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

IN THE SENATE OF THE UNITED STATES

Ms. MURKOWSKI (for herself, Ms. CANTWELL, and Ms. HIRONO) introduced the following bill; which was read twice and referred to the Committee on ________________

A BILL

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

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.

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

SEC. 2. FINDINGS.

Congress finds that—

(1) the United States and the territories of the United States contain 169 hazardous volcanoes;
since 1980, eruptions have claimed many lives and cost billions of dollars in property damage in the United States;

(3) ash eruptions pose a hazard to high-flying jet aircraft, including the more than 50,000 passengers who travel on jets over Alaska and the North Pacific every day;

(4) in 1989, an eruption of Redoubt Volcano, Alaska, caused in-flight failure of all 4 engines of a passenger Boeing 747 aircraft;

(5) international flights over the Commonwealth of the Northern Mariana Islands and the intense domestic air traffic of the Pacific Northwest also face potential engine failure in the event of an eruption;

(6) mudflows from ice-clad Cascade volcanoes of the States of Washington, Oregon, and California pose a serious hazard to cities and transportation arteries in the Pacific Northwest;

(7) lava flows, toxic gas emissions, and explosions impact residents and visitors to the State of Hawaii and have the potential to cause catastrophic property damage;

(8) frequent seismic unrest requires careful monitoring in the Mammoth Lakes area of the State
of California and Yellowstone National Park in the
States of Wyoming, Montana, and Idaho;

(9) modern technology, in the form of geo-
physical monitoring networks on the ground and the
use of near-real time satellite data, makes possible
early warnings typically weeks or months before
eruptions, giving emergency response agencies and
the public time to prepare, which minimizes poten-
tial damage to property and loss of life;

(10) the efficacy of monitoring is being dem-
onstrated by—

(A) the successful forecasts and warnings
of Augustine Volcano in 1986 and 2006, Re-
doubt Volcano in 1989 through 1990 and 2009,
and Mt. Spurr in 1992; and

(B) warnings and forecasts of lava flow ad-
vancement in Hawaii during the ongoing erup-
tion of Kilauea;

(11) the United States Geological Survey and
university and State partners of the United States
Geological Survey operate—

(A) the Alaska Volcano Observatory lo-
cated in Anchorage and Fairbanks, Alaska;

(B) the Cascades Volcano Observatory lo-
cated in Vancouver, Washington;
(C) the Hawaiian Volcano Observatory located in Hawai‘i Volcanoes National Park, Hawai‘i;

(D) the Yellowstone Volcano Observatory located in Yellowstone National Park in the State of Wyoming, Montana, and Idaho; and

(E) the California Volcano Observatory, located in Menlo Park, California; and

(12) a detailed survey of the volcanoes in the United States and the monitoring status of those volcanoes has revealed numerous serious monitoring gaps, leaving the United States exposed to preventable damage from large volcanic eruptions.

SEC. 3. 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 4(a)(1).

SEC. 4. 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 includes the Alaska Volcano Observatory, California Volcano Observatory, Cascades Volcano Observatory, Hawaiian Volcano Observatory, and Yellowstone Volcano Observatory; 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 agencies designating the institutions of higher education and State 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) **ANNUAL REPORT.**—Annually, the Secretary shall submit to Congress a report that describes the activities carried out under this Act.

**SEC. 5. FUNDING.**

(a) **AUTHORIZATION OF APPROPRIATIONS.**—There are authorized to be appropriated such sums as are necessary to carry out this Act for each of fiscal years 2017 through 2027.

(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.