

NATIONAL GEOLOGIC MAPPING REAUTHORIZATION ACT
OF 1997

MARCH 11, 1997.—Committed to the Committee of the Whole House on the State
of the Union and ordered to be printed

Mr. YOUNG of Alaska, from the Committee on Resources,
submitted the following

REPORT

[To accompany H.R. 709]

[Including cost estimate of the Congressional Budget Office]

The Committee on Resources, to whom was referred the bill (H.R. 709) to reauthorize and amend the National Geologic Mapping Act of 1992, and for other purposes, having considered the same, report favorably thereon with an amendment and recommend that the bill as amended do pass.

The amendment is as follows:

Strike out all after the enacting clause and insert in lieu thereof the following:

SECTION 1. SHORT TITLE.

This Act may be cited as the “National Geologic Mapping Reauthorization Act of 1997”.

SEC. 2. FINDINGS.

Congress finds that—

(1) in enacting the National Geologic Mapping Act of 1992 (43 U.S.C. 31a et seq.), Congress found, among other things, that—

(A) during the 2 decades preceding enactment of that Act, the production of geologic maps had been drastically curtailed;

(B) geologic maps are the primary data base for virtually all applied and basic earth-science investigations;

(C) Federal agencies, State and local governments, private industry, and the general public depend on the information provided by geologic maps to determine the extent of potential environmental damage before embarking on projects that could lead to preventable, costly environmental problems or litigation;

(D) the lack of proper geologic maps has led to the poor design of such structures as dams and waste-disposal facilities;

(E) geologic maps have proven indispensable in the search for needed fossil fuel and mineral resources; and

- (F) a comprehensive nationwide program of geologic mapping is required in order to systematically build the Nation's geologic-map data base at a pace that responds to increasing demand;
- (2) the geologic mapping program called for by that Act has not been fully implemented; and
- (3) it is time for this important program to be fully implemented.

SEC. 3. REAUTHORIZATION AND AMENDMENT.

(a) **DEFINITIONS.**—Section 3 of the National Geologic Mapping Act of 1992 (43 U.S.C. 31b) is amended—

- (1) by striking “As used in this Act.” and inserting “In this Act.”;
- (2) by redesignating paragraphs (2), (3), (4), and (5) as paragraphs (3), (4), (5), and (7), respectively;
- (3) by inserting after paragraph (1) the following:
- “(2) **ASSOCIATION.**—The term ‘Association’ means the Association of American State Geologists.”;
- (4) by inserting after paragraph (5) (as redesignated by paragraph (2) of this subsection) the following new paragraph:

“(6) **STATE.**—The term ‘State’ includes the District of Columbia, the Commonwealth of Puerto Rico, the Commonwealth of the Northern Mariana Islands, American Samoa, Guam, and the Virgin Islands.”; and

- (5) in each paragraph that does not have a heading, by inserting a heading, in the same style as the heading in paragraph (2), as added by paragraph (3), the text of which is comprised of the term defined in the paragraph.

(b) **GEOLOGIC MAPPING PROGRAM.**—Section 4 of the National Geologic Mapping Act of 1992 (43 U.S.C. 31c) is amended—

- (1) by striking subsection (a) and inserting the following:

“(a) **ESTABLISHMENT.**—

“(1) **IN GENERAL.**—There is established a national cooperative geologic mapping program between the United States Geological Survey and the State geological surveys, acting through the Association.

“(2) **DESIGN, DEVELOPMENT, AND ADMINISTRATION.**—The cooperative geologic mapping program shall be—

- “(A) designed and administered to achieve the objectives set forth in subsection (c);
- “(B) developed in consultation with the advisory committee; and
- “(C) administered through the Survey.”;

(2) in subsection (b)—

- (A) in the subsection heading by striking “USGS” and inserting “THE SURVEY”;

(B) in paragraph (1)—

- (i) by single-indenting the paragraph, double-indenting the subparagraphs, and triple indenting the clauses;

(ii) by inserting “LEAD AGENCY.—” before “The Survey”;

(iii) in subparagraph (A)—

- (I) by striking “Committee on Natural Resources” and inserting “Committee on Resources”; and

(II) by striking “date of enactment of this Act” and inserting “date of enactment of the National Geologic Mapping Reauthorization Act of 1997”;

(iv) in subparagraph (B)—

- (I) by striking “State geological surveys” and inserting “Association”; and

(II) by striking “date of enactment of this Act” and inserting “date of enactment of the National Geologic Mapping Reauthorization Act of 1997”; and

(v) in subparagraph (C)—

- (I) by striking “date of enactment of this Act” and inserting “date of enactment of the National Geologic Mapping Reauthorization Act of 1997”;

(II) by striking “Committee on Natural Resources” and inserting “Committee on Resources”;

(III) in clauses (i) and (ii) by inserting “and the Association” after “the Survey”;

(IV) by adding “and” at the end of clause (ii); and

(V) by striking “; and” at the end of clause (iii) and all that follows through the end of the subparagraph and inserting a period;

(C) in paragraph (2)—

- (i) by inserting “RESPONSIBILITIES OF THE SECRETARY.—” before “In addition to”; and
 - (ii) in subparagraph (A) by striking “State geological surveys” and inserting “Association”; and
 - (D) by single-indenting the paragraph and double-indenting the subparagraphs;
 - (3) in subsection (c)—
 - (A) in paragraph (2) by striking “interpretive” and inserting “interpretative”; and
 - (B) in paragraph (4) by striking “awareness for” and inserting “awareness of”; and
 - (4) in subsection (d)—
 - (A) in paragraph (1) by inserting “FEDERAL COMPONENT.—” before “A Federal”; and
 - (B) in paragraph (2)—
 - (i) by inserting “SUPPORT COMPONENT.—” before “A geologic”; and
 - (ii) by striking subparagraph (D) and inserting the following:
 - “(D) geochronologic and isotopic investigations that—
 - “(i) provide radiometric age dates for geologic-map units; and
 - “(ii) fingerprint the geothermometry, geobarometry, and alteration history of geologic-map units, which investigations shall be contributed to a national geochronologic data base;”;
 - (C) in paragraph (3) by inserting “STATE COMPONENT.—” before “A State”; and
 - (D) by striking paragraph (4) and inserting the following:
 - “(4) EDUCATION COMPONENT.—A geologic mapping education component—
 - “(A) the objectives of which shall be—
 - “(i) to develop the academic programs that teach earth-science students the fundamental principles of geologic mapping and field analysis; and
 - “(ii) to provide for broad education in geologic mapping and field analysis through support of field studies;
 - “(B) investigations under which shall be integrated with the other mapping components of the geologic mapping program and shall respond to priorities identified for those components; and
 - “(C) Federal funding for which shall be matched by non-Federal sources on a 1-to-1 basis.”.
- (c) ADVISORY COMMITTEE.—Section 5 of the National Geologic Mapping Act of 1992 (43 U.S.C. 31d) is amended—
- (1) by striking subsection (a) and inserting the following:
 - “(a) ESTABLISHMENT.—
 - “(1) IN GENERAL.—There shall be established a 10-member geologic mapping advisory committee to advise the Director on planning and implementation of the geologic mapping program.
 - “(2) MEMBERS EX OFFICIO.—Federal agency members shall include the Administrator of the Environmental Protection Agency or a designee, the Secretary of Energy or a designee, the Secretary of Agriculture or a designee, and the Assistant to the President for Science and Technology or a designee.
 - “(3) APPOINTED MEMBERS.—Not later than 90 days after the date of enactment of the National Geologic Mapping Reauthorization Act of 1997, in consultation with the Association, the Secretary shall appoint to the advisory committee 2 representatives from the Survey (including the Chief Geologist, as Chairman), 2 representatives from the State geological surveys, 1 representative from academia, and 1 representative from the private sector.”; and
 - (2) in subsection (b)(3) by striking “and State” and inserting “, State, and university”.
- (d) GEOLOGIC MAPPING PROGRAM IMPLEMENTATION PLAN.—Section 6 of the National Geologic Mapping Act of 1992 (43 U.S.C. 31e) is amended—
- (1) in paragraph (1) by inserting “cooperative” after “national”;
 - (2) by striking paragraph (3)(C) and inserting the following:
 - “(C) for the State geologic mapping component, a priority-setting mechanism that responds to—
 - “(i) specific intrastate needs for geologic-map information; and
 - “(ii) interstate needs shared by adjacent entities that have common requirements; and”;
 - (3) by striking paragraphs (4) and (5) and inserting the following:

“(4) a mechanism for adopting scientific and technical mapping standards for preparing and publishing general-purpose and special-purpose geologic maps to—

“(A) ensure uniformity of cartographic and scientific conventions; and

“(B) provide a basis for judgment as to the comparability and quality of map products; and”; and

(4) by redesignating paragraph (6) as paragraph (5).

(e) NATIONAL GEOLOGIC-MAP DATA BASE.—Section 7 of the National Geologic Mapping Act of 1992 (43 U.S.C. 31f) is amended by striking subsection (b) and inserting the following:

“(b) STANDARDIZATION.—

“(1) IN GENERAL.—Geologic maps contributed to the national archives shall have format, symbols, and technical attributes that adhere to standards so that archival information can be accessed, exchanged, and compared efficiently and accurately, as required by Executive Order 12906 (59 Fed. Reg. 17,671 (1994)), which established the National Spatial Data Infrastructure.

“(2) DEVELOPMENT OF STANDARDS.—Entities that contribute geologic maps to the national archives shall develop the standards described in paragraph (1) in cooperation with the Federal Geographic Data Committee, which is charged with standards development and other data coordination activities as described in Office of Management and Budget revised Circular A-16.”.

(f) ANNUAL REPORT.—Section 8 of the National Geologic Mapping Act of 1992 (43 U.S.C. 31g) is amended in the first sentence—

(1) by striking “Committee on Natural Resources” and inserting “Committee on Resources”; and

(2) by striking “program, and describing and evaluating progress” and inserting “program and describing and evaluating the progress”.

(g) AUTHORIZATION OF APPROPRIATIONS.—Section 9 of the National Geologic Mapping Act of 1992 (43 U.S.C. 31h) is amended to read as follows:

“SEC. 9. AUTHORIZATION OF APPROPRIATIONS.

“(a) IN GENERAL.—There are authorized to be appropriated to carry out the national cooperative geologic mapping program under this Act—

“(1) \$26,000,000 for fiscal year 1998;

“(2) \$28,000,000 for fiscal year 1999; and

“(3) \$30,000,000 for fiscal year 2000.

“(b) ALLOCATION OF APPROPRIATED FUNDS.—

“(1) IN GENERAL.—Of the amount of funds that are appropriated under subsection (a) for any fiscal year up to the amount that is equal to the amount appropriated to carry out the national cooperative geologic mapping program for fiscal year 1996—

“(A) not less than 20 percent shall be allocated to State mapping activities; and

“(B) not less than 2 percent shall be allocated to educational mapping activities.

“(2) INCREASED APPROPRIATIONS.—Of the amount of funds that are appropriated under subsection (a) for any fiscal year up to the amount that exceeds the amount appropriated to carry out the national cooperative geologic mapping program for fiscal year 1996—

“(A) for fiscal year 1998—

“(i) 75 percent shall be allocated for Federal mapping and support mapping activities;

“(ii) 23 percent shall be allocated for State mapping activities; and

“(iii) 2 percent shall be allocated for educational mapping activities;

“(B) for fiscal year 1999—

“(i) 74 percent shall be allocated for Federal mapping and support mapping activities;

“(ii) 24 percent shall be allocated for State mapping activities; and

“(iii) 2 percent shall be allocated for educational mapping activities;

and

“(C) for fiscal year 2000—

“(i) 73 percent shall be allocated for Federal mapping and support mapping activities;

“(ii) 25 percent shall be allocated for State mapping activities; and

“(iii) 2 percent shall be allocated for educational mapping activities.”.

PURPOSE OF THE BILL

The purpose of H.R. 709 is to reauthorize and amend the National Geologic Mapping Act of 1992, and for other purposes.

BACKGROUND AND NEED FOR LEGISLATION

Detailed geologic mapping provides basic information for solving a broad range of societal problems. These include the delineation and protection of sources of safe drinking water, environmental system understanding, and foundations of ecosystems management; identification and mitigation of natural hazards, such as earthquake-prone areas, volcanic eruptions, landslides and other ground failures, and many other land-use planning requirements; and assessment of coal, petroleum and natural gas, construction materials, metals, and other natural resources.

The critical areas have been identified at State level by State-map advisory committees. These critical areas include federal, State, and local priorities.

Only about one-fifth of the Nation is mapped at a scale adequate to meet these needs. Reauthorization of the National Geologic Mapping Act (NGMA) will allow federal, State and academic interests to continue to address these needs cooperatively. Since its establishment in 1879, the United States Geological Survey (USGS) has been charged with "classification of the public lands and examination of the geological structure, mineral resources and products of the national domain." While generally receiving good marks for its geologic mapping efforts for over a century, the National Academy of Sciences in a 1988 report recognized that the USGS alone lacked the personnel to overcome this deficiency. Traditionally, colleges and universities as well as the various State geologic surveys have contributed to the mix of geologic maps produced, albeit not always in a coordinated manner. The NGMA provides a cooperative framework to meet the Nation's geologic map data needs efficiently.

Funding for the program is incorporated in the budget of the USGS. The Committee notes that the authorization for appropriations to carry out the national cooperative mapping program under the NGMA are in reality a subset of the general appropriation the USGS receives annually to accomplish its mission. Prior to enactment of NGMA, the geologic mapping efforts of USGS fell within its broad authority to conduct earth science investigations in the national interest. Since enactment of the NGMA, the geologic mapping function has had a separate authorization as constrained by the NGMA. H.R. 709 would continue this ceiling on appropriations for geologic mapping. The Committee notes that appropriations for the cooperative mapping program from fiscal years 1993 through 1996 have fallen short of those authorized in the NGMA.

State Geological Surveys and university participants receive funding from the program through a competitive proposal process that requires 50:50 matching funds from the applicant, insuring the value of each proposal is weighed against its cost in federal and State appropriated funds. Since fiscal year 1993, approximately \$7.5 million of federal appropriated funds have been matched by State monies in the cooperative, peer-reviewed program for geologic

map products produced by the 50 State Geological Surveys, about 15 percent of the total federal appropriation over the same interval for geologic mapping program efforts in total.

COMMITTEE ACTION

H.R. 709 was introduced on February 12, 1997, by Representative Barbara Cubin (R-WY) and is cosponsored by Representatives Jim Gibbons (R-NV), Don Young (R-AK) and Ken Calvert (R-CA). The bill was referred to the Committee on Resources, and within the Committee to the Subcommittee on Energy and Mineral Resources. On February 27, 1997, the Subcommittee held a legislative hearing on H.R. 709. The USGS Chief Geologist, Dr. P. Patrick Leahy, testified for the Administration in strong support of the bill, as did Dr. Charles Mankin, Oklahoma State Geologist, on behalf of the Association of American State Geologists, which collectively represents all 50 States and the Commonwealth of Puerto Rico.

Also on February 27, 1997, the Subcommittee marked up H.R. 709. Ranking Minority Member Carlos Romero-Barceló (D-PR) offered an amendment to clarify that for purposes of the NGMA the Commonwealth of Puerto Rico was to be considered a State. Representative Donna Christian-Green (D-VI) offered a second degree amendment to further clarify that the U.S. Virgin Islands, the District of Columbia, the Commonwealth of the Northern Mariana Islands, Guam and American Samoa were also to be so considered. The Christian-Green amendment was adopted by voice vote, and the Romero-Barceló amendment, as amended, passed by voice vote. The bill, as amended, was then favorably reported to the Full Committee by voice vote.

On March 5, 1997, the full Resources Committee met to consider H.R. 709. No further amendments were offered and the bill, as amended, was then ordered favorably reported to the House of Representatives by voice vote.

SECTION-BY-SECTION ANALYSIS

SECTION 1. SHORT TITLE

This section provides the short title for the bill.

SECTION 2. FINDINGS

This section provides Congressional findings concerning geologic mapping needs of the Nation.

SECTION 3. REAUTHORIZATION AND AMENDMENT

This section reauthorizes and amends the NGMA. The federal/State/academia cooperative elements of the original Act are retained with minor amendments in definitional terms. The membership of the advisory committee to the USGS Director on planning and implementation of the geologic mapping program is reduced to 10 persons. Finally, an authorization for funding the cooperative geologic mapping program of the USGS and the allocation of funds between the federal, State and education components of the program are provided for three fiscal years: 1998, 1999 and 2000.

COMMITTEE OVERSIGHT FINDINGS AND RECOMMENDATIONS

With respect to the requirements of clause 2(l)(3) of rule XI of the Rules of the House of Representatives, and clause 2(b)(1) of rule X of the Rules of the House of Representatives, the Committee on Resources' oversight findings and recommendations are reflected in the body of this report.

FEDERAL ADVISORY COMMITTEE STATEMENT

The functions of the advisory committee reauthorized in H.R. 709 are not currently being nor could they be performed by one or more agencies or by enlarging the mandate of another existing advisory committee.

CONSTITUTIONAL AUTHORITY STATEMENT

Article I, section 8 and Article IV, section 3 of the Constitution of the United States grants Congress the authority to enact H.R. 709.

COST OF THE LEGISLATION

Clause 7(a) of rule XIII of the Rules of the House of Representatives requires an estimate and a comparison by the Committee of the costs which would be incurred in carrying out H.R. 709. However, clause 7(d) of that Rule provides that this requirement does not apply when the Committee has included in its report a timely submitted cost estimate of the bill prepared by the Director of the Congressional Budget Office under section 403 of the Congressional Budget Act of 1974.

COMPLIANCE WITH HOUSE RULE XI

1. With respect to the requirement of clause 2(l)(3)(B) of rule XI of the Rules of the House of Representatives and section 308(a) of the Congressional Budget Act of 1974, H.R. 709 does not contain any new budget authority, credit authority, or an increase or decrease in revenues or tax expenditures. Assuming funds are appropriated under the bill, H.R. 709 authorizes additional discretionary spending authority, as described in the Congressional Budget Office estimate.

2. With respect to the requirement of clause 2(l)(3)(D) of rule XI of the Rules of the House of Representatives, the Committee has received no report of oversight findings and recommendations from the Committee on Government Reform and Oversight on the subject of H.R. 709.

3. With respect to the requirement of clause 2(l)(3)(C) of rule XI of the Rules of the House of Representatives and section 403 of the Congressional Budget Act of 1974, the Committee has received the following cost estimate for H.R. 709 from the Director of the Congressional Budget Office.

CONGRESSIONAL BUDGET OFFICE COST ESTIMATE

U.S. CONGRESS,
CONGRESSIONAL BUDGET OFFICE,
Washington, DC, March 10, 1997.

Hon. DON YOUNG,
*Chairman, Committee on Resources,
House of Representatives, Washington, DC.*

DEAR MR. CHAIRMAN: The Congressional Budget Office has prepared the enclosed cost estimate for H.R. 709, National Geologic Mapping Reauthorization Act of 1996.

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

Sincerely,

JAMES L. BLUM
(For June E. O'Neill, Director).

Enclosure.

H.R. 709—National Geologic Mapping Reauthorization Act of 1996

Summary: H.R. 709 would reauthorize and amend the National Geologic Mapping Act of 1992, which established a cooperative program for geologic mapping between the United States Geological Survey (USGS), the state geologic surveys, and academia. The legislation would authorize appropriations for fiscal years 1998 through 2000 for the geologic mapping program and would change the allocation of funds among the federal, state, and educational components.

Assuming appropriation of the authorized amounts, CBO estimates that enacting H.R. 709 would result in additional discretionary spending of \$84 million from 1998 through 2001. The legislation would not affect direct spending or receipts; therefore, pay-as-you-go procedures would not apply. The legislation also does not contain any intergovernmental or private-sector mandates as defined in the Unfunded Mandates Reform Act of 1995.

Estimated cost to the Federal Government: The estimated budgetary impact of H.R. 709 is shown in the table on the following page. For the purposes of this estimate, CBO assumes that all amounts authorized in H.R. 709 would be appropriated by the start of each fiscal year and that outlays would follow the historical spending patterns for the national geologic mapping program.

CBO estimates that other provisions in the legislation would have no significant budgetary impact. For example, H.R. 709 would change the allocation of program funds so that increasing amounts are directed toward the state geologic surveys. Based on information from USGS, CBO estimates that this change would not affect the rate at which funds are spent.

	By fiscal year, in millions of dollars					
	1997	1998	1999	2000	2001	2002
Spending Under Current Law:						
Budget authority ¹	22	0	0	0	0	0
Estimated outlays	22	1	0	0	0	0
Proposed Changes:						
Authorization level	0	26	28	30	0	0
Estimated outlays	0	25	28	30	1	0

	By fiscal year, in millions of dollars					
	1997	1998	1999	2000	2001	2002
Spending Under H.R. 709:						
Authorization level ¹	22	26	28	30	0	0
Estimated outlays	22	26	28	30	1	0

¹ The 1997 level is the amount appropriated for that year.

The costs of this legislation fall within budget function 300 (natural resources).

Pay-as-you-go considerations: None.

Estimated impact on State, local, and tribal governments: H.R. 709 contains no intergovernmental mandates as defined in the Unfunded Mandates Reform Act of 1995 (Public Law 104–4) and would impose no costs on state, local, or tribal governments. This legislation would authorize appropriations for the national cooperative geologic mapping program, including about \$18 million over the 1998–2000 period for grants to states and close to \$2 million over that period for an education component, consisting of grants to colleges and universities. The state grant component would increase slightly over this period as a proportion of the total program. H.R. 709 also would codify the existing one-to-one matching requirement for the education component.

Estimated impact on the private sector: This bill would impose no new private-sector mandates as defined in Public Law 104–4.

Estimate prepared by: Federal Cost Estimate: Gary Brown. Impact on State, Local, and Tribal Governments: Marjorie Miller. Impact on the Private Sector: Lesley Frymier.

Estimate approved by: Robert A. Sunshine, Deputy Assistant Director for Budget Analysis.

COMPLIANCE WITH PUBLIC LAW 104–4

H.R. 709 contains no unfunded mandates.

CHANGES IN EXISTING LAW MADE BY THE BILL, AS REPORTED

In compliance with clause 3 of rule XIII of the Rules of the House of Representatives, 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 matter is printed in italic, existing law in which no change is proposed is shown in roman):

NATIONAL GEOLOGIC MAPPING ACT OF 1992

SECTION 1. SHORT TITLE.

This Act may be cited as the “National Geologic Mapping Act of 1992”.

* * * * *

SEC. 3. DEFINITIONS.

[As used in this Act:] *In this Act:*

(1) *ADVISORY COMMITTEE.*—The term “advisory committee” means the advisory committee established under section 5.

(2) *ASSOCIATION.*—*The term “Association” means the Association of American State Geologists.*

[(2)] (3) *DIRECTOR*.—The term “Director” means the Director of the United States Geological Survey.

[(3)] (4) *GEOLOGIC MAPPING PROGRAM*.—The term “geologic mapping program” means the National Cooperative Geologic Mapping Program established by section 4(a).

[(4)] (5) *SECRETARY*.—The term “Secretary” means the Secretary of the Interior.

(6) *STATE*.—*The term “State” includes the District of Columbia, the Commonwealth of Puerto Rico, the Commonwealth of the Northern Mariana Islands, American Samoa, Guam, and the Virgin Islands.*

[(5)] (7) *SURVEY*.—The term “Survey” means the United States Geological Survey.

SEC. 4. GEOLOGIC MAPPING PROGRAM.

[(a)] *ESTABLISHMENT*.—There is established in the United States Geological Survey a National Cooperative Geologic Mapping Program. The geologic mapping program shall be developed in consultation with the advisory committee and shall be designed and administered to achieve the objectives set forth in subsection (c).]

(a) *ESTABLISHMENT*.—

(1) *IN GENERAL*.—*There is established a national cooperative geologic mapping program between the United States Geological Survey and the State geological surveys, acting through the Association.*

(2) *DESIGN, DEVELOPMENT, AND ADMINISTRATION*.—*The cooperative geologic mapping program shall be—*

(A) *designed and administered to achieve the objectives set forth in subsection (c);*

(B) *developed in consultation with the advisory committee; and*

(C) *administered through the Survey.*

(b) *RESPONSIBILITIES OF [USGS] THE SURVEY*.—

(1) *LEAD AGENCY*.—The Survey shall be the lead Federal agency responsible for planning, developing priorities, coordinating, and managing the geologic mapping program. In carrying out this paragraph, the Secretary, acting through the Director, shall—

(A) develop a geologic mapping program implementation plan in accordance with section 6, which plan shall be submitted to the Committee on [Natural] Resources of the House of Representatives and the Committee on Energy and Natural Resources of the Senate within 300 days after the [date of enactment of this Act] *date of enactment of the National Geologic Mapping Reauthorization Act of 1997*;

(B) appoint, with the advice and consultation of the [State geological surveys] *Association*, the advisory committee within 90 days after the [date of enactment of this Act] *date of enactment of the National Geologic Mapping Reauthorization Act of 1997* in accordance with section 5; and

(C) within 210 days after the [date of enactment of this Act] *date of enactment of the National Geologic Mapping Reauthorization Act of 1997*, submit a report to the Com-

mittee on Energy and Natural Resources of the United States Senate and to the Committee on [Natural] Resources of the House of Representatives identifying—

(i) how the Survey *and the Association* will coordinate the development and implementation of the geologic mapping program;

(ii) how the Survey *and the Association* will establish goals, mapping priorities, and target dates for implementation of the geologic mapping program; *and*

(iii) how long-term staffing plans for the various components of the geologic mapping program will lead to successful implementation of the geologic mapping program[; and

[(iv) the degree to which geologic mapping activities traditionally funded by the Survey, including the use of commercially available aerial photography, geodesy, professional land surveying, photogrammetric mapping, cartography, photographic processing, and related services, can be contracted to professional private mapping firms].

(2) *RESPONSIBILITIES OF THE SECRETARY*.—In addition to paragraph (1), the Secretary, acting through the Director, shall be responsible for developing, as soon as practicable—

(A) in cooperation with the [State geological surveys] *Association*, other Federal and State agencies, public and private sector organizations and academia, the geologic-map data base; and

(B) maps and mapping techniques which achieve the objectives specified in subsection (c).

(c) *PROGRAM OBJECTIVES*.—The objectives of the geologic mapping program shall include—

(1) * * *

(2) development of a complementary national geophysical-map data base, geochemical-map data base, and a geochronologic and paleontologic data base that provide value-added descriptive and [interpretive] *interpretative* information to the geologic-map data base;

* * * * *

(4) development of public awareness [for] *of* the role and application of geologic-map information to the resolution of national issues of land use management.

(d) *PROGRAM COMPONENTS*.—The geologic mapping program shall include the following components:

(1) *FEDERAL COMPONENT*.—A Federal geologic mapping component, whose objective shall be determining the geologic framework of areas determined to be vital to the economic, social, or scientific welfare of the Nation. Mapping priorities shall be based on—

(A) * * *

* * * * *

(2) *SUPPORT COMPONENT*.—A geologic mapping support component, whose objective shall be providing interdisciplinary support for the Federal Geologic Mapping Component. Rep-

representative categories of interdisciplinary support shall include—

(A) * * *

* * * * *

[(D) geochronologic and isotopic investigations that (i) provide radiometric age dates for geologic-map units and (ii) fingerprint the geothermometry, geobarometry, and alteration history of geologic-map units, which investigations shall be contributed to a national geochronologic data base;]

(D) *geochronologic and isotopic investigations that—*

(i) provide radiometric age dates for geologic-map units; and

(ii) fingerprint the geothermometry, geobarometry, and alteration history of geologic-map units,

which investigations shall be contributed to a national geochronologic data base;

* * * * *

(3) *STATE COMPONENT.*—A State geologic mapping component, whose objective shall be determining the geologic framework of areas that the State geological surveys determine to be vital to the economic, social, or scientific welfare of individual States. Mapping priorities shall be determined by multirepresentational State panels and shall be integrated with national priorities. Federal funding for the State component shall be matched on a one-to-one basis with non-Federal funds.

[(4) A geologic mapping education component, whose objective shall be—

[(A) to develop the academic programs that teach earth-science students the fundamental principles of geologic mapping and field analysis; and

[(B) to provide for broad education in geologic mapping and field analysis through support of field teaching institutes.

Investigations conducted under the geologic mapping education component shall be integrated with the other mapping components of the geologic mapping program, and shall respond to priorities identified for those components.]

(4) *EDUCATION COMPONENT.*—A geologic mapping education component—

(A) *the objectives of which shall be—*

(i) to develop the academic programs that teach earth-science students the fundamental principles of geologic mapping and field analysis; and

(ii) to provide for broad education in geologic mapping and field analysis through support of field studies;

(B) investigations under which shall be integrated with the other mapping components of the geologic mapping program and shall respond to priorities identified for those components; and

(C) Federal funding for which shall be matched by non-Federal sources on a 1-to-1 basis.

SEC. 5. ADVISORY COMMITTEE.

[(a) ESTABLISHMENT.—There shall be established a sixteen member geologic mapping advisory committee to advise the Director on planning and implementation of the geologic mapping program. The President shall appoint one representative each from the Environmental Protection Agency, the Department of Energy, the Department of Agriculture, and the Office of Science and Technology Policy. Within 90 days and with the advice and consultation of the State Geological Surveys, the Secretary shall appoint to the advisory committee 2 representatives from the Survey (including the Chief Geologist, as Chairman), 4 representatives from the State geological surveys, 3 representatives from academia, and 3 representatives from the private sector.]

(a) ESTABLISHMENT.—

(1) *IN GENERAL.*—*There shall be established a 10-member geologic mapping advisory committee to advise the Director on planning and implementation of the geologic mapping program.*

(2) *MEMBERS EX OFFICIO.*—*Federal agency members shall include the Administrator of the Environmental Protection Agency or a designee, the Secretary of Energy or a designee, the Secretary of Agriculture or a designee, and the Assistant to the President for Science and Technology or a designee.*

(3) *APPOINTED MEMBERS.*—*Not later than 90 days after the date of enactment of the National Geologic Mapping Reauthorization Act of 1997, in consultation with the Association, the Secretary shall appoint to the advisory committee 2 representatives from the Survey (including the Chief Geologist, as Chairman), 2 representatives from the State geological surveys, 1 representative from academia, and 1 representative from the private sector.*

(b) DUTIES.—The advisory committee shall—

(1) * * *

* * * * *

(3) submit an annual report to the Secretary that evaluates the progress of the Federal [and State], *State, and university* mapping activities and evaluates the progress made toward fulfilling the purposes of this Act.

SEC. 6. GEOLOGIC MAPPING PROGRAM IMPLEMENTATION PLAN.

The Secretary, acting through the Director, shall, with the advice and review of the advisory committee, prepare an implementation plan for the geologic mapping program. The plan shall identify the overall management structure and operation of the geologic mapping program and shall provide for—

(1) the role of the Survey in its capacity as overall management lead, including the responsibility for developing the national *cooperative* geologic mapping program that meets Federal needs while simultaneously fostering State needs;

* * * * *

(3) mechanisms for identifying short- and long-term priorities for each component of the geologic mapping program, including—

(A) * * *

* * * * *

[(C) for the State geologic mapping component, a priority-setting mechanism that responds to (i) specific intrastate needs for geologic-map information, and (ii) interstate needs shared by adjacent entities that have common requirements; and]

(C) for the State geologic mapping component, a priority-setting mechanism that responds to—

(i) specific intrastate needs for geologic-map information; and

(ii) interstate needs shared by adjacent entities that have common requirements; and

* * * * *

[(4) a description of the degree to which the Survey can acquire, archive, and use Side-Looking Airborne Radar (SLAR) or Interferometric Synthetic Aperture Radar (IFSAR) data in a manner that is technically appropriate for geologic or related mapping studies;

[(5) a mechanism for adopting scientific and technical map standards for preparing and publishing general-purpose and special-purpose geologic maps to (A) assure uniformity of cartographic and scientific conventions, and (B) provide a basis for judgment as to the comparability and quality of map products; and]

(4) a mechanism for adopting scientific and technical mapping standards for preparing and publishing general-purpose and special-purpose geologic maps to—

(A) ensure uniformity of cartographic and scientific conventions; and

(B) provide a basis for judgment as to the comparability and quality of map products; and

[(6)] (5) a mechanism for monitoring the inventory of published and current mapping investigations nationwide in order to facilitate planning and information exchange and to avoid redundancy.

SEC. 7. NATIONAL GEOLOGIC-MAP DATA BASE.

(a) * * *

[(b) STANDARDIZATION.—Geologic maps contributed to the national archives should have standardized format, symbols, and technical attributes so that archival information can be assimilated, manipulated, accessed, exchanged, and compared efficiently and accurately.]

(b) STANDARDIZATION.—

(1) IN GENERAL.—Geologic maps contributed to the national archives shall have format, symbols, and technical attributes that adhere to standards so that archival information can be accessed, exchanged, and compared efficiently and accurately, as required by Executive Order 12906 (59 Fed. Reg. 17,671 (1994)), which established the National Spatial Data Infrastructure.

(2) DEVELOPMENT OF STANDARDS.—Entities that contribute geologic maps to the national archives shall develop the stand-

ards described in paragraph (1) in cooperation with the Federal Geographic Data Committee, which is charged with standards development and other data coordination activities as described in Office of Management and Budget revised Circular A-16.

SEC. 8. ANNUAL REPORT.

The Secretary shall, within 90 days after the end of each fiscal year, submit an annual report to the Committee on [Natural] Resources of the House of Representatives and the Committee on Energy and Natural Resources of the Senate describing the status of the nationwide geologic mapping [program, and describing and evaluating progress] *program and describing and evaluating the progress* achieved during the preceding fiscal year in developing the national geologic-map data base. Each report shall include any recommendations for legislative or other action as the Secretary deems necessary and appropriate to fulfill the purposes of this Act.

[SEC. 9. AUTHORIZATION OF APPROPRIATIONS.

[There is authorized to be appropriated to carry out this Act the following:

[(1) For Federal mapping activities under this Act, \$12,500,000 for fiscal year 1993, \$14,000,000 for fiscal year 1994, \$16,000,000 for fiscal year 1995, and \$18,000,000 for fiscal year 1996.

[(2) For Federal support activities under this Act, \$9,500,000 for fiscal year 1993, \$10,000,000 for fiscal year 1994, \$10,500,000 for fiscal year 1995, and \$11,000,000 for fiscal year 1996.

[(3) For State mapping activities under this Act, \$15,000,000 for fiscal year 1993, \$18,000,000 for fiscal year 1994, \$21,000,000 for fiscal year 1995, and \$25,000,000 for fiscal year 1996.

[(4) For educational support activities under this Act, \$500,000 for fiscal year 1993, \$750,000 for fiscal year 1994, \$1,000,000 for fiscal year 1995, and \$1,500,000 for fiscal year 1996.]

SEC. 9. AUTHORIZATION OF APPROPRIATIONS.

(a) *IN GENERAL.*—*There are authorized to be appropriated to carry out the national cooperative geologic mapping program under this Act—*

- (1) \$26,000,000 for fiscal year 1998;*
- (2) \$28,000,000 for fiscal year 1999; and*
- (3) \$30,000,000 for fiscal year 2000.*

(b) *ALLOCATION OF APPROPRIATED FUNDS.*—

(1) *IN GENERAL.*—*Of the amount of funds that are appropriated under subsection (a) for any fiscal year up to the amount that is equal to the amount appropriated to carry out the national cooperative geologic mapping program for fiscal year 1996—*

(A) not less than 20 percent shall be allocated to State mapping activities; and

(B) not less than 2 percent shall be allocated to educational mapping activities.

(2) *INCREASED APPROPRIATIONS.*—*Of the amount of funds that are appropriated under subsection (a) for any fiscal year*

up to the amount that exceeds the amount appropriated to carry out the national cooperative geologic mapping program for fiscal year 1996—

(A) for fiscal year 1998—

(i) 75 percent shall be allocated for Federal mapping and support mapping activities;

(ii) 23 percent shall be allocated for State mapping activities; and

(iii) 2 percent shall be allocated for educational mapping activities;

(B) for fiscal year 1999—

(i) 74 percent shall be allocated for Federal mapping and support mapping activities;

(ii) 24 percent shall be allocated for State mapping activities; and

(iii) 2 percent shall be allocated for educational mapping activities; and

(C) for fiscal year 2000—

(i) 73 percent shall be allocated for Federal mapping and support mapping activities;

(ii) 25 percent shall be allocated for State mapping activities; and

(iii) 2 percent shall be allocated for educational mapping activities.

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