in Alaska visited the disaster-affected communities and met with local officials. Through this joint effort reconstruction plans were formulated, schedules set, priorities assigned and problems resolved.

ESTABLISHMENT OF THE STATE COMMISSION

As a counterpart to the Federal Commission, on April 3, 1964, Gov. William A. Egan issued Executive

[7] See apps. I and II.

[8] See app. II.

Order No. 27, establishing the State of Alaska Reconstruction and Development Planning Commission. The State Commission, in cooperation with the Federal Commission, coordinated programs for restoring and developing Alaska.

The Attorney General of Alaska, Mr. George N. Hayes, was sent to Washington by the Governor as State liaison. He participated in the activities of the Federal Commission staff and attended Commission meetings. Mr. Joseph H. FitzGerald was appointed as coordinator of the State's Commission. He participated in the meetings of the Field Committee in Alaska. Through this arrangement, the State was kept fully informed of the Federal Commission's plans and actions, and State representatives have participated in the development of coordinated reconstruction plans.

ACTIVITIES OF THE FEDERAL COMMISSION

In an attempt to develop a quick understanding of the magnitude of the disaster, both State and Federal agencies made hurried estimates of damage within a few days after the earthquake. Because snow and ice still covered most of the ground in Alaska, these initial surveys made broad allowances for latent damages. Before planning could proceed beyond the initial emergency work, more thorough surveys were required. Therefore, much of the initial effort of the Federal Commission was devoted to developing data which would serve as a foundation for reconstruction planning and the drafting of proposed legislation.

Damage Analyses

In order to provide additional but more comprehensive damage estimates with accompanying engineering guides for emergency reconstruction planning, Chairman Anderson appointed the Alaskan Construction Consultant Committee headed by Mr. B. B. Armstrong. The members of this Committee were drawn from the Associated General Contractors of America and the International Union of Operating Engineers.

In mid-April, the Construction Consultant Committee, in conjunction with Alaskan contractors and labor representatives, made on-site inspections of damaged roads and streets, utilities, harbors and docks and public and private buildings, including airports. The Committee also reviewed the manpower situation. In each locality, reconstruction priorities were suggested, construction costs estimated and general methods of contracting suggested. The information was assembled into a formal report to the Federal Commission. The report served as a valuable guide in the emergency reconstruction program.[9]

A property-by-property damage appraisal by the Alaska State Housing Authority and the Housing and Home Finance Agency in early May produced a $77 million estimate of private real property damage. This damage estimate was much lower than the initial rough estimates provided in early April. The Commission authorized the transfer of $10,000 to the HHFA to cover a portion of the costs for this survey.

[9] See references.

Anchorage, Alaska : Turnagain Heights residential area——Residents attempt to salvage part of their household items. Portions of this area, located on a high bluff, slid toward Cook Inlet.

Early total damage estimates between $400 and $500 million were finally reduced to about $311 million, exclusive of personal property and loss of income. The following table provides specific details on the latest damage estimates.

Table I—Summary of Damages—Aug. 12, 1964

Public Property:		
Federal:		
Military	[1] $35,610,000	
Nonmilitary	[1] 35,641,000	
Non-Federal:		
State and local	[2] 107,373,000	
Highways	[3] 55,568,000	
		$234,192,000
Private Property:		
Real	[4] $77,000,000	
Personal	(no data)	
		[5] 77,000,000
Total damage		[5] 311,092,000

[1] OEP Report, May 11, 1964.

[2] OEP Report, July 24, 1964.

[3] Estimate provided by BPR and includes all highways on the Federal-aid system, BPR letter of May 15, 1964. The $55,568,000 figure is the amount required to restore to *pre-earthquake* condition. (The BPR estimate for construction to present design standards: $65,088,000).

[4] Private-real property survey, HHFA's telegram of May 7, 1964. Rounded to nearest million.

[5] Does not include personal property or loss of income.

On April 11, 1964, the American Institute of Architects (AIA) and the Engineers Joint Council (EJC) offered consultatory assistance to the Federal Commission. After discussion with State and local officials, the Commission agreed that these consultants could provide a significant service to the State. A team was formed, representing the AIA and the EJC and by invitation of the State and local governments and under the sponsorship of the Commission, the team members visited the Alaskan disaster area from June 8 through June 14. They inspected damages and observed the early reconstruction work. The team met with State and local officials, University of Alaska faculty members, Alaska architects, engineers and civic leaders. The team's report which provided recommendations for both reconstruction plans and the longer range development programs were submitted to Governor Egan on June 13.[10]

Soil Studies

Fundamental to any rebuilding program in Alaska is accurate knowledge of the geology and soil conditions of the earthquake area. The Federal Commission and the OEP sought the best judgment of geologists and soils engineers as to the likelihood of future slides and subsidence and as to precautions which could be taken to minimize their occurrence.[11]

The Federal Commission, therefore, established a ninth task force composed of scientists and engineers; and the OEP financed extensive soil explorations conducted in Anchorage, Seward, Valdez and Homer by the Corps of Engineers. Earthquake and geological studies were also conducted by the U.S. Coast and Geodetic Survey and by the U.S. Geological Survey.[12]

[10] See references.

[11] The Chairman recommended to the President, in a letter of Apr. 20, 1964, that a special long-range scientific study group be formed. Also, in 1959, the U.S. Geological Survey had issued a report indicating the underlying, unstable clay materials which could be dislodged by earthquake shocks in some of the built-up areas of Anchorage. Other geological studies have been made of earthquake-prone areas along the West Coast. Unfortunately, none of these warnings were heeded. However, where an area was already built up, it is very difficult to see what could have been done. See U.S. Geological Survey Bulletin, 1093, *Surficial Geology of Anchorage and Vicinity, Alaska* for further information.

[12] See references.

Because of the urgent need for scientific data, the Commission expedited the timetable for soils testing; results of the studies were received in half the time initially scheduled.

Engineering Practice

The recommendations of the scientific and engineering task force have been made available to the affected cities for their use in developing zoning codes and in the application of the Uniform Building Code. The task force also joined with the Corps of Engineers in recommending measures which might be adopted to stabilize the soil in order to reduce the risk of life and property in the event of another serious earthquake. The work of this task force may serve as a pattern for the treatment of other earthquake areas.[13]

A general conclusion is that earthquake-resistive design standards for Alaska which is classified as seismic zone 3 as required by the 1964 edition of the Uniform Building Code [14] should be adhered to and that strict compliance with approved plans and specifications is essential. The importance of adequate enforcement of the codes by professionals, independent from political and economic influences, was stressed. The recommendations of the scientific and engineering task force have served as guides for applying lending and mortgage insuring policies of Federal agencies in Alaskan earthquake areas.

Price Monitoring

The Commission, through the Economic Stabilization Task Force, also established a special system for monitoring prices, rents, wages and salary levels in Seward, Valdez, Kodiak, Anchorage and Fairbanks. Inflation could have severely handicapped the recovery effort. The chief objective in establishing and maintaining the surveillance program was to keep abreast of any upward price pressures brought about by the earthquake and, if such occurred, to provide the State with recommendations for coping with such developments. As of August 1, there had been no significant upward trends in either prices or wages. Business and labor in Alaska have cooperated effectively in holding the line against inflation.

SPECIAL LEGISLATION

Although unparalleled Federal assistance was being provided, it was soon apparent that Alaska would require even more Federal disaster aid than could be provided under existing programs.

Transitional Grants

In 1959, Congress appropriated $28.5 million in transitional grants for a 5-year period in order to help Alaska assume responsibility for public services previously provided by the Federal Government. This authority expired on June 30, 1964.

In order to maintain essential local and State services after the earthquake, the President requested a $22.5 million authorization in new transitional grants for the period through June 30, 1966. The loss of tax revenue and emergency expenditures jeopardized the continuation of many State and local government services. Municipal operations in several small

[13] See app. II.

[14] Publication of the International Conference of Building Officials, Pasadena, Calif., 1964.

Anchorage, Alaska——Turnagain Heights residential area : Turnagain slide area, shortly after the earthquake.

Anchorage, Alaska : Turnagain Heights residential area, slide area after most of the debris has been cleared.

communities would have been crippled without Federal assistance. The Bureau of the Budget estimated there would be a requirement for $22.5 to meet the shortfall in Alaska's anticipated revenues and to provide for extraordinary State and local expenditures.

Congress increased the President's request for transitional grant funds from $22.5 to $23.5 million to allow for loss of revenue by the Anchorage Independent School District. On May 25, the President requested a $17 million appropriation from this authorization as part of a broad request for $52.2 million to meet various program requirements in Alaska. Except for $500,000 allocated to the Federal Aviation Agency to continue airport operations, all of the $17 million transitional grant money has been turned over to the State. The total amount appropriated by the Congress was about $41 million after major deletions of $5.2 million for the Alaska Railroad, and $5.6 million for Corps of Engineer small-boat harbor expansion projects.

Retroactive Insurance

Senator Henry M. Jackson of Washington, Chairman of the Senate Committee on Interior and Insular Affairs, introduced S. 2719 which was a measure to provide retroactive earthquake insurance to Alaskans.[15] Hearings were held on this bill. The administration witnesses objected to the proposal and recommended that the problem of earthquake insurance be a part of the study that would be authorized by S. 2032.[16]

Amendments to Alaska Omnibus Act

While the task forces and special committees were gathering data for their reports to the Commission, Federal agencies were preparing recommendations concerning needs for special legislation. Following a careful review of various legislative proposals submitted by the several Federal agencies, the Commission recommended a broad legislative package to the President.

In drafting this legislation, the Commission, recognizing the need for early passage, limited the legislation to Alaska and the disaster area to avoid issues unrelated to the Alaska disaster. The proposed legislation amended the Alaska Omnibus Act and provided additional, and in most cases, new types of assistance for highways, urban renewal, debt adjustment, harbors and disaster loans.

In transmitting this proposal to Congress on May 27, 1964, the President said:

> The Legislation which I am proposing—based on recommendations of the Federal Reconstruction and Development Planning Commission for Alaska—will provide greater flexibility in Federal programs to cope with the extraordinary circumstances arising out of the earthquake * * *.
>
> Concern for our fellow citizen alone compels prompt action on this proposal but practical considerations are also most important. The construction season in Alaska is about to begin and is of short duration. The sooner Alaska can complete its reconstruction efforts the sooner

[15] 88th Cong., 2d Sess. Note: This legislation was not proposed by the Federal Commission. Senator Anderson did, however, at Senator Jackson's request, preside over the Senate committee hearings on this bill.

[16] 88th Cong., 2d sess. S. 2032 direct HHFA to study alternative programs which would help provide financial assistance to victims of flood disasters.

Anchorage, Alaska——Part of the Fourth Avenue slide area, at D Street looking east. Many buildings in this area were either destroyed or severely damaged.

742-278 O—64——4

Anchorage, Alaska——Fourth Avenue looking southeast on August 13, 1964. Debris clearance is completed, and the area regraded.

it can begin to devote its efforts toward the further development of the State's resources.

The legislation was introduced as S. 2881 and H.R. 11438 [17] and was referred to the Interior and Insular Affairs Committees of both Houses to expedite handling, since these committees had jurisdiction over the Alaska Statehood Act and the Alaska Omnibus Act 6 years earlier.[18]

One of the immediate needs in Alaska was restoration of severely-damaged roads. To repair and reconstruct the Federal-Aid highways outside the national forests, the new legislation provides for an increase in the Federal share of reconstruction costs from 50 percent to 94.9 percent. This adopts the same formula used in determining the Federal share of costs for new construction of Federal-Aid highways in Alaska. To cover this increase, appropriations for this purpose were not to exceed $51 million.

The legislation authorizes the Corps of Engineers to make modifications on previously authorized civil works projects, if modification was needed to overcome the adverse effects of the earthquake. This legislation was designed primarily to assist in the expansion of small-boat harbors to provide for current and reasonably prospective requirements.

The legislation also authorizes the Farmers Home Administration, the Rural Electrification Administration and the Housing and Home Finance Agency to adjust the indebtedness of some of their borrowers, thereby enabling them to overcome some earthquake losses. The purpose of this amendment to adjust indebtedness was to place the programs of these agencies on the same general footing as other Federal loan programs.

Another amendment to the Omnibus Act authorizes the Administrator of HHFA to enter into contracts for grants not exceeding $25 million for urban renewal projects in the Alaskan disaster area. Such authorization was in addition to and separate from that in the Housing Act of 1949. The Commission did not recommend any percentage increase in the Federal share for urban renewal projects.

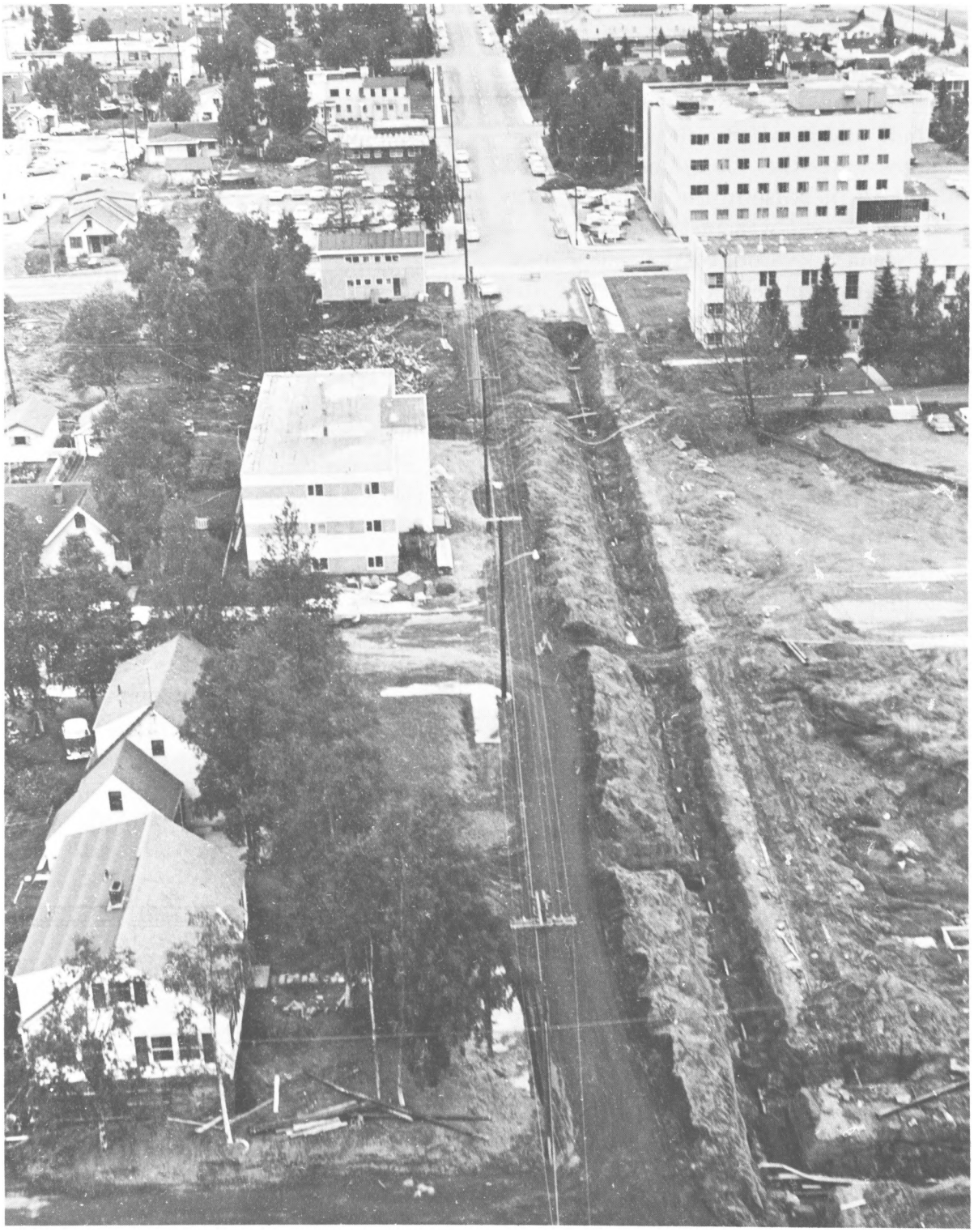
In order to restore the State's credit and to help finance the State's earthquake-related capital projects, the legislation authorizes purchase by the Federal Government of up to $25 million of State of Alaska bonds or the loan of $25 million to the State.

The Federal Commission hoped that the State's ability to sell bonds at a near-normal interest rate (3.5 to 4 percent) might encourage the sale of Alaska bonds in the private market. If not, as soon as the State's credit was restored, the bonds could either be sold in the private market by the Federal Government, or refinanced in the private market by the State.

Congress amended the Commission-sponsored legislation in three principal areas:

First, the Federal share of urban renewal projects in the Alaskan dis-

[17] 88th Cong., 2d Sess.
[18] See app. VI.



Anchorage, Alaska——Waterline installation at Eighth Avenue near L Street. Picture represents progress as of August 13, 1964. Through the use of double-shift work teams, the project will be completed before October 1964.

aster area was increased from 75 percent to 90 percent of the net project cost. After the initial cost estimates were substantially reduced, and land stabilization measures found necessary, the Commission agreed that an increase in the Federal share to 90 percent was justified.

Second, Congress authorized HHFA to purchase (as part of the $25 million bond authorization provision) up to $7.2 million in State of Alaska bonds for completing State capital improvement programs. Before the earthquake, these bonds had been approved by the State but not issued.

Third, Congress provided authority for Federal grants to help adjust or retire the outstanding mortgage obligations on the 1 to 4 family properties which were severely damaged or destroyed by the earthquake. In carrying out this provision, the President may make grants to the State not to exceed $5.5 million, to match State funds on a 50–50 basis.

The mortgage retirement provision specifies that in order for the State to receive a grant, it must submit an implementing plan to be approved by the President. This plan must: designate the State agency responsible for retiring or adjusting the mortgages; assure that the mortgagor will absorb the damage loss to the extent of his equity in the property in addition to paying $1,000 on his outstanding mortgage obligation; limit the payments on a single property to $30,000; issue regulations providing equitable treatment for all; prevent unjustified windfalls to the State, mortgagees, or mortgagors; and make such reports as the President requests.

Congress completed action on this legislation on August 8, 1964; and the President signed the bill on August 19, 1964. These amendments were the culmination of legislative proposals designed to aid in the reconstruction of Alaska. The following is a table summarizing actual and anticipated Federal assistance to Alaska.

Table II.—Estimated Federal Assistance to Alaska Resulting From Mar. 27, 1964, Earthquake

		Total Federal Costs (amounts in millions of dollars)*
I	**Federal aid to State and local governments:**	
	Disaster relief (OEP)	$60.0 to $70.0
	Transitional grants (President)	17.0 to 23.5
	Highways (Commerce)	43.0 to 63.0
	Urban Renewal grants (HHFA)	25.0 to 40.0
	Purchase of Alaska bonds (HHFA)	10.0 to 25.0
	Planning Advances (HHFA)	.3 to .4
	Subtotal I	155.3 to 221.9
II	**Federal aid to private individuals and groups:**	
	Loans by SBA, Interior, Agriculture	60.0 to 70.0
	Forgiveness and other adjustments on outstanding loans (Agriculture, HHFA, VA and President)	7.0 to 10.0
	Tax refunds and offsets (Treasury)	20.0 to 30.0
	Subtotal II	87.0 to 110.0

See footnote at end of table, p. 21.

Table II.—Estimated Federal Assistance to Alaska Resulting From Mar. 27, 1964, Earthquake—Continued

	Total Federal Costs* (amounts in millions of dollars)
III Restoration of Federal facilities and direct Federal operations:	
Defense facilities, etc. (Defense)	$35.6
Alaska Railroad (Interior)	27.0
All other Federal agencies	19.6
Subtotal III	82.2
Grand total (nearest million)	325.0 to 414.0

*Single figures have been added into both totals.

RECONSTRUCTION PLANS AND SCHEDULING

Because of the short construction season and the severity of Alaskan winters, the Commission has carefully coordinated critical reconstruction project planning. These plans were developed by Federal, State and local officials in cooperation with the Commission staff.[19] In addition, staff representatives worked closely with OEP and the Department of Defense personnel in expediting work schedules.

The Commission has, however, avoided placing all work on a crash basis in order to lessen inflation pressures, discourage the importation of non-Alaskan labor and pace the reconstruction period for noncritical work. The Commission believes that this policy will strengthen the Alaskan economy. The Office of Emergency Planning estimates that about two-thirds of the P.L. 81–875 funds available to Alaska will be under contract by the end of 1964. By this time, at least one-third of the emergency reconstruction will be completed.

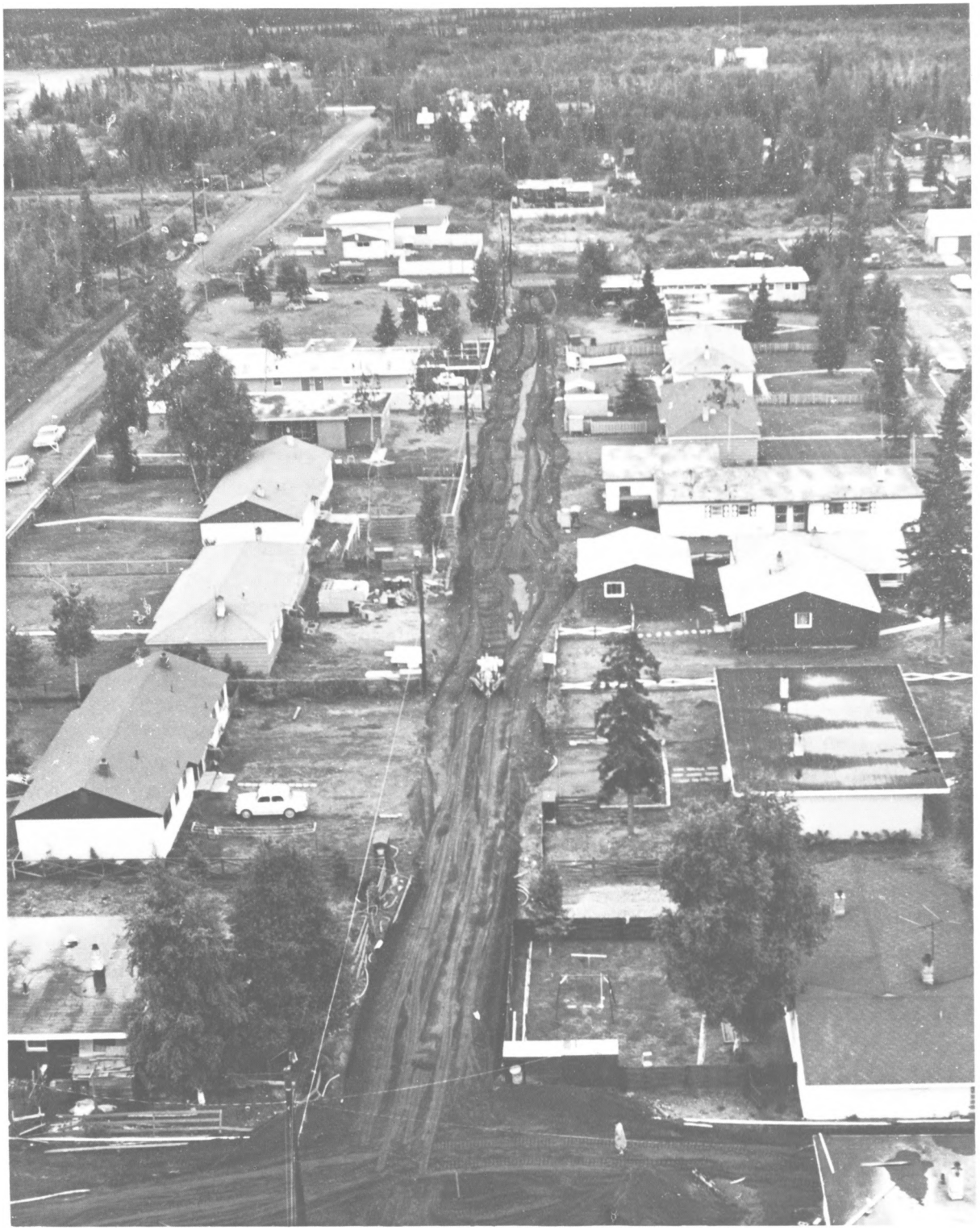
A pattern was followed during reconstruction planning in order to insure a sound reconstruction program. First, the responsible agencies made emergency repairs to the utilities and highways. Second, extensive geology and soils studies were made to determine where these facilities should be permanently reconstructed. Third, the projects were designed. (In order to expedite the reconstruction, project design often paralleled the soil studies.) Finally, proposals from potential contractors were evaluated and contracts awarded. Because of the short construction season, almost every step was telescoped in time over that normally required. The Commission has urged the use of double shifts, incentive contracts and more stringent project control methods, whenever necessary.

Water and Sewers

Top priority has been given to the restoration of water and sewer lines. Within a few days after the earthquake, emergency repairs were started by the Department of Defense at the request of OEP. Irrigation pipes were laid above ground and garden hoses connected to houses as a temporary water system in many areas.

Permanent reconstruction and restoration of all seriously-damaged water lines were scheduled for completion by early fall. All major breaks in sewer lines will be restored this summer and fall.

[19] See app. V for community reconstruction plan summaries.



Anchorage, Alaska: Turnagain Heights residential area——Permanent water line restoration progress as of August 13, 1964. In this area work commenced on July 9, and was completed in six weeks.

Portage, Alaska——One of the bridges which was wrecked by the earthquake.

Seward, Alaska——The damaged Alaska railroad yard on the waterfront. A major portion of the waterfront slid into the sea as a result of submarine land slides.

Highways

Except for the highway around Turnagain Arm and along Copper River, all highways have been temporarily repaired and can handle normal traffic loads at reduced speeds. Permanent reconstruction has been scheduled over a 3-year period. Reconstructing all damaged highways to present design standards would cost a maximum of $65 million. This figure includes the $29 million required for repair and replacement of forest highways, and $36 million for other highways in the Federal-Aid system.

A major problem is the highway which runs for many miles along the coast at the base of mountains around Turnagain Arm. Because of the general subsidence of land in that part of Alaska, much of the highway is flooded at high tide. The State Highway Commission, utilizing 94.9 percent Federal grant funds made available under the Omnibus Act, has made a major effort to raise the level of the road sufficiently to withstand the high tides expected in September, October and November of 1964. The high tides, accompanied by unfavorable winds, could tear out substantial portions of the road already restored.

Alaska Railroad

Alaska Railroad reconstruction is being accomplished by internal resources, by contract and through the Corps of Engineers (Seward port facilities). Excluding the Seward facilities and the rail line from Portage to Seward, the railroad will be restored to prequake standards by the end of the year. The railroad is currently carrying more freight than last year at this time.

The railroad around Turnagain Arm, however, is confronted with inundation following high tides this fall similiar to the problem of the highway. Land subsidence has placed much of the track below water level, but the roadbed is being raised and armored with riprap as rapidly as possible, in a race against the high fall tides.

Schools

Repair of most of the schools will be finished in time for the 1964 fall term. Where permanent new buildings are required, however, completion is scheduled for the opening of school in 1965. Double shifts will be necessary in only two or three schools this fall as a result of earthquake damage.

Airfields

Because air transportation plays a major role in Alaska, airport facilities had to be restored as rapidly as possible. Accordingly, the Federal Aviation Agency effort was directed toward the repair, either permanent or temporary, of FAA-owned and operated air navigation and traffic control facilities. Almost all of the FAA facilities were operable within nine hours after the earthquake.

Although the runways and taxiways at Anchorage International Airport were operable, the earthquake destroyed the traffic control tower. Emergency measures were taken immediately; and within an hour, air traffic was being controlled from an FAA-owned aircraft parked on the field. Later, a temporary traffic control tower was established at Lake Hood. This facility will be used until the new traffic control tower is constructed this fall.

In the Seward area, a mobile air

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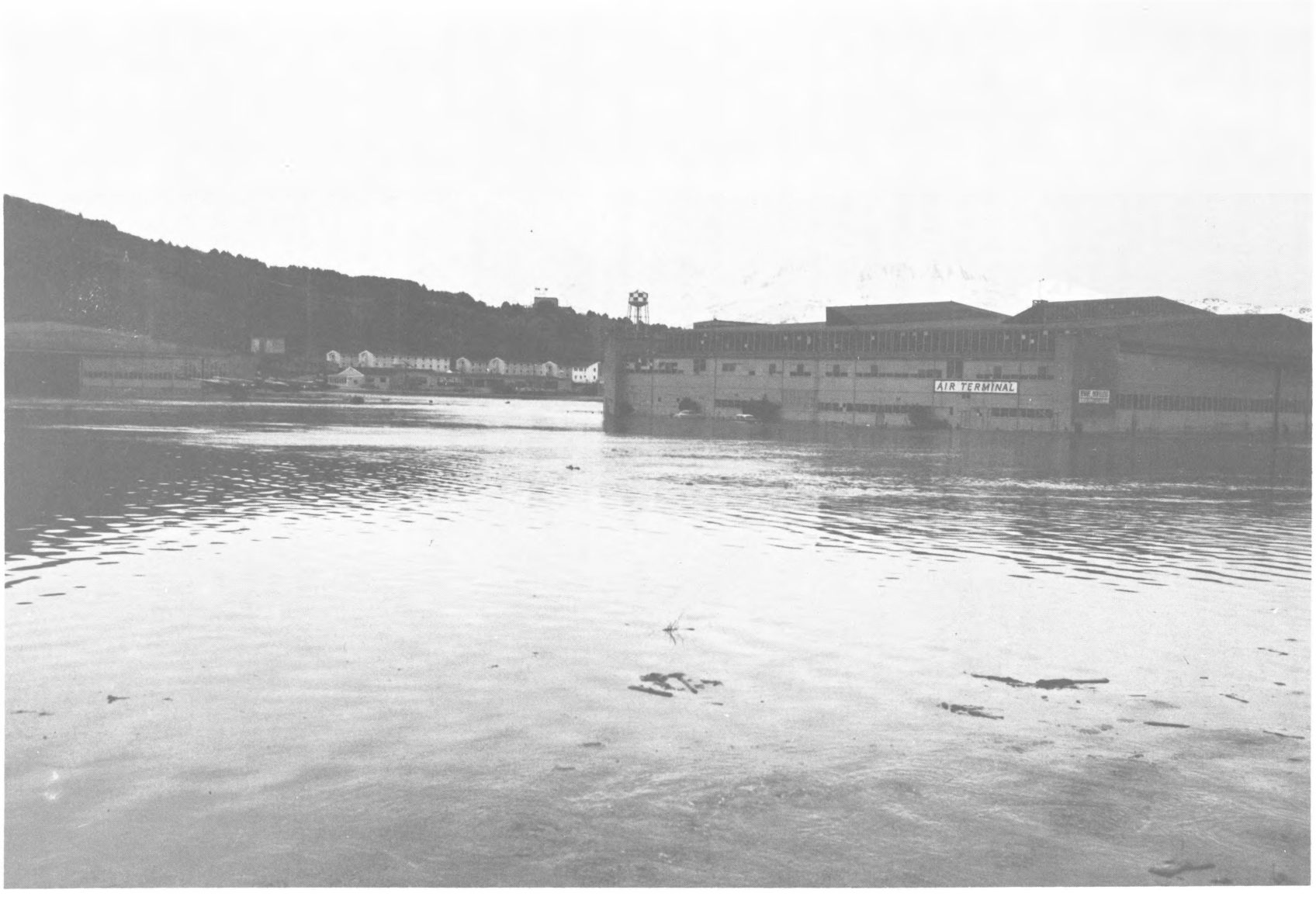


Kodiak, Alaska——Tidal wave in the hangar area at the Kodiak Naval Station. Kodiak Island sank more than 5 feet.

traffic control tower was also established. Destruction of harbor and railroad facilities, and severe damage to the Seward-Anchorage road link, made air transportation the chief means of support in Seward for 40 days. FAA also repaired communications systems used by the Weather Bureau.

Considerable FAA effort has been devoted to the inspection of remote airfields and the development of plans for repairing the nine State or municipally-owned fields. Most of the necessary repairs will be completed this fall.

Ports

Port facilities are vital to the economy of Alaska, and their reconstruction has been assigned a priority second only to that of water and sewers. Almost all of the goods going to and from central Alaska pass through these port facilities. Further, the economies of most of the small towns in this area depend heavily upon the fishing industries and require docks and small-boat harbors for their existence.

Planning for small-boat harbor construction has been complicated by delays in the passage of the Omnibus Act brought about by prolonged consideration of certain amendments. However, the design has not been delayed and restoration work is about to begin.

The first objective has been to proceed fast enough with construction to provide limited protection for small fishing boats during this winter. Completion of the harbors is scheduled for winter or early spring, in order to be ready for the spring fishing season. The Omnibus Act authorizes expansion of harbors in several communities beyond that which existed at the time of the earthquake. (Funds had not yet been appropriated at the time of this report.) Dock rebuilding schedules are similar to those of small-boat harbors.

Power

The largest nonmilitary power project in Alaska, the Eklutna Hydroelectric Project, received only minor damage and was able to continue normal operations after the earthquake. The second largest nonmilitary generating plant, the Cooper Lake Project of the Chugach Electric Cooperative Association, also received only minor damage although there was major damage to part of the Anchorage transmission line. The line has been restored on a temporary basis. Service to Kenai Peninsula was not interrupted.

A number of the smaller power plants in the earthquake area were damaged; but, service was quickly restored through inter-connections with other sources, and through utilization of mobile-generating units provided by the military. Immediately following the earthquake, the Federal Power Commission sent a team of engineers to Alaska. The resulting FCC report was given to all agencies concerned.

URBAN RENEWAL

The Federal and State reconstruction efforts have incorporated urban renewal project planning for Anchorage, Cordova, Kodiak, Seward, Seldovia and Valdez. The Urban Renewal Administration, the Alaska State Housing Authority, and the several communities have cooperated very closely with each other in order to har-

Homer, Alaska——The Spit after the land subsidence which followed the earthquake. A temporary dock has been constructed at left.

Valdez, Alaska——The remains of the Valdez waterfront.

monize long-range urban development needs. The urban renewal project will provide earthquake-damaged communities with better land utilization, the removal of blighted areas, and more effective traffic patterns. The proposed Anchorage project also includes soil stabilization measures designed to protect millions of dollars of property adjacent to the earthquake slide areas. The Valdez projects accommodate a change in town sites. Urban renewal application and planning procedures which normally take 18 months to 2 years have been telescoped into 3 or 4 months to meet these urgent community needs.

AID TO THE PRIVATE SECTOR

The State's credit position and the need to maintain a flow of private capital were of a major concern following the earthquake. This was expressed by witnesses who appeared before the Federal Commission on April 8. Mr. Elmer E. Rasmuson, president of the National Bank of Alaska, said:

> * * * the local lending institutions simply do not have the capacity to handle this rebuilding job * * * We must keep the flow of capital coming into Alaska * * *

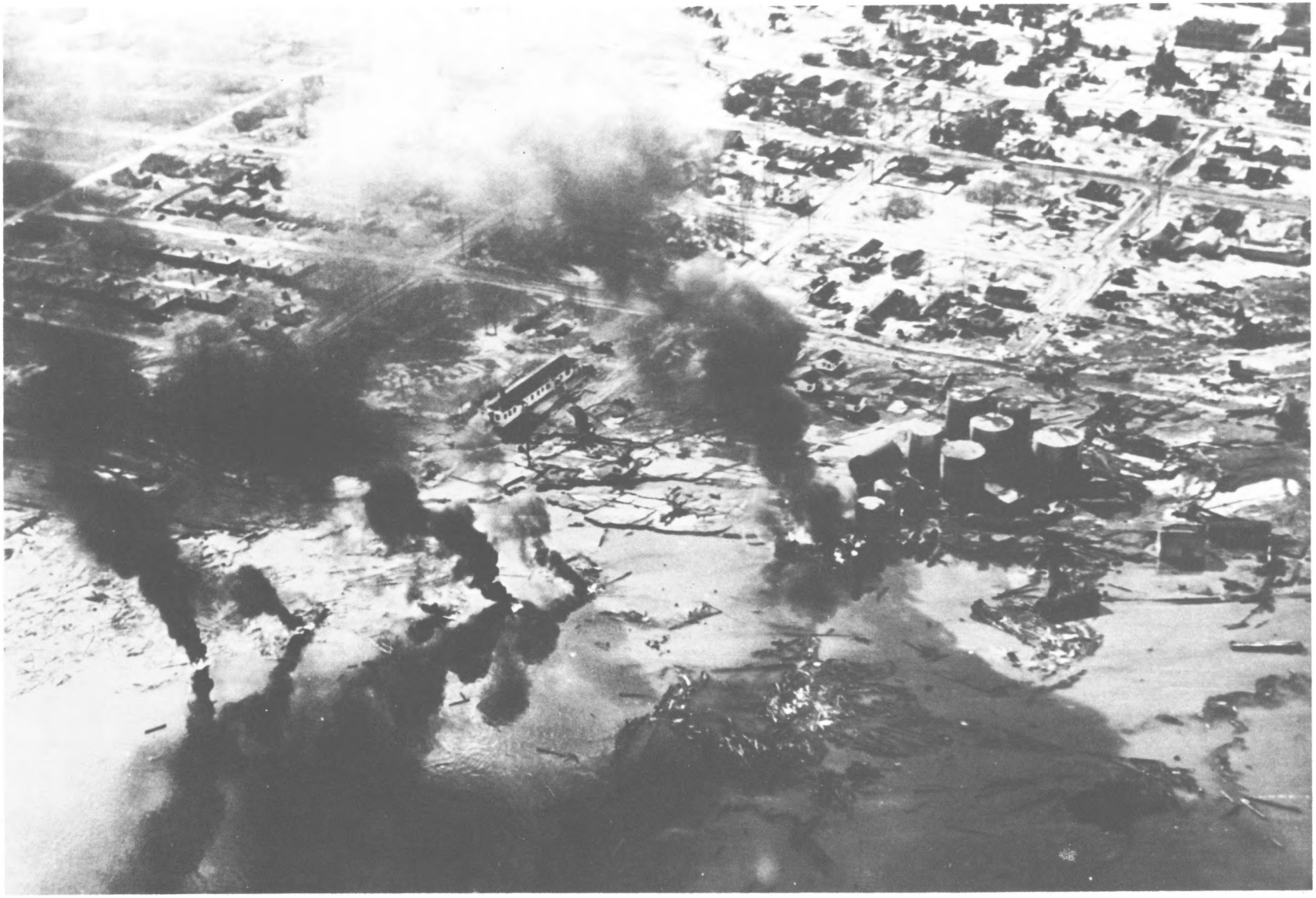
The Federal Government clearly recognized this necessity. The prompt assistance provided by the Federal Government to the State and local communities was a direct buttress to the State and local governments. Indirectly, it also aided the private business community and individuals as well. But more than this was required to save the individual citizens and business enterprises adversely affected by the earthquake. Accordingly, the Commission urged those Federal agencies which could render assistance to individuals and businesses under their existing statutory authority to provide financial support as quickly as possible.

The agencies responded by liberalizing normal disaster aid policies. Federal agency representatives were sent to Alaska to advise and consult with those needing help. Wherever possible, Washington offices authorized immediate local processing and/or approval in order to reduce time normally required for such action.

The Small Business Administration, the Rural Electrification Administration, the Farmers Home Administration and the Bureau of Commercial Fisheries are providing $60 to $70 million in loans. Many of the loans (disaster-related) will be made at an interest rate of 3 percent (2 percent in the case of REA loans) and for longer terms than would be normally available under these Agency programs. The various Federal aids on outstanding loans will mean a $7 to $10 million Treasury subsidy for debtors.

Prior to passage of the amendments to the Omnibus Act, the Federal National Mortgage Association and the Veterans Administration established a new precedent by agreeing to release mortgagors from further obligation under existing mortgages where the property securing such mortgages had been destroyed. The mortgagors were required to make a token payment of $1,000 on the outstanding mortgage balance in order to qualify for this relief. It was hoped that private lenders would also adjust their mortgages.

The Small Business Administration for the first time granted forebearance on the principal and interest payment on its loans for the first year and on



Seward, Alaska——The waterfront the day after the earthquake.

principal for another 4 years. Also, for the first time, it provided for amortized loans on a 30-year basis, using the 20-year maturity plus a 10-year extension for orderly liquidation.[20]

Further, in early May, the SBA agreed to make loans up to 30 years, at 3 percent interest, to finance new homes for owners who wished to rebuild. These loans could also include the $1,000 payment which was required under FNMA and VA mortgage forgiveness programs. SBA also offered the same terms to homeowners where private mortgage lenders made similar settlements on totally-destroyed or irreparably-damaged properties. Although homeowners lost their equity, the liberalized loan policy in many cases would make the monthly home payments on new homes about the same as before the earthquake, despite the assumption of the new debt.

The Farmers Home Administration for the first time also made available 3 percent emergency housing loans to rural residents in the earthquake area on long terms, and offered to adjust indebtedness of the borrowers. The Federal Housing Administration agreed that where an FHA-insured loan is involved, the lender could turn the property over to the Federal Housing Administration for debentures, thus releasing the original property owner from his obligation. FHA would issue debentures equal to the unpaid balance of the mortgage less the estimated cost of restoring the property.

Immediately following the FNMA and VA mortgage forgiveness announcement, several of the larger lenders indicated informally that they would be willing to settle some of their outstanding mortgages on a case-by-case basis. In this way, lenders could recover a portion of their losses through income tax deductions. A high-loss year, as a part of the 3-year average on which tax-exempt reserves are based offered additional tax advantages. On the other hand, foreclosure action and pursuance of deficiency judgments involve substantial legal costs with collection potentially difficult or in some cases impossible.

Most lenders, however, held back any broad action in the expectation that some Federal assistance would be forthcoming. Section 57 in the amendments to the Alaska Omnibus Act provides this assistance.[21]

Alaskan businessmen and homeowners may obtain further relief by using property losses as deductions from income subject to the Federal income tax. The Internal Revenue Service extended the April 15 deadline for application of tax rebates against the 1963 (or earlier) income tax, or against the 1964 estimated tax. The total refunds will depend on the property damage estimates and on the effective income tax rate applicable to owners of damaged property. Estimates range from $20 to $30 million.

LONG-RANGE ECONOMIC DEVELOPMENT PLANNING

Economic Factors

Although attention during the weeks following the earthquake has been focused on reconstruction, President Johnson, Senator Anderson and Gov-

[20] See amendments to the Omnibus Act for liberalization of this authority.

[21] See amendments to Alaska Omnibus Act.

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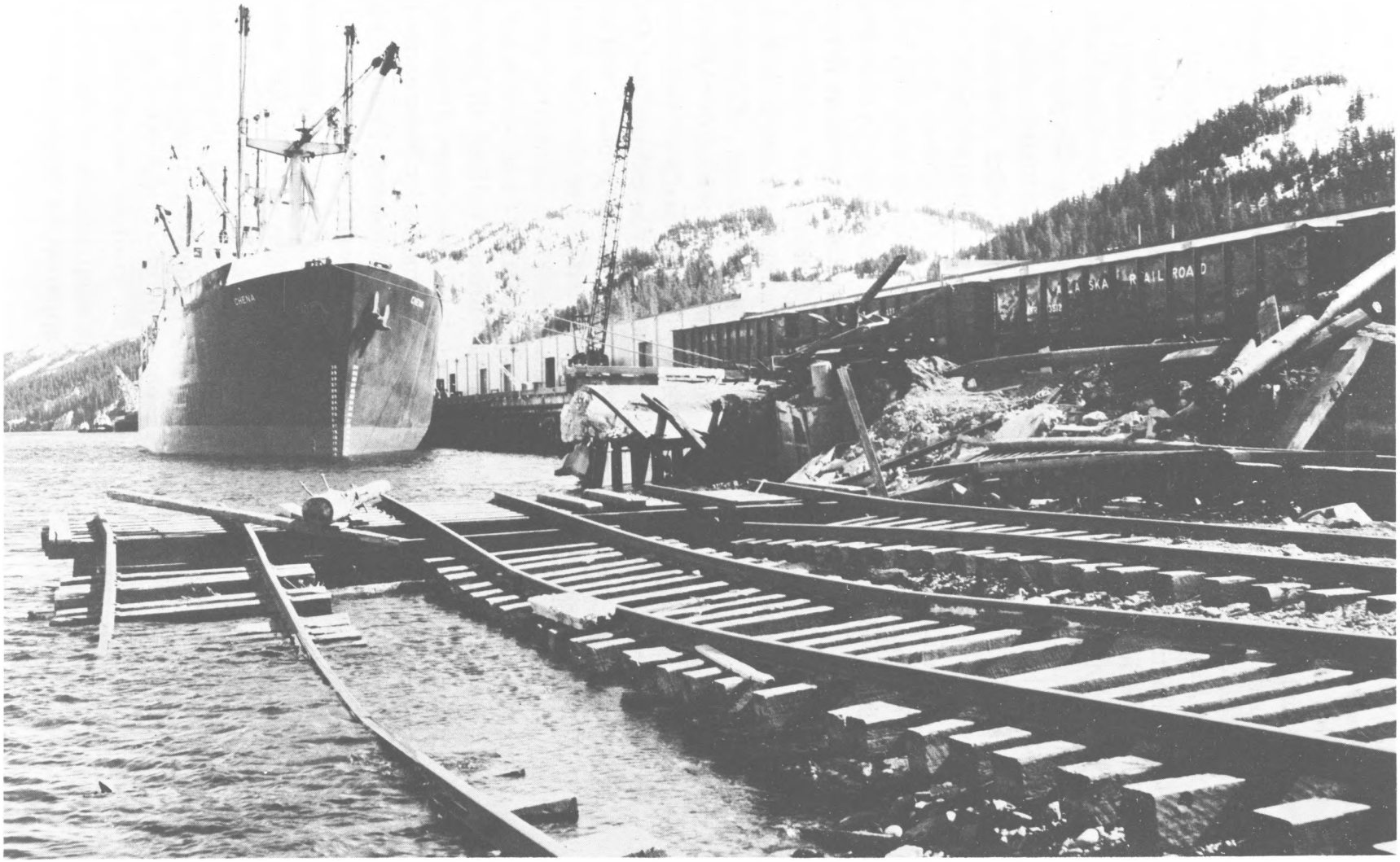

Whittier, Alaska——Part of the railroad track at the port after tidal waves which followed the earthquake.

ernor Egan have stressed the need for long-range economic development planning. Alaska is a unique State with huge timber and fishing resources. Alaska's great area and small population, however, have meant scattered and relatively limited domestic markets. Furthermore, climatic conditions have made many industries highly seasonal. More than in any other State, Government employment and activities are the dominant force in the economy. Alaska was faced with difficult economic problems before the earthquake.[22] Concern over Alaska's capacity to sustain a viable economy had been voiced during the debate which preceded statehood in 1959.

Prior to 1940, the Alaskan economy was based on extractive industries—primarily minerals, fish and furs. But the Alaskan nonmetallic mineral industries have been transformed, during the last two decades, from an exporting industry to an industry primarily for domestic use—worth approximately $10 million annually. Coal, sand gravel, and crushed stone constituted the major part of Alaskan nonmetallic mineral production until 1961 when petroleum products shot up from 5 to 50 percent.

Although exact knowledge of the State's mineral resources are unknown, it is widely held that these resources are vast. Oil exploration activity has been increasing during the past few years. Production of gold and copper has decreased and metallic mineral production now amounts to less than $5 million a year. This production is primarily for export. Most of the known mercury and platinum deposits are presently not economically available.

Approximately 75 percent of Alaska's manufacturing activity is concentrated in the two industry groups: fish canning and forest products. Most of the remaining 25 percent of the State's manufacturing falls within three other industry groups—concrete products, printing-publishing and food processing other than fish canning, which includes dairies and bakeries. Agriculture, however, yields less than 1 percent of the aggregate personal income in Alaska.

Alaska imports more than 90 percent of its requirements. This imbalance of shipments is caused by the relatively heavy requirements of military bases and service-type industries. Centralization of military bases and civilian government offices in the Anchorage area has encouraged the growth of commerce, trade, and service industries here. Almost half of all personal income in Alaska comes from wage and salary payments by Federal, State, and local governments; Federal agencies provide two-fifths of the total. Nationally, all government wage and salary payments account for only one-seventh of the personal income. A substantial share of the remaining income is derived from Federal purchases of goods and services from the Alaskan business community.

The deep impact of Government is also apparent in employment. Of the

[22] *The Land Resources of Alaska*, Hugh A. Johnson and Harold T. Jorgenson, ch. 1.

approximately 90,000 people employed in Alaska in 1962, 32,435 were in the Armed Forces and 23,900 worked in other Government capacities, mainly for Federal agencies.

Much of Alaska's present hope for economic development lies in exploiting products wanted by Asiatic nations, particularly Japan. The Japanese already are operating one pulpmill and one sawmill in southeast Alaska. Under a special 1964 agreement they bought salmon from fishermen in Prince William Sound.

Future Planning

Awareness of Alaska's economic problems long before the earthquake prompted State officials to propose a joint Federal-State economic development program in the fall of 1962. On October 31, 1962, President Kennedy informed Governor Egan and the Alaska Congressional Delegation that their proposal for an Alaska Resources Development Commission "is consistent with our objective of assuring coordinated long-range planning for the development of all our natural resources and for taking appropriate Federal and State action to assure sound economic development and growth." [23]

In 1963 it was agreed to establish a Federal Development Planning Committee for Alaska. The Committee was to have been chaired by a full-time Presidential appointee. Seven representatives from major Federal agencies operating in Alaska would comprise the membership. The Committee was to develop coordinated plans for Federal development programs in Alaska, and to make recommendations to the President, the Governor and interested agency heads. The State was to have established an Alaska Development Planning Committee comprised of State officers who were to work with the Federal Committee.

The disaster of March 27, therefore, found the Federal Government and the State of Alaska with the outline of a system for coping with Alaska's economic difficulties. This outline, served as a framework for Executive Order 11150, and embodied the objectives sought earlier by President Kennedy.

The reconstruction policy decisions by the Federal Reconstruction and Development Planning Commission for Alaska took into account Alaska's long-term needs. This was evident when the Commission recommended the reconstruction of rail facilities in Seward, the rebuilding of highways to modern standards, the relocation of the town of Valdez, etc.

As the reconstruction planning work is completed the Federal effort called for under Executive Order 11150 will turn to the economic and resources development planning of Alaska. The character of this long-range development will be very different from the emergency reconstruction phase. The pace will, of necessity, decrease and the emphasis will shift from construction planning and scheduling to economic study analyses and recommendations.

As a result, the Commission and the Bureau of the Budget have developed an organizational concept which fits

[23] Telegram from White House dated Oct. 31, 1962, to Governor Egan and the Alaska Congressional Delegation.

Kodiak, Alaska——SS *Victory Maid* and *Lucky Star* in boat harbor 1 hour before the earthquake and seismic waves struck the town.

Kodiak, Alaska——SS *Victory Maid* in Kodiak boat harbor shortly after the earthquake and tidal waves. The *Lucky Star* disappeared and has never been found.

the requirements of this phase.[24] For example, the focal point of the Federal organization will shift from Washington to Alaska. The State role in the planning phase will be a very active one, and the State Commission may also wish to modify its structure. Both the State and Federal Governments will be concerned with planning for the entire State, not just the disaster area. This long-range planning should move forward at once, building upon the momentum developed in the course of reconstruction.

RECOMMENDATIONS

1. In order to minimize destruction and loss of life in future earthquakes, the Federal Commission offers the following recommendations:

a. Conduct additional research on earthquake prediction techniques and on the propagation of seismic waves on land and sea.

b. Establish a seismic sea-wave warning system in Alaska to provide the earliest possible warning to coastal areas of that State. The Honolulu service is wholly inadequate when an earthquake occurs in or near Alaska. It is necessary to improve and extend our sea-wave warning system in order to predict the magnitude of the wave, as well as the time of arrival.

c. Utilizing all available information, initiate an earthquake hazard study of those populated areas within the U.S. portion of the circum-Pacific seismic belt which are of special interest from engineering, geologic and seismic standpoints. Principal types of earth materials should be classified with respect to recorded seismic activity, their probable response to seismic shock and the likelihood of damage to buildings.

d. In those coastal areas in which dock and other port installations are subject to potential sliding, undertake coastal and marine geologic studies to assess potential hazards and develop recommendations for protective measures, or abandonment, as appropriate. In addition, further studies should be devoted to gaining an understanding of the mechanics of submarine landslides and the resultant local turbulent wave actions which cause excessive damage. Also, in areas potentially jeopardized by precipitous mountain terrain similar geologic studies should be made.

e. Review the experience gained in Alaska and study building damages in order to develop any new criteria which might result in more effective or advanced building codes and zoning plans for seismic areas. More emphasis should be given to effective enforcement of current standards as recommended by Task Force Nine in Appendix II.

f. The U.S. Coast and Geodetic Survey, the U.S. Geological Survey, the National Academy of Sciences and other scientific and technical organizations should be urged to improve existing seismic equipment and develop more responsive automatic instrumentation. The experience of the Alaskan disaster pointed out very dramatically the need for more

[24] Letter to the President from Senator Anderson and Bureau of Budget Director Kermit Gordon, dated Aug. 20, 1964; and letter from the White House to Senator Anderson and Director Gordon, dated Aug. 26, 1964.

and better instrumentation. If one considers instrumentation developed for navigation aids, guidance and control systems by the combined military establishments and the National Aeronautics and Space Administration, this nation's present seismic equipment could be considered at least one generation behind.

g. Review Federal aid policies for hazardous areas. It is impossible and often undesirable to avoid private or public construction in all areas in which there may be some slight risk of a future disaster. However, in those areas which engineers or scientists regard as particularly hazardous, Federal policies ought not to encourage further development. To do so is to help perpetuate an unnecessary risk to life and property.

h. Discuss with Japan methods of relief and reconstruction. Japanese earthquake seismologists and engineers visited Alaska soon after the March 27 earthquake to analyze its effects. At this time, they offered not only technical assistance in the form of personnel, but also workable instrumentation for the detection of after-shocks. Discussions with Japanese officials indicate an interest in exchange of information concerning earthquakes and reconstruction policies in the two countries. Such exchanges should be encouraged.

i. There is much evidence that under the auspices of UNESCO a worldwide effort is being mounted for active participation in analyzing earthquake phenomena and for sharing information among participating nations. At a recent meeting in Paris, participating nations agreed that such meetings and exchange of information would be on a continuing basis. International cooperation in earthquake warnings and scientific studies of earthquake dynamics should be encouraged. The possibility of expanding the United Nations' role in this area should also be carefully considered.

j. The activities of the Commission and the participating agencies should be examined to determine if this experience indicates desirable modifications to P.L. 81–875 to insure the most effective Federal response possible to future disasters.

k. The unique approaches utilized to meet the Alaskan disaster should not necessarily be used as precedents for other disasters. The work of the Commission, however, underscores the importance of the President's desire for a prompt and thorough review of Federal assistance policies and programs for the private sector. This should include study and consideration of the possibility of adequate, private, disaster insurance coverage (earthquake, flood, or other) at reasonable costs.

l. A study should be made to develop recommendations for improving Federal Government natural disaster planning. Practical measures for minimizing damage and loss should be identified and developed in advance and their adoption by both the private and public sectors should be encouraged. Even a nominal amount of such advance planning might substantially reduce the severity of loss if realistically related to

those areas of the United States known to be particularly vulnerable and exposed to specific types of natural disasters such as earthquakes.

m. Where properties in a disaster area are in continuing danger of damage which would constitute a hazard to people, authority should be given to an agency by which appropriate protective measures could be taken such as the moving of buildings to a new site.

Kodiak, Alaska——The Kodiak marginal pier flooded by high tides after the land subsided following the earthquake.

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Reconstruction and Development Survey of Earthquake Damages in Alaska. The Alaskan Construction Consultant Committee for the Federal Reconstruction and Development Planning Commission for Alaska, 1964.

(Review of damages resulting from the earthquake and the seismic and tidal waves; a study of selected communities damaged by fire and general land uplift or subsidence; special studies of highways, Alaska Railroad, and labor situation; and deliberations on reconstruction priorities.

Scientific and Engineering Task Force Report. Task Force 9, 30 Day Report, May 27, 1964, prepared for the Federal Reconstruction and Development Planning Commission for Alaska.

(A review of the present activity and the long-term scientific and engineering programs relating to geology, seismology, geodesy, oceanography, cartography, and engineering design in Alaska.)

Types of Assistance Available to Alaska From Federal Departments and Agencies. Office of Emergency Planning, Executive Office of the President, Edward A. McDermott, Director, for the Federal Reconstruction and Development Planning Commission for Alaska, April 6, 1964.

(Brief, tentative estimate of the status of individual resources in the damaged areas of Alaska, together with a listing of the principal types of Federal assistance available under Public Law 81–875 and under the statutory authorities of the various Federal departments and agencies.)

APPENDICES

Appendix I

THE FEDERAL COMMISSION'S TASK FORCES AND THE ALASKA FIELD COMMITTEE

I. Task Forces

At a meeting of the Federal Reconstruction and Development Planning Commission for Alaska on April 7, 1964, agreement was reached to establish eight special task forces composed of representatives from selected Federal agencies.

Each of the task forces was given one specific area to study in order to assist the Federal Commission in developing coordinated reconstruction and long-range development plans for Alaska. These task forces were:

1. Community Facilities
2. Economic Stabilization
3. Financial Institutions
4. Housing
5. Industrial Development
6. Natural Resources
7. Ports and Fishing
8. Transportation

A Scientific and Engineering Task Force was established a short time later, after the need for this type of task force became evident. A complete review of its activities is contained in Appendix II.

II. Alaska Field Committee

At the Federal Commission's meeting on April 7, it was decided that a field committee should be established in Alaska within the framework of the Commission. The membership was composed of representatives of agencies serving on the Federal Commission which have staffs in Alaska.

This committee provided coordination at the field level for those problems which cut across agency lines of responsibility. It helped to bridge the geographical gap of over 3,000 miles between Washington and the site of the reconstruction effort in Alaska. Through the field committee, information concerning the progress of reconstruction was forwarded directly to the Executive Director in Washington at the same time it was moving upward through channels in the responsible agencies. Problems in one agency affecting the work of other agencies were flagged at an early stage for both the interested agencies and the Commission.

Although the field committee did not have authority to direct actions of the various agencies, the drawing together of agency representatives in the field committee was one method of coordination used by the Federal Commission. As the design phase neared completion, special project management sessions were called by the chairman of the field committee involving those agencies having responsibility for reconstruction of public facilities. Primary purpose of these sessions was to flag problems and agree upon action to be taken.

TASK FORCE MEMBERSHIP

COMMUNITY FACILITIES

Crow, John O., Deputy Commissioner, Bureau of Indian Affairs, Interior
Lund, Chester B., Office of Field Administrator, Health, Education, and Welfare
Phillips, Robert Y., Director, Government Readiness, Office of Emergency Planning
Wadsworth, John G., Deputy Assistant Commissioner for Buildings Management, General Services Administration
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* The majority of the Commission staff were on loan part time from other agencies.

Appendix II

REPORT OF THE SCIENTIFIC AND ENGINEERING TASK FORCE

I. Organization

Task force.—Recognizing the immediate requirement for early geological, geodetic, and engineering data, Senator Clinton P. Anderson, Chairman of the Federal Reconstruction and Development Planning Commission for Alaska, established a Scientific and Engineering Task Force on April 25, 1964, with the following objectives as set forth in its charter:

> The first objective of the Scientific and Engineering Task Force is to advise the Commission immediately as to the physical parameters in Alaska which should be considered in connection with reconstruction, on the basis of information available now. These recommendations will be submitted to the Commission in a form applicable to reasonable, practical and economical reconstruction.
>
> The second objective for the Scientific and Engineering Task Force is to participate in the conduct of a scientific study. While it is recognized that a decision has not been made as to the manner in which the long-range scientific study of Alaska will be made, this task force fully endorses the need of such a study for the following reasons:
>
> This earthquake, one of the major ones of history, provides a unique opportunity to obtain and make widely known reliable scientific and technical data concerning the cause and effect of seismic disturbances. Concerted effort in the scientific and engineering investigation of the Alaska earthquake and its related phenomena should be executed. The study should include such things as methods to predict the initial shock and after shocks of future earthquakes, a better understanding of the geologic and geomorphic factors affecting earthquake damage, the development of more efficient seismological equipment, better understanding of the generation and propagation of seismic seawaves, better understanding of the engineering aspects of earthquakes, improvement and application of structural engineering criteria for earthquake-resistant structures, and the improvement and application of techniques for minimizing destruction and loss of life in the future.

Field team.—It immediately became apparent that the pressing problem was the establishment of criteria under which rehabilitation or new construction could be permitted. To meet the urgent requirement for geological and earth mechanics information and engineering guidance for zoning and reconstruction, the task force established a field team with headquarters in Anchorage.

The first objective of the field team was to develop plans for field studies pertinent to reconstruction. The second objective was to recommend areas suitable for reconstruction and to establish interim zoning and design criteria to guide construction in this earthquake-prone region.

The task force was authorized to draw on Federal agencies and their consulting services as required to augment members. In complete compliance with Executive Order 11150, the field team was required to work very closely with State, local, and Federal agency representatives in the field.

II. History

Immediately upon receiving word of the disastrous earthquake, each of the scientific and engineering agencies, i.e., U.S. Coast and Geodetic Survey, U.S. Geological Survey, and the Corps of Engineers, dispatched experts to the field to obtain firsthand information to serve as a basis for planning emergency studies in support of reconstruction. The studies and surveys include investigations of surface and subsurface geological conditions relating to construction, geological mapping, evaluation of the relations of tectonic tilting, installation of seismograph stations, analysis and interpretation of available seismological data; geodetic, oceanographic, and cartographic support; and large-scale soils exploratory work in affected areas. A complete summary of these and other planned studies and investigations by the various agencies is contained in the 30-day report of the Scientific and Engineering Task Force, dated May 27, 1964, a copy of which is on file in the Federal Commission office.

III. Zoning and Building Criteria

Purpose.—To provide a sound basis for establishing the zoning and engineering criteria on which Federal aid for reconstruction could be based, the Alaska District of the Corps of Engineers was assigned the responsibility for a program of soils explorations in Anchorage, Seward, Valdez, and Homer. These explorations are being done under contract with Shannon & Wilson, Inc., of Seattle and are being funded by the Office of Emergency Planning. The investigations were designed to (1) determine general composition and structure of the soils in which earthquake sliding occurred, and (2) mechanics of the slide failure. On the basis of such determinations, reconstruction procedures for each area were to be determined. The task force was assigned the responsibility of providing zoning and engineering design criteria in the affected areas. The field team, with prior consent from the task force and the Commission in Washington, was given authority to release maps indicating reconstruction zones for Anchorage and for the other cities mentioned.

Anchorage and vicinity.—The first release of zoning criteria was made on May 19, 1964, on a map of the Anchorage area. (See fig. 1.) Stipulated in this release was a statement that reconstruction involving Federal funds could be commenced in the areas shown as nominal risk, provided the engineering requirements of the 1964 Uniform Building Code as adopted by the International Conference of Building Officials and applicable to seismic zone 3 were followed. On the basis of such zoning or modification thereof resulting from completion of present engineering, geological, and seismological investigations, no Federal aid would be available for reconstruction in high risk areas. Nominal risk and high risk are defined on figure 1.

In the Anchorage area, the soils and geological studies were divided into four principal areas as follows: Fourth Avenue area, L–K Street slide area; Turnagain slide area; and, as a group, the isolated areas of Romig Hill, Government Hill, First Avenue, and Chester Creek.

As a result of the Shannon & Wilson studies in the Fourth Avenue area, it was determined that the area between Barrow Street on the east, E Street on the west, Fourth Avenue on the north, and the alley between Fifth and Sixth Avenues, could be made safe for new construction and for reconstruction provided the following measures or similar measures were taken:

a. There should be regrading of the area between First and Fourth Avenues and between E Street and Barrow Street to provide a uniform slope between First and Fourth Avenues; construction of a berm or buttress in the vicinity of First Avenue; and provision of subsurface drainage. A schematic drawing of the proposed grading and buttress is shown on figure 2.

b. In the design of reconstruction or new construction of buildings in the area south of Fourth Avenue, particular attention should be paid to the design of footings to make necessary provisions for anticipated lateral movement or differential settlement as provided for in the Uniform Building Code.

c. In the area between First and Fourth Avenues, new construction should be limited to minor structures with shallow footings.

The second Shannon & Wilson report dealt with the area west of E Street and down along Cook Inlet to Bootlegger's Cove. Based on that report, the area between F and I Streets and Fourth Avenue, and the alley between Fifth and Sixth Avenues was released to a nominal risk rating. At the same time, the area between E and I Streets and between Fourth and First Avenues, plus the small area between E and F Streets and between Fourth Avenue and the alley between Fifth and Sixth Avenues, could be released to nominal risk provided a buttress would be constructed along the base of the bluff near First Avenue between F Street and K Street extended and some drainage within the area would be provided. At the same time, it was initially believed that the area between I Street and Bootlegger's Cove could be stabilized only at an exceedingly high cost even if stabilization were technically feasible. As a result of these findings, it was determined that the area between I Street and Bootlegger's Cove should remain a high risk area, but that additional studies would be made to determine whether there is any possible means of salvaging this area.

Subsequent studies have indicated that the area between I Street and Bootlegger's Cove can be stabilized at reasonable cost by grading and berms within the area occupied by buildings. A small buttress will be required on the Cove side of the Alaska Railroad.

The third Shannon & Wilson report dealt with the Turnagain Heights area. On the basis of that report, a large residential area, which includes the Forest Park Golf Course and is located between Fish Creek and Romig Hill and north of Northern Lights Boulevard, and a small but valuable area south of Northern Lights Boulevard, was reclassified to nominal risk. The area east of the point at which the city boundary meets Cook Inlet was reclassified as provisional nominal risk which rating would change to nominal risk provided certain stabilization measures could be undertaken. It was originally believed that these measures would

probably consist of regrading all of the slide area and installation of a band of vertical sand drains in the regraded area. The sand drains, as initially tentatively planned, would consist of a series of vertical drains 18 inches in diameter, 80 feet deep, and spaced on approximately 8-foot centers over a band of approximately 250 feet wide extending the length of the regraded area. To provide a basis for final design of these stabilization measures, it was recommended that a test section, approximately 100 feet wide transversed to the excess of the belt of proposed sand drains, be installed and observed for a period of approximately 9 months to a year, to determine the effectiveness of the proposed remedial work and to provide a basis for design of the final remedial work.

Subsequent studies indicated that normal consolidation processes would increase the stability of the underlying clay just as quickly as the sand drains. For this reason only the grading portion of the initial plan is being retained.

The fourth Shannon & Wilson report covered Romig Hill, Government Hill, First Avenue, and other minor areas upon which reports had not been previously made. As a result of the findings of this report, nearly all of the properties in the Anchorage area for which preliminary recommendations had not been made previously, were found suitable for use subject to certain restraints. These restraints consisted primarily of restricting filling, prohibiting construction on or near the top of such slopes, and restricting any cutting so as to steepen such slopes. The Government Hill area and the Alaska Native Hospital area were released from high risk category except for the small slide area in the vicinity of Government Hill school. It was found that the stability of the Government Hill area and the Alaska Native Hospital area could be improved by simple grading and drainage and that such action would make it possible to salvage the community facility rooms of the Government Hill school. The school proper is to be rebuilt at a new location. The Romig Hill area, which includes West High School, was released to nominal risk with the cautions that fill should not be placed on top of the slope and that the meandering of Chester Creek be kept under surveillance to insure that the stream does not undercut the hill. Minor regrading was suggested as a measure designed to increase the stability of Hill Crest Road. The north and south sides of Chester Creek were also released from the high risk classification with the provision that, since these bluffs in the lower regions are founded on Bootlegger Cove clays, special considerations should be given to design to insure provision for lateral foundation movement or differential settlement. Although additional study is being made, the preliminary analysis also indicated that the slide in the vicinity of the Native Hospital could be stabilized economically.

This series of four preliminary reports in the Anchorage area completed the preliminary work in this area; the zoning restrictions resulting therefrom are shown on figure 3.

A final report which will include the data resulting from the surface and subsurface investigations pertinent to reconstruction will be made early in September. It is not expected that earlier recommendations with respect to zoning classifications will be materially changed. The final report will include detailed findings supporting the analyses and conclusions previously announced to the public.

Whenever an area was released for reconstruction or new construction, it was done with the distinct understanding that the design for and construction of such work would be in strict accordance with the provisions of the Uniform Building Code for seismic zone 3.

Preliminary designs for the protective work in the area between I Street and Barrow Street are being developed by the Corps of Engineers with authority and funds provided by the Urban Renewal Administration.

Kodiak.—Members of the field team made a site inspection of the damaged areas in and near the town and nearby military installations and reviewed a report by George W. Moore of the U.S. Geological Survey.

Damage at Kodiak and vicinity was caused by tectonic subsidence and flooding and by a nonbreaking sea-surge plus a small amount of subsidence due to compaction of sediment.

Short of another major earthquake whose effects as to uplift or subsidence cannot be predicted, there are no apparent geological or other reasons for expecting further trouble at or near Kodiak.

On this basis, the task force on May 28, 1964, endorsed plans already under way for reconstruction of the Kodiak town and harbor facilities and recommended Commission approval of the plans. This endorsement was, of course, subject to the requirement that all design and construction be in strict accordance with the provisions of Uniform Building Code for seismic zone 3.

Valdez.—Members of the field team inspected the existing town, the new temporary barge dock, and the proposed site for the relocation of Valdez. The reports by the U.S. Geological Survey and the Alaskan Highway Department were also reviewed in detail by the field team.

The present condition of nearly all Valdez buildings and facilities, the long history of flood troubles from the Valdez glacial stream, previous slides, and the instability of both on and offshore sediment, all argued strongly for abandonment of the present town. On the basis of the findings of the field team and the reports

prepared by the U.S. Geological Survey and the Alaskan State Highway Department, the task force endorsed the announced plan to abandon the present town of Valdez and to rebuild both the town and dock facilities at the old town site, 4 miles northwest of Valdez just east of the mouth of Mineral Creek. Subsequent Shannon & Wilson soils reports have confirmed the earlier findings. The endorsement was subject to the requirement that all design and construction be in strict accordance with the provisions of the Uniform Building Code for seismic zone 3.

Homer and vicinity.—On the basis of a detailed geological report on the Homer area, prepared by Roger M. Waller, U.S. Geological Survey, and on an on-site inspection of Homer and vicinity by members of the field team, it was recommended that lands in Homer and vicinity be classified stable, subject to moderate erosion or inundation, subject to accelerated erosion, and subject to high tides and potential slides. The definitions and extent of these classifications are shown on figure 4.

In assigning these classifications the task force recognizes that the Homer Spit is in serious condition due to maximum subsidence of about 6 feet (at outer end) and to apparent fractures on the outer end. Further earthquakes could possibily cause a renewed subsidence in places, as well as submarine slides off the end of the Spit.

Aggradation or degradation of portions of the Spit are to be expected to result in natural or artifical changes in its shape and consequent changes in erosion and sedimentation patterns. Bluff erosion, accelerated by the general lowering of the land levels near Homer, is endangering homes in the Millers Landing and Palmer Creek areas. In addition, there is a potential danger of earthflows in sections 10, 17, and 18, northwest of Homer, such as occurred in two similar canyons east of Homer.

The tip of Homer Spit along the Cook Inlet side of the Spit is classed as subject to high tides and potential slides. Danger from high tides, accelerated erosion, and potential slumps off the end of the Spit lead the task force to recommend against new construction or repair of existing structures other than highway, harbor, and dock facilities.

It is emphasized that the recommended classifications are made without complete knowledge of the future buildup or degradation of the Homer Spit by natural or artificial causes. For this reason, classifications of the Spit are considered temporary and possibly subject to change after a new pattern of erosion and deposition is established. In this connection, it should be noted that the Corps of Engineers has authorized a beach erosion control study for Homer Spit; however, it will be at least 2 years before final results of this study can be known.

Seward.—As a result of studies by Shannon & Wilson, Inc., on-site inspections by members of the field team and geologic investigations by Richard W. Lempke of the U.S. Geological Survey, the task force concluded that most of the damage caused by the Good Friday earthquake to the Seward waterfront was due to tsunami wave, fire, and major submarine landslides off the face of the alluvial fan on which Seward is built. The remaining waterfront is fissured and weak—almost as far back as Seventh Avenue. It is believed that another large earthquake might cause further sliding in this area.

On the basis of these conclusions, the major area of Seward was classified as nominal risk and the area between the waterfront and Seventh Avenue and extending northwest from Seventh Avenue and Monroe Street to near the lagoon area was classified as high risk. The definitions and risk areas are shown on figure 5.

IV. Recommended General Guidelines for Reconstruction

Geological.—The nature and extent of destruction resulting from the March 27 earthquake are directly related to the nature of the geologic environments affected and the way those environments reacted to seismic shock. An understanding of these relationships will contribute to intelligent planning for reconstruction and development.

It has been demonstrated that the damage in general can be attributed to land and submarine sliding, differential compaction due to vibration and lurching, regional (tectonic) subsidence and emergence, and both locally induced and tsunami effects. It logically follows that areas underlain by materials that are susceptible and subject to sliding and differential compaction should be avoided. If it becomes necessary to build in a slide area, special care should be taken to avoid loading the heads and/or unloading the toes. Any zones of fissuring at the heads of slides should be avoided with an appropriate margin of safety that can only be defined on an individual case basis.

The damage record of the earthquake clearly demonstrates the vulnerability of coastal areas. Throughout south-coastal Alaska, the most attractive and often the only level building sites are deltas or deltalike platforms that have been built by glacial or alluvial streams into fiords that serve as good, natural, deepwater harbors. Such constructional features commonly rest on seaward sloping bedrock surfaces and are underlain by water-saturated, unconsolidated sediments containing much fine-grained sand, silt, and clay. Their outer edges commonly extend to depths of hundreds of feet at high angles or

repose (e.g., at Whittier and Seward, forest slopes are as much as 35°, close to the highest angle of repose recorded for detrital sediments in quiet water). Such areas are highly susceptible to sliding, subsidence through differential compaction, and the destructive effects of waves. Reconstruction should go forward at these sites only after detailed and thorough surface and subsurface geologic studies indicate it is safe to do so. If possible, future townsites in bays and submerged, steep-sided valleys should be located on high ground and at places where they are protected from wave effects (i.e., behind large islands, etc.)

Regional uplift and subsidence may profoundly affect coastlines. Shorelines lowered with respect to sea level are more susceptible to the destructive force of earthquake-generated waves and subject to widespread inundation of coastal property. Uplifted areas have the usefulness of their channels, harbors, and other shoreline installations impaired; whereas the destructiveness of waves is likely to be less. Unfortunately, it is impossible to predict whether certain land areas will go up or down, or even whether regional land level changes will occur at all during the next earthquake.

The conclusion has long been held, based mainly on earthquake-effect studies, that the intensity of shaking of the ground is effected by the properties of the ground. Building sites on alluvium will sustain relatively strong shaking several times as long as those on crystalline rock. This ratio usually decreases with decreasing thickness of alluvium. Furthermore, ground effects may cause appreciable differences in duration and amount of movement at localities only short distances apart. In general, the amplitude of ground motion is markedly greater at sites underlain by thick, soft alluvium. These considerations make it important to fully assess ground conditions when construction is undertaken in any seismically active region, especially where unconsolidated materials are involved.

Engineering criteria.—The engineering criteria guidelines for reconstruction involve factors which are common for new construction as well as for reconstruction, both in Alaska and elsewhere. The guidelines are twofold: (1) Earthquake resistive design standards, and their intelligent application, and (2) construction practices which are geared to earthquake resistive design requirements.

To meet the need for earthquake resistive designs, local regulations should require strict adherence to the seismic zone 3 requirements of the 1964 edition of the Uniform Building Code as approved by the International Conference of Building Officials; these requirements are currently in force in Anchorage. It has been amply shown in Pacific coast earthquake experience, including California, that some of the complex earthquake resistive design aspects are not always thoroughly understood by all architects and structural engineers. Therefore, it would be appropriate for the local authorities to consult experienced structural engineers who are familiar with earthquake resistive design to assist in reviewing designs.

Our field observations indicate a definite need on the part of construction personnel, both craftsmen and inspectors, for a better understanding of exacting compliance with details of both drawings and specifications. Certain construction practices, peculiar to earthquake resistive construction, should be more commonly used. For example, close supervision should be given to hollow concrete block construction and to other unit masonry in order to assure that each workman places the reinforcing steel as specified, fills the cells with grout, etc. For another example, the practice of sandblasting construction joints, or chipping them, or using other methods to remove the laitance which materially contributed to the poured-in-place reinforced concrete wall damage should be encouraged. To assure these and other improved construction practices (for other than wood frame dwellings), it is necessary to have experienced field supervision by men having a structural engineering background.

From a safety point of view the construction of POL facilities without a ring dike around storage tanks should not be permitted.

V. Recommended Long-Term Scientific and Engineering Investigations

Geological.—Most of the geological investigations already in progress and being implemented by the Geological Survey involve field studies in Alaska that will continue through the coming summer season until weather conditions make further work infeasible. The extent to which the program should be extended into subsequent seasons will be largely dependent upon the results of this summer's field and subsequent laboratory studies.

In addition to investigations at the damaged communities, the Geological Survey has implemented an integrated program of regional investigations of the relationships between earthquake damage, geology, hydrology, and distance from the epicenter of the main shock. Emphasis is on the railroad and highway systems, building and utility damage, and on the response of various types of unconsolidated deposits to earthquake induced motions. It includes field and laboratory analyses of landslides, regional uplift and subsidence, and compaction, lurching, and fissuring in various kinds of earth materials affected by the earthquake.

A study of all available pre- and early post-

earthquake aerial photographs is being undertaken prior to field investigations to identify:

a. Fault breakage at the surface, if any.

b. Fissuring of the ground.

c. Orientation of pressure ridges and cracking in ice.

d. Landslides, rock falls, and avalanches.

e. Position of glacier fronts shortly after the earthquake.

Tectonic tilting and land-level changes are being studied throughout the affected region. In addition to evaluating tide gauge data and information from local residents on relative sea level changes, supplementary data is being obtained on the amount of change by comparing pre-earthquake sea level, as recorded by sessile littoral and shallow water organisms, with present sea level. Sea level sensitive vegetation features (such as beach and tidal bog surfaces) together with elevated or drowned geomorphic features should also prove helpful in evaluating relative sea level changes.

A system of relative bench marks has been established at a number of large lakes in the tectonically active areas of south-central Alaska. Periodic comparison of elevations between such bench marks and lake levels, in conjunction with tide gauge data in coastal areas and first order USC&GS level lines, will monitor future regional tilting.

The program of regional earthquake geologic investigations being undertaken will include an evaluation of the relations of tectonic tilting, seismic data, land level changes, and surface breakage by faulting (if found) to the pattern of tectonic elements in southern Alaska. The Geological Survey is in a unique position to do this in view of its many years of Alaskan geologic mapping experience and its continuing analysis of the geologic and tectonic history of all of Alaska.

In Resurrection Bay and Port Valdez, the submarine landslides which originated on deltaic deposits are to be investigated by—

Obtaining precision bathymetry from the main scarp to the toe of the submarine landslides, and to the toe of any associated turbidity current deposits. Some of the bathymetry has already been obtained by the Coast and Geodetic Survey but more will be needed by the USGS.

Conducting echo-probe or other sparker surveys of the submarine landslides.

Obtaining a series of cores and bottom photographs from the main scarp of the slides to their toes, and to the toes of any associated turbidites. The character of the transition from slide masses to any turbidities which may have been formed will be investigated.

Determination of the proportion of the fiord floors covered by precipitous sedimentation induced by the March 27 earthquake by bottom sediment sampling, supplemented by bottom photographs and by benthonic infauna population counts in Resurrection Bay, Port Valdez, and along a few selected traverses in other areas of Prince William Sound. (The effects of the earthquake on the benthonic infauna may be investigated by fishery research vessels; if so, their work will be closely followed by the USGS.)

Close comparisons of the composition of the earthquake-induced submarine landslides and any associated turbidites with the material in the original slide masses (as determined from drill holes near the main scarps of the slides) will be made. These sediments present an opportunity to compare the original composition of bodies of sediment with the composition of the submarine deposits they now form.

The possibility exists, in this sparsely populated area, of artificially initiating submarine landslides, and perhaps turbidity currents, by the use of explosives on steep-fronted fiord deltas. If such slides and currents can be induced, their velocity and other characteristics will be carefully studied by previously emplaced instruments.

The origin and effects of large waves (including locally generated waves and tsunamis) in the Prince William Sound and Kodiak Islands areas are being investigated by—

Studying wave trimlines and directional features indicating the path of destructive waves.

Gathering eyewitness accounts.

Assembling and evaluating the available tide guage data.

Examining possible ancient trimlines indicating past episodes of destruction by large waves.

Determine amounts of sand and other sediments removed from beaches, and effects of their deposition on bottom environments offshore.

Determine maximum depths at which waves have moved or affected bottom sediments.

Possible changes in the rate of flow and other characteristics of glaciers in the earthquake affected area will be determined by placing, and periodically surveying, stakes on selected glaciers, including those for which we already have control. In addition, aerial photographs of glaciers taken immediately after the quake are to be compared with historical records, older air photos, and other pictures as well as with future photographs and field observations.

The Geological Survey's regional investigations will include a reconnaissance of the entire

earthquake-affected region to record evidence of seismic effects upon water wells, springs, streams, and lakes. In addition to the direct effects of tremors, the hydrologic effects of landslides, coastal submergence or emergence, compaction of sediments, and overriding by tidal waves are being studied. Sites will be selected to evaluate the influence of physiographic changes upon the hydrologic regimen by detailing:

Effects of the earthquake upon streamflow, including water dissolved-load, sediment-load, and perhaps bed-load.

Effects of submergence and emergence of coastal areas, including degradation or aggredation of stream channels, channel realinements, changes in ground water occurrence, and changes in water quality.

Changes in the hydrologic flow system of the Anchorage area (including Matanuska Valley and Turnagain Arm to and beyond Portage) will be evaluated. Specific aspects to be studied include—

Storage.

Artesian pressure, as shown by water levels in wells.

Recharge (as suggested by seepage from streams).

Natural discharge (which might cause appearance or disappearance of springs).

Transmissibility (based on study of tidal effects).

Water quality (indicated by chemical analysis).

Seismological—improvement of the seismic sea wave warning system.—The system operated by the U.S. Coast and Geodetic Survey at the time of the Alaskan earthquake consisted of a nerve center in Honolulu, 26 standard tide stations, 4 automatic wave detector stations, 14 seismograph stations, and a communications network.

The communications network utilized by the system, including methods now used to disseminate warnings to the public, has been closely examined since the earthquake; and it is apparent that wholesale employment of the Weather Bureau's warning service, in addition to facilities now being used, would definitely increase overall effectiveness. The details of tying in the Weather Bureau's service are now being worked out as a priority matter. In addition, present reliability and effectiveness could and should be greatly improved by—

1. Educational program: Conduct an extensive educational program to inform and instruct authorities and the public regarding all aspects of tsunamis and the functioning of the sea wave warning system. Such a program will include the use of brochures, pamphlets, visual aids, lectures, demonstrations, etc., to emphasize the potential danger of tidal waves and earthquakes, and to educate the public regarding self-preservation methods and actions.

2. Additional seismic stations and equipment: Establish a remote 3-station array of seismic instruments on the island of Oahu, Hawaii, to immediately provide an azimuth to an earthquake epicenter and make possible its location within a few minutes rather than the hour or more now required by dependence on several distant seismograph stations. While this array will be extremely valuable for first approximation information as required to give earlier alerts and warnings, it cannot replace the distant seismograph station network required for final and accurate epicenter determination.

3. Tide station improvement: Install remote recording systems with automatic alarm at all existing tide stations to provide immediate tidal information to the observer, day or night. Observers now must actually visit the tide gage on a pier or similar structure over the water to get the wave information required by Honolulu, and this is very time consuming. Also, a comprehensive training program for observers (who in all cases are part-time employees) would be initiated, and regular maintenance inspections made at each installation.

4. Deep-sea tide gages: Establish five deep-sea tide gages at widely separated areas in the Pacific for telemetering information to shore stations. They will provide much needed deep-ocean wave and tidal data, which will substantially improve and contribute to the accuracy and efficiency of the warning system.

5. Promote increased international participation: Sponsor a comprehensive international program on the part of Pacific Ocean nations to: (*a*) Provide an effective, jointly operated warning system; (*b*) develope standard methods and procedures for analysis and transmission of seismic and tidal data to a common nerve center; and (*c*) cooperate in exchange of ideas and techniques for making possible detection and prediction of earthquakes and tsunamis.

6. Alaska sea wave warning system: Establish a local seismic sea wave warning system in Alaska to provide the earliest possible warning to coastal areas of that state. The Honolulu service is wholly inadequate when an earthquake occurs in or near Alaska. The proposed Alaska system will consist of seismic stations at Sitka, Anchorage, Fairbanks, and Adak, and the same tide stations used in the

Pacific system. It will independently provide inmmediate warnings to Alaskan coastal areas from nerve centers at Sitka and Anchorage.

7. Determine tidal datum plane changes in Alaska: Conduct surveys in Alaska to primarily determine areas of subsidence with respect to tidal datum planes, where danger from tsunamis is more acute than before.

Seismic sea wave research.—Establish immediately a Research Center at Honolulu, Hawaii, where national and international scientists can conduct basic and applied research toward the solution of problems associated with tsunami phenomena. Direction and administration of the Bureau's tsunami program would be its prime responsibility. Through resident personnel and the use of grants and contracts to university groups or private organizations, studies would be conducted in: (1) Hydrodynamics of wave generation and propagation; (2) compilation and interpretation of "runup" data; (3) analysis of tide gage records for evaluation of tsunami energy; (4) physical and computer model studies; (5) study of earthquake focal mechanism; (6) fault plane with relationship to tsunamis; (7) magnitude and energy of earthquakes as related to generated tsunamis; and (8) others as required.

Improvement of the Alaskan seismic station network and the use of portable stations.—It is proposed that new permanent seismic stations be constructed at Adak and Anchorage, and that additional seismic instrumentation be installed at the Sitka and College, Alaska, stations. These stations would provide the basic input for the Alaska sea wave warning system and also yield much needed data on the seismicity of Alaska. The use of two or more deep sea seismometers should be considered for the southeast Alaska area. For accurate location of earthquake epicenters, control is necessary on the seaward side of Alaska. This information has never been available in the past. Because of recent advances in instrumentation it is now possible to install seismographs of this type.

It is proposed that five sets of completely portable equipment be kept constantly in use in Alaska to monitor aftershock and (possibly) foreshock activity in selected regions. One of the most promising approaches to earthquake prediction is the interpretation of the seismic background noise of small earthquakes in earthquake prone regions. In conjunction with this approach it is proposed to establish a deep hole and surface seismic listening post on an active fault in southeast Alaska in order to study the seismic noise in great detail.

Determination of crustal velocities and structure.—It is proposed that comprehensive program of seismic refraction work be undertaken in the Prince William Sound-Anchorage-Kodiak area so that the crustal velocities and layering in this region can be accurately determined. These data would provide the knowledge of the tectonic setting of the area which is essential for a comprehensive research program. It would greatly enhance the interpretation of the aftershocks data already available by removing the ambiguity inherent in focal depth and epicenter calculations.

A strong motion network for Alaska.—A network of approximately 20 strong motion seismograph stations is essential in order to establish building codes and outline the best possible locations for expansion of building facilities throughout Alaska. Until the recent installation of a very limited number of strong motion seismographs in Alaska, no information on earthquakes induced ground accelarations or periods was available.

To date, location of strong-motion seismographs has been mostly in urban areas and has been dictated by need for quantitative data to guide design of structures. In future planning, consideration should also be given for location of strong-motion seismographs to obtain ground magnification factors and to obtain data on attenuation and character of motion near faults. Consideration should also be given to development of suitable and economically feasible instruments to record structural response during earthquakes.

It is recommended that a long range study of the engineering and scientific aspects of building damage in Anchorage, both from a design standpoint and from a construction standpoint, be implemented.

Strain seismometers.—Strain seismometers should be installed in suitable underground facilities in active fault regions to gather information of strain and to ascertain the usefulness of these instruments in earthquake prediction.

Tiltmeters.—A network of tiltmeters should be installed in the epicentral area of the recent earthquake to determine if regional tilting is continuing and to find out if tilting occurs before and after larger earthquakes.

Geodetic, oceanographic, and cartographic.—Comparisons of geodetic measurements and the differences of horizontal and vertical coordinates provide the most accurate means of locating the surface faulting and determining the magnitude and direction of crustal movements or displacements. The existing geodetic networks in southern Alaska contain several hundred triangulation stations that have been adjusted to a common datum. The portion of this network that has been disturbed by the earthquake should be resurveyed as soon as possible, and then resurveyed again at periodic

intervals (5 to 10 years) for the purpose of detecting continuing crustal movements. The same requirement exists for the vertical control networks.

These nets are interconnected so that a three-dimensional analysis can be made. Planning for the future should make maximum use of analytical photogrammetric techniques combined with geodetic measurements for crustal movement studies.

Geophysical studies in the area require oceanographic support. Major oceanographic vessels should continue the task of resurveying the numerous channels and water passages in southern Alaska. While collecting the data required for the revision of hydrographic surveys and the charts of the area, the ships can collect gravimetric and geomagnetic data to be combined with similar measurements made on land. These measurements, with the seismic data for the area, would provide the basic information needed for a complete geophysical model.

The revision of the charts and maps of the area must be continued. The hydrographic, geodetic, and photogrammetric surveys must be completed in support of this charting program. Color photography should be used to assist in the delineation of the shoal areas and to provide the maximum interpretations of physical detail.

The long-range aspect of these survey programs must be emphasized. A well-planned program for repeating surveys at 5- or 10-year intervals would divide the area geographically into small segments in which the fieldwork could be completed in one season. Thus, after several seasons the complete cycle of a resurvey would be completed.

Engineering structures and design.—The 1964 edition of the Uniform Building Code as adopted by the International Conference of Building Officials (Los Angeles) is comprehensive for structural design, and if followed, should result in structures capable of resisting collapse due to earthquakes of anticipated magnitude. However, there are several areas where additional studies should be encouraged:

a. The interactions between certain types of multiple-story shear walls for the purpose of developing design data.

b. The base shear distribution to upper stories of tall buildings to include a consideration of the degree of flexibility which exists in such buildings.

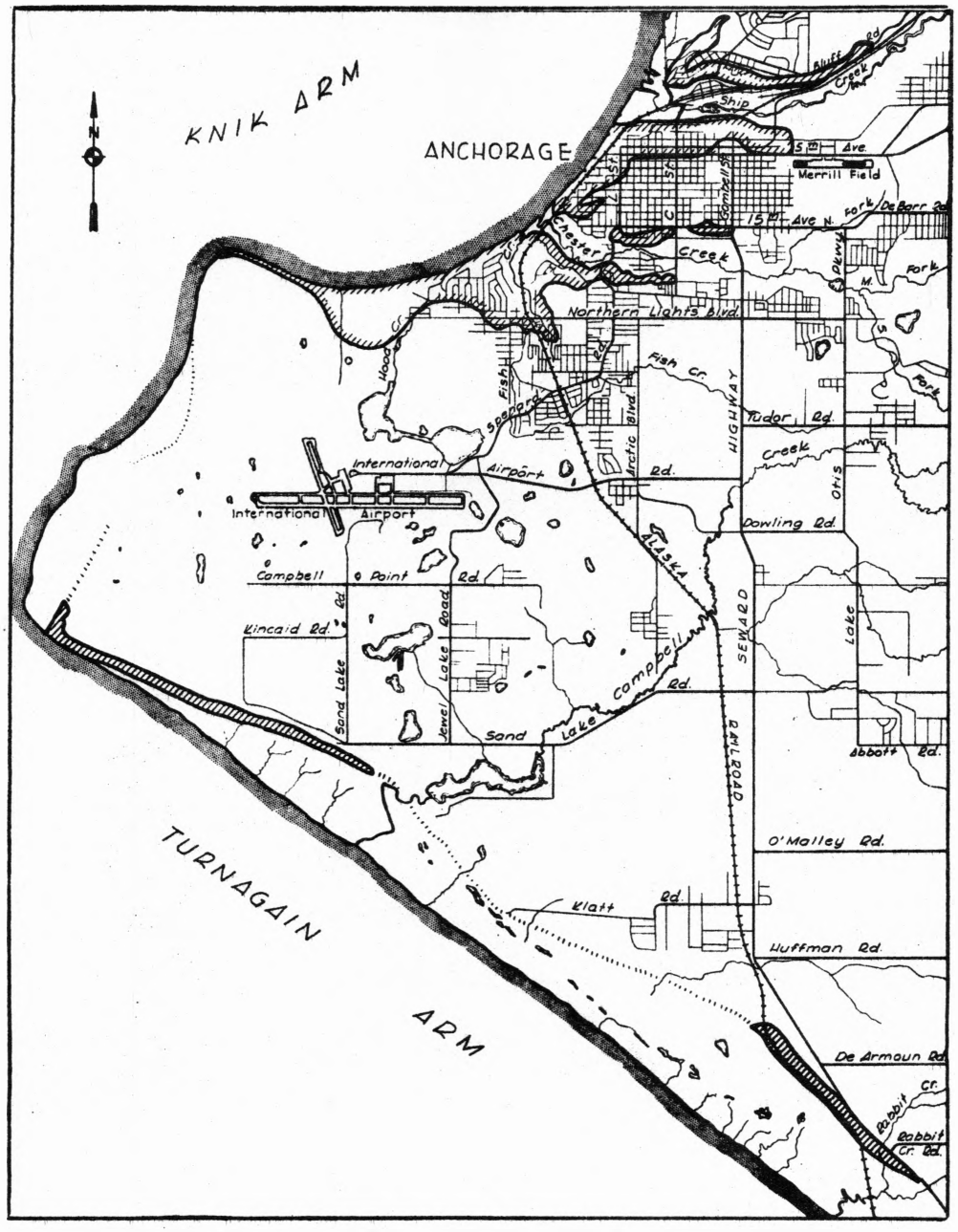
c. The behavior of soils under dynamic loads such as caused by earthquakes.

However, the task force is unable, except for sprinkler systems, to discover any code requirements governing seismic design consideration for utilities (above or below ground), either suspended or floor mounted mechanical or electrical items, or piping systems. The task force recommends that appropriate code authorities be encouraged to give early consideration to these items.

Special studies.—The U.S. Geological Survey is actively planning a comprehensive report on geologic and hydrologic effects of the Alaskan earthquake. As now visualized, it will contain chapters on damaged cities and transportation routes as well as discussions of each of the geologic factors such as regional uplifts and subsistence that influence damages throughout the state. Exploratory steps are being taken by the survey to include contributions of data from other agencies in the proposed report, so that it will constitute a complete story of all earth science engineering facets of the earthquake.

In his letter of May 2, 1964, the President requested that the Office of the Special Assistant to the President for Science and Technology undertake the assembly of a comprehensive scientific and technical account of the Alaskan earthquake and its effect. It is anticipated that these studies will also include consideration of the possibility of predicting earthquakes.

See App. III.



HIGH AND NOMINAL RISK AREAS OF ANCHORAGE AND VICINITY
GENERALLY EXCLUDING MILITARY LANDS
Initial Classification - 19 May 1964

NOMINAL RISK AREA

Little likelihood of landslides except for small slumps, largely in artificial fill. In all other respects, risks are no greater than is normally expected in the construction industry. Current Uniform Building Code, as identified with Seismic Zone 3, applies.

HIGH RISK AREA

Requires further study before final determinations can be made as to stability.

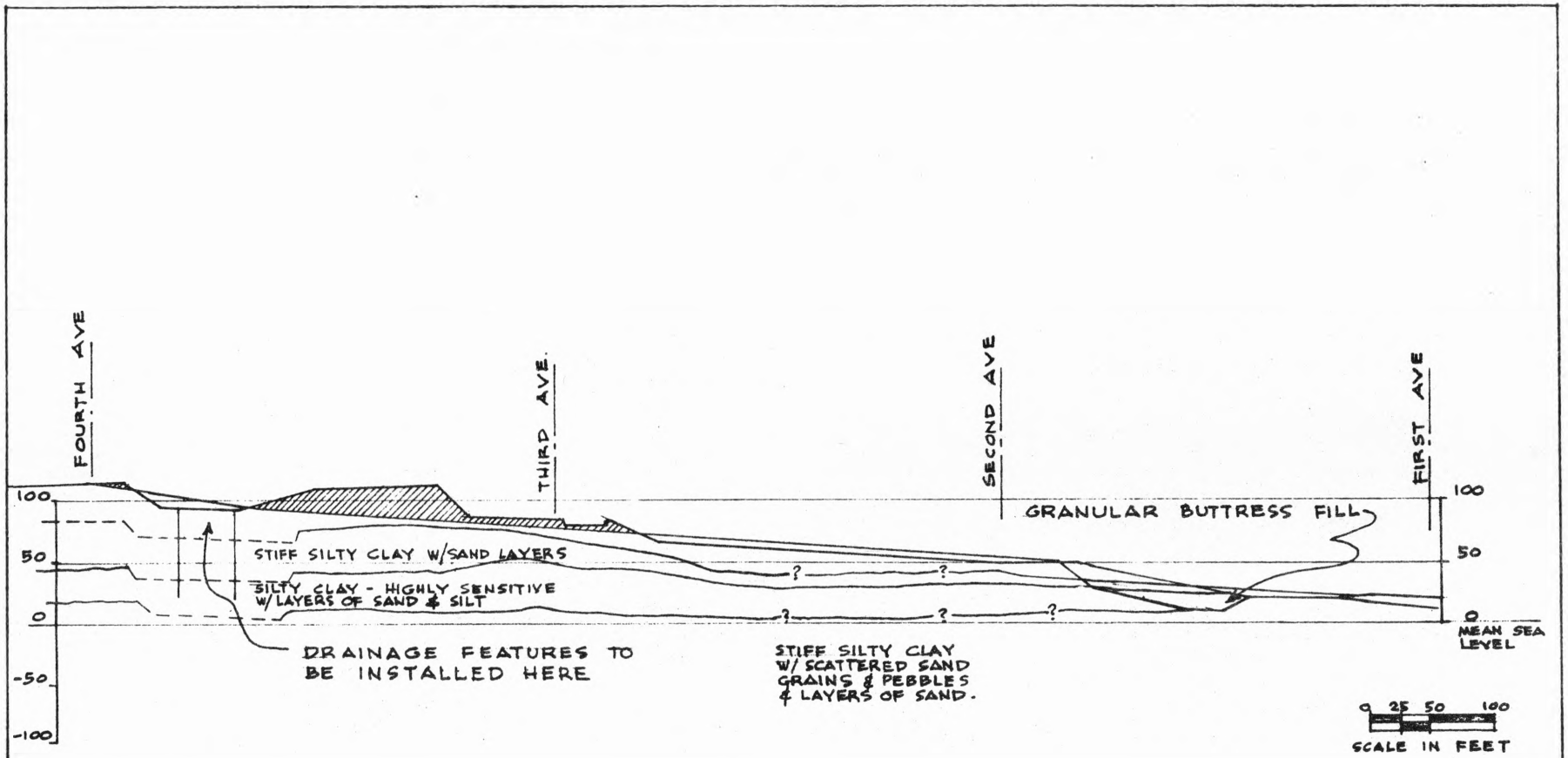
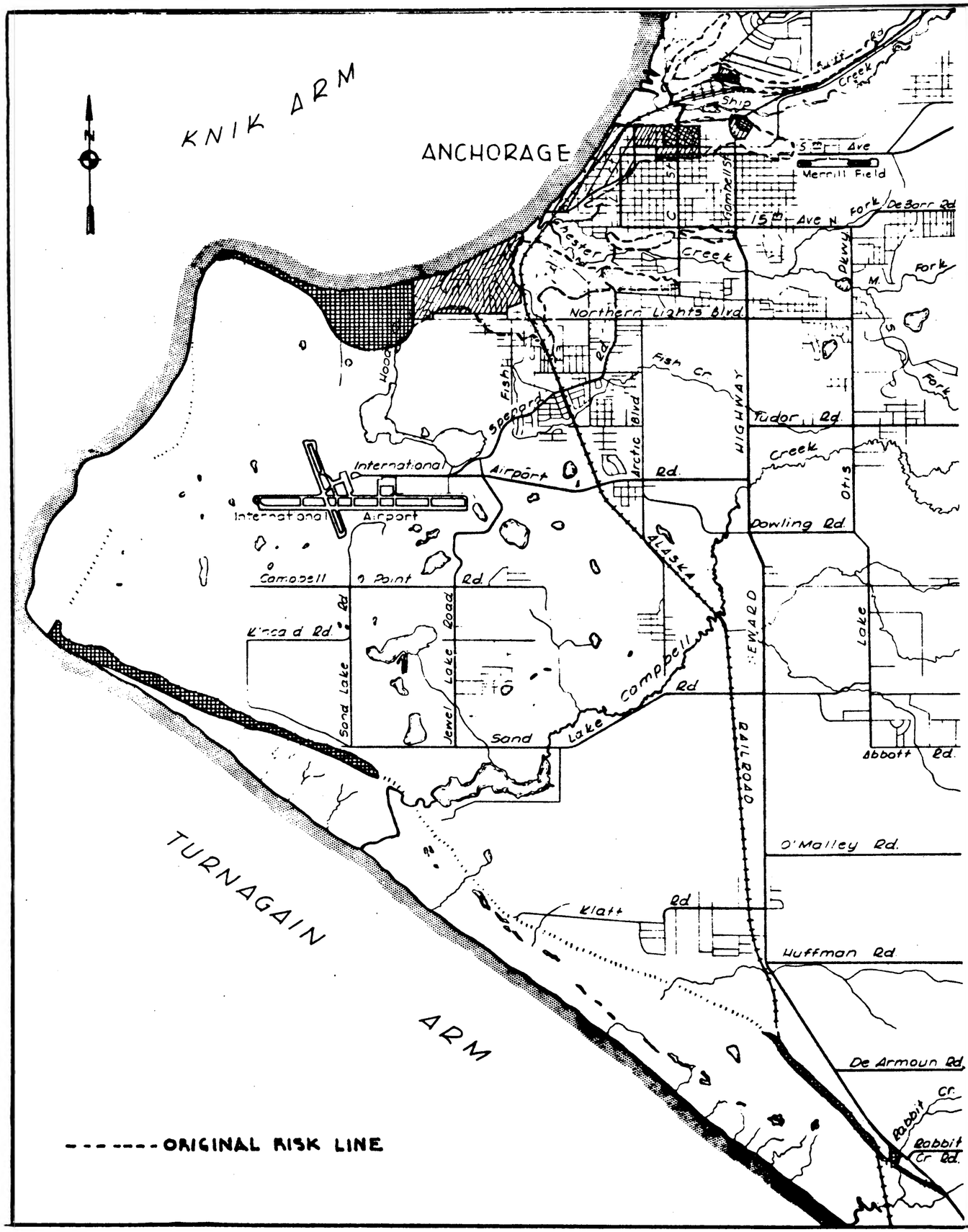


FIGURE NO. 2

FOURTH AVE. SLIDE
PROPOSED REMEDIAL MEASURES
SHANNON & WILSON, INC.
JUNE 27, 1964



PARTIAL RECLASSIFICATION OF RISK AREAS, ANCHORAGE AND VICINITY
GENERALLY EXCLUDING MILITARY LANDS

(Supersedes maps of May 19, June 26, July 8, and 14, 1964)

NOMINAL RISK AREA

Little likelihood of landslides except for small slumps, largely in artificial fill. In all other respects risks are no greater than is normally expected in the construction industry. Current Uniform Building Code for Seismic Zone 3 applies both to new buildings and to plans for rehabilitation of earthquake-damaged structures. Special engineering consideration should be given to construction near the top, at the base and on the steep slopes wherever the Bootlegger Cove Clay is present. No filling, cutting or construction should be permitted that will steepen or increase the load on or above these slopes.

Properties at bases of bluffs, such as Point Campbell and Rabbit Creek areas, may be subject to damage by future slump landslides even though outside of high risk zone.

PROVISIONAL NOMINAL RISK AREA

Reclassification to "Nominal Risk" in this area is contingent upon construction of properly designed stabilization. Even with stabilization, certain restrictions on land utilization must be applied. If stabilization is not effected, land will be High Risk Final Classification.

Special consideration should be given to design in this area. This is because differential horizontal and vertical ground displacements can be expected.

Area subject to regrading. Should be used only for light structures of limited dimensions, parks and vehicle parking. Lower limit can be defined only after final design of stabilization measures.

HIGH RISK FINAL CLASSIFICATION

Land considered unstable, particularly in event of future earthquakes; no economical means of stabilization known. No repair, rehabilitation or new construction involving use of Federal funds is recommended. The exact position of the line between High Risk and Provisional Nominal Risk in the Turnagain Heights area is dependent on the outcome of engineering studies of the proposed stabilization measures.

HIGH RISK PENDING FINAL CLASSIFICATION

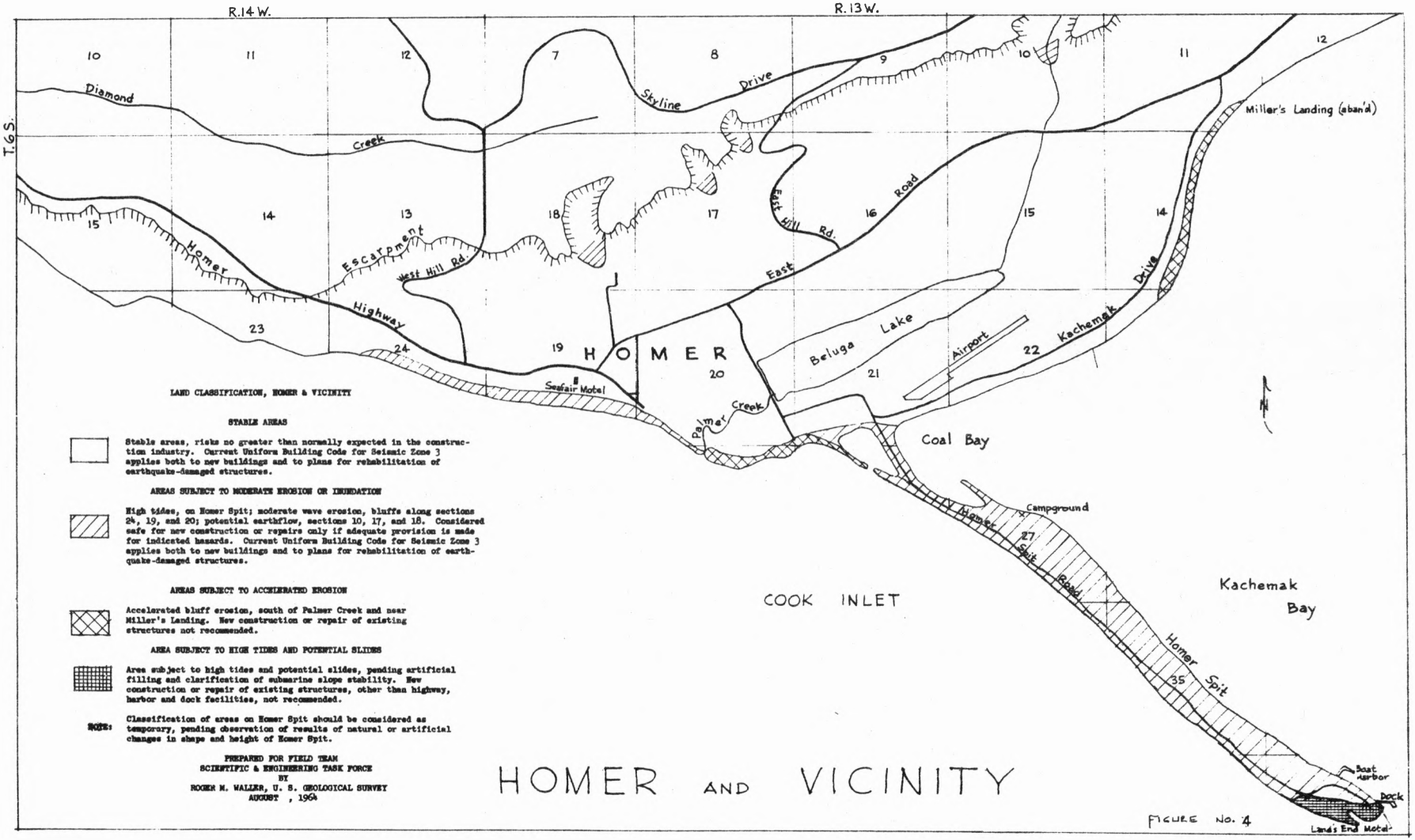
Requires further study before final determinations can be made as to stability.

SCIENTIFIC AND ENGINEERING TASK FORCE
FEDERAL RECONSTRUCTION AND DEVELOPMENT PLANNING COMMISSION
FOR ALASKA

JULY 27, 1964

ANCHORAGE & VICINITY

FIGURE NO. 3



LAND CLASSIFICATION, HOMER & VICINITY

STABLE AREAS

Stable areas, risks no greater than normally expected in the construction industry. Current Uniform Building Code for Seismic Zone 3 applies both to new buildings and to plans for rehabilitation of earthquake-damaged structures.

AREAS SUBJECT TO MODERATE EROSION OR INUNDATION

High tides, on Homer Spit; moderate wave erosion, bluffs along sections 24, 19, and 20; potential earthflow, sections 10, 17, and 18. Considered safe for new construction or repairs only if adequate provision is made for indicated hazards. Current Uniform Building Code for Seismic Zone 3 applies both to new buildings and to plans for rehabilitation of earthquake-damaged structures.

AREAS SUBJECT TO ACCELERATED EROSION

Accelerated bluff erosion, south of Palmer Creek and near Miller's Landing. New construction or repair of existing structures not recommended.

AREA SUBJECT TO HIGH TIDES AND POTENTIAL SLIDES

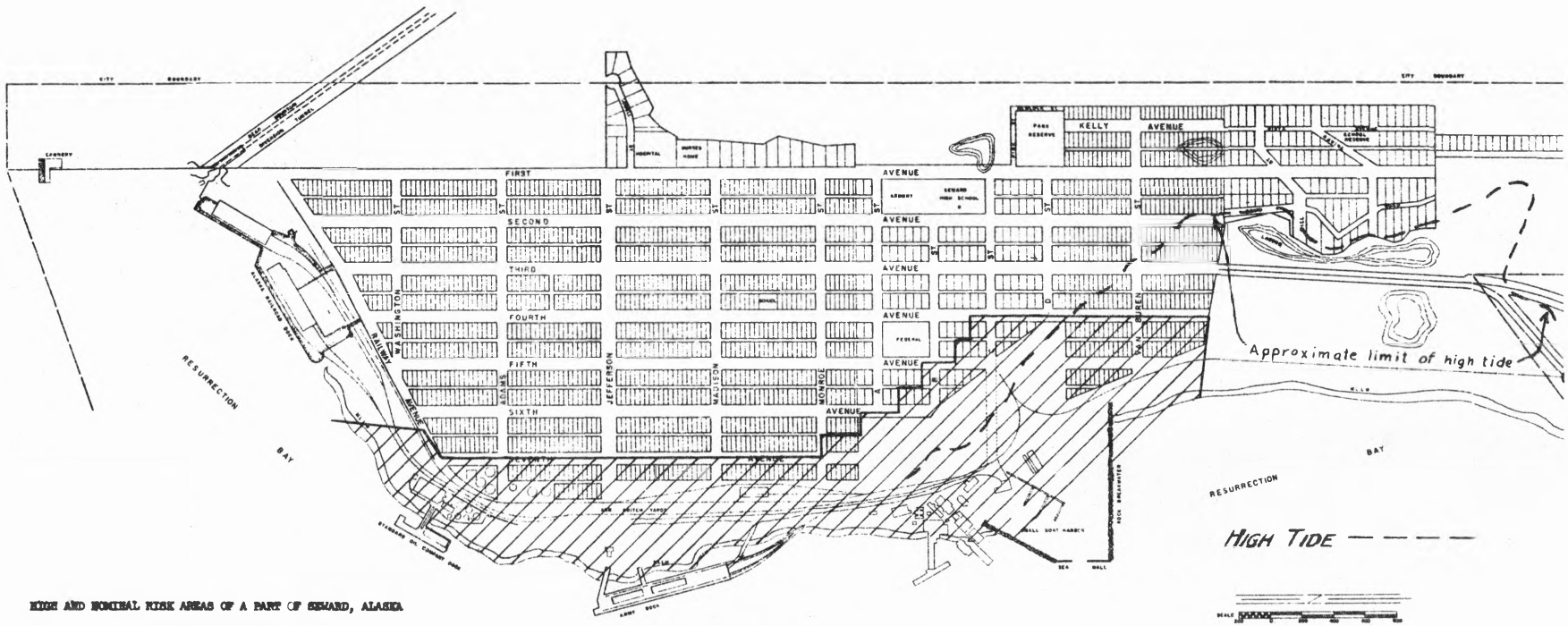
Area subject to high tides and potential slides, pending artificial filling and clarification of submarine slope stability. New construction or repair of existing structures, other than highway, harbor and dock facilities, not recommended.

NOTE: Classification of areas on Homer Spit should be considered as temporary, pending observation of results of natural or artificial changes in shape and height of Homer Spit.

PREPARED FOR FIELD TEAM
SCIENTIFIC & ENGINEERING TASK FORCE
BY
ROGER M. WALLER, U. S. GEOLOGICAL SURVEY
AUGUST , 1964

HOMER AND VICINITY

FIGURE No. 4



HIGH AND NOMINAL RISK AREAS OF A PART OF SEWARD, ALASKA

NOMINAL RISK AREA

Little likelihood of landslides except for small slumps, largely in artificial fill. In all other respects risks are no greater than is normally expected in the construction industry. Current Uniform Building Code for Seismic Zone 3 applies both to new buildings and to plans for rehabilitation of earthquake-damaged structures.

HIGH RISK AREA

Land considered unstable, particularly in event of future earthquakes; no economically feasible means of stabilization known. No repair, rehabilitation or new construction involving use of Federal funds is recommended, except for grading and light fill.

SCIENTIFIC AND ENGINEERING TASK FORCE
FEDERAL RECONSTRUCTION AND DEVELOPMENT PLANNING COMMISSION
FOR ALASKA

JULY 25, 1964

OFFICIAL MAP

CITY OF SEWARD ALASKA

December 1958

Appendix III

PRESS RELEASES, STATEMENTS, AND LETTERS

From the White House, April 2, 1964:

Executive Order 11150

ESTABLISHING THE FEDERAL RECONSTRUCTION AND DEVELOPMENT PLANNING COMMISSION FOR ALASKA

Whereas the people of the State of Alaska have experienced death, injury, and property loss and damage of staggering proportions as a result of the earthquake of March 27, 1964; and

Whereas the President, acting pursuant to authority granted in the Act of September 30, 1950, as amended (42 U.S.C. 1855–1855g), has declared a major disaster in those areas of Alaska adversely affected by the earthquake beginning on March 27, 1964; and

Whereas the Federal Government and the State of Alaska desire to cooperate in the prompt reconstruction of the damaged Alaska communities; and

Whereas the Federal and State Governments have a common interest in assuring the most effective use of Federal and State programs and funds in advancing reconstruction and the long-range development of the State; and

Whereas such effective use is dependent upon coordination by Federal and State programs, including emergency reconstruction activities, which affect general economic development of the State and the long-range conservation and use of natural resources; and

Whereas the Governor of Alaska has declared his intention to establish a State commission for reconstruction and development planning:

Now, therefore, by virtue of the authority vested in me as President of the United States, it is ordered as follows:

SECTION 1. *Establishment of Commission.* (a) There is hereby established the Federal Reconstruction and Development Planning Commission for Alaska (hereinafter referred to as the Commission).

(b) The Commission shall be composed of a Chairman, who shall be designated by the President, the Secretary of Defense, the Secretary of the Interior, the Secretary of Agriculture, the Secretary of Commerce, the Secretary of Labor, the Secretary of Health, Education, and Welfare, the Administrator of the Federal Aviation Agency, the Housing and Home Finance Administrator, the Administrator of the Small Business Administration, the Chairman of the Federal Power Commission, and, so long as the President's declaration of a major disaster is in effect, the Director of the Office of Emergency Planning. Each agency head may designate an alternate to represent him at meetings of the Commission which he is unable to attend.

(c) The Chairman may request the head of any Federal executive department or agency who is not a member of the Commission under the provisions of subsection (b), above, to participate in meetings of the Commission concerned with matters of substantial interest to such department or agency head.

(d) The President shall designate an Executive Director of the Commission, whose compensation shall be fixed in accordance with the standards and procedures of the Classification Act of 1949, as amended.

SEC. 2. *Functions of the Commission.* (a) The Commission shall develop coordinated plans for Federal programs which contribute to reconstruction and to economic and resources development in Alaska and shall recommend appropriate action by the Federal Government to carry out such plans.

(b) When the Governor of Alaska has designated representatives of the State of Alaska for purposes related to this order, the Commission shall cooperate with such representatives in accomplishing the following:

(1) Making or arranging for surveys and studies to provide data for the development of plans and programs for reconstruction and for economic and resources development in Alaska.

(2) Preparing coordinated plans for reconstruction and economic and resources development in Alaska deemed appropriate to carry out existing statutory responsibilities of Federal, State, and local agencies. Such plans shall be designed to promote optimum benefits from the expenditure of Federal, State and local funds for consistent objectives and purposes.

(3) Preparing recommendations to the President and to the Governor of Alaska with respect to both short-range and long-

range programs and projects to be carried out by Federal, State, or local agencies, including recommendations for such additional Federal or State legislation as may be deemed necessary and appropriate to meet reconstruction and development needs.

SEC. 3. *Commission Procedures.* (a) The Commission shall meet at the call of the Chairman.

(b) The Commission may prescribe such regulations as it deems necessary for the conduct of its affairs, and may establish such field committees in Alaska as may be appropriate.

(c) Personnel assigned to the Commission shall be directed and supervised by the Executive Director of the Commission. Activities of the staff shall be carried out, under general direction and supervision of the Chairman, in accordance with such policies and programs as may be approved by the Commission.

(d) The Chairman of the Commission shall report to the President from time to time on progress and accomplishments.

SEC. 4. *Agency Cooperation.* (a) Each Federal agency represented on the Commission shall, consonant with law, cooperate with the Commission to expedite and facilitate its work. Each such agency shall, as may be necessary, furnish assistance to the Commission in accordance with the provisions of section 214 of the Act of May 3, 1945 (59 Stat. 134; 31 U.S.C. 691).

(b) Other Federal agencies shall, to the extent permitted by law, furnish the Commission such information or advice bearing upon the work of the Commission as the Chairman may from time to time request.

SEC. 5. *Construction.* Nothing in this order shall be construed as subjecting any Federal agency or officer, or any function vested by law in, or assigned pursuant by law to, any Federal agency or officer, to the authority of the Commission or of any other agency or officer, or as abrogating any such function in any manner.

(Signed) LYNDON B. JOHNSON.

WHITE HOUSE,
April 2, 1964.

From the President, May 2, 1964

LETTER TO THE HONORABLE DONALD F. HORNIG, SPECIAL ASSISTANT TO THE PRESIDENT FOR SCIENCE AND TECHNOLOGY

DEAR DR. HORNIG: It is important we learn as many lessons as possible from the disastrous Alaskan earthquake. A scientific understanding of the events that occurred may make it possible to anticipate future earthquakes, there and elsewhere, so as to cope with them more adequately.

I, therefore, request that your office undertake to assemble a comprehensive scientific and technical account of the Alaskan earthquake and its effects. To insure an integrated approach to the collection and evaluation of the information, the scientific work of the U.S. Coast and Geodetic Survey, the U.S. Geological Survey, the National Science Foundation, the U.S. Air Force, the Corps of Engineers and such other agencies as are involved should be coordinated by your office. As you know, the early engineering related to reconstruction is being coordinated by the Federal Reconstruction and Development Planning Commission for Alaska. In order to learn the most, the scientific effort should be carried out as soon as practicable.

In defining the scientific and technical questions involved and the related informational requirements for collection and assessment, I hope that you will be able to enlist the aid of the National Academy of Sciences.

The scientific and engineering information acquired as a result of this activity should be made available to assist the efforts of the Federal Reconstruction and Development Planning Commission, and your office should be available to provide such other technical assistance to the Commission as you feel appropriate. This information should, of course, also be provided to the Director of the Office of Emergency Planning and other government agencies having reconstruction responsibilities in Alaska. Your office should coordinate its activities with the Commission, taking full advantage of its field activities and of the information being acquired for use in the early reconstruction phase.

The foregoing activities of your office should be carried out in consultation with the other agencies which have specific responsibilities for Federal operations in Alaska during the emergency period.

Sincerely yours,

(Signed) LYNDON B. JOHNSON.

From the Federal Commission, May 8, 1964:

PRESS RELEASE

A special task force of the Federal Commission on Reconstruction and Development Planning for Alaska will examine the possible help the Federal Government can give Alaska in selling $50 million in state bonds as a recovery measure.

"I have asked our financial committee to come up with recommendations as soon as possible, hopefully, next week," Senator Clinton P. Anderson, D., New Mexico, Commission Chairman, said today. "Much of the money produced by these bonds, which the Alaska Legisla-

ture voted after the March 27 earthquake, would permit Alaska to match Federal money for a wide range of vital public needs, including roads and school construction."

"Bond specialists have indicated to Alaskan officials that the State would have to pay a much higher interest rate on bonds now because the disaster critically hurt the State's revenues," Anderson said. The Alaska bonds most recently sold carried a 3.5619 percent interest rate. "A higher rate," Anderson said, "would place a most heavy burden on the State. We want to do everything possible to avoid that, and get on with the rebuilding effort with sharing to the extent of the State's ability."

Anderson said Governor William Egan has agreed to provide the tentative breakdown on how the $50 million bond package would be used. "This is most helpful information, essential to any recommendation we would submit to President Johnson," the Chairman said.

Anderson said, "I have asked the financial group to report to us on the various approaches we can take on this question."

From the Federal Commission May 19, 1964:

PRESS RELEASE

The decision of the Internal Revenue Service to grant persons suffering property losses from natural disasters an extension of time in which to apply for Federal tax rebates was hailed today as "a boon to Alaskans" by the Federal Reconstruction and Development Planning Commission for Alaska.

Senator Clinton P. Anderson (D., New Mexico), Chairman of the Commission, said that an amendment to Title 26 of the Internal Revenue Code, published in the Federal Register today, will permit Alaska property owners and businessmen who suffered earthquake damage to amend their 1963 Federal income tax returns in order to seek immediate tax rebates, or reductions in their 1964 estimated tax.

"Before the new regulation went into effect," Senator Anderson said, "Alaskan taxpayers who had filed their tax returns without taking full advantage of the disaster provisions of the tax laws, would have lost an opportunity to apply losses incurred as a result of the earthquake of March 27 against taxable earnings in 1963 and previously."

Senator Anderson urged all Alaskans owning quake-damaged property to consult the field office of the Internal Revenue Service in Anchorage, Alaska, in order to obtain maximum relief under the law. The Commission Chairman pointed out that "all business loss, and all personal property loss over $100 could be credited against tax payments over the past three years—thereby producing a considerable cash tax rebate from the Treasury Department."

"Where the business loss exceeds the income over the past three years," Senator Anderson added, "tax credits may be projected as far as 5 years into the future. This tax relief should help relieve the problems arising from a shortage of immediate capital for the rebuilding of Alaska."

The Commission Chairman said that his Commission "is very pleased with the action of the Internal Revenue Service in cooperating with the Commission's efforts to obtain every possible measure of relief and compensation for the victims of the Alaska earthquake."

Internal Revenue Service officials in Washington confirmed Senator Anderson's statement that the new regulatory decision, which extends the period during which a taxpayer may file an amended return to three months beyond the due date, may provide many Alaskans with a means of improving their economic position.

As an example of how the new decision might affect Alaskans, Internal Revenue Service officials pointed out that an Alaskan taxpayer who had already filed his return before the March 27 earthquake, and who had been too shaken up by the disaster to amend his return by the April 15 deadline, could now file an amended return and regain taxes he had paid out as far back as 1961.

A taxpayer who had a taxable income of $10,000 in 1963, for example, and paid out $2,000 in taxes, could recover the entire $2,000 now if his earthquake losses totaled $10,000. If his losses were more than $10,000, he could recover taxes paid out for 1962 and 1961. If his losses were more than his total taxable income over the past 3 years, he could apply the additional loss as a credit against future earnings up to 5 years ahead.

Thus an Alaskan who had great property losses from the earthquake could receive a lump sum in cash from the Treasury Department as well as the opportunity to retain all of his present and future earnings up to 1969.

From the Chairman, May 23, 1964:

LETTER TO THE PRESIDENT

DEAR MR. PRESIDENT: I am enclosing a draft of a bill "To provide assistance to the State of Alaska in providing for the reconstruction of areas damaged by the earthquake of March 1964, and subsequent seismic waves, and for other purposes," and a section-by-section analysis.

This legislation is an outgrowth of the considerations of this Commission since the Alaskan earthquake of March 1964. Its pur-

pose is to provide needed special assistance to the State and its people in their reconstruction efforts. The Commission has found that special Federal assistance in the form of legislation is needed now for highways, urban renewal, harbors, housing and State finances. Areas requiring additional legislation may become apparent at a later time and may be proposed then.

The draft legislation amends the Alaska Omnibus Act and is limited in scope to Alaska and the disaster area. It recognizes (1) that the recent disaster caused extensive property loss and damage in the private and public sector; and (2) that this damage has severely restricted and drained the State's resources.

Highways

To provide the special assistance needed to repair and reconstruct the nonforest Federal-aid highways damaged by the earthquake, the draft legislation would authorize an increase in the Federal share of the cost of reconstruction from the present 50 percent to 94.9 percent as provided in the bill, and an appropriation not to exceed $15 million to cover the increase. The higher percentage is now applicable to new Federal-aid highway construction in Alaska.

Current estimates indicate that up to $36 million will be required to reconstruct these highways in the disaster area. Under existing law, the State's share of this estimated cost would be one-half this amount. Even with the enactment of pending legislation making transitional grants available to the State, Alaska could not pay its share of highway reconstruction and carry out its other disaster-oriented programs.

Debt adjustments

A preliminary private real property survey indicates that the private loss, as a result of the recent earthquake and subsequent seismic waves, is about $77 million. The Department of Agriculture, through the Farmers Home Administration and the Rural Electrification Administration, would be authorized by this draft bill to adjust the indebtedness of some of their borrowers to enable them to overcome losses suffered from the earthquake. It would also authorize the refinancing of the outstanding indebtedness of these and other farmers and rural residents similarly damaged. This draft legislation would provide similar debt adjustment authority to the Housing and Home Finance Administrator. These provisions place the programs of the Department of Agriculture and the HHFA on the same general footing as other Federal loan programs which now are authorized to adjust their borrower's indebtedness under disaster conditions.

Urban renewal

A number of communities in the disaster area of Alaska are considering or have made applications for urban renewal projects. These are: Anchorage, Homer, Kodiak, Seldovia, Seward, and Valdez. Currently available, but very preliminary, estimates indicate that the total cost of these projects may be as high as $59 million. The Federal share of this cost would be about $45 million. This share is made up of 75 percent of the project costs plus 100 percent of relocation costs, which is the usual formula for cities of this size.

The Commission gave very serious consideration to the question of whether the Federal grant share should be increased above 75 percent for projects directly related to the earthquake. While recognizing the straitened circumstances of the communities themselves, I believe this increase was not justified on the basis of the available estimates of costs and resources. The preliminary cost figures, admittedly highly tentative, raise substantial questions as to whether the magnitude of the proposed projects is necessary to effect recovery from the effects of the earthquake. At the same time, it seems reasonable to expect the State to provide substantial assistance to the communities in meeting their local share. The draft bill authorizes the purchase by the Federal Government of $25 million of State bonds for this purpose among others.

The bill would authorize the Housing and Home Finance Administrator to enter into contracts for urban renewal projects in Alaska up to a maximum of $25 million. The recent disaster makes it essential that this additional contract authority be requested for use in Alaska at this time. To the extent that additional grant funds may be needed to carry out these projects, they would be made available from regular urban renewal grant authorizations.

Loans

As indicated above, a number of homes in Alaska were damaged or destroyed or in some cases even lost. The Small Business Administration now has authority to make disaster loans to the home owners with a maximum maturity of twenty years. Since these loans may include some portion of the existing indebtedness on damaged or destroyed homes, as well as the cost of rebuilding these homes, the draft bill would authorize the making of such loans for a maximum period of 30 years.

Harbors

The draft legislation would authorize the Corps of Engineers to make modifications in previously authorized civil works projects in Alaska, where it is found that such modifica-

tions are necessary to overcome the adverse effects of the earthquake. These modifications would include such reasonable expansions in the harbors that may be economically feasible to meet the prospective needs of the communities. The estimated cost is $10 million.

State finances

The State legislature has authorized a $50 million bond issue to help finance capital projects related to reconstruction from the earthquake. It is expected that for the next 2 years the State will be faced with high capital investment requirements which will add to the State's financial burden.

While the Commission does not expect that all of the $50 million would be needed now, it appears that one-half or more may be required to supplement the State's revenues and the extended transition grants in order to meet the Federal assistance for major reconstruction and rehabilitation projects over the next two years. The draft bill provides Federal assistance in marketing up to $25 million of these State of Alaska bonds. The Housing and Home Finance Administrator would purchase these bonds with funds now available in the public facility loan revolving fund. The bonds would be sold in the private market, or refunded in the private market by the State, as soon as its regular credit is restored. The State would receive from HHFA the more favorable interest rate for public bodies in redevelopment areas (currently 3⅝ percent), and principal repayment might be deferred for a few years from the date of the loan or purchase of the bonds.

The agencies represented by the Commission have devoted considerable time and effort in developing this draft bill. There is an urgent need for this legislation. The short construction season requires the initiation of construction as soon as possible in order to permit Alaska to prepare for next winter. It is the belief of the Commission that the bill proposes fiscally responsible means of providing special assistance to the State's reconstruction efforts which must proceed as rapidly as possible. The proposed bill has been reviewed by the interested departments and agencies and the Bureau of the Budget and has received their concurrence. Pursuant to the meetings of May 8 and 22, 1964, of the Commission, it is recommended that this legislation be submitted to the Congress for early action.

Respectfully yours,

(Signed) Hon. CLINTON P. ANDERSON,
Chairman, Federal Reconstruction and Development Planning Commission for Alaska.

See App. VI.

From the President, May 27, 1964:

LETTER FROM THE PRESIDENT TO THE SPEAKER OF THE HOUSE OF REPRESENTATIVES AND PRESIDENT PRO TEMPORE OF THE SENATE

The State of Alaska and the people of Alaska, aided by voluntary agencies and the Federal Government, have begun to rebuild from the ruins of the devastat ng earthquake of March 27. But new legislative authority is urgently needed to provide the additional special assistance essential to their reconstruction efforts. I am today, therefore, sending to the Congress draft legislation to provide this authority.

Immediately following the earthquake, we moved quickly to assist Alaska and its people. Under existing programs and new authorities proposed in this draft bill, the Federal Government is estimated to spend over $275 million in Alaska in the course of the earthquake reconstruction program.

Major items in this estimate include $80 million of grants under existing authority of the Office of Emergency Planning for restoring public facilities and debris clearance; over $75 million for restoration of Federal facilities; over $60 million in grants for highway repair; and up to $45 million in grants for urban renewal projects. Also, legislation has already been approved by the Congress—which I will sign into law today—authorizing $23.5 million in grants to the State to make up losses of State and local tax revenues and to insure continuity of government.

In addition, under existing law, various outstanding Federal loans are being adjusted. Federal tax refunds and reductions will be based on casualty losses, and various Federal agencies are extending credit on liberal terms. The Small Business Administration, for example, will make disaster loans on very favorable terms to assist homeowners and businesses in reconstruction.

The legislation which I am proposing—based on recommendations of the Federal Reconstruction and Development Planning Commission for Alaska—will provide greater flexibility in Federal programs to cope with the extraordinary circumstances arising out of the earthquake. Included among the programs involved are highways, urban renewal, housing, and harbor improvements.

The enclosed letter from the Chairman of the Commission, Senator Clinton P. Anderson, describes the principal features of the draft bill.

Concern for our fellow citizens alone compels prompt action on this proposal. But practical considerations are also most important. The construction season in Alaska is about to begin and is of short duration. The sooner

Alaska can complete its reconstruction efforts, the sooner it can begin again to devote its efforts toward the further development of the State's resources.

Accordingly, I urge the Congress to take prompt action on the proposed legislation to facilitate Alaskan planning and reconstruction efforts during this summer's construction season.

Sincerely,

(Signed) LYNDON B. JOHNSON.

From the President, May 28, 1964:

STATEMENT BY THE PRESIDENT

"I have signed S. 2772, amending the Alaska Omnibus Act.

"This legislation authorizes grants to the State of Alaska of $23.5 million to replace revenues lost and expenses incurred in connection with the earthquake of March 27.

"As a result of that tragedy, Alaska, its people, its cities and towns, and its economy have suffered great hardship and encountered burdensome problems.

"Much is being done by the Federal Government, the State and private groups and individuals to alleviate the situation. This legislation is aimed at one significant aspect of the disaster—the provision of funds needed to continue State and local government functions.

"The Congress is to be congratulated for its prompt action on this vital measure."

From the Chairman, May 28, 1964:

STATEMENT BY SENATOR ANDERSON

"The Federal agencies which hold mortgages on homes in Alaska agreed on May 6 to accept a token $1,000 payment from owners whose homes were totally destroyed or irreparably damaged by the earthquake. The way was then clear for these owners to refinance under very liberal terms and through Federal agencies a loan covering a new home and the token payment.

"By the Federal Government taking the initiative on mortgages which it held, it was considered by the Federal Commission that private lending institutions might follow suit. While we did not expect that these institutions, which have an obligation to their stockholders, would simply write off the outstanding indebtedness by a blanket forgiveness, we did hope that they would act with speed on a case-by-case settlement.

"Our information is that they are proceeding on an individual basis. My concern is with the pace of this effort. The Small Buisiness Administration and other federal agencies stand ready to make low-interest, long-term loans to affected individuals. But they cannot do so until the private mortgage-holders resolve their end of this problem. The Federal Government quite obviously cannot—and it should not—compel action by the private mortgage-holders. But it should be clear that the Government has been keeping faith with its responsibilities to the people in Alaska, and the Government is ready to aid those whose mortgages are privately-held—but only to the extent made evident by existing law or by the provisions in legislation now before the Congress. This should be a matter for cooperative action by both the private and Government sides."

From the President, June 22, 1964:

LETTER FROM THE PRESIDENT TO SENATOR CLINTON P. ANDERSON, CHAIRMAN OF THE FEDERAL RECONSTRUCTION AND DEVELOPMENT PLANNING COMMISSION FOR ALASKA

Thank you for your letter of June 8 on the work of the Federal Reconstruction and Development Planning Commission. It reflects a record of Federal activity and achievement in the two short months since the Commission was established of which we can all be proud.

I am pleased to see that the State legislature has also taken a number of key steps and that the prospects for Alaska's important tourist industry are encouraging. I look forward to receiving the housing data now being collected. It should answer a number of the most serious remaining questions relating to recovery in the private sector.

I have signed the deficiency appropriation bill providing over $41 million for work in Alaska and for the transition grants to the State. This represents another significant step in Alaska's recovery in which the Commission has played so great a part.

With all the other actions that have been, and are being taken, I believe we have come a long way in solving a very tough problem.

Sincerely,

(Signed) LYNDON B. JOHNSON.

From the Federal Commission, July 7, 1964:

PRESS RELEASE

Senator Clinton P. Anderson, Chairman of the Federal Reconstruction and Development Planning Commission for Alaska, said today that the Urban Renewal Administration has

now authorized a feasibility study of the soil stabilization program recommended to protect building in the earthquake-ravaged center of Anchorage.

Senator Anderson also disclosed that, following the submission of soil study reports from the Corps of Engineers and the Commission's Scientific and Engineering Task Force, the Small Business Administration is now willing to make repair loans in the Anchorage high risk areas under certain conditions.

Loans of up to one-third of the value of the property may be made, provided that a building permit is granted by the City, and that the SBA loan combined with any outstanding mortgage indebtedness does not exceed the pre-earthquake value of the property. Existing mortgages and repair loans may be consolidated, if earthquake insurance is obtained by the borrower.

Senator Anderson said that the feasibility study, including cost estimates, is necessary to enable the city of Anchorage to determine whether to proceed with the soil stabilization project, and to enable the Federal Government to establish what level of financial assistance may be provided. Draining, grading and buttressing the land at the foot of the Fourth Street slide areas are included in the project.

If carried out as proposed, the soil stabilization program would reinforce land adjacent to a substantial portion of the valuable business area of downtown Anchorage, and would permit the reclassification of this area from "high" to "nominal" risk.

Senator Anderson said the reconstruction plans have been developed jointly by the Commission, State, and local authorities for Anchorage, Kodiak, Seward, Valdez, and Homer. Extensive soil studies have been undertaken in these communities to provide the necessary guides for reconstruction and long-range planning. The soil data has now been developed for Valdez, Kodiak, most of Seward, and much of downtown Anchorage. The remaining work will be completed within 2 to 3 weeks.

Wherever possible, design work is being done concurrently with the soil studies in order to conserve time, even though in some instances the results of the soil studies will undoubtedly require last-minute changes in design, the Commission Chairman explained.

Construction priority has been given to the restoration of water lines and the repair of major breaks in sewerage systems, both of which are considered vital to protect the health and safety of these communities. Most of these contracts will be awarded during July, with the essential work scheduled to be completed before winter.

Senator Anderson added that design work on the vitally important harbors of Homer, Seward, and Valdez is virtually completed.

"There may be some delay in certain projects," he said, "because of the failure of Congress to pass the Omnibus Bill before the House recessed last week." He attributed this failure largely to several proposed controversial amendments, discussion of which is prolonging consideration of the bill in the House.

"Passage earlier this year of a bill appropriating funds to rebuild the Alaska Railroad, as recommended by the President and the Reconstruction Commission," Senator Anderson said, "has made it possible to envisage a return to limited service on the rail line between Anchorage and the Seward area by early winter." Some $20 million is scheduled to be expended or under contract by the railroad by the end of 1964, according to the Department of the Interior.

An additional $20 million has been committed or contracted by the Federal Government for the rebuilding of Alaska highways, with the Federal share of the cost amounting to 94.9 percent, assuming that the Omnibus Bill passes essentially as proposed. The Bureau of Public Roads has estimated that roughly $12 million will be spent on Alaskan highways within the next 6 months.

The Senator indicated that the initial, or debris clearing phase of the reconstruction program, undertaken by the Corps of Engineers and the Navy Department for the Office of Emergency Planning, is virtually complete, and that he is "very pleased with the results, thus far, and eager to see construction move rapidly ahead."

"As the appropriate Federal agencies are able to proceed with the reconstruction plans which have been developed with the Commission," Senator Anderson concluded, "I hope that the Commission can soon begin to enter the second phase of its work—that of long-range economic and development planning, which is to be coordinated with the State of Alaska."

REMARKS OF SENATOR CLINTON P. ANDERSON BEFORE ANCHORAGE CHAMBER OF COMMERCE, ANCHORAGE, ALASKA, 12 NOON, APRIL 27, 1964

It was 14 years ago this week that I had the privilege of presiding over hearings of the Senate Committee on Interior and Insular Affairs on statehood for Alaska. We had a very fine group of witnesses including Ernest Gruening, who was then the Territorial Governor, Bob Bartlett, then your Delegate in the House of Representatives, and the then Governor, Earl Warren of California. And there were many fine citizens from Alaska.

At one point in those hearings, I questioned the language in the bill which provided for payments to your common-school fund from proceeds from the national forests. It was in the bill as it came over to us from the House. I favored statehood, but I certainly would have been derelict in my responsibility as a Member of Congress if I had not raised questions and sought the kind of clarification that is essential to the legislative process. Yet there seemed to be a feeling that we should just accept the House bill or be guilty of blocking statehood.

When the proposal for the Eklutna Project was before us, I read every line of the report and I tried to get the bill reported favorably. That project has been in being for some time now, and it has been of real value to this area. But we did have to ask questions about it.

What I am trying to say is that history has a way of repeating itself. I am again asking questions—and am up here asking more—but inquiry should not be taken for hostility. Nor should the absence of haste in the enactment of unusual new programs be interpreted as a lack of sympathy or as do-nothingness.

I imagine that if this were a road company doing Dickens' "A Christmas Carol," some persons would quickly cast me in the part of "Scrooge." In fact, I have had letters so classifying me.

Some newspaper reports have portrayed me in that role. But I wish the record to be absolutely clear. My responsibility—as set forth by the President of the United States—is to speed the recovery of your State with the objective of making Alaska an ever better place to live and work than it was before the tragedy of last month. I would not have wanted to come up here if we weren't already well along toward that goal.

Let me say, however, that it would be a sharp break with precedent if the President's Commission would recommend that there be a wholesale assumption by the Federal Government of the full obligations of anyone who suffered loss of a home or a business in the earthquake. I doubt that Congress would be overly receptive to such a proposal.

The Federal Commission fully appreciates the severity of the blow that the economy of Alaska suffered from the earthquake and tides. Alaska was hit at a time when your economy is still not fully developed and is rather narrowly based.

Long before a program of Federal disaster relief was created, American cities were devastated by natural disaster of terrible proportions. The great fire that swept Chicago in 1871 claimed 250 lives and did $196 million damage to property and left 60 insurance companies bankrupt. The earthquake and fire of 1906 snuffed out 450 lives in San Francisco and destroyed about $400 million in property. The 1938 hurricane that swept through New England did $300 million damage and left 660 dead.

All that was before Public Law 875, which established a program of Federal assistance to disaster areas, was enacted.

Then came the 1951 floods which destroyed or left uninhabitable over 8,300 homes in Kansas alone.

The hurricane of 1955 cost nearly 200 lives in 6 eastern States, and total damages were estimated at $650 million.

I could cite other events in this tragic chronology. My point is that in these disasters the Federal Government moved in and played a vital part in restoration. But there were limits to what it could do. No blank check was written to recoup private losses.

I am sure that you are well acquainted with some of the existing programs which are going to be of major benefit—indeed, already are of aid in recovery. The Small Business Administration, the Veterans' Administration, the Farmers Home Administration, the Housing and Home Finance Agency, and the Bureau of Commercial Fisheries are making loans, granting forbearance, and making other adjustments because of the disaster.

But that is not enough.

President Johnson, you will recall, asked Congress for a $50 million supplemental appropriation for the disaster fund—primarily for assistance to Alaska. In little more than hours, Congress voted those funds. That is just one measure of the awareness in Washington of what took place here on Good Friday.

On Saturday the President's recommendation for extension of the transitional grants beyond the scheduled expiration this summer was introduced in Congress by Senator Jackson, and I am a cosponsor. I think there will be favorable action on this. The first hearing may be May 4. And the $22,500,000 the bill authorizes will be of marked help to your State and local governments.

Also on the legislative front, the House Committee on Merchant Marine and Fisheries has ordered reported out a bill that will enable Alaskans who lost their fishing boats to charter replacement vessels on very favorable terms. A few phone calls helped speed that bill along, and I know that the leadership in the House will call up the bill as soon as possible.

I do not anticipate any problems in the Senate on this measure. The Senate has already passed the basic bill and will, I am hopeful, accept the amendments of the House.

The drydock which the Navy moved to Kodiak from San Diego is ready to take aboard damaged fishing boats for repairs by private builders. There was some question as to whether private boats could be repaired by private boatyards using a Navy vessel. We simply told the

Navy to move full steam ahead with getting the drydock to Kodiak and the policy issues would be resolved. They have been.

This is a small—but important—example of how we have been cutting through redtape in behalf of the 49th State.

Also in the legislative area, the full Senate Interior Committee held 2 days of hearings on the bill to provide retroactive earthquake insurance to Alaska. The committee will meet again to hear more witnesses on May 4. Contrary to some views, I believe this proposal represents a substantial new venture for the Federal Government and a unique change in the concept of insurance. Even if there were no long debate in the Senate on civil rights to hobble major legislation, the fate of this measure would be doubtful. There are States which have been hit in recent years by severe floods and hurricanes. The Senators from those States are waiting in the wings to get some kind of retroactive protection for their people.

I am not prejudging the insurance measure. But I want you to understand the basis for my questions.

The Federal Commission has submitted a unanimous recommendation relative to certain stretches of the Alaska Railroad. Next Friday the Commission will meet, and I hope we will be in a position to recommend additional legislation affecting your State, particularly in the area of lending programs.

The President, the Federal Commission, and all of us who are deeply concerned with the State and National problem created by the disaster are looking at every avenue that may lead to additional help. I completely understand how—in an hour of acute need—people look around to see what possible sources of funds might be available to assist Alaska. Statements have been made by some persons that one of these sources should be the savings from a sharply reduced foreign aid budget. Those who advocate such action say "charity begins at home." I would not quarrel with that general philosophy. I have not always been pleased with foreign aid, and I did not come to Alaska to defend the oversea assistance program.

Foreign aid, frankly, has been used to prop up shaky governments which might better have fallen and build projects which never should have been built. But foreign aid has also served America's interest by reducing the risk of violence, chaos, and instability in many important areas of the world. If you pitch your whole case on opposition to that, you automatically enlist against your needs those who have a strong attachment to building up a more peaceful world by bolstering free governments.

It is interesting that one of the criticisms of foreign aid is that it is not tightly supervised by the United States and so money is wasted. I wonder if Alaska really wants Federal assistance for the private side of its economy with close Federal supervision as to how the funds would be used? How large a voice should Washington have in the affairs of Juneau? How much should it dictate to the elected officials of Alaska? This, it seems to me, would be a basic question to be resolved.

I have been in Washington long enough to know that the funds cut out of one program do not necessarily get assigned to some other urgent need. So, I do not think your salvation rests on a fight for a reduction in foreign assistance.

I have also heard proposals that the Small Business Administration reduce its interest rates below 3 percent to be in line with foreign aid interest charges. On Thursday, at the last Federal Commission meeting, Mr. Foley, the Administrator of the Small Business Administration—an agency which has been doing a fine job here—spelled this matter out very precisely. I quote Mr. Foley:

> "Our authority says that our interest rate shall not exceed 3 percent. There has been some feeling that the interest rate should be three-quarters of 1 percent because that is what Foreign aid charges. The Foreign aid loans that have carried three-quarters of 1 percent interest rate have been loans from government to government, not to private individuals. Foreign aid loans that have gone to private individuals carry 5½ percent interest." Mr. Foley said.

Is that what is being sought for Alaska? And he continued:

> "I think that point ought to be cleared up because we have been comparing apples and pears by comparing the 3-percent interest rate with the three-quarters percent rate. I have been in Anchorage and Kodiak with Secretary Carr and feel reasonably confident that bankers and businessmen are quite optimistic and quite appreciative of this type of liberal program for the restoration of the commercial property. That program also applies to working capital expenses, working capital for businessmen."

Nor should you anticipate that certain other sources are susceptible to use in Alaska. I have in mind the suggestions by some persons that the special insurance funds of the Federal Housing Administration can be tapped for disaster relief.

The FHA is strictly limited in the use of its insurance funds by the National Housing Act and by its insurance contracts with mortgage lenders. The National Housing Act specifies that these funds are to be used as revolving funds for carrying out the provisions of the insurance programs. The act further prescribes formulas to be used in calculating insurance payments to lenders.

The basic mortgage insurance program under which the great bulk of home mortgages are insured is a mutual program. This means that the homeowner may participate in any surplus funds realized after the payment of all insurance premiums and expenses. Regardless of whether the fund is mutual or nonmutual, the use of the monies in the fund for relieving disaster victims is not authorized. This is true even though the victims have homes covered by FHA mortgage insurance which have been damaged or destroyed.

The FHA mortgage insurance covers losses occasioned by a lender as a result of a default in mortgage payments by a homeowner. It does not provide any protection to the lender for losses which result from damage to the property by an earthquake. It is for this reason that in settling insurance claims on Alaskan property, the FHA will have to deduct from its payment to the lender an amount representing any damage by the recent earthquake which has not been repaired.

As a Government agency, the FHA can only disburse money for purposes for which it has statutory authority, and its authority is limited to obligations arising out of its mortgage insurance programs. In addition, it is obligated to maintain sound insurance reserves to back up the vast amount of outstanding insurance and to provide funds for paying further insurance claims.

Quite obviously, there is a legal barrier to dipping into these funds to help your situation.

Alaska is already heavily dependent on the Federal Government. According to information supplied to me by the Bureau of the Budget, it was anticipated—before March 27—that nearly 55 percent of the revenue of the State of Alaska is in the form of Federal money. Those Federal receipts, including income from Federal lands and resources—were expected to total $67.4 million. This, coupled with the transitional grants which have been made since statehood, makes it appear that the Federal Government is a senior financial partner in Alaska.

Additionally, the Federal Government is the largest single employer in Alaska—and that is a very mixed blessing to be sure. Some 16,700 civilians are employed here by the Federal Government. And Alaska has the highest concentration of military personnel compared with total population of any State—some 32.000 in uniform. Thus, the combined total of Federal employment—in the neighborhood of 46,000—presents a staggering figure in relation to the State population and total employment.

I am sure that I say only what you are aware of—that the economy of this State is going to be effected by changes in the defense policies of our Government. Changes in military technology could well have a significant impact on Alaska—as is the case in many other States.

Coming from a State with large airbases and nuclear weapons installations, this particular problem is not foreign to me. I have been urging my own State to plan for a future in which defense needs are going to be altered considerably.

I think these considerations were part of your thinking some time back when your Governor and congressional delegation proposed a cooperative Federal-State development effort. Your officials sought a device which would hasten economic development of this great State. President Johnson endorsed the proposal, and the wheels began turning to implement the recommendation.

For one reason or another, however, actual establishment of the joint agency was delayed. Then came the agony of March 27, and, with some changes in the original proposal, a Federal Reconstruction and Development Planning Commission for Alaska was created by order of President Johnson.

It has been working—and working hard—in behalf of Alaska and the best interests of the other 49 States. We have operated in close association with your State people, particularly Governor Egan. We are going to be making headway, I am confident, in assisting you in charting your long-term development.

But while I devote nearly full time to this matter, I am not interested in making it a permanent career. That is why we are moving deliberately to have our final recommendations to the President ready by late summer. In the meantime, while we rightfully must take time to make sound judgments on broad policy questions, the work of reconstruction goes forward.

I invite every Alaskan to join in. There is constructive work to be done and far-reaching plans to be made. You should want—and have—a part in that. You will find me and the other Commission members ready to work long and hard for a better and more prosperous Alaska. I welcome you to that endeavor.

Appendix IV

RESCUE WORK OF THE PRIVATE SECTOR

The success of the immediate recovery effort in Alaska can be attributed, to a large degree, to the prompt and efficient help which came from the private sector. Charitable and professional organizations, clubs and church groups immediately set up emergency housing, prepared food, and performed rescue missions. By the time the recovery activities of the private sector are complete, over 20 organizations will have spent more than $1.5 million. Throughout the recovery effort, the Alaska Civil Defense Office coordinated the relief activities of the private sector.

Red Cross.—The Red Cross sent representatives to Anchorage, Cordova, Homer, Kenai, Kodiak, Seldovia, Seward, and Valdez. They established their national disaster team headquarters in the Anchorage YMCA building on March 28, bringing supplies, blankets, sheets, and funds to supplement the YMCA's depleted stocks. This made it possible for the YMCA to continue its food and shelter service. Later in the recovery effort the Red Cross moved its headquarters to the American Baptist Church in Anchorage.

The Red Cross cooperated closely with Federal, State, and local groups in providing food, clothing, and medical care. They also repaired and rebuilt homes, replaced household furniture, replaced or repaired occupational supplies and equipment, handled welfare inquiries concerning Alaskan residents, and gave grants to needy families.

The Red Cross not only helped people in the disaster area, but also cared for earthquake victims taken to Glenallen and Fairbanks, and moved some families to Seattle. By the end of June, the Red Cross had spent $739,500 on 907 families who were homeless, hungry, or in need of some kind of assistance. The Red Cross has also earmarked $398,000 for native villages, to supplement the funds of the Bureau of Indian Affairs—the Federal agency which is organizing the immediate recovery and long-range reconstruction in native villages. All Red Cross assistance is an outright grant requiring no repayment. Total Red Cross expenditures to date as reported by the Red Cross Washington Office are $825,225. By the time all relief cases are closed, Red Cross expenditures will be well over $1 million.

YMCA.—Immediately after the disaster, the YMCA prepared their Anchorage building for recovery efforts. The Y set up an area to serve food, and arranged housing for homeless people. YMCA personnel recruited volunteers to maintain the building and to set up beds in the club rooms and in the auditorium.

On the first night, over 200 people were housed and hundreds more were served coffee and sandwiches. In the first 5 days over 1,000 persons were housed; thousands more were fed. With the help of church groups, the Girls' Service Organization, the Equipment Club (Air Force and Army men), a 15-man crew from Northwest Airlines who were forced to evacuate the Westward Hotel, and others, the YMCA maintained a 24-hour food and shelter service. The Explorer Scouts set up a Civil Defense radio contact in the YMCA building to send and receive pertinent information concerning people who needed help, the availability of shelter and food, and the location of areas which were too dangerous to travel. YMCA relief efforts were continued for about one month, with expenditures totaling between $10,000 and $12,000.

Salvation Army.—The Salvation Army was active in Anchorage, Cordova, English Bay, Glenallen, Homer, Hope, Kodiak, Portage, Seldovia, Seward, Valdez, and in more remote sections of southeastern Alaska. In Anchorage 682 families were given groceries, staples, and grants; 302 families were given clothing and bedding; 3,443 sitdown meals were served at the Social Center; and there were 100,350 canteen servings. In other towns the Salvation Army provided food, clothing, rescue equipment, mobile homes, and repair service for needed buildings which had been damaged in the quake. As of June 11, the Salvation Army had spent or committed $186,000.

American Legion.—Shortly after the earthquake, the National Commander of the American Legion asked the 17,000 Legion posts and 14,000 Auxiliary units to help the earthquake victims. As of June 11, the Legion had collected $50,635 in donations. With part of this money the Legion provided 82 families in Alaska with grants to enable them to purchase needed items which were lost in the quake.

Lions Club, District 49.—This organization "adopted" the community of Afognak, which was evacuated and resettled on Kodiak Island. The Lions Club had earmarked $35,000 for the project, but ended up spending $50,000. In gratitude to the club, the new village was named "Port Lions."

Alaskan Bar Association.—The association provided a legal aid service for several weeks following the earthquake. The service was available to all persons in the Anchorage area who needed immediate relief from legal obligations.

Boy Scouts of America.—Before communications were restored, the boys served as "runners" between State civil defense and other agencies. They directed traffic, served as guards around civil defense and damage areas, and also served as drivers to deliver supplies and messages to relief headquarters within the city. Fifty-three Explorer Scouts contributed 2,720 man-hours.

Alaska Council of Churches.—The council acted as a clearinghouse for welfare information between churches, and as a coordinating agency to prevent duplication of relief work. The council distributed funds of the member churches on the basis of demonstrated need. The aid given by the churches is usually for long-range building repairs. Individual churches, however, extended the assistance to include emergency housing and food supplies. Many churches which are not council members also contributed to the recovery effort. Total council expenditures will total $15,000.

Veterans of Foreign Wars.—The Veterans of Foreign Wars were active in many communities in Alaska, donating $80,000 in relief assistance to veterans and their families.

Anchorage Panhellenic Association.—The Association worked with West High School counselors to help graduating girls continue their plans to go to college. They helped the girls find summer employment, on-campus employment at Alaska Methodist University, scholarship aid, and group transportation rates. The association plans to offer free room and board to girls in other towns who wish to attend college in Anchorage.

Anchorage Junior Chamber of Commerce.—The Jaycees have planned a "Quake—Alaska" (Quick United Action to Kindle the Economy of Alaska) project. The project consists of two phases: publicizing the need for legislation to assist recovery, and soliciting funds from other Jaycee locals for the recovery effort. The Jaycee assistance is both immediate and long-range. The Jaycee-ettes have donated $100 to the "Quake—Alaska" project.

Governor's Fund.—Shortly after the earthquake the Governor of Alaska, William A. Egan, established the Governor's Reconstruction Fund. As of July 30, 1964, the fund contained $115,403.97 in donations. Money has come from all over the nation, and from foreign countries.

Some of the largest donations have come from Japan. Within a few days after the earthquake, the Japanese Consul General in Seattle presented Governor Egan with a $10,000 check from the Japanese Government. Japan, which has also been the victim of earthquakes, is well aware of the hardships Alaskans are enduring. The Japanese Fisheries Association gave the State of Alaska $5,000 on April 7; and on June 8 the Governor of Kanagawa, Japan, presented the Secretary of State for Alaska with $4,933.49 in donations from the citizens of Kanagawa.

A $1,500 contribution was sent by Louis M. Suiter, chairman of the board of trustees of the Bell Helicopter Co. Humanity Fund. The money represented contributions from individual employees of the company.

One large gift was a check for $3,824.97—a contribution from west coast lumber dealers and manufacturers in the States of Washington and Oregon. The check was in addition to a shipment of lumber and other building materials donated by the companies in May.

Lumber Donation.—On May 2 the *Coastal Monarch* left the harbor at Portland, Oreg., for Alaska with 4,100 tons of lumber and other building materials. The supplies were a donation from companies in Washington and Oregon. The ship arrived at Kodiak, where 1,608 tons were unloaded, on May 8. The rest of the supplies were unloaded at Seward on May 14. The Army Transportation Corps, which supplied the transportation, the Bureau of Yards and Docks, which did the unloading at Kodiak, and the Corps of Engineers, which did the unloading at Seward, were all reimbursed by OEP for transportation and stevedore costs.

AFL-CIO.—The Unions' headquarters in Washington, D.C., donated $25,000 for Alaskan reconstruction.

Others.—The Alaska Educational Association disbursed about $30,000 as of May 1, 1964, to teachers who lost members of their families in the quake. The League of Women Voters has aided in relief, both on an immediate and a long-range basis, by helping to get information out to the public.

Many other organizations were ready to help if needed, and have plans for helping in the long-range reconstruction program. Among these are the Alaska Nurses Association, the Anchorage Community Chest, the Anchorage Women's Club, the Loyal Order of Moose No. 1534, the Rainbow-Demolay, the PEO Sisterhood, the National Association of Legal Secretaires, and the Anchorage Tuberculosis Association, Inc.

Finally, there were two new organizations formed as a result of the disaster: the Alaska Earthquake Disaster Fund and the Rebuild Alaska Committee.

The Alaska Earthquake Disaster Fund was organized in Fairbanks as a result of people from all over Alaska expressing a desire to contribute money for recovery. A trusteeship with three banks participating was set up to handle the donation fund. A special three-man committee, representing the fund, flew to Valdez. Some victims were evacuated, and housed and fed in Fairbanks. Arrangements were made for others to travel to the Lower 48.

The Rebuild Alaska Committee is a statewide incorporated organization attempting to raise money through a nationwide radio and television appeal sponsored by the National Association of Broadcasters. The committee plans to make capital available to affected businesses and communities. As of August 15, the committee had $10,000 in available funds with a lot of mail not yet opened.

It is recognized that many other organizations and individuals made contributions and assisted Alaska in other ways, and that it would be impossible to assure appropriate recognition to all of the companies, labor unions, eleemosynary organizations, and individuals.

Information concerning the efforts of the private sector came from three separate reports submitted by—

Alaska Disaster Field Office
Office of Emergency Planning
June 17, 1964

Red Cross National Headquarters
Washington, D.C.
May 28, 1964—Informal communications on June 25, 1964, and August 10, 1964

The Office of the Deputy Secretary of Defense
Department of Defense
May 19, 1964

The New York Times
July 13, 1964

Anchorage, Alaska——The Fourth Avenue business area after some of the debris left by the earthquake was removed.

Appendix V

SUMMARY OF RECONSTRUCTION ACTIVITIES BY COMMUNITIES

Anchorage
Cordova
Homer
Kodiak
Seldovia
Seward
Valdez
Whittier

ANCHORAGE

In addition to structural damage from the magnitude and duration of the quake, major destruction was caused by quake-induced landslides. Anchorage did not receive serious damage from the tsunami. The major destruction occurred from four slides: Fourth Avenue, L Street, Turnagain Heights, and Government Hill. An extensive geological and soils exploration and evaluation project which provided reconstruction guidance was made. In order that reconstruction in the suspected landslide areas would not be delayed until the final reports were completed, arrangements were made for priority of four preliminary reports. This allowed earlier initiation of reconstruction.

All emergency work has been completed, including temporary (summer) sewer and water repairs, temporary power system repairs, city dock repair, emergency repairs to Anchorage International Airport, a temporary bulk petroleum tanker unloading facility, and necessary demolition and cleanup.

Permanent repairs to utilities are scheduled for completion as follows: Municipal light and power repair—August 1965, with the priority work to be done in 1964; water system—completed in November 1964, with priority work done by September 1964; sanitary sewers—completed July 1965, with priority work done in 1964; storm sewers—completed July 1965, with priority work done in 1964.

Repairs to city-owned public buildings are scheduled for completion in November 1964. Repairs to schools in the Anchorage Independent School District are scheduled to be completed in August 1964, in time for the fall term—except for West High School which will be rebuilt by September 1965; the Denali Elementary School, by December 1964; and Government Hill Elementary School which should occupy a new building by July 1965.

Permanent repairs to Anchorage International Airport are underway. The new control tower is scheduled for completion in November 1964. Reconstruction and repairs to the Alaska Railroad Building Complex in Anchorage will be complete in November 1964, and the marshalling yard should be restored by November 1965.

The urban renewal project for the central business district is underway with the design of large-scale landslide stabilization measures designed to protect adjacent private property valued at many millions of dollars. The reconstruction phase of the projects, if approved, will be completed in 1965. The city has decided to go forward with a pilot stabilization project in the residential area of Turnagain, using urban renewal funds.

As of August 20, 1964, the Office of Emergency Planning has estimated eligible reconstruction projects for this community at $17,260,000.[1] The Anchorage Independent School District has eligible projects estimated to cost $5,529,000.

CORDOVA

The tsunami which reached Cordova elevated the water 5 feet above the highest high-tide line; and extensive damage to piers, docks and houses resulted along the waterfront. The vicinity was further affected by a general uplift between +6.5 and +7.5 feet which impaired the utilization of the shoreline installations by the lowered water levels. The restoration of the small-boat harbor is scheduled to begin about mid-September and be completed about the end of this year. Repair and extension of the sewer outfall was completed at the end of August. Restoration of the water system will proceed on a priority basis with completion scheduled this fall. Two urban renewal projects to rehabilitate the shoreline facilities are being formulated.

As of August 20, 1964, the Office of Emergency Planning has approved reconstruction

[1] The figures given in this appendix do not include funds made available under other Federal programs, such as the $25 million urban renewal.

Seward, Alaska——One of the Seward fishing vessels which was taken on a wild ride inland by the tsunamis.

projects for this community at an estimated total cost of $1,421,000.

HOMER

Losses on the 5-mile Homer Spit, resulting from land subsidence and high water, included serious damage to the highway, the city dock, the small-boat harbor, POL tankage, canneries, and tourist facilities.

A temporary dock has been built and a permanent city dock is to be completed by November 15, 1964. Replacement of the small-boat harbor and facilities began in August and is scheduled for completion June 15, 1965, with a usable portion to be completed by this winter. The highway reconstruction on a higher grade to compensate for the subsidence will be delayed until next spring to permit evaluation of the new pattern of erosion or deposition to be established over the winter season. Hospital and grade school repairs are minor and are scheduled for completion by August 30, 1964.

As of August 20, 1964, the Office of Emergency Planning has approved reconstruction projects for this community at an estimated total cost of $1,565,000.

KODIAK

The disaster struck Kodiak in three phases—quake, inundations, and 100-knot winds. The industrial waterfront and the low-lying commercial area was severely damaged.

Demolition of unsafe structures and cleanup of debris are complete. Repairs to the sewage lift station are complete. Repairs to sidewalks, sewer, water, and storm drain systems are scheduled for completion in October 1964. A contract for a displaced persons trailer camp has been awarded. A new city dock is being built using, in part, a grant in lieu of repair. Completion is scheduled for July 1965, with a usable facility by December 1964.

The raising of both breakwaters has been completed. Contracts for restoration of small-boat harbor facilities (floats, parking lot, etc.) were let in August and are scheduled for completion in January 1965; inner floats, October 31, 1964.

An urban renewal project for the heavily damaged commercial area has been agreed upon; and land acquisition to permit utility installations before severe weather is being expedited. The lower portion of the commercial section is being filled to compensate for the general subsidence of Kodiak of 5 to 6 feet.

As of August 20, 1964, the Office of Emergency Planning has approved reconstruction projects for this community at an estimated total cost of $3,194,000.

SEWARD

Damage at Seward was caused by shoreline and offshore slides, tsunamis, and fire. The fire, resulting from the ruptured oil tanks, was carried by the tsunamis and slide-induced waves.

The small-boat harbor disappeared. Most of the railroad trackage within the city, a large portion of the water, sewer, and power lines, the electric generating station, and most of the petroleum bulk storage tanks were lost.

Debris cleanup, except for the Alaska Railroad area, is complete. Most emergency repairs are complete and reconstruction has begun.

Repairs to the Seward Airport are scheduled for completion in September 1964. Seward's city dock should be usable by November 1964, and completely restored by September 1965. Restoration of water and sewage lines has been assigned high priority to insure restoration of services in October 1964, before the cold weather. The city hospital and public school repairs should be finished by September 1964.

The electric distribution system should be restored by November 1964. Permanent restoration of the powerplant is scheduled for completion October 30, 1965. Meanwhile, arrangements have been made to provide emergency standby power.

The small-boat basin is scheduled for completion by March 1965, and the floats and other inner harbor facilities should be installed by May 1965. Design of the railroad dock warehouses and marshaling yard is complete, but the project completion date has not yet been established.

An urban renewal project is being planned for the waterfront area of the city where most of the extensive earthquake and tsunami damage occurred in Seward. The new plan places the port facilities where they are less vulnerable to slides resulting from earthquakes.

As of August 20, 1964, the Office of Emergency Planning has approved reconstruction projects for this community at an estimated total cost of $10,268,000.

SELDOVIA

Seldovia's quake-resultant problem is land subsidence. In relation to the tides, Seldovia's waterfront is several feet lower than before, and because much of the town is on pilings along the boardwalk, it is in jeopardy when high winds combine with high tides.

The airport and the airport road repairs are

scheduled for completion in September 1964. The rock breakwaters at Seldovia are being raised and replacement of boat and seaplane floats are scheduled for completion in September 1964. An emergency proposal to provide storm wave protection during high tides by sinking four surplus ships offshore from the endangered facilities is being evaluated.

An urban renewal project has been proposed for Seldovia and the preliminary work necessary for preparing a project plan is in process. Under this project, land will be developed on which buildings now threatened by high tides can move to higher ground. The city will receive a Public Law 875 grant in lieu of raising its boardwalk which will supplement the urban renewal funds.

As of August 20, 1964, the Office of Emergency Planning has approved reconstruction projects for this community at an estimated total cost of $1,035,000.

VALDEZ

The quake and tsunamis caused the industrial waterfront to slide into the bay and most of the remaining village was severely damaged by the inundations. The proposal of the town to abandon the damaged townsite in favor of the Mineral Creek site was strongly endorsed by the Scientific and Engineering Task Force and is being made possible under the aegis of an urban renewal project and P.L. 81–875. The major expenditure of funds, therefore, is for the new site with only the minimum effort required to enable residents to live at the existing site during the winter is being scheduled.

Emergency repairs to the city hospital and the old ferry landing were completed on May 22, 1964. Debris removal was completed in June. Priority was given to the winterizing of the sewer and water systems in the existing townsite which was completed in August 1964. Temporary repair of those portions of the junior-senior high school to be used this winter is scheduled for completion in September 1964.

Valdez airport and the Robe Lake Seaplane Base repairs are scheduled for completion by the end of September 1964.

The urban renewal project for the new Mineral Creek townsite was utilized to comprehensively plan land utilization, utility and street layouts as well as integrate the waterfront and town development.

The old road to the new townsite is being maintained until it is replaced by a permanent highway.

Replacement of the grade school at the new townsite is scheduled for completion in September 1964. A usable city dock facility at the new townsite will be available in November 1964, with completion by August 30, 1965.

The small-boat basin and inner-harbor facilities at the new site should be completed in May 1965, although the scheduled progress will permit limited use this winter. Reconstruction of the State mental health hospital and the highway administration facilities at the new townsite is being scheduled by the State.

As of August 20, 1964, the Office of Emergency Planning has approved reconstruction projects for this community at an estimated total cost of $5,977,000.

WHITTIER

Although seismic shock damaged some of the structures, more destruction was caused by the high water and the fire which followed. Except for a small amount of debris clearance, minimum restoration of rail and rail unloading facilities has been accomplished by the Department of Interior. It is anticipated that on the completion of the rail-dock, yard, and warehouse complex in Seward, all functions but the seatrain activity currently in Whittier will be relocated at Seward.

As of August 20, 1964, the Office of Emergency Planning has approved reconstruction projects for this community at an estimated total cost of $14,000.

Appendix VI

AMENDING THE ALASKA OMNIBUS ACT [1]

(Excerpt From Conference Report 1710)

The committee of conference on the disagreeing votes of the two Houses on the amendments of the House to the bill (S. 2881) to amend the Alaska Omnibus Act to provide assistance to the State of Alaska for the reconstruction of areas damaged by the earthquake of March 1964 and subsequent seismic waves, and for other purposes, having met, after full and free conference, have agreed to recommend and do recommend to their respective Houses as follows:

That the Senate recede from its disagreement to the amendment of the House, and agree to the same with an amendment as follows:

In lieu of the matter inserted by the House amendment insert the following: That this Act may be cited as the "1964 Amendments to the Alaska Omnibus Act."

SEC. 2. The Congress hereby recognizes that the State of Alaska has experienced extensive property loss and damage as a result of the earthquake of March 27, 1964, and subsequent seismic waves, and declares the need for special measures designed to aid and accelerate the State's efforts in providing for the reconstruction of the areas in the State devastated by this natural disaster.

SEC. 3. Section 21 of the Alaska Omnibus Act (73 Stat. 145) is amended by adding a new subsection (f) to read as follows:

> "(f) Notwithstanding the limitation contained in subsection (f) of section 120 of title 23, United States Code, the Secretary of Commerce is authorized to make expenditures from the emergency fund under section 125 of such title for the repair or reconstruction of highways on the Federal-aid highway systems of Alaska which have been damaged or destroyed by the 1964 earthquake and subsequent seismic waves, in accordance with the Federal share payable under subsection (a) of section 120 of such title. The increase in expenditures resulting from the difference between the Federal share authorized by this subsection and that authorized by subsection (f) of section 120 of such title shall be reimbursed to the emergency fund by an appropriation from the general fund of the Treasury: Provided, That such increase in expenditures shall not exceed $15,000,000 in the aggregate."

SEC. 4. The Alaska Omnibus Act (73 Stat. 141) is amended by adding the following new sections at the end of section 50 thereof:

"NEW FEDERAL LOAN ADJUSTMENTS

"SEC. 51. (a) The Secretary of Agriculture is authorized to compromise or release such portion of a borrower's indebtedness under programs administered by the Farmers Home Administration in Alaska as he finds necessary because of loss resulting from the 1964 earthquake and subsequent seismic waves, and he may refinance outstanding indebtedness of applicants in Alaska for loans under section 502 of the Housing Act of 1949 for the repair, reconstruction, or replacement of dwellings or farm buildings lost, destroyed, or damaged by such causes and securing such outstanding indebtedness. Such loans may also provide the purchase of building sites, when the original sites cannot be utilized.

"(b) The Secretary of Agriculture is authorized to compromise or release such portion of a borrower's indebtedness under programs administered by the Rural Electrification Administration in Alaska as he finds necessary because of loss, destruction, or damage of property resulting from the 1964 earthquake and subsequent seismic waves.

"SEC. 52. The Housing and Home Finance Administrator is authorized to compromise or release such portion of any note or other obligation held by him with respect to property in Alaska pursuant to title II of the Housing Amendments of 1955 or included within the revolving fund for liquidating programs established by the Independent Offices Appropriation Act of 1955, as he finds necessary because of loss, destruction, or damage to facilities securing such obligations by the 1964 earthquake and subsequent seismic waves.

[1] Signed by President Johnson on August 19, 1964, and became Public Law 88-451.

"URBAN RENEWAL

"SEC. 53. The Housing and Home Finance Administrator is authorized to enter into contracts for grants not exceeding $25,000,000 for urban renewal projects in Alaska, including open land projects, under section 111 of the Housing Act of 1949, which he determines will aid the communities in which they are located in reconstruction and redevelopment made necessary by the 1964 earthquake and subsequent seismic waves. Such authorization shall be in addition to and separate from any grant authorization contained in section 103(b) of said Act.

"The Administrator may increase the capital grant for a project assisted under this section to not more than 90 per centum of net project cost where he determines that a major portion of the project area has either been rendered unusable as a result of the 1964 earthquake and subsequent seismic waves or is needed in order adequately to provide, in accordance with the urban renewal plan for the project, new locations for persons, businesses, and facilities displaced by the earthquake."

"EXTENSION OF TERM OF HOME DISASTER LOANS

"SEC. 54. Loans made pursuant to paragraph (1) of section 7(b) of the Small Business Act (72 Stat. 387), as amended (15 U.S.C. 636(b)), for the purpose of replacing, reconstructing, or repairing dwellings in Alaska damaged or destroyed by the 1964 earthquake and subsequent seismic waves, may have a maturity of up to thirty years: Provided, That the provisions of section 7(c) of said Act shall not be applicable to such loans.

"MODIFICATION OF CIVIL WORKS PROJECTS

"SEC. 55. The Chief of Engineers, under the direction of the Secretary of the Army, is hereby authorized to make such modifications to previously authorized civil works projects in Alaska adversely affected by the 1964 earthquake and subsequent seismic waves as he finds necessary to meet changed conditions and to provide for current and reasonably prospective requirements of the communities they serve, at an estimated cost of $10,000,000.

"PURCHASE OF ALASKA STATE BONDS

"SEC. 56. The Housing and Home Finance Administrator is authorized to purchase, in accordance with the provisions of sections 202(b), 203, and 204 of title II of the Housing Amendments of 1955, the securities and obligations of, or make loans to, the State of Alaska to finance any part of the programs needed to carry out the reconstruction activities in Alaska related to the 1964 earthquake and subsequent seismic waves or to complete capital improvements begun prior to the earthquake: Provided, That the aggregate amount of such purchase or loan shall not exceed $25,000,000.

"RETIREMENT OR ADJUSTMENT OF OUTSTANDING MORTGAGE OBLIGATION

"SEC. 57. For the purpose of enabling the State of Alaska to retire or adjust outstanding home mortgage obligations or other real property liens secured by one to four family homes which were severely damaged or destroyed in the March 1964 earthquake and subsequent seismic waves, the President is authorized to make additional grants to the State of Alaska in an amount not to exceed a total of $5,500,000 to match, on a fifty-fifty basis, any funds provided by the State to pay the costs of retiring or adjusting such mortgage obligations. In order to be approved, a State application for a grant for carrying out the purpose of this section must: (1) be in accordance with a plan submitted by the State, to be approved by the President, for the implementation of the purpose of this section; (2) designate the State agency for retiring or adjusting said mortgage obligations; (3) provide that the mortgagor shall be required to absorb the damage loss to the entire extent of his equity interest in the property and also agree to pay at least $1,000 of the outstanding mortgage balance; (4) provide that no payments for retiring or adjusting mortgage obligations on a single property shall exceed $30,000; (5) provide regulations to assure equitable treatment among home owners and to prevent unjustified payments or gains to the State, morgagees or mortgagors; and (6) provide that the State agency will make such reports, in such form and containing such information as the President may from time to time require, and give the President, upon demand, access to the records on which such reports are based."

APPROPRIATION AUTHORIZATION

SEC. 5. There is authorized to be appropriated such sums as may be necessary to carry out the provisions of this Act, which shall be available for obligation until June 30, 1967. There is also authorized to be appropriated such sums

as may be necessary for the expenses of such advisory commissions or committees as the President may establish in connection with the reconstruction and development planning of the State of Alaska. The total amount authorized to be appropriated pursuant to this section shall not exceed $55,650,000.

TERMINATION DATE

SEC. 6. The authority contained in this Act shall expire on June 30, 1967, except that such expiration shall not affect the payment of expenditures for any obligation or commitment entered into under this Act prior to June 30, 1967.

REPORTING

SEC. 7. The President shall report semiannually during the term of this Act to the President of the Senate and the Speaker of the House on the actions taken under this Act by the various Federal agencies. The first such report shall be submitted not later than February 1, 1965, and shall cover the period ending December 31, 1964.

U. S. GOVERNMENT PRINTING OFFICE : 1964 O - 742-276