To establish a national program to identify and reduce losses from landslide hazards, to establish a national 3D Elevation Program, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

MARCH 22, 2017

Ms. DelBene (for herself, Ms. Bonamici, Mr. Cartwright, Ms. Lee, Ms. Norton, Mr. Smith of Washington, Mr. Kilmer, Mr. Heck, and Mr. Grijalva) introduced the following bill; which was referred to the Committee on Natural Resources, and in addition to the Committee on Science, Space, and Technology, for a period to be subsequently determined by the Speaker, in each case for consideration of such provisions as fall within the jurisdiction of the committee concerned

NOVEMBER 16, 2018

Reported from the Committee on Natural Resources with an amendment

[Strike out all after the enacting clause and insert the part printed in italic]

NOVEMBER 16, 2018

Referral to the Committee on Science, Space, and Technology extended for a period ending not later than December 28, 2018

DECEMBER 28, 2018

Additional sponsors: Mr. Polis, Mr. Tipton, and Mrs. Torres

DECEMBER 28, 2018

Committee on Science, Space, and Technology discharged; committed to the Committee of the Whole House on the State of the Union and ordered to be printed

[For text of introduced bill, see copy of bill as introduced on March 22, 2017]
A BILL

To establish a national program to identify and reduce losses from landslide hazards, to establish a national 3D Elevation Program, and for other purposes.
Be it enacted by the Senate and House of Representa-
tives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE.
This Act may be cited as the “National Landslide Pre-
paredness Act”.

SEC. 2. DEFINITIONS.

In this Act:

(1) 3D.—The term “3D” means 3-dimensional.

(2) 3D ELEVATION DATA.—

(A) IN GENERAL.—The term “3D elevation
data” means 3D, high-resolution data obtained
using lidar, ifsar, or other methods over the
United States (including territories).

(B) INCLUSIONS.—The term “3D elevation
data” includes terrestrial and bathymetric ele-
vation data.

(3) 3D ELEVATION PROGRAM.—The term “3D
Elevation Program” means the 3D Elevation Pro-
gram established under section 5(a).

(4) IF SAR.—The term “ifsar” means
interferometric synthetic aperture radar.

(5) INDIAN TRIBE.—The term “Indian tribe” has
the meaning given the term in section 4 of the Indian
Self-Determination and Education Assistance Act (25
(6) **LIDAR.**—The term “lidar” means light detection and ranging.

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

(8) **STATE.**—The term “State” means any unit of State or Territorial government handling the identification, mapping, assessment, and research of landslide hazards or responding to landslide events, including—

(A) a State geological survey office;

(B) a State department of emergency response; and

(C) a State department of transportation.

**SEC. 3. NATIONAL LANDSLIDE HAZARDS REDUCTION PROGRAM.**

(a) **ESTABLISHMENT.**—The Secretary shall establish a program, to be known as the “National Landslide Hazards Reduction Program” (referred to in this section as the “program”)—

(1) to identify and understand landslide hazards and risks;

(2) to reduce losses from slides;

(3) to protect communities at risk of landslide hazards; and
(4) to help improve communication and emergency preparedness, including by coordinating with communities and entities responsible for infrastructure that are at risk of landslide hazards.

(b) DESCRIPTION OF PROGRAM.—

(1) PROGRAM ACTIVITIES.—The Secretary, in coordination with the Interagency Coordinating Committee on Landslide Hazards established by subsection (c)(1) (referred to in this section as the “Committee”) and in coordination with existing activities of the United States Geological Survey and other Federal agencies, shall—

(A) identify, map, assess, and research landslide hazards;

(B) respond to landslide events; and

(C) in coordination with States and Indian tribes—

(i) establish working groups with States and Indian tribes to identify regional and local priorities for researching, identifying, mapping, and assessing landslide hazards; and

(ii) develop and implement landslide hazard guidelines for—

(I) geologists;
(II) geological and geotechnical
engineers; and

(III) land use and other decision-makers.

(2) National Strategy.—Not later than 180
days after the date of enactment of this Act, and every
5 years thereafter, the Secretary, in coordination with
the Committee, shall develop and publish a national
strategy for landslide hazards and risk reduction in
the United States, which shall include—

(A) goals and priorities for the program;

(B) priorities for data acquisition, research,
communications, and risk management on land-
slides and landslide hazards across relevant Fed-
eral agencies; and

(C) a detailed interagency plan to carry out
the national strategy, including details about the
programs, projects, and budgets that will be used
to implement the national strategy.

(3) National Landslide Hazards Database.—In carrying out the program, the Secretary,
in coordination with States and Indian tribes, shall
develop and maintain a publicly accessible national
landslide hazard and risk inventory database to com-
pile, maintain, standardize, and evaluate data regarding—

(A) landslide hazards and risks nationwide;

(B) the nationwide impact of landslides on—

(i) health and safety;

(ii) the economy and infrastructure;

and

(iii) the environment;

(C) landslide hazard stabilization; and

(D) reduction of losses from landslides.

(4) LANDSLIDE HAZARD AND RISK PREPAREDNESS FOR COMMUNITIES.—In carrying out the program, the Secretary, in coordination with the Secretary of the Army, the Secretary of Commerce, the Secretary of Homeland Security, the Secretary of Transportation, and the heads of other relevant Federal agencies, and in consultation with States and Indian tribes, shall develop and disseminate—

(A) landslide planning and risk reduction guidance, guidelines, maps, tools, and training materials to help inform State, local, and tribal governments and decisionmakers with respect to—
(i) the use and implementation of landslide hazard assessments;
(ii) the applied use of the database developed under paragraph (3);
(iii) reducing losses from landslides; and
(iv) resources available for communities working to improve landslide hazard preparedness; and
(B) landslide preparedness curricula and training modules for—
(i) State, local, and tribal officials;
(ii) Federal, State, local, and tribal emergency managers; and
(iii) the National Guard.

(5) Flash flood and debris flow early warning system.—In carrying out the program, the Secretary, in coordination with the Secretary of Commerce and Secretary of Agriculture, shall expand the early warning system for flash floods and debris flow by—
(A) expanding the early warning system for post-wildfire debris flow to include recently burned areas across the western United States;
(B) developing procedures with State, local, and tribal governments to monitor stormwater drainage in areas with high flash flood and debris flow risk;

(C) identifying high-risk debris flow areas, such as recently burned land and potential lahar hazard areas; and

(D) identifying areas susceptible to post-wildfire landslides.

(6) EMERGENCY RESPONSE ACTIVITIES.—In carrying out the program, the Secretary, in coordination with the Secretary of Commerce, the Secretary of Homeland Security, the heads of other relevant Federal agencies, States, and Indian tribes, shall establish emergency response procedures for the rapid deployment of Federal scientists, equipment, and services to areas impacted by a significant landslide event—

(A) to support emergency response efforts and improve the safety of emergency responders;

(B) to improve data collection; and

(C) to conduct research to advance the understanding of the causes, impacts, and reduction of landslide hazards and risks.
(c) **INTERAGENCY COORDINATING COMMITTEE ON LANDSLIDE HAZARDS.**

(1) **IN GENERAL.**—There is established a committee, to be known as the “Interagency Coordinating Committee on Landslide Hazards”.

(2) **MEMBERSHIP.**—The Committee shall be composed of the following members (or their designees):

(A) The Secretary, who shall serve as Chairperson of the Committee.

(B) The Secretary of the Army.

(C) The Secretary of Commerce.

(D) The Secretary of Homeland Security.

(E) The Secretary of Transportation.

(F) The Director of the National Science Foundation.

(G) The Director of the Office of Science and Technology Policy.

(H) The Director of the Office of Management and Budget.

(I) The Secretary of Agriculture.

(3) **MEETINGS.**—The Committee shall meet at the call of the Chairperson.

(4) **PURPOSE AND DUTIES.**—The Committee shall—

(A) advise and oversee the program;
(B) facilitate communication and coordination across Federal agencies in the planning, management, budgeting, and execution of landslide activities; and

(C) support the development and execution of the national strategy under subsection (b)(2), including by—

(i) supporting the development of national goals and priorities for the national strategy;

(ii) articulating Federal agency roles, responsibilities, and resources for carrying out the national strategy; and

(iii) overseeing the implementation of the national strategy.

(d) ADVISORY COMMITTEE.—

(1) IN GENERAL.—The Secretary shall establish an advisory committee, to be known as the “Advisory Committee on Landslides” (referred to in this subsection as the “Advisory Committee”).

(2) MEMBERSHIP.—The Advisory Committee shall be composed of not fewer than 11 members—

(A) of whom none may be an individual described in any of subparagraphs (A) through (F)
of section 7342(a)(1) of title 5, United States Code; and

(B) who shall be representatives of—

(i) States, including State geological organizations;

(ii) Indian tribes, including tribal geological organizations;

(iii) research institutions and institutions of higher education that are qualified—

(I) to provide advice regarding landslide hazard and risk reduction; and

(II) to represent related scientific, architectural, engineering, and planning disciplines;

(iv) industry standards development organizations; and

(v) State, local, and tribal emergency management agencies.

(3) RECOMMENDATIONS.—

(A) In general.—The Advisory Committee shall submit to the Committee recommendations for the implementation of the program, including recommendations regarding—
(i) landslide hazard and risk reduction and planning;

(ii) tools for communities;

(iii) research; and

(iv) such other topics as the Advisory Committee determines appropriate.

(B) CONSIDERATION.—The Secretary and the agency heads described in subparagraphs (A) through (H) of subsection (c)(2) shall take into consideration any recommendation of the Advisory Committee submitted under subparagraph (A).

(e) GRANT PROGRAMS.—

(1) COOPERATIVE LANDSLIDE HAZARD MAPPING AND ASSESSMENT PROGRAM.—

(A) IN GENERAL.—Subject to appropriations, the Secretary may—

(i) provide grants, on a competitive basis, to State, local, and tribal governments to research, map, assess, and collect data on landslide hazards and identify areas susceptible to post-wildfire landslides within the jurisdictions of those governments; and
(ii) accept and use funds received from other Federal and non-Federal partners to advance the purposes of the program.

(B) PRIORITY.—

(i) IN GENERAL.—The Secretary shall consult annually with the Committee, States, and Indian tribes to establish priorities for the grant program under this paragraph.

(ii) FUNDING PRIORITIZATION.—In providing grants under this paragraph, the Secretary shall give priority to projects that—

(I) will achieve the greatest landslide hazard and risk reduction;

(II) reflect the goals and priorities of the national strategy established under subsection (b)(2)(A);

(III) are matched at least 50 percent of the total cost of the project from non-Federal sources; and

(IV) include acquisition of enhanced elevation data consistent with the 3D Elevation Program.
(2) **National Landslide Research Grants.**—

In providing grants for landslide research and development, the Director of the National Science Foundation, in consultation with the Secretary and the Committee, shall ensure that the grants are provided on a competitive basis to State, local, and tribal governments, institutions of higher education, and nongovernmental entities to advance the goals and priorities of the national strategy established under subsection (b)(2)(A), including for research and development on—

(A) the causes, mechanisms, triggers, hydrology, and geology of landslides;

(B) ways to reduce landslide hazards and risks to minimize loss of life and property, including landslide hazard and risk communication, perception, decisionmaking, tools, and technologies; and

(C) other goals and priorities of the national strategy established under subsection (b)(2)(A).

(f) **Annual Report.**—The Secretary shall submit to Congress an annual report, including a description of, with respect to the preceding calendar year—
(1) the goals and accomplishments of the Secretary and the agency heads described in subparagraphs (A) through (H) of subsection (c)(2) in carrying out the national strategy developed under subsection (b)(2), expressed—

(A) by agency, program, and budgetary resource; and

(B) by the goals and priorities of the national strategy established under subsection (b)(2)(A);

(2) the results of the activities of the Committee under this section;

(3) the extent to which any recommendations of the Advisory Committee under subsection (d)(3)(A) have been implemented;

(4) the grants provided under this section during that preceding calendar year, including a description of—

(A) each activity carried out using such a grant; and

(B) the results of those activities; and

(5) for each significant landslide event in the United States during that preceding calendar year—
(A) a description of the landslide event and the implications of the event on communities, including life and property;

(B) recommendations on how the identification of the landslide risk could have been improved prior to the event;

(C) a description of the effectiveness of any warning and risk communication, including the dissemination of warnings by State, local, and tribal partners in the affected area;

(D) recommendations to improve risk identification, reduction, and communication to landowners and local governments;

(E) recommendations to improve landslide hazard preparedness and emergency response activities under this section; and

(F) such other findings as the Secretary determines appropriate.

(g) Sunset.—This program, including any reporting requirements, shall sunset on the date that is seven years after the date of enactment.

SEC. 4. GROUND SUBSIDENCE.

As the Secretary determines to be appropriate, the Secretary shall support the identification, mapping, research,
and monitoring of subsidence and groundwater resource accounting.

SEC. 5. 3D ELEVATION PROGRAM.

(a) Establishment of 3D Elevation Program.—

(1) In general.—The Secretary shall establish a program, to be known as the “3D Elevation Program”—

(A) to provide 3D elevation data coverage for the United States;

(B) to coordinate and facilitate the collection, dissemination, and use of 3D elevation data among Federal departments and agencies and non-Federal entities;

(C) to produce standard, publicly accessible 3D elevation data products for the United States; and

(D) to promote the collection, dissemination, and use of 3D elevation data among Federal, State, local, and tribal governments, communities, institutions of higher education, and the private sector through—

(i) cooperative agreements;

(ii) the development and maintenance of spatial data infrastructure to provide
quality control and deliver to the public 3D elevation data products;

(iii) the development of standards and guidelines for 3D elevation data acquisition to increase accessibility to 3D elevation data in a standard, easy-to-use format; and

(iv) the identification, assessment, and adoption of emerging technologies to improve the accuracy and efficiency of the 3D Elevation Program.

(2) MANAGEMENT.—

(A) IN GENERAL.—The Secretary shall manage the 3D Elevation Program—

(i) to ensure efficiency with respect to related activities of the Department of the Interior and other participating Federal departments and agencies; and

(ii) to meet the needs of Department of the Interior programs, stakeholders, and the public.

(B) OTHER FEDERAL DEPARTMENTS AND AGENCIES.—The head of each Federal department and agency involved in the acquisition, production, distribution, or application of 3D elevation data shall—
(i) coordinate with the 3D Elevation Federal Interagency Coordinating Committee established under subsection (b) to acquire additional, enhanced 3D elevation data;

(ii) submit to the Secretary a description of priority areas of interest for 3D elevation data collection for use in providing grants and cooperative agreements under subsection (d);

(iii) implement policies and procedures for data acquisition and sharing that are consistent with standards and guidelines developed under the 3D Elevation Program;

(iv) participate in, and share the results and benefits of, the 3D Elevation Program, in accordance with standards and guidelines developed under the 3D Elevation Program; and

(v) ensure that any 3D elevation data acquired with Federal grant funding—

(I) meets 3D Elevation Program standards; and

(II) is included in the national holdings of those data.
(b) 3D Elevation Federal Interagency Coordinating Committee.—

(1) Establishment.—The Secretary, in coordination with the Secretary of Commerce, shall establish an interagency coordinating committee, to be known as the “3D Elevation Federal Interagency Coordinating Committee” (referred to in this subsection as the “Committee”), to better coordinate 3D elevation data management across the Federal Government.

(2) Membership.—The Committee shall be composed of the following members (or their designees):

(A) The Secretary, who shall serve as Chairperson of the Committee.

(B) The Secretary of Agriculture.

(C) The Secretary of Commerce.

(D) The Secretary of Homeland Security.

(E) The Director of the National Science Foundation.

(F) The Director of the Office of Science and Technology Policy.

(G) The Director of the Office of Management and Budget.

(H) The head of any other Federal department or agency, at the request of the Secretary.
(3) COORDINATION.—The Committee shall coordinate, as appropriate, with the existing activities of—

(A) the 3D Elevation Program Executive Forum;

(B) the Alaska Mapping Executive Committee;

(C) the 3D Elevation Working Group; and

(D) the 3D National Elevation Subcommittee.

(4) MEETINGS.—The Committee shall meet at the call of the Chairperson.

(5) DUTIES.—The Committee shall—

(A) oversee the planning, management, and coordination of the 3D Elevation Program; and

(B) develop, by not later than 1 year after the date of enactment of this Act, and update periodically thereafter—

(i) a strategic plan that establishes goals and priorities for activities carried out under the 3D Elevation Program; and

(ii) a detailed management plan to implement the strategic plan.

(c) SUBCOMMITTEE OF NATIONAL GEOSPATIAL ADVISORY COMMITTEE.—
(1) **Establishment.**—

(A) **In General.**—The Secretary shall establish, within the National Geospatial Advisory Committee, a subcommittee (referred to in this subsection as the “Subcommittee”).

(B) **Membership.**—The Subcommittee shall—

(i) consist of not fewer than 11 members, of whom none may be a Federal officer or employee; and

(ii) include representatives of—

(I) research and academic institutions;

(II) industry standards development organizations;

(III) units of State and local government; and

(IV) the private sector.

(2) **Duties.**—

(A) **Assessment.**—The Subcommittee shall conduct an assessment of—

(i) trends and developments in—

(I) the collection, dissemination, and use of 3D elevation data; and
(II) science and technology relating to 3D elevation data;

(ii) the effectiveness of the 3D Elevation Program in carrying out the activities described in subsection (a)(1);

(iii) the need to revise or reorganize the 3D Elevation Program; and

(iv) the management, coordination, implementation, and activities of the 3D Elevation Program.

(B) REPORT.—Not later than 1 year after the date of enactment of this Act, and not less frequently than once every 2 years thereafter, the Subcommittee shall submit to the Secretary and the 3D Elevation Federal Interagency Coordinating Committee established under subsection (b) a report that includes—

(i) the findings of the assessment under subparagraph (A); and

(ii) recommendations of the Subcommittee based on those findings, if any.

(d) GRANTS AND COOPERATIVE AGREEMENTS.—

(1) IN GENERAL.—The Secretary may make grants and enter into cooperative agreements with other Federal departments and agencies, units of trib-
al, State, or local government, institutions of higher education, nonprofit research institutions, or other organizations to facilitate the improvement of nationwide coverage of 3D elevation data.

(2) APPLICATIONS.—To be eligible to receive a grant or enter into a cooperative agreement under this subsection, an entity described in paragraph (1) shall submit to the Secretary an application at such time, in such manner, and containing such information as the Secretary may require.

(3) TERMS AND CONDITIONS.—A grant or cooperative agreement under this subsection shall be subject to such terms and conditions as the Secretary determines to be appropriate, including making data publically available and interoperable with other Federal datasets.

(e) SUNSET.—This program, including any reporting requirements, shall sunset on the date that is seven years after the date of enactment.
A BILL

To establish a national program to identify and reduce losses from landslide hazards, to establish a national 3D Elevation Program, and for other purposes.

DECEMBER 28, 2018

Committee on Science, Space, and Technology discharged; committed to the Committee of the Whole House on the State of the Union and ordered to be printed.

H. R. 1675

[Report No. 115–1035, Part I]