

NATIONAL GEOLOGIC MAPPING ACT REAUTHORIZATION  
ACT

\_\_\_\_\_  
JANUARY 12, 2018.—Committed to the Committee of the Whole House on the State  
of the Union and ordered to be printed

\_\_\_\_\_

Mr. BISHOP of Utah, from the Committee on Natural Resources,  
submitted the following

R E P O R T

[To accompany H.R. 4033]

[Including cost estimate of the Congressional Budget Office]

The Committee on Natural Resources, to whom was referred the bill (H.R. 4033) to reauthorize the National Geologic Mapping Act of 1992, having considered the same, report favorably thereon without amendment and recommend that the bill do pass.

PURPOSE OF THE BILL

The purpose of H.R. 4033 is to reauthorize the National Geologic Mapping Act of 1992.

BACKGROUND AND NEED FOR LEGISLATION

The Geologic Mapping Act of 1992 established the National Cooperative Geologic Mapping Program (NCGMP).<sup>1</sup> This program was designed to foster cooperation and coordination between the United States Geological Survey and the State Geologic Surveys in generating modern, detailed, digitized, geologic maps in a cost effective and efficient manner. These maps are intended to foster resource development, environmental protection, and identification and mitigation of natural hazards. Geologic maps are records of the nature and distribution of rocks and soils, water, energy and mineral resources both on the surface and subsurface. There are three sub-components to the NCGMP: FEDMAP—A federal mapping effort by the U.S. Geological Survey; STATEMAP—A state mapping effort by State Geologic Surveys; and EDMAP—University programs

---

<sup>1</sup> 43 U.S.C. 31.

that support geologic mapping projects for undergraduate and graduate students.<sup>2</sup>

Funds for projects through the STATEMAP and EDMAP subprograms are matched one to one by State dollars and are selected through a competitive process. Each State has an advisory committee made up of the end-users of the geologic maps produced.<sup>3</sup> These may include representatives from county health departments, State environmental agencies, federal agencies and the private sector. This ensures that areas with the highest priority and need are selected for mapping projects.

Each program has a review panel which provides oversight on the effectiveness and efficiency of the projects funded. Representatives from federal agencies, State Surveys and the private sector serve on the Federal Advisory Committee for the NCGMP.

More than 8,500 new geologic maps have been produced through this cooperative program. On average 350 new maps and reports are produced each year. To date 49 States and Puerto Rico have participated in this program, producing geologic maps that are available for approximately 53% of the U.S.<sup>4</sup>

Another important requirement of the Geologic Mapping Act of 1992 was the establishment of the National Geologic Database. One of the components of this database is a catalog that has information on most of the geologic maps ever produced in the U.S., which amounts to more than 100,000 products.<sup>5</sup>

These geologic maps provide valuable information needed for identifying energy, mineral and water resources, geologic and environmental hazards such as active faults and seismic areas, unstable ground subject to landslides, swelling soils, floodplains and abandoned mine lands. Understanding the sub-surface geology and soil profiles can facilitate better planning for septic systems in rural areas, water treatment facilities, road construction and maintenance, home construction and other infrastructure needs.

Funds expended in this program reap significant benefits. An assessment of the economic benefits of detailed geologic mapping in Kentucky commissioned by the State Geological Surveys of Kentucky and Illinois estimated that the economic return to Kentucky was 25 to 39 times the cost of the program.<sup>6</sup> The geologic maps in Kentucky benefited many end users including city planners, coal and other mineral resource developers, and water users. In Ohio, developers and engineers who used geologic maps save on average \$50,000 on each project.<sup>7</sup>

H.R. 4033 reauthorizes the National Geologic Mapping Act through 2023 and keeps authorization levels equal to the 2005 level at \$64,000,000 per fiscal year. The authorization of appropriations for the NCGMP will expire in 2018.

<sup>2</sup>U.S. Geological Survey, National Cooperative Geologic Mapping Program, <https://ncgmp.usgs.gov/about/>.

<sup>3</sup>U.S. Geological Survey, State Mapping Funding, <https://ncgmp.usgs.gov/about/STATEMAP/funding.html>.

<sup>4</sup>U.S. Department of the Interior 2017/2018 Annual Performance Plan and 2016 Report, May 26, 2017, [https://www.doi.gov/sites/doi.gov/files/uploads/doi\\_appr\\_05262017\\_final.pdf](https://www.doi.gov/sites/doi.gov/files/uploads/doi_appr_05262017_final.pdf).

<sup>5</sup>The National Geologic Map Database Catalog, [https://ngmdb.usgs.gov/ngmdb/ngmdb\\_home.html](https://ngmdb.usgs.gov/ngmdb/ngmdb_home.html).

<sup>6</sup>Bhagwat, S. B., and V. C. Ipe, 2000, Economic benefits of detailed geologic mapping to Kentucky: Illinois State Geological Survey, Special Report 3, p. 39.

<sup>7</sup>Kleinhenz and Associates, 2011, An Economic Impact Analysis of the Ohio Geological Survey's Products and Services, Ohio Geological Survey, p. 29.

## SECTION-BY-SECTION ANALYSIS

*Section 1—Short title*

The short title of the bill is the “National Geologic Mapping Act Reauthorization Act”.

*Section 2—Reauthorization of National Geologic Mapping Act of 1992*

This section extends the authorization for the National Cooperative Geologic Mapping Program through 2023. It also replaces the Associate Director for Geology at the United States Geological Survey (USGS) with the Associate Director for Core Science Systems at USGS on the Geologic Mapping Advisory Committee.

## COMMITTEE ACTION

H.R. 4033 was introduced on October 12, 2017, by Congressman Doug Lamborn (R-CO). The bill was referred to the Committee on Natural Resources, and within the Committee to the Subcommittee on Energy and Mineral Resources. The Subcommittee held a hearing on the bill on November 30, 2017. On December 12, 2017, the Natural Resources Committee met to consider the bill. The Subcommittee was discharged by unanimous consent. No amendments were offered, and the bill was ordered favorably reported to the House of Representatives by unanimous consent on December 13, 2017.

## COMMITTEE OVERSIGHT FINDINGS AND RECOMMENDATIONS

Regarding clause 2(b)(1) of rule X and clause 3(c)(1) of rule XIII of the Rules of the House of Representatives, the Committee on Natural Resources’ oversight findings and recommendations are reflected in the body of this report.

## COMPLIANCE WITH HOUSE RULE XIII AND CONGRESSIONAL BUDGET ACT

1. Cost of Legislation and the Congressional Budget Act. With respect to the requirements of clause 3(c)(2) and (3) of rule XIII of the Rules of the House of Representatives and sections 308(a) and 402 of the Congressional Budget Act of 1974, the Committee has received the following estimate for the bill from the Director of the Congressional Budget Office:

U.S. CONGRESS,  
CONGRESSIONAL BUDGET OFFICE,  
*Washington, DC, January 11, 2018.*

Hon. ROB BISHOP,  
*Chairman, Committee on Natural Resources,  
House of Representatives, Washington, DC.*

DEAR MR. CHAIRMAN: The Congressional Budget Office has prepared the enclosed cost estimate for H.R. 4033, the National Geologic Mapping Act Reauthorization Act.

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

Sincerely,

KEITH HALL,  
*Director.*

Enclosure.

*H.R. 4033—National Geologic Mapping Act Reauthorization Act*

Summary: H.R. 4033 would authorize the annual appropriation of \$64 million through 2023 to carry out the National Cooperative Geologic Mapping Program (NCGMP). Under current law, \$64 million is authorized to be appropriated each year for the NCGMP through 2018.

Assuming appropriation of the authorized amounts, CBO estimates that implementing H.R. 4033 would cost \$246 million over the 2018–2022 period. Enacting the bill would not affect direct spending or revenues; therefore, pay-as-you-go procedures do not apply.

CBO estimates that enacting H.R. 4033 would not increase net direct spending or on-budget deficits in any of the four consecutive 10-year periods beginning in 2028.

H.R. 4033 contains no intergovernmental or private-sector mandates as defined in the Unfunded Mandates Reform Act (UMRA).

Estimated cost to the Federal Government: The estimated budgetary effect of H.R. 4033 is shown in the following table. The costs of this legislation fall within budget function 300 (natural resources and environment).

|  | By fiscal year, in millions of dollars— |      |      |      |      |           |
|--|---|------|------|------|------|-----------|
|  | 2018                                    | 2019 | 2020 | 2021 | 2022 | 2018–2022 |
| INCREASES IN SPENDING SUBJECT TO APPROPRIATION |   |      |      |      |      |           |
| Authorization Level .....                      | 0                                       | 64   | 64   | 64   | 64   | 256       |
| Estimated Outlays .....                        | 0                                       | 58   | 61   | 63   | 64   | 246       |

Basis of estimate: For this estimate, CBO assumes that the legislation will be enacted near the beginning of calendar year 2018 and that the authorized amounts will be appropriated for each fiscal year. Estimated outlays are based on historical spending patterns.

The NCGMP is carried out jointly by the U.S. Geological Survey and state geological authorities. Under this program, federal and state geologists are developing a comprehensive geological map of the United States and a related database of environmental and scientific information. Under current law, \$64 million is authorized annually through 2018 to carry out the NCGMIP; in 2017, \$24 million was allocated for that program. H.R. 4033 would extend the \$64 million annual authorization of appropriation through 2023. CBO estimates that implementing H.R. 4033 would cost \$246 million over the 2018–2022 period and \$74 million in years after 2022.

Pay-As-You-Go Considerations: None.

Increase in long-term direct spending and deficits: CBO estimates that enacting H.R. 4033 would not increase net direct spend-

ing or on-budget deficits in any of the four consecutive 10-year periods beginning in 2028.

Mandates: H.R. 4033 contains no intergovernmental or private-sector mandates as defined in UMRA.

Estimate prepared by: Federal costs: Robert Reese; Mandates: Zach Byrum.

Estimate approved by: H. Samuel Papenfuss, Deputy Assistant Director for Budget Analysis.

2. General Performance Goals and Objectives. As required by clause 3(c)(4) of rule XIII, the general performance goal or objective of this bill is to reauthorize the National Geologic Mapping Act of 1992.

#### EARMARK STATEMENT

This bill does not contain any Congressional earmarks, limited tax benefits, or limited tariff benefits as defined under clause 9(e), 9(f), and 9(g) of rule XXI of the Rules of the House of Representatives.

#### COMPLIANCE WITH PUBLIC LAW 104–4

This bill contains no unfunded mandates.

#### COMPLIANCE WITH H. RES. 5

Directed Rule Making. This bill does not contain any directed rule makings.

Duplication of Existing Programs. This bill does not establish or reauthorize a program of the federal government known to be duplicative of another program. Such program was not included in any report from the Government Accountability Office to Congress pursuant to section 21 of Public Law 111–139 or identified in the most recent Catalog of Federal Domestic Assistance published pursuant to the Federal Program Information Act (Public Law 95–220, as amended by Public Law 98–169) as relating to other programs.

#### PREEMPTION OF STATE, LOCAL OR TRIBAL LAW

This bill is not intended to preempt any State, local or tribal law.

#### CHANGES IN EXISTING LAW MADE BY THE BILL, AS REPORTED

In compliance with clause 3(e) 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, and existing law in which no change is proposed is shown in roman):

#### **NATIONAL GEOLOGIC MAPPING ACT OF 1992**

\* \* \* \* \*

#### **SEC. 3. DEFINITIONS.**

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.

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

(4) EDUCATION COMPONENT.—The term “education component” means the education component of the geologic mapping program described in [section 6(d)(3)] *section 4(d)(3)*.

(5) FEDERAL COMPONENT.—The term “Federal component” means the Federal component of the geologic mapping program described in [section 6(d)(1)] *section 4(d)(1)*.

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

(7) SECRETARY.—The term “Secretary” means the Secretary of the Interior.

(8) 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.

(9) STATE COMPONENT.—The term “State component” means the State component of the geologic mapping program described in [section 6(d)(2)] *section 4(d)(2)*.

(10) SURVEY.—The term “Survey” means the United States Geological Survey.

#### SEC. 4. GEOLOGIC MAPPING PROGRAM.

##### (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 THE SURVEY.—

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

(A) develop a 5-year strategic plan for the geologic mapping program in accordance with section 6, which plan shall be submitted to the Committee on Resources of the House of Representatives and the Committee on Energy and Natural Resources of the Senate not later than 1 year after the date of enactment of the [Omnibus Public Land Management Act of 2009] *National Geologic Mapping Act Reauthorization Act*;

(B) appoint, with the advice and consultation of the Association, the advisory committee not later than 1 year after the date of enactment of the [Omnibus Public Land

Management Act of 2009] *National Geologic Mapping Act Reauthorization Act* in accordance with section 5; and

(C) submit biennially a report to the Committee on Energy and Natural Resources of the United States Senate and to the Committee on Resources of the House of Representatives identifying—

(i) how the Survey and the Association are coordinating the development and implementation of the geologic mapping program;

(ii) how the Survey and the Association 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 affect successful implementation of the geologic mapping program.

(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 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) determining the Nation's geologic framework through systematic development of geologic maps at scales appropriate to the geologic setting and the perceived applications, such maps to be contributed to the national geologic map data base;

(2) development of a complementary national geochronologic and paleontologic data base that provides value-added descriptive and interpretative information to the geologic-map data base;

(3) application of cost-effective mapping techniques that assemble, produce, translate and disseminate geologic-map information and that render such information of greater application and benefit to the public; and

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

(d) PROGRAM COMPONENTS.—

(1) FEDERAL COMPONENT.—

(A) IN GENERAL.—The geologic mapping program shall include a Federal geologic mapping component, the objective of which shall be to determine the geologic framework of areas determined to be vital to the economic, social, environmental, or scientific welfare of the United States.

(B) MAPPING PRIORITIES.—For the Federal component, mapping priorities—

(i) shall be described in the 5-year plan under section 6; and

(ii) shall be based on—

(I) national requirements for geologic map information in areas of multiple-issue need or areas of compelling single-issue need;

(II) national requirements for geologic map information in areas where mapping is required to solve critical earth science problems; and

(III) the needs of land management agencies of the Department of the Interior.

(C) INTERDISCIPLINARY STUDIES.—

(i) IN GENERAL.—The Federal component shall include interdisciplinary studies that add value to geologic mapping.

(ii) REPRESENTATIVE CATEGORIES.—Interdisciplinary studies under clause (i) may include—

(I) establishment of a national geologic map database under section 7;

(II) studies that lead to the implementation of cost-effective digital methods for the acquisition, compilation, analysis, cartographic production, and dissemination of geologic map information;

(III) paleontologic, geochronologic, and isotopic investigations that provide information critical to understanding the age and history of geologic map units;

(IV) geophysical investigations that assist in delineating and mapping the physical characteristics and 3-dimensional distribution of geologic materials and geologic structures; and

(V) geochemical investigations and analytical operations that characterize the composition of geologic map units.

(iii) USE OF RESULTS.—The results of investigations under clause (ii) shall be contributed to national databases.

(2) STATE COMPONENT.—

(A) IN GENERAL.—The geologic mapping program shall include a State geologic mapping component, the objective of which shall be to establish the geologic framework of areas determined to be vital to the economic, social, environmental, or scientific welfare of individual States.

(B) MAPPING PRIORITIES.—For the State component, mapping priorities—

(i) shall be determined by State panels representing a broad range of users of geologic maps; and

(ii) shall be based on—

(I) State requirements for geologic map information in areas of multiple-issue need or areas of compelling single-issue need; and

(II) State requirements for geologic map information in areas where mapping is required to solve critical earth science problems.

(C) INTEGRATION OF FEDERAL AND STATE PRIORITIES.—A national panel including representatives of the Survey shall integrate the State mapping priorities under this



paragraph with the Federal mapping priorities under paragraph (1).

(D) USE OF FUNDS.—The Survey and recipients of grants under the State component shall not use more than 15.25 percent of the Federal funds made available under the State component for any fiscal year to pay indirect, servicing, or program management charges.

(E) FEDERAL SHARE.—The Federal share of the cost of activities under the State component for any fiscal year shall not exceed 50 percent.

(3) EDUCATION COMPONENT.—

(A) IN GENERAL.—The geologic mapping program shall include a geologic mapping education component for the training of geologic mappers, the objectives of which shall be—

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

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

(B) INVESTIGATIONS.—The education component may include the conduct of investigations, which—

(i) shall be integrated with the Federal component and the State component; and

(ii) shall respond to mapping priorities identified for the Federal component and the State component.

(C) USE OF FUNDS.—The Survey and recipients of grants under the education component shall not use more than 15.25 percent of the Federal funds made available under the education component for any fiscal year to pay indirect, servicing, or program management charges.

(D) FEDERAL SHARE.—The Federal share of the cost of activities under the education component for any fiscal year shall not exceed 50 percent.

**SEC. 5. ADVISORY COMMITTEE.**

(a) ESTABLISHMENT.—

(1) IN GENERAL.—There shall be established a 11-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 the Interior or a designee from a land management agency of the Department of the Interior, the Secretary of Energy or a designee, and the Secretary of Agriculture or a designee.

(3) APPOINTED MEMBERS.—In consultation with the Association, the Secretary shall appoint to the advisory committee two representatives from the Survey (including the [Associate Director for Geology] *Associate Director for Core Science Systems*, as Chair), two representatives from the State geological surveys, one representative from academia, and 2 representatives from the private sector.

(b) DUTIES.—The advisory committee shall—

(1) review and update the 5-year plan prepared by the Director pursuant to section 6;

(2) review the scientific progress of the geologic mapping program;

(3) provide a scientific overview of geologic maps (including maps of geologic-based hazards) used or disseminated by Federal agencies for regulation or land-use planning; and

(4) submit an annual report to the Secretary that evaluates the progress of the Federal, State, and university mapping activities and evaluates the progress made toward fulfilling the purposes of sections 4 through 7.

\* \* \* \* \*

**SEC. 9. AUTHORIZATION OF APPROPRIATIONS.**

(a) IN GENERAL.—There is authorized to be appropriated to carry out this Act \$64,000,000 for each of fiscal years 2009 through **[2018]** 2023.

(b) ALLOCATION OF APPROPRIATIONS.—Of any amounts appropriated for any fiscal year in excess of the amount appropriated for fiscal year 2005—

(1) 50 percent shall be available for the State component;

and

(2) 4 percent shall be available for the education component.

\* \* \* \* \*

