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106th Congress 2d Session	SENATE	REPORT 106–384

EARTH, WIND, AND FIRE AUTHORIZATION ACT

R E P O R T

OF THE

COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

ON

S. 1639

AUGUST 25, 2000.—Ordered to be printed
Filed under authority of the order of the Senate of July 26, 2000

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SENATE COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

ONE HUNDRED SIXTH CONGRESS

SECOND SESSION

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106TH CONGRESS, *2d Session* | SENATE | REPORT 106–384

EARTH, WIND, AND FIRE AUTHORIZATION ACT

AUGUST 25, 2000.—Ordered to be printed

Filed under authority of the order of the Senate of July 26, 2000

Mr. MCCAIN, from the Committee on Commerce, Science, and Transportation, submitted the following

REPORT

[To accompany S. 1639]

The Committee on Commerce, Science, and Transportation, to which was referred the bill (S. 1639) the Earth, Wind, and Fire Authorization Act, "A bill to authorize appropriations for carrying out the National Earthquake Hazards Reduction Program, the National Weather Service and Related Agencies, and the United States Fire Administration for fiscal years 2001, 2002, and 2003", having considered the same, reports favorably thereon with an amendment in the nature of a substitute, and recommends that the bill do pass.

PURPOSE OF THE BILL

The purpose of the bill, as reported, is to authorize appropriations for carrying out the National Earthquake Hazards Reduction Program (NEHRP), the National Weather Service (NWS) and Related Agencies, and the United States Fire Administration (USFA) for fiscal years 2001, 2002, and 2003.

BACKGROUND AND NEEDS

Earthquake.—Established by the Earthquake Hazards Reduction Act of 1977 (Public Law 95–124), NEHRP is an inter-agency program designed to help minimize the loss of life and property caused by earthquakes. The Act reflected a general optimism about the potential for developing accurate short-term forecasts of the location, magnitude, and timing of earthquakes. In 1980, Congress reauthorized the Earthquake Hazards Reduction Act, Public Law 96–472, defining FEMA as lead agency and authorizing funding for FEMA

and the National Bureau of Standards, now National Institute of Standards and Technology (NIST).

NEHRP includes funding for the four principal agencies and provides coordination of the earthquake-related activities that 12 other contributing agencies perform as part of their missions. The principal agencies are FEMA, NIST, the United States Geological Survey (USGS), and the National Science Foundation (NSF).

As lead agency of NEHRP, FEMA coordinates Federal earthquake hazard reduction efforts. FEMA is primarily responsible for translating the research programs of the other agencies into effective earthquake hazard reduction measures for implementation at the state and local levels. That responsibility includes developing and disseminating improved seismic design and construction techniques and standards for application by Federal, state, and local entities, and for voluntary use by model code groups and design professionals. It also includes coordinating the Federal response to catastrophic earthquakes, providing financial and technical assistance to state and local governments to implement comprehensive earthquake hazard reduction programs, and developing public awareness and education programs. FEMA prepares a coordinated budget document for the NEHRP and, through the inter-agency NEHRP group, plans and participates in the development of earthquake research agendas and new mitigation techniques to help ensure that unnecessary duplication among agency programs does not occur.

USGS conducts basic research on earthquakes and provides assessments of earthquake hazards. The agency studies the geology and seismicity of an area to identify and assess the seismic hazards using instruments, paleoseismological techniques, and historical records to predict the likelihood and size of potential earthquakes. The information generated provides local communities and other bodies a basis for prioritizing hazard reduction activities. Further, USGS monitors strong ground motion during earthquakes, which, coupled with surface geology, is used to improve buildings design. USGS also conducts research to understand how earthquakes occur and to identify precursors that would make it possible to predict earthquakes.

NSF supports fundamental earthquake research through large-scale, small-group, and individual research activities, and by funding centers, facilities, and instrumentation. Research funded by NSF includes engineering research, basis earth science research, and earthquake-related social science research. The earthquake engineering research includes studying how buildings respond to earthquakes, how to design and construct buildings to better resist earthquakes, and how to transfer that knowledge to the engineers and architects who design buildings and develop building codes. In 1986, NSF established a National Earthquake Engineering Research Center at the State University of New York Buffalo to be a focal point for earthquake engineering research.

NIST is mandated by Congress to conduct research and development in earthquake engineering, aiming to improve building codes and standards as well as advance practices for structures and lifelines including water lines, natural gas pipelines, and electrical lines. This work focuses on the development of design guidelines and test requirements through problem-focused research and devel-

opment (R&D) to introduce the use of new and innovative mitigation measures to the design and construction professions. NIST investigators use damaging earthquakes as laboratories in post-earthquake studies. By examining the response of the environment, investigators seek to improve the design practices used for structures and lifeline systems.

Weather and Atmospheric Science.—In 1970, the National Oceanic and Atmospheric Administration (NOAA) was created at the Department of Commerce by combining the existing Bureau of Commercial Fisheries, U.S. Weather Bureau, Coast and Geodetic Society, Environmental Data Service, National Satellite Center, and Research Libraries. NOAA conducts research and gathers data about the global oceans, atmosphere, space, and sun and applies this knowledge to science and services that touch the lives of all Americans.

The budget for NOAA is divided into two primary accounts, Operations, Research and Facilities (ORF), which consists of approximately 70 percent of NOAA's budget, and Procurement, Acquisition and Construction (PAC), comprising 25 percent. A newly-created account established in fiscal year (FY) 2000 under the authority of the Endangered Species Act to fund salmon conservation measures represents 4 percent; several smaller accounts make up the remaining 1 percent.

The ORF account consists of eight activities. They include—

(1) National Ocean Service;
(2) National Marine Fisheries Service;
(3) Oceanic and Atmospheric Research (OAR);
(4) NWS;
(5) National Environmental Satellite, Data, and Information Service (NESDIS);
(6) Program Support;
(7) Facilities; and
(8) Fleet Maintenance and Planning.

The Subcommittee on Science, Technology, and Space has joint jurisdiction over OAR, and complete oversight for NWS and NESDIS. The remaining activities fall under the jurisdiction of the Subcommittee on Oceans and Fisheries of the Senate Committee on Commerce, Science, and Transportation.

OAR provides the research and technology development necessary to improve NOAA weather services, solar terrestrial forecasts, and marine services. OAR conducts the scientific analyses used in developing national policy decisions in areas such as climate change, air quality, and stratospheric ozone depletion. OAR research promotes economic growth through efforts in marine biotechnology and development of environmental observation. The President's budget request for OAR is $202 million for FY 2001, $213.1 million for FY 2002, and $224.8 million for FY 2003.

NWS provides weather and flood warnings and forecasts to the general public. Weather satellites and staffed and automated stations on land and at sea gather meteorological observations of the atmosphere and the Earth's service. Based upon these observations, professional meteorologists prepare warnings and forecasts and disseminate them to the public. The President's budget request for NWS is $634.9 million for FY 2001, $669.8 million for FY 2002, and $706.6 million for FY 2003.

NESDIS provides for the operation of the polar-orbiting and geostationary operational environmental satellites, development of the converged polar-orbiting satellite series with the Department of Defense and the National Aeronautics and Space Administration and management of NOAA's environmental data collections. The polar and geostationary satellites provide meteorological data to NWS for use in developing warnings and forecasts. Environmental data and information are collected from NOAA and other sources disseminated, and archived for future use. The President's budget request for NESDIS is $108.2 for FY 2001, $114.2 for FY 2002, and $120.43 for FY 2003.

The PAC account, established in FY 1998 as an annual appropriation, includes costs associated with acquisition of NOAA's major capital assets. The Administration's FY 2001 request of $635.2 million for PAC expands the scope of an annual appropriation for incrementally funded capital projects to include advanced appropriations for entire projects or divisible segments of larger ones. Requesting advanced appropriations for capital assets responds to the requirements of the Federal Acquisition Streamlining Act of 1994 and the Information Technology Management Reform Act of 1996 for multi-year PAC projects or divisible segments will improve the decision-making process by allowing managers to understand the full cost of project implementation when making funding decisions.

The Administration has proposed three initiatives in FY 2001 that are of interest to the Subcommittee on Science, Technology, and Space; the National Disaster Reduction Initiative (NDRI), Climate in the 21st Century, and the Minority Serving Institutions initiative. In FY 2001, the Administration requested in increase of $110 million for NDRI to implement the second phase of the Department of Commerce's strategy to reduce and mitigate the impacts of extreme natural events. This strategy calls for an end-to-end approach to natural disaster mitigation, including research to improve prediction and understanding of extreme events, advances in developing response and recovery plans, assessments of vulnerabilities of communities and infrastructure, and dissemination of information, technology and training to reduce vulnerability before and after natural disasters. NOAA is requesting $28 million in FY 2001 for the second initiative, Climate in the 21st Century. This effort is designed to meet the needs of emergency managers, the private sector, the research community, decision-makers in the United States and international government agencies to provide timely data and information about climate variability, climate change and trends in extreme weather events. Finally, NOAA's FY 2001 budget includes $17 million to continue educational training relationships through a joint partnership with a consortium of Minority Serving Institutions.

Fire.—USFA is a directorate with FEMA. Its mission is to provide leadership, coordination, and support for the nation's fire prevention and control, fire training and education, and emergency medical services activities. USFA's programs promote the ultimate goal of a significant reduction of the nation's loss of life and property from fire. Although fire loss has decreased substantially over the past 25 years, the fire problem in the United States remains serious. The United States still has one of the highest fire death

rates in the industrialized world, with 14.9 deaths per million people in 1998. Between 1993 and 1996, an average of more than 4,400 Americans lost, their, lives and another 26,000 were injured annually as the result of fire. In addition, approximately 100 firefighters are killed each year in duty-related incidents. The nation's fire loss also includes direct property loss estimated at $8.5 billion annually.

During the early 1980s, the Reagan Administration proposed the elimination of the USFA while preserving the Fire Academy. Although Congress did not allow the termination of the USFA, the agency suffered severe staff reductions and the Fire Academy was separated from the USFA and housed with other FEMA emergency training programs. In 1991, the Fire Academy subsequently was reorganized and put back into the USFA, where it remains today. USFA programs are divided into four basic area: data collection, public education and awareness, training, and technology.

For FY 2001, the Administration is requesting $69.8 million for USFA, a 60 percent, or $27 million increase over FY 2000 levels. $25 million of this increase will be used to support a new grants program to needy and distressed communities for life safety equipment for firefighters.

LEGISLATIVE HISTORY

The Earth, Wind, and Fire Act of 1999 was introduced on September 24, 1999, by Senators Frist, Breaux, McCain, Hollings, and Rockefeller.

On June 29, 1999, Senator Frist held a Science, Technology, and Space Subcommittee hearing on public safety science and technology. The Administrator of NOAA, the Director of the U.S. Fire Administration, and participating agency leaders of NEHRP testified regarding their agencies' contributions to public safety research and development.

On April 13, 2000, the Commerce Committee in open session considered S. 1639 as introduced by Senator Frist, and without objection, ordered S. 1639, with an amendment in the nature of a substitute, to be reported.

ESTIMATED COSTS

In accordance with paragraph 11(a) of rule XXVI of the Standing Rules of the Senate and section 403 of the Congressional Budget Act of 1974, the Committee provides the following cost estimate, prepared by the Congressional Budget Office:

U.S. CONGRESS,
CONGRESSIONAL BUDGET OFFICE,
Washington, DC, May 11, 2000.

Hon. JOHN MCCAIN,
Chairman, Committee on Commerce, Science, and Transportation, U.S. Senate, Washington, DC.

DEAR MR. CHAIRMAN: The Congressional Budget Office has prepared the enclosed cost estimate for S. 1639, the Earth, Wind, and Fire Authorization Act of 2000.

If you wish further details on this estimate, we will be pleased to provide them. The CBO staff contact is Megan Carroll.

Sincerely,

BARRY B. ANDERSON
(For Dan L. Crippen, Director).

Enclosure.

CONGRESSIONAL BUDGET OFFICE COST ESTIMATE

S. 1639—Earth, Wind, and Fire Authorization Act of 2000

Summary: S. 1639 would authorize appropriations for several research programs primarily related to natural hazards, weather, and the atmosphere. CBO estimates that implementing S. 1639 would cost about $5.5 billion over the next five years, assuming appropriation of the authorized amounts. The bill would not affect direct spending or receipts; therefore, pay-as-you-go procedures would not apply. S. 1639 contains no intergovernmental or private-sector mandates as defined in the Unfunded Mandates Reform Act (UMRA) and would impose no costs on state, local, or tribal governments.

Title I of S. 1639 would authorize appropriations totaling $318 million over the 2001–2003 period for the Federal Emergency Management Agency, the U.S. Geological Survey (USGS), the National Science Foundation (NSF), and the National Institute of Standards and Technology to carry out provisions of the Earthquake Hazards Reduction Act of 1977. Title I also would authorize the appropriation of $187 million over the 2001–2005 period for the USGS to implement a new system of seismic research and monitoring, and $74 million over the 2001–2004 period for the NSF to establish a network for engineering simulations of earthquakes.

Title II would authorize appropriations for three branches of the National Oceanic and Atmospheric Administration—the National Weather Service, the Office of Oceanic and Atmospheric Research, and the National Environmental Satellite, Data, and Information Service. For these programs, the bill would authorize the appropriations of about $1.5 billion for fiscal year 2001, $1.6 billion for 2002, and $1.7 billion for 2003.

Title III would authorize appropriations totaling $163 million over the 2001–2003 period for the programs, salaries, and expenses of the U.S. Fire Administration.

Estimated cost to the Federal Government: For the purposes of this estimate, CBO assumes that S. 1639 will be enacted by the end of fiscal year 2000 and that the authorized amounts will be provided each year. Estimates of outlays are based on historical spending patterns for these and similar programs. The estimated budgetary impact of S. 1639 is shown in the following table. The costs of this legislation fall within budget functions 250 (general science, space, and technology), 300 natural resources and environment), 370 (commerce and housing credit), and 450 (community and regional development).

	By fiscal year, in millions of dollars—					
	2000	2001	2002	2003	2004	2005
SPENDING SUBJECT TO APPROPRIATION						
Spending Under Current Law for Research Programs Authorized by S. 1639:						
Budget Authority[1]	1,559	0	0	0	0	0
Estimated Outlays	1,553	624	408	88	4	0
Proposed Changes:						
Authorization Level	0	1,727	1,835	1,903	52	34
Estimated Outlays	0	1,040	1,588	1,837	775	253
Spending Under S. 1639:						
Authorization Level[1]	1,559	1,727	1,835	1,903	52	34
Estimated Outlays	1,553	1,664	1,996	1,925	779	253

[1] The 2000 level is the amount appropriated for these research programs for that year.

Pay-as-you-go considerations: None.

Intergovernmental and private-sector impact: S. 1639 contains no intergovernmental or private-sector mandates as defined in UMRA and would impose no costs on state, local, or tribal governments. Some of the appropriations authorized by this bill would fund grants and other services to state and local governments.

Previous CBO estimate: During 1999, CBO transmitted cost estimates for three bills that would authorize appropriations for the same programs authorized under each of the titles in S. 1639:

- On April 21, 1999, CBO transmitted a cost estimate for H.R. 1184, the Earthquake Hazards Reduction Authorization Act of 1999, as reported by the House Committee on Science on April 19, 1999;
- On May 7, 1999, CBO transmitted a cost estimate for H.R. 1553, the National Weather Service and Related Agencies Authorization Act of 1999, as ordered reported by the House Committee on Science on April 29, 1999;
- On May 6, 1999, CBO transmitted a cost estimate for H.R. 1550, the Fire Administration Authorization Act of 1999, as ordered reported by the House Committee on Science on April 29, 1999.

Differences in the amounts authorized and the fiscal years covered by these previous bills and by S. 1639 account for the differences in our cost estimates.

Estimate prepared by: Federal Costs: Megan Carroll (Title I), Deborah Reis (Title II), and Rachel Applebaum (Title III); Impact on State, Local, and Tribal Governments: Marjorie Miller; and Impact on the Private Sector: Jean Wooster.

Estimate approved by: Peter H. Fontaine, Deputy Assistant Director for Budget Analysis.

REGULATORY IMPACT STATEMENT

In accordance with paragraph 11(b) of rule XXVI of the Standing Rules of the Senate, the Committee provides the following evaluation of the regulatory impact of the legislation, as reported:

Because S. 1639, as reported, does not create any new programs, the legislation will have no additional regulatory impact, and will result in no additional reporting requirements. The legislation have no further effect on the number or types of individuals and businesses regulated, the economic impact of such regulation, the per-

sonal privacy of affected individuals, or the paperwork required from such individuals and businesses.

NUMBER OF PERSONS COVERED

S. 1639, as reported, authorizes appropriations for the Earth, Wind, and Fire Act for fiscal years 2001, 2002, and 2003. The Committee believes that the reported bill will not subject any individuals or businesses affected by the bill to any additional regulations.

ECONOMIC IMPACT

This legislation will not have an adverse economic impact on the Nation.

PRIVACY

This legislation would not have an adverse impact on personal privacy of individuals.

PAPERWORK

This reported bill contains 6 reporting requirements—

(1) the Director of USGS shall transmit to Congress a 5-year management plan for establishing and operating the Advanced National Seismic Research and Monitoring System;

(2) each participating NEHRP agency shall include in its annual appropriations request a report identifying elements of the proposed NEHRP activities;

(3) the Director of FEMA shall transmit a report to Congress, after a period of public comment, describing the elements of NEHRP that specifically address the needs of at-risk populations, including the elderly, persons with disabilities, non-English-speaking families, single-parent households, and the poor;

(4) the Administrator of USFA shall prepare and submit to the Senate Committee on Commerce, Science, and Transportation, and the House of Representatives Committee on Science a five-year strategic plan of the program activities for USFA not later than April 30, 2000;

(5) the Administrator of USFA, in consultation with the Director of NIST, trade representatives, professional and nonprofit associations, state and local firefighting services, and other appropriate entities, shall transmit a report to the Senate Committee on Commerce, Science, and Transportation, and the House of Representatives Committee on Science, describing USFA's research agenda, including a plan to implement that agenda; not later than 120 days after the date of enactment of the reported bill; and

(6) the Administrator of USFA shall conduct an assessment of the need for additional capabilities for Federal counterterrorism training of emergency response personnel and submit the report containing the results of this assessment to Congress not later than 180 days after the date of enactment of the reported bill.

SECTION-BY-SECTION ANALYSIS

TITLE I—EARTHQUAKE HAZARDS REDUCTION ACT

Section 101. Authorization of appropriations

This section of the reported bill would authorize appropriations for NEHRP and the four participating agencies for fiscal years 2001, 2002, and 2003, as follows:

Agency	FY 2001	FY 2002	FY 2003
FEMA	$19,861,000	$20,953,000	$22,105,000
USGS	47,360,000	49,965,000	52,713,000
NSF	30,900,000	32,600,000	34,393,000
NIST	2,332,000	2,460,000	2,595,300

Sec. 102. Repeals

This section of the reported bill would repeal section 10 and subsections (e) and (f) of section 12 of the Earthquake Hazards Reduction Act of 1977.

Sec. 103. Advanced National Seismic Research and Monitoring System

Under this section of the reported bill, the Director of USGS would be authorized to establish and operate an Advanced National Seismic Research and Monitoring System to organize, modernize, and stabilize the national, regional, and urban seismic monitoring systems in the United States. Not later than 90 days after the date of enactment of this Act, the Director would be required to transmit to Congress a five-year management plan for establishing and operating the new system. Funds for expansion, modernization, and operation of an Advanced National Seismic Research and Monitoring System would be authorized at $38 million in FY 2001, $44 million in FY 2002, $35.1 million in FY 2003, $35 million in FY 2004, and $33.5 million in FY 2005.

Sec. 104. Network for earthquake engineering simulations

The Director of NSF would be authorized, under the reported bill, to establish a Network for Earthquake Engineering Simulation to upgrade, link, and integrate a system of geographically distributed experimental facilities for earthquake engineering testing of full-size structures and their components and partial-scale physical models. Funding for the above Network would be authorized for the NSF at $24.4 million in FY 2001, $4.5 million in FY 2002, and $17 million in FY 2003.

Sec. 105. Budget coordination

This section of the reported bill directs FEMA to provide budget coordination annually to other program agencies for activities related to NEHRP. The annual program budget would be submitted to OMB in the report outlining each element of the proposed program activities of the participating agencies.

Sec. 106. Report on at-risk populations

This section of the reported bill would require the Director of FEMA to transmit a report to Congress describing the elements of

NEHRP that specifically address the needs of at-risk populations, including the elderly, persons with disabilities, non-English-speaking families, single-parent households, and the poor not later than one year after the date of the enactment of this Act.

Sec. 107. Public access to earthquake information

This section of the reported bill would amend FEMA's program responsibilities under section 5(b)(2)(A)(ii) of the Earthquake Hazards Reduction Act of 1977 to include development of means of increasing public access to available locality-specific information that may assist the public in preparing for or responding to earthquakes.

Sec. 108. Lifelines

As reported, the bill would amend section 4(6) of the Earthquake Hazards Reduction Act of 1977 by inserting "and infrastructure" after "communication facilities." This change would clarify the meaning of the term "lifelines."

TITLE II—NATIONAL WEATHER SERVICE AND RELATED AGENCIES AUTHORIZATION ACT

Sec. 201. Definitions

This section of the reported bill defines certain key terms applicable to Title II of the reported bill including "Administrator" and "Secretary."

Sec. 202. National Weather Service

Subsection (a) authorizes $634.9 million for FY 2001, $669.8 million for FY 2002, and $706.6 million for FY 2003 to enable NOAA to carry out the ORF activities for NWS. Of these funds, the following funding is outlined:

Program	FY 2001	FY 2002	FY 2003
Local Warnings and Forecasts	$466,471,000	$492,127,000	$519,194,000
Advanced Hydrological Prediction System	1,000,000	1,055,000	1,113,000
Susquehanna River Basin Flood System	619,000	653,000	689,000
Aviation Forecasts	35,596,000	37,554,000	39,619,000
Weather Forecast Offices Facilities Maintenance	5,250,000	5,339,000	5,843,000
Central Forecast Guidance	38,001,000	40,091,000	42,296,000
Atmospheric and Hydrological Research	3,068,000	3,237,000	3,415,000
Next Generation Weather Radar	38,802,000	40,936,000	43,188,000
Automated Surface Observing System	7,423,000	7,831,000	8,262,000
Advanced Weather Interactive Processing System	38,642,000	40,767,000	43,010,000

Subsection (b) would authorize $75.36 million for FY 2001, $77.75 million for FY 2002, and $71.01 for FY 2003 to enable NOAA to carry out the PAC activities of the NWS. Of these funds, the following funding is outlined:

Program	FY 2001	FY 2002	FY 2003
Next Generation Weather Radar	$9,580,000	$16,798,000	$15,931,000
Automated Surface Observing System	5,125,000	5,125,000	5,125,000
Advanced Weather Interactive Processing System	17,300,000	17,300,000	9,645,000
Center Computer Facilities Upgrades	13,085,000	17,505,000	19,285,000
Radiosonde Replacement	7,000,000	7,000,000	7,000,000
Weather Forecast Office Construction	9,526,000	9,526,000	9,526,000
NOAA Weather Radio Expansion	6,244,000	4,500,000	4,500,000

Program	FY 2001	FY 2002	FY 2003
Evansville Infrastructure Protection	5,500,000	.....	.....

The Committee, in providing authorization for full funding of NWS, has not included language concerning the existing relationships between NWS and the private sector.

Sec. 203. Atmospheric research

Subsection (a) paragraph (1) would authorize $202 million for FY 2001, $213.1 million for FY 2002, and $224.8 million for FY 2003 to enable NOAA to carry out the Atmospheric Research Operations, Research, and Facilities environmental research and development activities of the Office of Oceanic and Atmospheric Research.

Of the amounts of paragraph (1) subsection (a), paragraph (2) would authorize $154.4 million for FY 2001, $162.8 million for FY 2002, and $171.8 million for FY 2003 for Climate and Air Quality Research. The reported bill enumerates other programs within Climate and Air Quality Research.

Of the amounts of paragraph (1), subsection (a), paragraph (3) would authorize $47.6 million for FY 2001, $50.2 million for FY 2002, and $53 billion for FY 2003 for Atmospheric Programs. The reported bill enumerates other subactivities within Atmospheric Programs.

Subsection (b) would authorize $7 million for FY 2001, $7 million for FY 2002, and $7 million FY 2003 to enable NOAA to carry out Atmospheric Research PAC environmental research and development activities of the Office of Oceanic, and Atmospheric Research. These monies would fund the Geophysical Fluid Dynamics Lab Supercomputer.

Sec. 204. National Environmental Satellite Data and Information Service

Subsection (a), paragraph (1) of this section of the reported bill would authorize $108.2 million for FY 2001, $114.2 million for FY 2002, and $120.43 for FY 2003 to enable NOAA to carry out ORF environmental research and development and related activities of NESDIS.

Subsection (a), paragraph (2) would authorize $63.412 million for FY 2001, $66.9 million for FY 2002, and $70.579 million for FY 2003 of the amounts referred to in paragraph (1) of this subsection for Satellite Observing Systems. The reported bill provides for additional programs within Satellite Observing Systems.

Of the amounts authorized under paragraph (1) of subsection (a), paragraph (3) of this subsection would authorize $44.789 million for FY 2001, $47.252 million for FY 2002, and $49.851 million for FY 2003 for Environmental Data Management Systems.

Subsectin (b) would authorize $445.828 million for FY 2001, $515.271 million for FY 2002, and $554.945 million for FY 2003 to enable NOAA to carry out PAC environmental research and development and related activities of the NESDIS.

Subsection (b), paragraph (1) would authorizes $136.965 million for FY 2001, $136.965 million for FY 2002, and $103.010 million for FY 2003 for procurement and launch of the Polar Orbiting Environmental Satellites (POES), K, L, M, and N.

Subsection (b), paragraph (2) would authorize $76.654 million for FY 2001, $156.731 million for FY 2002, and $236.471 million for FY 2003 for procurement and launch for the National Polar-Orbiting Operational Environmental Satellite System (NPOESS).

Subsection (b), paragraph (3) would authorize $323.209 million for FY 2001, $221.575 million for FY 2002, and $215.464 million for FY 2003 for the procurement and launch for the Geostationary Operational Environment NEXT follow-on Satellites (GOES N–Q).

Sec. 205. Minority Serving Institutions

This section in the reported bill would authorize $17 million for FY 2001, $17.935 million for FY 2002, and $18.921 million for FY 2003 for Minority Serving Institutions in the Atmospheric, Environmental, and Oceanic Sciences. The Committee supports this initiative designed to train more minorities in the scientific disciplines that support NOAA's missions.

Sec. 206. Internet availability of information

This section of the reported bill requires the Administrator to make available through the Internet the abstracts relating to all research grants and awards with funds authorized by this Act.

TITLE III—FIRE ADMINISTRATION ACT

Sec. 301. Authorization of appropriations

This section of the reported bill would authorize $69.753 million for FY 2001, $46.096 million for FY 2002, and $47.479 million for FY 2003 for USFA. The FY 2001 authorization includes funding for a $25 million grant program to assist local firefighters in rural and needy communities.

Sec. 302. Strategic plan

This section of the reported bill would require the USFA Administrator to submit a strategic plan, by April 30, 2001, to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science of the House of Representatives. Subsection (b) specifies the contents of the plan.

Sec. 303. Research agenda

This section of the reported bill would require the USFA Administrator, within 120 days of enactment, and in consultation with NIST; FEMA; representatives of trade, professional, and non-profit associations; state and local firefighting services; and other appropriate entities to prepare and submit to the Committee on Commerce, Science, and Transportation of the Senate and the Committee on Science of the House of Representatives a research agenda along with an implementation plan. Subsection (b) specifies the contents of the plan.

Sec. 304. Surplus and excess federal equipment

This section of the reported bill would require the Administrator to provide information to the public on procedures to acquire surplus and excess equipment or property that may be useful to state and local fire, emergency, and hazardous material handling service providers.

Sec. 305. Cooperative agreements with Federal facilities

This section of the reported bill would require the Administrator to provide information to the public on procedures to establish cooperative agreements between State and local fire and emergency services and federal facilities in their regions relating to the provision of fire and emergency services.

Sec. 306. Need for additional training in counterterrorism

This section of the reported bill would require the Administrator to conduct an assessment of the need for additional capabilities for Federal counterterrorism training of emergency response personnel. Subsection (b) specifies the contents of the plan. Subsection (c) requires the report to be submitted within 180 days of enactment of this Act.

CHANGES IN EXISTING LAW

In compliance with paragraph 12 of rule XXVI of the Standing Rules of the Senate, changes in existing law made by the bill, as reported, are shown as follows (existing law proposed to be omitted is enclosed in black brackets, new material is printed in italic, existing law in which no change is proposed is shown in roman):

Federal Fire Prevention and Control Act of 1974

SEC. 17. AUTHORIZATION OF APPROPRIATIONS. [15 U.S.C. 2216]

(a) There are authorized to be appropriated to carry out the foregoing provisions of this Act, except as otherwise specifically provided, with respect to the payment of claims, under section 11 of this Act, an amount not to exceed $25,210,000 for the fiscal year ending September 30, 1980, which amount includes—

(1) $4,781,000 for programs which are recommended in the report submitted to the Congress by the Administrator pursuant to section 24(b)(1);

(2) $9,430,000 for the National Academy for Fire Prevention and Control;

(3) $307,000 for adjustments required by law in salaries, pay, retirement, and employee benefits;

(4) $500,000 for additional rural firefighting technical assistance and information activities;

(5) $500,000 for the study required by section 26 of this Act; and

(6) $110,000 for the study required by section 27 of this Act.

(b) There are authorized to be appropriated for the additional administrative expenses of the Federal Emergency Management Agency, which are related to this Act and which result from Reorganization Plan Numbered 3 of 1978 (submitted June 19, 1978) and related Executive orders, an amount not to exceed $600,000 for the fiscal year ending September 30, 1980.

(c) There are authorized to be appropriated to carry out this Act, except as otherwise specifically provided with respect to the payment of claims under section 11 of this Act, an amount not to exceed $23,814,000 for the fiscal year ending September 30, 1981, which amount includes—

(1) not less than $1,100,000 for the first year of a three-year concentrated demonstration program of fire prevention and control in two States with high fire death rates;

(2) not less than $2,575,000 for rural fire prevention and control; and

(3) not less than $4,255,000 for research and development for the activities under section 18 of this Act at the Fire Research Center of the National Bureau of Standards of which not less than $250,000 shall be available for adjustments required by law in salaries, pay, retirement, and employee benefits.

The funds authorized in paragraph (3) shall be in addition to funds authorized in any other law for research and development at the Fire Research Center.

(d) Except as otherwise specifically provided with respect to the payment of claims under section 11 of this Act, to carry out the purposes of this Act, there are authorized to be appropriated—

(1) $20,815,000 for the fiscal year ending September 30, 1982, and $23,312,800 for the fiscal year ending September 30, 1983, which amount shall include—

(A) such sums as may be necessary for the support of research and development at the Fire Research Center of the National Bureau of Standards under section 18 of this Act, which sums shall be in addition to those funds authorized to be appropriated under the National Bureau of Standards Authorization Act for fiscal years 1981 and 1982; and

(B) $654,000 for the fiscal year ending September 30, 1982, and $732,480 for the fiscal year ending September 30, 1983, for executive direction by the Federal Emergency Management Agency of program activities for which appropriations are authorized by this subsection; and

(2) such further sums as may be necessary in each of the fiscal years ending September 30, 1982, and September 30, 1983, for adjustments required by law in salaries, pay, retirement, and employee benefits incurred in the conduct of activities for which funds are authorized by paragraph (1) of this subsection.

The funds authorized under section 18 shall be in addition to funds authorized in any other law for research and development at the Fire Research Center of the National Bureau of Standards.

(e) Except as otherwise specifically provided with respect to the payment of claims under section 11 of this Act, to carry out the purposes of this Act, there are authorized to be appropriated—

(1) $15,720,000 for the fiscal year ending September 30, 1984, and $20,983,000 for the fiscal year ending September 30, 1985; and

(2) such further sums as may be necessary in each of the fiscal years ending September 30, 1984, and September 30, 1985, for adjustments required by law in salaries, pay, retirement, and employee benefits incurred in the conduct of activities for which funds are authorized by paragraph (1) of this subsection.

The funds authorized under this subsection shall be in addition to funds authorized in any other law for research and development at the Fire Research Center of the National Bureau of Standards.

(f) Except as otherwise specifically provided with respect to the payment of claims under section 11 of this Act, to carry out the

purposes of this Act, there are authorized to be appropriated $22,037,000 for the fiscal year ending September 30, 1987.

(g)(1) Except as otherwise specifically provided with respect to the payment of claims under section 11 of this Act, there are authorized to be appropriated to carry out the purposes of this Act—

(A) $17,039,000 for the fiscal year ending September 30, 1989;

(B) $17,737,000 for the fiscal year ending September 30, 1990;

(C) $18,464,000 for the fiscal year ending September 30, 1991;

(D) $25,550,000 for the fiscal year ending September 30, 1992;

(E) $26,521,000 for the fiscal year ending September 30, 1993;

(F) $27,529,000 for the fiscal year ending September 30, 1994;

(G) $29,664,000 for the fiscal year ending September 30, 1998; [and]

(H) $30,554,000 for the fiscal year ending September 30, [1999.] *1999;*

(I) $69,753,000 for fiscal year 2001;

(J) $46,096,000 for fiscal year 202; and

(K) $47,479,000 for fiscal year 2003.

(2) Of the amounts referred to in paragraph (1), not more than $4,150,000 is authorized to be appropriated for each fiscal year for National Emergency Training Center site administration.

(h) In addition to any other amounts that are authorized to be appropriated to carry out this Act, there are authorized to be appropriated to carry out this Act—

(1) $500,000 for fiscal year 1995 for basic research on the development of an advanced course on arson prevention;

(2) $2,000,000 for fiscal year 1996 for the expansion of arson investigator training programs at the Academy under section 24 and at the Federal Law Enforcement Training Center, or through regional delivery sites;

(3) $4,000,000 for each of fiscal years 1995 and 1996 for carrying out section 25, except for salaries and expenses for carrying out section 25; and

(4) $250,000 for each of the fiscal years 1995 and 1996 for salaries and expenses for carrying out section 25.

SEC. 33. SURPLUS AND EXCESS FEDERAL EQUIPMENT.

The Administrator shall make publicly available, including through the Internet, information on procedures for acquiring surplus and excess equipment or property that may be useful to State and local fire, emergency, and hazardous material handling service providers.

SEC. 34. COOPERATIVE AGREEMENTS WITH FEDERAL FACILITIES.

The Administrator shall make publicly available, including through the Internet, information on procedures for establishing cooperative agreements between State and local fire and emergency services and Federal facilities in their region relating to the provision of fire and emergency services.

Earthquake Hazards Reduction Act of 1977

SEC. 7701. CONGRESSIONAL FINDINGS. [42 U.S.C. 7701]

The Congress finds and declares the following:

(1) All 50 States are vulnerable to the hazards of earthquakes, and at least 39 of them are subject to major or moderate seismic risk, including Alaska, California, Hawaii, Illinois, Massachusetts, Missouri, Montana, Nevada, New Jersey, New York, South Carolina, Utah, and Washington. A large portion of the population of the United States lives in areas vulnerable to earthquake hazards.

(2) Earthquakes have caused, and can cause in the future, enormous loss of life, injury, destruction of property, and economic and social disruption. With respect to future earthquakes, such loss, destruction, and disruption can be substantially reduced through the development and implementation of earthquake hazards reduction measures, including (A) improved design and construction methods and practices, (B) land-use controls and redevelopment, (C) prediction techniques and early-warning systems, (D) coordinated emergency preparedness plans, and (E) public education and involvement programs.

(3) An expertly staffed and adequately financed earthquake hazards reduction program, based on Federal, State, local, and private research, planning, decisionmaking, and contributions would reduce the risk of such loss, destruction, and disruption in seismic areas by an amount far greater than the cost of such program.

(4) A well-funded seismological research program in earthquake prediction could provide data adequate for the design, of an operational system that could predict accurately the time, place, magnitude, and physical effects of earthquakes in selected areas of the United States.

(5) The geological study of active faults and features can reveal how recently and how frequently major earthquakes have occurred on those faults and how much risk they pose. Such long-term seismic risk assessments are needed in virtually every aspect of earthquake hazards management, whether emergency planning, public regulation, detailed building design, insurance rating, or investment decision.

(6) The vulnerability of buildings, lifelines, public works, and industrial and emergency facilities can be reduced through proper earthquake resistant design and construction practices. The economy and efficacy of such procedures can be substantially increased through research and development.

(7) Programs and practices of departments and agencies of the United States are important to the communities they serve; some functions, such as emergency communications and national defense, and lifelines, such as dams, bridges, and public works, must remain in service during and after an earthquake. Federally owned, operated, and influenced structures and life-lines should serve as models for how to reduce and minimize hazards to the community.

(8) The implementation of earthquake hazards reduction measures would, as an added benefit, also reduce the risk of

loss, destruction, and disruption from other natural hazards and manmade hazards, including hurricanes, tornadoes, accidents, explosions, landslides, building and structural cave-ins, and fires.

(9) Reduction of loss, destruction, and disruption from earthquakes will depend on the actions of individuals, and organizations in the private sector and governmental units at Federal, State, and local levels. The current capability to transfer knowledge and information to these sectors is insufficient. Improved mechanisms are needed to translate existing information and research findings into reasonable and usable specifications, criteria. And practices so that individuals, organizations, and governmental units may make informed decisions and take appropriate actions.

(10) Severe earthquakes are a worldwide problem. Since damaging earthquakes occur infrequently in any one nation, international cooperation is desirable for mutual learning from limited experiences.

(11) an effective Federal program in earthquake hazards reduction will require input from and review by persons outside the Federal Government expert in the sciences of earthquake hazards reduction and in the practical application of earthquake hazards reduction measures.

SEC. 4. DEFINITIONS. [42 U.S.C. 7703]

As used in this Act, unless the context otherwise requires:

(1) The term "includes" and variants thereof should be read as if the phrase "but is not limited to" were also set forth.

(2) The term "Program" means the National Earthquake Hazards Reduction Program established under section 5.

(3) The term "seismic" and variants thereof mean having to do with, or caused by earthquakes.

(4) The term "State" means each of the States of the United States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Commonwealth of the Mariana Islands, and any other territory or possession of the United States.

(5) The term "United States" means, when used in a geographical sense, all of the States as defined in section 4(4).

(6) The term "lifelines" means public works and utilities, including transportation facilities and infrastructure, oil and gas pipelines, electrical power and communication facilities *and infrastructure,* and water supply and sewage treatment facilities.

(7) The term "Program agencies" means the Federal Emergency Management Agency, the United States Geological Survey, the National Science Foundation, and the National Institute of Standards and Technology.

SEC. 5. NATIONAL EARTHQUAKE HAZARDS REDUCTION PROGRAM. [42 U.S.C. 7704]

(a) ESTABLISHMENT.—There is established a National Earthquake Hazards Reduction Program.

(b) RESPONSIBILITIES OF PROGRAM AGENCIES.—

(1) LEAD AGENCY.—The Federal Emergency Management Agency (hereafter in this Act referred to as the "Agency") shall have the primary responsibility for planning and coordinating

the Program. In carrying out this paragraph, the Director of the Agency shall—

[(A) prepare, in conjunction with the other Program agencies, an annual budget for the Program to be submitted to the Office of Management and Budget;]

[(B)] *(A)* ensure that the Program includes the necessary steps to promote the implementation of earthquake hazard reduction measures by Federal, State, and local governments, national standards and model building code organizations, architects and engineers, and others with a role in planning and constructing buildings and lifelines;

[(C)] *(B)* prepare, in conjunction with the other Program agencies, a written plan for the Program, which shall include specific tasks and milestones for each Program agency, at such times as may be required by significant Program events, but in no event less frequently than every 3 years;

[(D)] *(C)* prepare, in conjunction with the other Program agencies, a biennial report, to be submitted to the Congress within 90 days after the end of each even-numbered fiscal year, which shall describe the activities and achievements of the Program during the preceding two fiscal years;

[(E)] *(D)* request the assistance of Federal agencies other than the Program agencies, as necessary to assist in carrying out this Act; and

[(F)] *(E)* work with the National Science Foundation, the National Institute of Standards and Technology, and the United States Geological Survey, to develop a comprehensive plan for earthquake engineering research to effectively use existing testing facilities and laboratories (existing at the time of the development of the plan), upgrade facilities and equipment as needed, and integrate new, innovative testing approaches to the research infrastructure in a systematic manner.

The principal official carrying out the responsibilities described [in this paragraph] *in subparagraph (E)* shall be at a level no lower than that of Associate Director.

(2) FEDERAL EMERGENCY MANAGEMENT AGENCY.—

(A) PROGRAM RESPONSIBILITIES.—In addition to the lead agency responsibilities described in paragraph (1), the Director of the Agency shall—

(i) operate a program of grants and technical assistance which would enable States to develop preparedness and response plans, prepare inventories and conduct seismic safety inspections of critical structures and lifelines, update building and zoning codes and ordinances to enhance seismic safety, increase earthquake awareness and education, and encourage the development of multi-State groups for such purposes;

(ii) prepare and execute, in conjunction with the Program agencies, the Department of Education, other Federal agencies, and private sector groups, a comprehensive earthquake education and public awareness program, to include development of materials and

their wide dissemination to schools and the general public, *and development of means of increasing public access to available locality-specific information that may assist the public in preparing for or responding to earthquakes;*

(iii) prepare and disseminate widely, with the assistance of the National Institute of Standards and Technology, other Federal agencies, and private sector groups, information on building codes and practices for structures and lifelines;

(iv) develop, and coordinate the execution of, Federal interagency plans to respond to an earthquake, with specific plans for each high-risk area which ensure the availability of adequate emergency medical resources, search and rescue personnel and equipment, and emergency broadcast capability;

(v) develop approaches to combine measures for earthquake hazards reduction with measures for reduction of other natural and technological hazards; and

(vi) provide response recommendations to communities after an earthquake prediction has been made under paragraph (3)(D).

In addition, the Director of the Agency may enter into cooperative agreements or contracts with States and local jurisdictions to establish demonstration projects on earthquake hazard mitigation, to link earthquake research and mitigation efforts with emergency management programs, or to prepare educational materials for national distribution.

(B) STATE ASSISTANCE PROGRAM CRITERIA.—In order to qualify for assistance under subparagraph (A)(i), a state must—

(i) demonstrate that the assistance will result in enhanced seismic safety in the State;

(ii) provide a share of the costs of the activities for which assistance is being given, in accordance with subparagraph (C); and

(iii) meet such other requirements as the Director of the Agency shall prescribe.

(C) NON-FEDERAL COST SHARING.—

(i) In the case of any state which has received, before October 1, 1990, a grant from the Agency for activities under this Act which included a requirement for cost sharing by matching such grant, any grant obtained from the Agency for activities under subparagraph (A)(i) after such date shall not include a requirement for cost sharing in an amount greater than 50 percent of the cost of the project for which the grant is made.

(ii) In the case of any State which has not received, before October 1, 1990, a grant from the Agency for activities under this Act which included a requirement for cost sharing by matching such grant, any grant ob-

tained from the Agency for activities under subparagraph (A)(i) after such date—

(I) shall not include a requirement for cost sharing for the first fiscal year of such a grant;

(II) shall not include a requirement for cost sharing in an amount greater than 25 percent of the cost of the project for which the grant is made for the second fiscal year of such grant, and cost sharing requirement may be satisfied through in-kind contributions;

(III) shall not include a requirement for cost sharing in an amount greater than 35 percent of the cost of the project for which the grant is made for the third fiscal year of such grant, and any cost sharing requirement may be satisfied through in-kind contributions; and

(IV) shall not include a requirement for cost sharing in an amount greater than 50 percent of the cost of the project for which the grant is made for the fourth and subsequent fiscal years of such grant.

(3) UNITED STATES GEOLOGICAL SURVEY.—The United States Geological Survey shall conduct research necessary to characterize and identify earthquake hazards, assess earthquake risks, monitor seismic activity, and improve earthquake predictions. In carrying out this paragraph, the Director of the United States Geological Survey shall—

(A) conduct a systematic assessment of the seismic risks in each region of the Nation prone to earthquakes, including, where appropriate, the establishment and operation of intensive monitoring projects on hazardous faults, seismic microzonation studies in urban and other developed areas where earthquake risk is determined to be significant, and engineering seismology studies;

(B) work with officials of State and local governments to ensure that they are knowledgeable about the specific seismic risks in their areas;

(C) develop standard procedures, in consultation with the Agency, for issuing earthquake predictions, including aftershock advisories;

(D) issue when necessary, and notify the Director of the Agency of, an earthquake prediction or other earthquake advisory, which may be evaluated by the National Earthquake Prediction Evaluation Council, which shall be exempt from the requirements of section 10(a)(2) of the Federal Advisory Committee Act when meeting for such purposes;

(E) establish, using existing facilities, a Center for the International Exchange of Earthquake Information which shall—

(i) promote the exchange of information on earthquake research and earthquake preparedness between the United States and other nations;

(ii) maintain a library containing selected reports, research papers, and data produced through the Program;

(iii) answer requests from other nations for information on United States earthquake research and earthquake preparedness programs; and

(iv) direct foreign requests to the agency involved in the Program which is best able to respond to the request;

(F) operate a national Seismic Network;

(G) support regional seismic networks, which shall complement the National Seismic Network; and

(H) work with the National Science Foundation, the Federal Emergency Management Agency, and the National Institute of Standards and Technology to develop a comprehensive plan for earthquake engineering research to effectively use existing testing facilities and laboratories (in existence at the time of the development of the plan), upgrade facilities and equipment as needed, and integrate new, innovative testing approaches to the research infrastructure in a systematic manner.

(4) NATIONAL SCIENCE FOUNDATION.—The National Science Foundation shall be responsible for funding research on earth sciences to improve the understanding of the causes and behavior of earthquakes, on earthquake engineering, and on human response to earthquakes. In carrying out this paragraph, the Director of the National Science Foundation shall—

(A) encourage prompt dissemination of significant findings, sharing of data, samples, physical collections, and other supporting materials, and development of intellectual property so research results can be used by appropriate organizations to mitigate earthquake damage;

(B) in addition to supporting individual investigators, support university research consortia and centers for research in geosciences and in earthquake engineering;

(C) work closely with the United States Geological Survey to identify geographic regions of national concern that should be the focus of targeted solicitations for earthquake-related research proposals;

(D) emphasize, in earthquake engineering research, development of economically feasible methods to retrofit existing buildings and to protect lifelines to mitigate earthquake damage;

(E) support research that studies the political, economic, and social factors that influence the implementation of hazard reduction measures; and

(F) develop, in conjunction with the Federal Emergency Management Agency, the National Institute of Standards and Technology, and the United States Geological Survey, a comprehensive plan for earthquake engineering research to effectively use existing testing facilities and laboratories (in existence at the time of the development of the plan), upgrade facilities and equipment as needed, and integrate new, innovative testing approaches to the research infrastructure in a systematic manner.

(5) NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY.—The National Institute of Standards and Technology shall be responsible for carrying out research and development to improve building codes and standards and practices for structures and lifelines. In carrying out this paragraph, the Director of the National Institute of Standards and Technology shall—

(A) work closely with national standards and model building code organizations, in conjunction with the Agency, to promote the implementation of research results;

(B) promote better building practices among architects and engineers;

(C) work closely with national standards organizations to develop seismic safety standards and practices for new existing lifelines; and

(D) work with the National Science Foundation, the Federal Emergency Management Agency, and the United States Geological Survey to develop a comprehensive plan for earthquake engineering research to effectively use existing testing facilities and laboratories (in existence at the time of the development of the plan), upgrade facilities and equipment as needed, and integrate new, innovative testing approaches to the research infrastructure in a systematic manner.

(c) BUDGET COORDINATION.—

(1) GUIDANCE.—The Agency shall each year provide guidance to the other Program agencies concerning the preparation of requests for appropriations for activities related to the Program, and shall prepare, in conjunction with the other Program agencies, an annual Program budget to be submitted to the Office of Management and Budget.

(2) REPORTS.—Each Program agency shall include with its annual request for appropriations submitted to the Office of Management and Budget a report that—

(A) identifies each element of the proposed Program activities of the agency;

(B) specifies how each of these activities contributes to the Program; and

(C) states the portion of its request for appropriations allocated to each element of the Program.

[SEC. 10. NON-FEDERAL COST SHARING FOR SUPPLEMENTAL FUNDS. [42 U.S.C. 7705d]

[A grant under this Act to a State from the Agency that is made with funds appropriated under the Fiscal Year 1990 Dire Emergency Supplemental to Meet the Needs of Natural Disasters of National Significance (Public Law 101–130; 103 Stat. 775) shall not include a requirement for cost sharing in an amount greater than 25 percent of the cost of the project for which the grant is made, and any cost sharing requirement may be satisfied through in-kind contributions.]

SEC. 12. AUTHORIZATION OF APPROPRIATIONS. [42 U.S.C. 7706]

(a) GENERAL AUTHORIZATION FOR THE PROGRAM.—

(1) There are authorized to be appropriated to the President to carry out the provisions of sections 5 and 6 of this Act (in addition to any authorizations for similar purposes included in

other Acts and the authorizations set forth in subsections (b) and (c) of this section), not to exceed $1,000,000 for the fiscal year ending September 30, 1978, not to exceed $2,000,000 for the fiscal year ending September 30, 1979, and not to exceed $2,000,000 for the fiscal year ending September 30, 1980.

(2) There are authorized to be appropriated to the Director to carry out the provisions of sections 5 and 6 of this Act for the fiscal year ending September 30, 1981—

(A) $1,000,000 for continuation of the Interagency Committee on Seismic Safety in Construction and the Building Seismic Safety Council programs,

(B) $1,500,000 for plans and preparedness for earthquake disasters,

(C) $500,000 for prediction response planning,

(D) $600,000 for architectural and engineering planning and practice programs,

(E) $1,000,000 for development and application of a public education program,

(F) $3,000,000 for use by the National Science Foundation in addition to the amount authorized to be appropriated under subsection (c), which amount includes $2,400,000 for earthquake policy research and $600,000 for the strong ground motion element of the siting program, and

(G) $1,000,000 for use by the Center for Building Technology, National Bureau of Standards in addition to the amount authorized to be appropriated under subsection (d) for earthquake activities in the Center.

(3) There are authorized to be appropriated to the Director for the fiscal year ending September 30, 1982, $2,000,000 to carry out the provisions of sections 5 and 6 of this Act.

(4) There are authorized to be appropriated to the Director, to carry out the provisions of sections 5 and 6 of this Act, $1,281,000 for fiscal year ending September 30, 1983.

(5) There are authorized to be appropriated to the Director, to carry out the provisions of sections 5 and 6 of this Act, for the fiscal year ending September 30, 1984, $3,705,000, and for the fiscal year ending September 30, 1985, $6,096,000.

(6) There are authorized to be appropriated to the Director, to carry out the provisions of sections 5 and 6 of this Act, for the fiscal year ending September 30, 1986, $5,596,000, and for the fiscal year ending September 30, 1987, $5,848,000.

(7) There are authorized to be appropriated to the Director of the Agency, to carry out this Act $5,778,000 for the fiscal year ending September 30, 1988, $5,788,000 for the fiscal year ending September 30, 1989, $8,798,000 for the fiscal year ending September 30, 1990, $14,750,000 for the fiscal year ending September 30, 1991, $19,000,000 for the fiscal year ending September 30, 1992, $22,000,000 for the fiscal year ending September 30, 1993, $25,000,000 for the fiscal year ending September 30, 1995, $25,750,000 for the fiscal year ending September 30, 1996, $20,900,000 for the fiscal year ending September 30, 1998, [and] $21,500,000 for the fiscal year ending September 30, [1999.] *1999; $19,861,000 for the fiscal year ending September 30, 2001, of which $450,000 shall be used to*

support the National Earthquake Hazard Reduction Program-eligible efforts of an established multi-state consortium to reduce the unacceptable threat of earthquake damages in the New Madrid seismic region through efforts to enhance preparedness, response, recovery, and mitigation; $20,953,000 for the fiscal year ending September 30, 2002; and $22,105,000 for the fiscal year ending September 30, 2003.

(b) GEOLOGICAL SURVEY.—There are authorized to be appropriated to the Secretary of the Interior for purposes of carrying out, through the Director of the United States Geological Survey, the responsibilities that may be assigned to the Director under this Act not to exceed $27,500,000 for the fiscal year ending September 30, 1978; not to exceed $35,000,000 for the fiscal year ending September 30, 1979; not to exceed $40,000,000 for the fiscal year ending September 30, 1980; $32,484,000 for the fiscal year ending September 30, 1981; $34,425,000 for the fiscal year ending September 30, 1982; $31,843,000 for the fiscal year ending September 30, 1983; $35,524,000 for the fiscal year ending September 30, 1984; $37,300,200 for the fiscal year ending September 30, 1985; $35,578,000 for the fiscal year ending September 30, 1986; $37,179,000 for the fiscal year ending September 30, 1987; $38,540,000 for the fiscal year ending September 30, 1988; $41,819,000 for the fiscal year ending September 30, 1989; $55,283,000 for the fiscal year ending September 30, 1990, of which $8,000,000 shall be for earthquake investigations under section 11; $50,000,000 for the fiscal year ending September 30, 1991; $54,500,000 for the fiscal year ending September 30, 1992; $62,500,000 for the fiscal year ending September 30, 1993; $49,200,000 for the fiscal year ending September 30, 1995; $50,676,000 for the fiscal year ending September 30, 1996; $52,565,000 for the fiscal year ending September 30, 1998, of which $3,800,000 shall be used for the Global Seismic Network operated by the Agency; and $54,052,000 for the fiscal year ending September 30, 1999, of which $3,800,000 shall be used for the Global Seismic Network operated by the Agency. *There are authorized to be appropriated to the Secretary of the Interior for purposes of carrying out, through the Director of the United States Geological Survey, the responsibilities that may be assigned to the Director under this Act $47,360,000 for fiscal year 2001; $49,965,000 for fiscal year 2002; and $52,713,000 for fiscal year 2003.* Of the amounts authorized to be appropriated under this subsection, at least—

(1) $8,000,000 of the amount authorized to be appropriated for the fiscal year ending September 30, 1998; **[**and**]**

(2) $8,250,000 of the amount authorized to be appropriated for the fiscal year ending September 30, **[**1999,**]** *1999;*

(3) $9,000,000 of the amount authorized to be appropriated for fiscal year 2001;

(4) $9,250,000 of the amount authorized to be appropriated for fiscal year 2002; and

(5) $9,500,000 of the amount authorized to be appropriated for fiscal year 2003.

shall be used for carrying out a competitive, peer-reviewed program under which the Director, in close coordination with and as a complement to related activities of the United States Geological Survey, awards grants to, or enters into cooperative agreements with,

State and local governments and persons or entities from the academic community and the private sector.

(c) NATIONAL SCIENCE FOUNDATION.—To enable the Foundation to carry out responsibilities that may be assigned to it under this Act, there are authorized to be appropriated to the Foundation not to exceed $27,500,000 for the fiscal year ending September 30, 1978; not to exceed $35,000,000 for the fiscal year ending September 30, 1979; not to exceed $40,000,000 for the fiscal year ending September 30, 1980; $26,600,000 for the fiscal year ending September 30, 1981; $27,150,000 for the fiscal year ending September 30, 1982; $25,000,000 for the fiscal year ending September 30, 1983; $25,800,000 for the fiscal year ending September 30, 1984; $28,665,000 for the fiscal year ending September 30, 1985; $27,760,000 for the fiscal year ending September 30, 1986; $29,009,000 for the fiscal year ending September 30, 1987; $28,235,000 for the fiscal year ending September 30, 1988; $31,634,000 for the fiscal year ending September 30, 1989; $38,454,000 for the fiscal year ending September 30, 1990. Of the amounts authorized for Engineering under section 101(d)(1)(B) of the National Science Foundation Authorization Act of 1988, $24,000,000 is authorized for carrying out this Act for the fiscal year ending September 30, 1991, and of the amounts authorized for Geosciences under section 101(d)1)(D) of the National Science Foundation Authorization Act of 1988, $13,000,000 is authorized for carrying out this Act for the fiscal year ending September 30, 1991. Of the amounts authorized for Research and Related Activities under section 101(e)(1) of the National Science Foundation Authorization Act of 1988, $29,000,000 is authorized for engineering research under this Act, and $14,750,000 is authorized for geosciences research under this Act, for the fiscal year ending September 30, 1992. Of the amounts authorized for Research and Related Activities under section 101(f)(1) of the National Science Foundation Authorization Act of 1988, $34,500,000 is authorized for engineering research under this Act, and $17,500,000 is authorized for geosciences research under this Act, for the fiscal year ending September 30, 1993. There are authorized to be appropriated, out of funds otherwise authorized to be appropriated to the National Science Foundation: (1) $16,200,000 for engineering research and $10,900,000 for geosciences research for the fiscal year ending September 30, 1995, (2) $16,686,000 for engineering research and $11,227,000 for geosciences research for the fiscal year ending September 30, 1996, (3) $18,450,000 for engineering research and $11,920,000 for geosciences research for the fiscal year ending September 30, [1998, and] *1993,* (4) $19,000,000 for engineering research and $12,280,000 for geosciences research for the fiscal year ending September 30, [1999] *1999, and (5) $19,000,000 for engineering research and $11,900,000 for geosciences research for the fiscal year ending September 30, 2001. There are authorized to be appropriated to the National Science Foundation $20,045,000 for engineering research and $12,555,000 for geosciences research for fiscal year 2002 and $21,147,000 for engineering research and $13,246,000 for geosciences research for fiscal year 2003.*

(d) NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY.—To enable the National Institute of Standards and Technology to carry out responsibilities that may be assigned to it under this Act, there

are authorized to be appropriated $425,000 for the fiscal year ending September 30, 1981; $425,000 for the fiscal year ending September 30, 1982; $475,000 for the fiscal year ending September 30, 1983; $475,000 for the fiscal year ending September 30, 1984; $498,750 for the fiscal year ending September 30, 1985; $499,000 for the fiscal year ending September 30, 1986; $521,000 for the fiscal year ending September 30, 1987; $525,000 for the fiscal year ending September 30, 1988; $525,000 for the fiscal year ending September 30, 1989; $2,525,000 for the fiscal year ending September 30, 1990; $1,000,000 for the fiscal year ending September 30, 1991; $3,000,000 for the fiscal year ending September 30, 1992; and $4,750,000 for the fiscal year ending September 30, 1993. There are authorized to be appropriated, out of funds otherwise authorized to be appropriated to the National Institute of Standards and Technology, $1,900,000 for the fiscal year ending September 30, 1995, $1,957,000 for the fiscal year ending September 30, 1996, $2,000,000 for the fiscal year ending September 30, [1998, and] *1998,* $2,060,000 for the fiscal year ending September 30, [1999] *1999, $2,332,000 for fiscal year 2001, $2,460,000 for fiscal year 2002, and $2,595,300 for fiscal year 2003.*

[(e) FUNDS FOR CERTAIN REQUIRED ADJUSTMENTS.—For each of the fiscal years ending September 30, 1982, September 30, 1983, September 30, 1984, and September 30, 1985, there are authorized to be appropriated such further sums as may be necessary for adjustments required by law in salaries, pay, retirement, and employee benefits incurred in the conduct of activities for which funds are authorized by the preceding provisions of this section.

[(f) AVAILABILITY OF FUNDS.—Funds appropriated for fiscal years 1991, 1992, and 1993 pursuant to this section shall remain available until expended.]

SEC. 13. ADVANCED NATIONAL SEISMIC RESEARCH MONITORING SYSTEM.

(a) ESTABLISHMENT.—The Director of the United States Geological Survey shall establish and operate an Advanced National Seismic Research and Monitoring System. The purpose of such system shall be to organize, modernize, standardize, and stabilize the national, regional, and urban seismic monitoring systems in the United States, including sensors, recorders, and data analysis centers, into a coordinated system that will measure and record the full range of frequencies and amplitudes exhibited by seismic waves, in order to enhance earthquake research and warning capabilities.

(b) MANAGEMENT PLAN.—Not later than 90 days after the date of the enactment of the Earthquake Hazards Reduction Authorization Act of 2000, the Director of the United States Geological Survey shall transmit to the Congress a 5-year management plan for establishing and operating the Advanced National Seismic Research and Monitoring System. The plan shall include annual cost estimates for both modernization and operation, milestones, standards, and performance goals, as well as plans for securing the participation of all existing networks in the Advanced National Seismic Research and Monitoring System and for establishing new, or enhancing existing, partnerships to leverage resources.

(c) AUTHORIZATION OF APPROPRIATIONS.—

(1) EXPANSION AND MODERNIZATION.—In addition to amounts appropriated under section 12(b), there are authorized to be ap-

propriated to the Secretary of the Interior, to be used by the Director of the United States Geological Survey to establish the Advanced National Seismic Research and Monitoring System—

(A) $33,500,000 for fiscal year 2001;

(B) $33,700,000 for fiscal year 2002;

(C) $35,100,000 for fiscal year 2003;

(D) $35,000,000 for fiscal year 2004; and

(E) $33,500,000 for fiscal year 2005.

(2) OPERATION.—In addition to amounts appropriated under section 12(b), there are authorized to be appropriated to the Secretary of the Interior, to be used by the Director of the United States Geological Survey to operate the Advanced National Seismic Research and Monitoring System—

(A) $4,500,000 for fiscal year 2001; and

(B) $10,300,000 for fiscal year 2002.

SEC. 14. NETWORK FOR EARTHQUAKE ENGINEERING SIMULATION.

(a) ESTABLISHMENT.—The Director of the National Science Foundation shall establish a Network for Earthquake Engineering Simulation that will upgrade, link, and integrate a system of geographically distributed experimental facilities for earthquake engineering testing of full-sized structures and their components and partial-scale physical models. The system shall be integrated through networking software so that integrated models and databases can be used to create model-based simulation, and the components of the system shall be interconnected with a computer network and allow for remote access, information sharing, and collaborative research.

(b) AUTHORIZATION OF APPROPRIATIONS.—In addition to amounts appropriated under section 12(c), there are authorized to be appropriated, out of funds otherwise authorized to be appropriated to the National Science Foundation, $28,200,000 for fiscal year 2001 for the Network for Earthquake Engineering Simulation. In addition to amounts appropriated under section 12(c), there are authorized to be appropriated to the National Science Foundation for the Network for Earthquake Engineering Simulation—

(1) $24,400,000 for fiscal year 2002;

(2) $4,500,000 for fiscal year 2003; and

(3) $17,000,000 for fiscal year 2004.

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