

NATIONAL VOLCANO EARLY WARNING AND MONITORING
SYSTEM ACT

JANUARY 9, 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. 4475]

[Including cost estimate of the Congressional Budget Office]

The Committee on Natural Resources, to whom was referred the bill (H.R. 4475) to provide for the establishment of the National Volcano Early Warning and Monitoring System, having considered the same, report favorably thereon with an amendment and recommend that the bill as amended do pass.

The amendment is as follows:

SECTION 1. SHORT TITLE.

This Act may be cited as the “National Volcano Early Warning and Monitoring System Act”.

SEC. 2. DEFINITIONS.

In this Act:

(1) SECRETARY.—The term “Secretary” means the Secretary of the Interior, acting through the Director of the United States Geological Survey.

(2) SYSTEM.—The term “System” means the National Volcano Early Warning and Monitoring System established under section 3(a)(1).

SEC. 3. NATIONAL VOLCANO EARLY WARNING AND MONITORING SYSTEM.

(a) ESTABLISHMENT.—

(1) IN GENERAL.—The Secretary shall establish within the United States Geological Survey a system, to be known as the “National Volcano Early Warning and Monitoring System”, to monitor, warn, and protect citizens of the United States from undue and avoidable harm from volcanic activity.

(2) PURPOSES.—The purposes of the System are—

(A) to organize, modernize, standardize, and stabilize the monitoring systems of the volcano observatories in the United States, which include the Alaska Volcano Observatory, California Volcano Observatory, Cascades Volcano Observatory, Hawaiian Volcano Observatory, Yellowstone Volcano Observatory, and other volcano observatories established under subsection (d); and

- (B) to unify the monitoring systems of volcano observatories in the United States into a single interoperative system.
- (3) OBJECTIVE.—The objective of the System is to monitor all the volcanoes in the United States at a level commensurate with the threat posed by the volcanoes by—
- (A) upgrading existing networks on monitored volcanoes;
 - (B) installing new networks on unmonitored volcanoes; and
 - (C) employing geodetic and other components when applicable.
- (b) SYSTEM COMPONENTS.—
- (1) IN GENERAL.—The System shall include—
 - (A) a national volcano watch office that is operational 24 hours a day and 7 days a week;
 - (B) a national volcano data center; and
 - (C) an external grants program to support research in volcano monitoring science and technology.
 - (2) MODERNIZATION ACTIVITIES.—Modernization activities under the System shall include the comprehensive application of emerging technologies, including digital broadband seismometers, real-time continuous Global Positioning System receivers, satellite and airborne radar interferometry, acoustic pressure sensors, and spectrometry to measure gas emissions.
- (c) MANAGEMENT.—
- (1) MANAGEMENT PLAN.—
 - (A) IN GENERAL.—Not later than 180 days after the date of enactment of this Act, the Secretary shall submit to Congress a 5-year management plan for establishing and operating the System.
 - (B) INCLUSIONS.—The management plan submitted under subparagraph (A) shall include—
 - (i) annual cost estimates for modernization activities and operation of the System;
 - (ii) annual milestones, standards, and performance goals; and
 - (iii) recommendations for, and progress towards, establishing new, or enhancing existing, partnerships to leverage resources.
 - (2) ADVISORY COMMITTEE.—The Secretary shall establish an advisory committee to assist the Secretary in implementing the System, to be comprised of representatives of relevant agencies and members of the scientific community, to be appointed by the Secretary.
 - (3) PARTNERSHIPS.—The Secretary may enter into cooperative agreements with institutions of higher education and State or territorial agencies designating the institutions of higher education and State or territorial agencies as volcano observatory partners for the System.
 - (4) COORDINATION.—The Secretary shall coordinate the activities under this Act with the heads of relevant Federal agencies, including—
 - (A) the Secretary of Transportation;
 - (B) the Administrator of the Federal Aviation Administration;
 - (C) the Administrator of the National Oceanic and Atmospheric Administration; and
 - (D) the Director of the Federal Emergency Management Administration.
- (d) VOLCANO OBSERVATORY IN PACIFIC U.S. TERRITORIES.—
- (1) FEASIBILITY STUDY.—Not later than 180 days after the date of enactment of this Act, the Secretary shall conduct a study to assess the feasibility of establishing volcano observatories in Guam, the Northern Mariana Islands, and American Samoa to monitor volcanic activity across the western and southern Pacific Ocean along the Ring of Fire, including underwater volcanic activity in such region.
 - (2) CONSULTATION.—The Secretary shall consult with appropriate territorial and local entities in conducting the study.
 - (3) COOPERATIVE AGREEMENT.—If the study required by paragraph (1) determines that such observatories are feasible, then the Secretary, subject to the availability of appropriations, may enter into cooperative agreements under subsection (c)(3) with institutions of higher education or territorial agencies to establish such volcano observatories as part of the National Volcano Early Warning and Monitoring System.
- (e) ANNUAL REPORT.—In each of fiscal years 2018 through 2024, the Secretary shall submit to Congress a report that describes the activities carried out under this Act.

SEC. 4. FUNDING.

(a) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to the Secretary to carry out this Act \$15,000,000 for each of fiscal years 2018 through 2024.

(b) EFFECT ON OTHER SOURCES OF FEDERAL FUNDING.—Amounts made available under this section shall supplement, and not supplant, Federal funds made available for other United States Geological Survey hazards activities and programs.

PURPOSE OF THE BILL

The purpose of H.R. 4475 is to provide for the establishment of the National Volcano Early Warning Monitoring System.

BACKGROUND AND NEED FOR LEGISLATION

The U.S. Geological Survey's Volcano Hazards Program (VHP) mission is to "enhance public safety and minimize social and economic disruption from eruptions through delivery of effective forecasts, warnings, and information of volcano hazards based on scientific understanding of volcanic processes."¹ The VHP monitors volcanoes to provide warnings of potential activity to managers and the public. Volcano monitoring networks collect data which are interpreted by scientists at the five volcano observatories in Alaska, California, Hawaii, Washington, and Wyoming.²

The United States is the third most active country for volcanic eruptions, ranking only behind Indonesia and Japan.³ It is home to 169 active volcanoes, of which 55 are considered to be threatening to life and property.⁴ Since 1980, 44 volcanoes in the United States have produced 120 eruptions and produced 51 episodes of notable volcanic unrest.⁵

In Washington State, Mount St. Helens erupted on May 18, 1980, causing 57 fatalities and destroying 27 bridges and 185 miles of highways at an estimated cost of \$1.1 billion.⁶ Although Mount St. Helens is well known, Mount Rainier near Seattle could cause far greater loss of life if it should erupt again. The same is true of the Yellowstone National Park caldera should it erupt, as it has roughly every 600,000 years.⁷

The Federal Aviation Administration reports that over 80,000 large aircraft a year, carrying more than 30,000 passengers a day, fly near many of Alaska's volcanoes, mostly on the heavily traveled great-circle routes between Europe, North America and Asia.⁸ In 1989, the Alaska Volcano Observatory could provide only a few days' notice before Mount Redoubt erupted. In 2009, after the center's capabilities had been expanded, it provided two months of notice before the volcano erupted again.⁹

¹ U.S. Geological Survey's Volcano Hazards Program Website, <https://volcanoes.usgs.gov/vhp/about.html>

² U.S. Geological Survey's Volcano Observatories, <https://volcanoes.usgs.gov/vhp/observatories.html>

³ U.S. Geological Survey, "Volcanos of the United States", <https://pubs.usgs.gov/gip/volcus/ustext.html>

⁴ *Id.*

⁵ Smithsonian Institution National Museum of Natural History Global Volcanism Program, http://volcano.si.edu/search_volcano.cfm

⁶ U.S. Geological Survey, "Eruptions of Mount St. Helens: Past, present, and future", <https://pubs.er.usgs.gov/publication/7000008>

⁷ U.S. Geological Survey, Yellowstone Volcano Observatory, https://volcanoes.usgs.gov/volcanoes/yellowstone/yellowstone_sub_page_54.html

⁸ Alaska Volcano Observatory, <https://avo.alaska.edu/faq.php>

⁹ U.S. Geological Survey, Volcano FAQ, https://volcanoes.usgs.gov/vsc/file_mgr/file-153/FAQs.pdf

The National Volcano Early Warning and Monitoring System Act would provide the necessary resources and direction to modernize the networks that are relied on to monitor the many volcanoes in the United States.

COMMITTEE ACTION

H.R. 4475 was introduced on November 28, 2017, by Congressman Don Young (R-AK). The bill was referred to the Committee on Natural Resources. On December 12, 2017, the Natural Resources Committee met to consider the bill. Congresswoman Madeleine Z. Bordallo (D-GU) offered an amendment designated 032; it was adopted by unanimous consent. Congressman Don Young offered an amendment designated #1; it was adopted by unanimous consent. No further amendments were offered, and the bill, as amended, 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, December 20, 2017.

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. 4475, the National Volcano Early Warning and Monitoring System 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. 4475—National Volcano Early Warning and Monitoring System Act

Summary: H.R. 4475 would authorize the appropriation of \$15 million for each year over the 2018–2024 period for the U.S. Geological Survey (USGS) to establish a system to improve monitoring of active volcanoes. The bill also would direct USGS to conduct a

study on the feasibility of establishing volcano observatories in the U.S. Pacific Island territories and would authorize USGS to enter into cooperative partnerships with states, territories, universities, and agencies to implement the system.

Assuming appropriation of the authorized amounts, CBO estimates that implementing H.R. 4475 would cost \$73 million over the 2018–2022 period.

Enacting H.R. 4475 would not affect direct spending or revenues; therefore, pay-as-you-go procedures do not apply. CBO estimates that enacting the bill would not increase net direct spending or on-budget deficits in any of the four consecutive 10-year periods beginning in 2028.

H.R. 4475 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. 4475 is shown in the following table. The costs of this legislation falls 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	15	15	15	15	15	75
Estimated Outlays	14	14	15	15	15	73

Basis of estimate: For this estimate, CBO assumes that the bill will be enacted near the beginning of calendar year 2018 and that the authorized amounts will be appropriated for each fiscal year.

H.R. 4475 would authorize \$15 million annually over the 2018–2024 period for USGS to establish a system to streamline and update monitoring of active volcanoes. The bill would require USGS to:

- Replace 143 outdated seismometers (instruments that measure the ground motion) on active volcanoes,
- Create a volcano watch office that would be in operation 7 days a week and 24 hours a day to monitor active volcanoes,
- Create a national volcano data center to collect and analyze data on volcanic activity,
- Implement a grant program to support research on volcano monitoring, and
- Conduct a study to assess the feasibility of establishing volcano observatories in Guam, the Northern Mariana Islands, and American Samoa.

USGS also would be authorized to enter into cooperative agreements with states, territories, and universities to assist in running the system.

Based on historical spending patterns for similar activities, CBO estimates that implementing H.R. 4475 would cast \$73 million over the 2018–2022 period and \$32 million after 2022.

Pay-As-You-Go considerations: None.

Increase in long-term direct spending and deficits: CBO estimates that enacting H.R. 4475 would not increase net direct spending or on-budget deficits in any of the four consecutive 10-year periods beginning in 2028.

Mandates: H.R. 4475 contains no intergovernmental or private-sector mandates as define in UMRA.

Previous CBO estimate: On May 9, 2017, CBO transmitted an estimate for S. 346, the National Volcano Early Warning and Monitoring System Act, as ordered reported by the Senate Committee on Energy and Natural Resources on March 30, 2017. CBO's estimated costs for the two bills differ because H.R. 4475 would authorize the appropriation of specific amounts while S. 346 would authorize the appropriation of such sums as are necessary.

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 provide for the establishment of the National Volcano Early Warning Monitoring System.

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

If enacted, this bill would make no changes to existing law.