

[DISCUSSION DRAFT]

117TH CONGRESS
1ST SESSION

H. R. _____

To improve the Federal effort to reduce wildland fire risks, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

M____. _____ introduced the following bill; which was referred to the Committee on _____

A BILL

To improve the Federal effort to reduce wildland fire risks, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE.**

4 This Act may be cited as the “National Wildland Fire
5 Risk Reduction Program Act”.

6 **SEC. 2. ESTABLISHMENT.**

7 The President shall establish a National Wildland
8 Fire Risk Reduction Program with the purpose of achiev-
9 ing major measurable reductions in the losses of life and

1 property from wildland fires through a coordinated Fed-
2 eral effort to—

3 (1) improve the assessment of fire environments
4 and the understanding and prediction of wildland
5 fires, associated smoke, and their impacts, includ-
6 ing—

7 (A) at the wildland-urban interface;

8 (B) on communities, buildings and other
9 infrastructure; and

10 (C) social and economic impacts;

11 (2) develop and encourage the adoption of
12 science-based and cost-effective measures to prevent
13 and mitigate wildland fire and associated smoke im-
14 pacts; and

15 (3) improve the understanding and mitigation
16 of the impacts of climate change and variability on
17 wildland fire risk, frequency, and severity, and to in-
18 form paragraphs (1) and (2).

19 **SEC. 3. PROGRAM ACTIVITIES.**

20 The Program shall consist of the activities described
21 under section 6, which shall be designed—

22 (1) to support research and development, in-
23 cluding interdisciplinary research, related to fire en-
24 vironments, wildland fires, associated smoke, and

1 their impacts, in furtherance of a coordinated inter-
2 agency effort to address wildfire risk reduction;

3 (2) to support data management and steward-
4 ship, and the development and coordination of data
5 systems and computational tools to accelerate the
6 understanding of fire environments, wildland fires,
7 associated smoke, and their impacts;

8 (3) to support the development of novel tools
9 and technologies to improve understanding, moni-
10 toring, prediction, and mitigation of wildland fires,
11 associated smoke, and their impacts;(4) to support
12 education and training to expand the number of stu-
13 dents and researchers in areas of study and research
14 related to wildland fire;

15 (5) to accelerate the translation of research re-
16 lated to wildland fires and associated smoke into op-
17 erations to reduce harm to communities, buildings,
18 and other infrastructure;

19 (6) to conduct communication and outreach re-
20 garding wildland fire science and wildland fire risk
21 mitigation, to communities, energy utilities and op-
22 erators of other critical infrastructure, and other rel-
23 evant stakeholders;

24 (7) to support research and development
25 projects funded under joint solicitations or through

1 memoranda of understanding between no fewer than
2 two agencies participating in the Program; and

3 (8) to disseminate, to the extent practicable,
4 scientific data and related products and services in
5 formats meeting shared standards to enhance the
6 interoperability, usability, and accessibility of Pro-
7 gram Agency data in order to better meet the needs
8 of Program agencies, other Federal agencies, and
9 relevant stakeholders.

10 **SEC. 4. INTERAGENCY COORDINATING COMMITTEE ON**
11 **WILDLAND FIRE RISK REDUCTION.**

12 (a) ESTABLISHMENT.—Not later than 90 days after
13 enactment of this Act, the Director of the Office of Science
14 and Technology Policy shall establish an Interagency Co-
15 ordinating Committee on Wildland Fire Risk Reduction,
16 to be co-chaired by the Director and the Director of the
17 National Institute of Standards and Technology.

18 (b) MEMBERSHIP.—In addition to the co-chairs, the
19 Committee shall be composed of—

20 (1) the Director of the National Science Foun-
21 dation;

22 (2) the Administrator of the National Oceanic
23 and Atmospheric Administration;

24 (3) the Administrator of the Federal Emer-
25 gency Management Agency;

1 (4) the United States Fire Administration;

2 (5) the Chief of the Forest Service;

3 (6) the Administrator of the National Aero-
4 nautics and Space Administration;

5 (7) the Administrator of the Environmental
6 Protection Agency;

7 (8) the Secretary of Energy;

8 (9) the Director of the Office of Science and
9 Technology Policy;

10 (10) the Director of the Office of Management
11 and Budget;

12 (11) the Secretary of the Interior;

13 (12) the Director of United States Geological
14 Survey;

15 (13) the Secretary of Health and Human Serv-
16 ices;

17 (14) the Secretary of Defense;

18 (15) the Secretary of Housing and Urban De-
19 velopment; and

20 (16) the head of any other Federal agency that
21 the Director considers appropriate.

22 (c) MEETINGS.—The Committee shall meet not less
23 than twice a year for the first 2 years and then not less
24 than once a year at the call of the Director.

1 (d) GENERAL PURPOSE AND DUTIES.—The Com-
2 mittee shall oversee the planning, management, and co-
3 ordination of the Program, and solicit stakeholder input
4 on Program goals.

5 (e) STRATEGIC PLAN.—The Committee shall develop
6 and submit to Congress, not later than 1 year after enact-
7 ment, a Strategic Plan for the Program that includes—

8 (1) prioritized goals for the Program, consistent
9 with the purposes of the Program as described in
10 section 2;

11 (2) short-term, mid-term, and long-term re-
12 search and development objectives to achieve those
13 goals;

14 (3) a description of the role of each Program
15 agency in achieving the prioritized goals;

16 (4) a description of how the Committee will fos-
17 ter collaboration between and among the Program
18 agencies to help meet the goals of the Program;

19 (5) the methods by which progress toward the
20 goals will be assessed;

21 (6) an explanation of how the Program will fos-
22 ter the translation of research into measurable re-
23 ductions in the losses of life and property from
24 wildland fires, including recommended outcomes and
25 metrics for each program goal and how operational

1 Program agencies will transition demonstrated tech-
2 nologies and research findings into operations;

3 (7) a description of the research infrastructure,
4 including databases and computational tools, needed
5 to accomplish the research and development objec-
6 tives outlined in paragraph (2), a description of how
7 research infrastructure in existence at the time of
8 the development of the plan will be used to meet the
9 objectives, and an explanation of how new research
10 infrastructure will be developed to meet the objec-
11 tives;

12 (8) description of how Program Agencies will
13 collaborate with stakeholders and take into account
14 stakeholder needs and recommendations in devel-
15 oping research and development objectives;

16 (9) recommendations on the most effective
17 means to integrate the research results into wildland
18 fire preparedness and response actions across Fed-
19 eral, State, and local levels; and

20 (10) guidance on how the Committee's rec-
21 ommendations are best used in climate adaptation
22 planning for Federal, State, local, Tribal, and terri-
23 torial entities.

24 (f) COORDINATION WITH OTHER FEDERAL EF-
25 FORTS.—The Director shall ensure that the activities of

1 the Program are coordinated with other relevant Federal
2 initiatives as appropriate.

3 (g) PROGRESS REPORT.—Not later than 18 months
4 after the date transmission of the Strategic Plan from
5 subsection (e) to Congress and not less frequently than
6 once every 2 years thereafter, the Committee shall submit
7 to the Congress a report on the progress of the Program
8 that includes—

9 (1) a description of the activities funded under
10 the Program, a description of how those activities
11 align with the prioritized goals and research objec-
12 tives established in the Strategic Plan, and the
13 budgets, per agency, for these activities; and

14 (2) the outcomes achieved by the Program for
15 each of the goals identified in the Strategic Plan.

16 **SEC. 5. GOVERNMENT ACCOUNTABILITY OFFICE REVIEW.**

17 Not later than 3 years after the date of enactment
18 of this Act, the Comptroller General of the United States
19 shall submit a report to Congress that—

20 (1) evaluates the progress and performance of
21 the Program in establishing and making progress to-
22 ward the goals of the Program as set forth in this
23 Act; and

1 (2) includes such recommendations as the
2 Comptroller General determines are appropriate to
3 improve the Program.

4 **SEC. 6. RESPONSIBILITIES OF PROGRAM AGENCIES.**

5 (a) NATIONAL INSTITUTE OF STANDARDS AND
6 TECHNOLOGY.—The responsibilities of the Director of the
7 National Institute of Standards and Technology with re-
8 spect to the Program are as follows:

9 (1) RESEARCH AND DEVELOPMENT ACTIVI-
10 TIES.—The Director of the National Institute of
11 Standards and Technology shall—

12 (A) carry out research on the impact of
13 wildland fires on communities, buildings, and
14 other infrastructure;;

15 (B) carry out research on the generation of
16 firebrands from wildland fires and on methods
17 and materials to prevent or reduce firebrand ig-
18 nition of communities, buildings, and other in-
19 frastructure;;

20 (C) carry out research on novel materials,
21 systems, structures, and construction designs to
22 harden structures, parcels, and communities to
23 the impact of wildland fires;

1 (D) carry out research on the impact of
2 environmental factors on wildland fire behavior,
3 including wind, terrain, and moisture.; and

4 (E) support the development of perform-
5 ance-based tools to mitigate the impact of
6 wildland fires, and work with appropriate
7 groups to promote the use of such tools, includ-
8 ing through model building codes and fire
9 codes, standard test methods, voluntary con-
10 sensus standards, and construction and retrofit
11 best practices;

12 (2) WILDLAND-URBAN INTERFACE FIRE POST-
13 INVESTIGATIONS.—The Director of the National In-
14 stitute of Standards and Technology shall—

15 (A) coordinate Federal post-wildland fire
16 investigations of fires at the wildland-urban
17 interface; and

18 (B) develop methodologies to characterize
19 the impact of wildland fires on communities and
20 the impact of changes in building and fire
21 codes, including methodologies—

22 (i) for collecting, inventorying, and
23 analyzing information on the performance
24 of communities, buildings, and other infra-
25 structure in wildland fires; and

1 (ii) for improved collection of perti-
2 nent information from different sources,
3 including first responders, the design and
4 construction industry, insurance compa-
5 nies, and building officials.

6 (b) NATIONAL SCIENCE FOUNDATION.—As a part of
7 the Program, the Director of the National Science Foun-
8 dation shall support—

9 (1) research to improve the understanding and
10 prediction of wildland fire risks, including the condi-
11 tions that increase the likelihood of a wildland fire,
12 the behavior of wildland fires, and their impacts on
13 buildings, communities, infrastructure, ecosystems
14 and living systems;

15 (2) development and improvement of tools and
16 technologies, including databases and computational
17 models, to enable and accelerate the understanding
18 and prediction of wildland fires and their impacts

19 (3) development of research infrastructure, as
20 appropriate, to enable and accelerate the under-
21 standing and prediction of wildland fires and their
22 impacts, including upgrades or additions to the Na-
23 tional Hazards Engineering Research Infrastructure;

24 (4) research to improve the understanding of—

1 (A) the response to wildland fire risk mes-
2 sages by individuals, communities, and policy-
3 makers;

4 (B) economic and other factors influencing
5 the implementation and adoption of wildland
6 fire risk reduction measures by individuals,
7 communities, and policymakers; and

8 (C) decision-making and emergency re-
9 sponse to wildland fires;

10 (5) undergraduate and graduate research op-
11 portunities and graduate and postdoctoral fellow-
12 ships and traineeships in fields of study relevant to
13 wildland fires and their impacts; and

14 (6) research to improve the understanding of
15 the impacts of climate change and climate variability
16 on wildland fires, including wildland fire risk, fre-
17 quency, and severity, and wildland fire prediction,
18 mitigation, and resilience strategies.

19 (c) NATIONAL OCEANIC AND ATMOSPHERIC ADMIN-
20 ISTRATION.—

21 (1) IN GENERAL.—The Administrator of the
22 National Oceanic and Atmospheric Administration
23 (in this subsection referred to as the “Adminis-
24 trator”) shall conduct research, observations, mod-
25 eling, forecasting, prediction, and historical analysis

1 of wildland fires to improve understanding of
2 wildland fires, and associated fire weather and
3 smoke, for the protection of life and property and
4 for the enhancement of the national economy.

5 (2) WEATHER FORECASTING AND DECISION
6 SUPPORT FOR WILDLAND FIRES.—The Adminis-
7 trator shall—

8 (A) develop and provide accurate, timely,
9 and effective warnings and forecasts of wildland
10 fires and fire weather events that endanger life
11 and property. Such warnings may include red
12 flag warnings, operational fire weather alerts,
13 and any other warnings or alerts the Adminis-
14 trator deems appropriate;

15 (B) provide stakeholders and the public
16 impact-based decision support services, seasonal
17 climate predictions, air quality products, and
18 smoke forecasts; and

19 (C) provide on-site weather forecasts, sea-
20 sonal climate predictions, and other decision
21 support to wildland fire incident command
22 posts.

23 (3) WILDLAND FIRE INCIDENT RESEARCH
24 DATABASE.—The Administrator, in collaboration
25 with Program agencies and relevant stakeholders,

1 shall develop a publicly accessible Fire Incident Re-
2 search Database to support the archiving, steward-
3 ship, and understanding of historical wildland fire
4 and fire weather data, and to advance wildland fire
5 science. In developing the database, NOAA shall col-
6 laborate with Program agencies and stakeholders
7 to—

8 (A) develop data standards to enhance
9 interoperability of diverse wildland fire data and
10 improve usability of data for a diverse range of
11 stakeholders; and

12 (B) solicit data from other Program agen-
13 cies and from relevant stakeholders.

14 (4) WILDLAND FIRE AND FIRE WEATHER SUR-
15 VEILLANCE AND OBSERVATIONS.—The Adminis-
16 trator, in coordination with Administrator of the Na-
17 tional Aeronautics and Space Administration, shall

18 (A) leverage existing observations, tech-
19 nologies and assets and develop new tech-
20 nologies to sustain and enhance environmental
21 observations used for wildland fire prediction
22 and detection, fire weather and smoke fore-
23 casting, monitoring, and post-wildland fire re-
24 covery, with a focus on—

1 (i) collecting data for pre-ignition
2 analysis, such as drought, fuel conditions,
3 and soil moisture, that will help predict se-
4 vere wildland fire conditions on subsea-
5 sonal to decadal timescales;

6 (ii) supporting identification and clas-
7 sification of fire environments to determine
8 vulnerability to wildland fires and rapid
9 wildland fire growth;

10 (iii) detecting, observing, and moni-
11 toring wildland fires and smoke;

12 (iv) supporting research on the inter-
13 action of weather and wildland fire behav-
14 ior; and

15 (v) supporting post-fire assessments
16 conducted by Program agencies; and

17 (B) prioritize the ability to detect wildfire
18 and smoke in its requirements for its current
19 and future operational space-based assessments
20 and commercial data purchases.

21 (5) FIRE WEATHER TESTBED.—In collaboration
22 with Program agencies, the Administrator shall es-
23 tablish a Fire Weather Testbed to evaluate physical
24 and social science, technology, and other research to

1 develop fire weather products and services for imple-
2 mentation by relevant stakeholders.

3 (6) WILDLAND FIRE AND FIRE WEATHER RE-
4 SEARCH AND DEVELOPMENT.—The Administrator
5 shall support a wildland fire and smoke research and
6 development program with the goals of—

7 (A) improving the understanding, pre-
8 diction, detection, forecasting, monitoring, and
9 assessments of wildland fires and associated fire
10 weather and smoke;

11 (B) developing products and services to
12 meet stakeholder needs;

13 (C) transitioning physical and social
14 science research into operations;

15 (D) improving modeling and technology,
16 including coupled fire-atmosphere fire behavior
17 modeling; and

18 (E) better understanding of links between
19 fire weather events and subseasonal-to-climate
20 impacts.

21 (7) EXTRAMURAL RESEARCH.—The Adminis-
22 trator shall collaborate with and support the non-
23 Federal wildland fire research community, which in-
24 cludes institutions of higher education, private enti-
25 ties, nongovernmental organizations, and other rel-

1 evant stakeholders by making funds available
2 through competitive grants, contracts, and coopera-
3 tive agreements.

4 (8) HIGH PERFORMANCE COMPUTING.—The
5 Administrator shall acquire high performance com-
6 puting technologies and supercomputing technologies
7 to conduct research and development activities, sup-
8 port research to operations under this section, and
9 host operational fire and smoke forecast models.

10 (9) INCIDENT METEOROLOGIST WORKFORCE AS-
11 SESSMENT.—Not later than 6 months after the date
12 of enactment of this Act, the Administrator shall
13 submit to the Committee on Science, Space, and
14 Technology in the House, and the Committee on
15 Commerce, Science, and Transportation in the Sen-
16 ate the results of an assessment of National Weath-
17 er Service workforce and training needs for Incident
18 Meteorologists for wildland fires and other extreme
19 events and the potential need for more such Incident
20 Meteorologists. Such assessment shall take into con-
21 sideration information technology support, logistical
22 and administrative operations, future climate condi-
23 tions, and feedback from relevant stakeholders.

1 (d) FEDERAL EMERGENCY MANAGEMENT AGEN-
2 CY.—The Administrator of the Federal Emergency Man-
3 agement Agency shall—

4 (1) support—

5 (A) the development of risk assessment
6 tools and effective mitigation techniques for
7 wildland fires;

8 (B) wildland fire-related data collection
9 and analysis;

10 (C) public outreach and information dis-
11 semination related to wildland fires and
12 wildland fire risk; and

13 (D) promotion of the adoption of wildland
14 fire preparedness and risk reduction measures,
15 including for households, businesses, and com-
16 munities;

17 (2) work closely with standards development or-
18 ganizations and building code organizations, in con-
19 junction with the National Institute of Standards
20 and Technology, to promote the implementation of
21 research results and promote better buildings and
22 retrofit practices within the design and construction
23 industry, including architects, engineers, contractors,
24 builders, and inspectors; and

1 (3) acting through the United States Fire Ad-
2 ministration—

3 (A) help translate new information and re-
4 search findings into best practices to improve
5 the training of firefighters in wildland fire fire-
6 fighting; and

7 (B) conduct outreach and information dis-
8 semination to fire departments regarding best
9 practices for wildland fire firefighting and
10 training in wildland fire firefighting.

11 (e) NATIONAL AERONAUTICS AND SPACE ADMINIS-
12 TRATION.—The responsibilities of the Administrator of
13 the National Aeronautics and Space Administration (in
14 this subsection referred to as the “Administrator”) with
15 respect to the Program are as follows:

16 (1) IN GENERAL.—The Administrator shall,
17 with respect to the Program—

18 (A) support relevant basic and applied sci-
19 entific research and modeling;

20 (B) ensure the use in the Program of all
21 relevant Earth observations data for maximum
22 utility;

23 (C) explore and apply novel tools and tech-
24 nologies in the activities of the Program;

1 (D) support the translation of research to
2 operations, including Program Agencies and rel-
3 evant stakeholders; and

4 (E) facilitate the communication of
5 wildland fire research, knowledge, and tools to
6 relevant stakeholders.

7 (2) WILDLAND FIRE RESEARCH AND APPLICA-
8 TIONS.—The Administrator shall support basic and
9 applied wildland fire research and modeling activi-
10 ties, including competitively-selected research to—

11 (A) improve understanding and prediction
12 of fire environments, wildland fires, associated
13 smoke, and their impacts;

14 (B) improve the understanding of the im-
15 pacts of climate change and variability on
16 wildland fire risk, frequency, and severity;

17 (C) characterize the pre-fire phase and
18 fire-inducing conditions, such as soil moisture
19 and vegetative fuel availability;

20 (D) characterize the active fire phase, such
21 as fire and smoke plume mapping, fire behavior
22 and spread modeling, and domestic and global
23 fire activity;

1 (E) characterize the post-fire phase, such
2 as landscape changes, air quality, erosion, land-
3 slides, and impacts on carbon distributions;

4 (F) contribute to advancing predictive
5 wildland fire models;

6 (G) address other relevant investigations
7 and measurements prioritized by the National
8 Academies of Sciences, Engineering, and Medi-
9 cine Decadal Survey on Earth Science and Ap-
10 plications from Space;

11 (H) improve the translation of research
12 knowledge into actionable information;

13 (I) develop research and data products, in-
14 cluding maps and decision-support information,
15 tools, and support related training as appro-
16 priate and practicable;

17 (J) collaborate with other Program agen-
18 cies and relevant stakeholders, as appropriate,
19 on joint research and development projects, in-
20 cluding research grant solicitations and field
21 campaigns; and

22 (K) transition research advances to oper-
23 ations, including Program Agencies and rel-
24 evant stakeholders, as practicable.

1 (3) WILDLAND FIRE DATABASES AND COM-
2 PUTATIONAL TOOLS.—

3 (A) IN GENERAL.—The Administrator
4 shall—

5 (i) identify, from the Administration’s
6 Earth science data systems, data, including
7 combined data products, that can con-
8 tribute to improving the understanding,
9 monitoring, prediction, and mitigation of
10 wildland fires and their impacts, including
11 data related to fire weather, plume dynam-
12 ics, smoke and fire behavior, impacts of cli-
13 mate change and variability, land and
14 property burned, wildlife and ecosystem de-
15 struction, among other areas;

16 (ii) prioritize the dissemination of
17 data identified under this subparagraph to
18 the widest extent practicable to support
19 relevant research and operations stake-
20 holders;

21 (iii) consider opportunities to support
22 the Program under section 2 and the Pro-
23 gram activities under section 3 when plan-
24 ning and developing Earth observation sat-

1 ellites, instruments, and airborne measure-
2 ment platforms;

3 (iv) identify opportunities, in collabo-
4 ration with Program Agencies, as prac-
5 ticable and appropriate, to acquire addi-
6 tional airborne and space-based data and
7 observations that may enhance or supple-
8 ment the understanding, monitoring, pre-
9 diction, and mitigation of wildland fire
10 risks, and the relevant Program activities
11 under section 3; and

12 (v) lead, in collaboration with Pro-
13 gram agencies, the development of a
14 Wildland Fire Risk Reduction Scientific
15 Data Collaboration Environment for the
16 purposes of accelerating the understanding
17 and prediction of wildland fires and to fa-
18 cilitate communications and outreach on
19 wildland fire data, science, and risk to Pro-
20 gram agencies and relevant stakeholders.

21 (B) DATABASE SPECIFICATIONS.—The
22 Wildland Fire Risk Reduction Scientific Data
23 Collaboration Environment under clause (v) of
24 subparagraph (A) shall be—

1 (i) a publicly accessible web portal or
2 other centralized means of access to Pro-
3 gram agencies' wildland fire risk scientific
4 data related to active wildland fires; and

5 (ii) comprised of observations, avail-
6 able real-time and near-real-time measure-
7 ments, derived science and data products,
8 such as risk and spread maps, and other
9 relevant decision support and information
10 tools.

11 (4) NOVEL TOOLS FOR ACTIVE WILDFIRE MONI-
12 TORING AND RISK MITIGATION.—The Administrator,
13 in collaboration with other Program agencies and
14 relevant stakeholders, as practicable and appro-
15 priate, shall apply novel tools and technologies to
16 support active wildland fire research, monitoring,
17 mitigation, and risk reduction. In particular, the Ad-
18 ministrator shall:

19 (A) Establish a program to develop and
20 demonstrate a unified concept of operations for
21 the safe and effective deployment of diverse air
22 capabilities in active wildland fire monitoring,
23 mitigation, and risk reduction, and to—

24 (i) develop a wildland fire airspace op-
25 erations system accounting for piloted air-

1 craft, autonomous aerial systems, and
2 other new and emerging capabilities such
3 as autonomous and high-altitude assets;

4 (ii) develop an interoperable commu-
5 nications strategy to support such system;

6 (iii) develop a roadmap for the on-
7 ramping of new technologies, capabilities,
8 or entities into such system;

9 (iv) identify additional development,
10 testing, and demonstration that would be
11 required to expand the scale of operations
12 of such system;

13 (v) identify actions that would be re-
14 quired to transition the program into ongo-
15 ing, operational use; and

16 (vi) identify other objectives for such
17 system, as deemed appropriate by the Ad-
18 ministrator.

19 (B) Develop and demonstrate affordable
20 and deployable sensing technologies, in con-
21 sultation with other Program agencies and rel-
22 evant stakeholders, to improve monitoring of
23 fire fuel and active wildland fires, wildland fire
24 behavior and forecast models, mapping efforts,

1 the prediction and mitigation of wildland fires
2 and their impacts. The Administrator shall—

3 (i) test and demonstrate technologies
4 such as infrared, microwave, and active
5 sensors suitable for deployment on space-
6 craft, aircraft, and uncrewed aerial sys-
7 tems, as appropriate and practicable;

8 (ii) develop and demonstrate afford-
9 able and deployable sensing technologies
10 that can be transitioned to operations for
11 collection of near-real-time localized meas-
12 urements;

13 (iii) transition demonstrated tech-
14 nologies, techniques, and data into ongo-
15 ing, operational use; and

16 (iv) prioritize and facilitate, to the
17 greatest extent practicable, the dissemina-
18 tion of these science data to operations, in-
19 cluding Program agencies and relevant
20 stakeholders.

21 (f) ENVIRONMENTAL PROTECTION AGENCY.—The
22 Administrator of the Environmental Protection Agency
23 shall support environmental research and development ac-
24 tivities to—

25 (1) improve the understanding of—

1 (A) wildland fire and smoke impacts on
2 communities, and on water and outdoor and in-
3 door air quality;

4 (B) wildland fire smoke plume characteris-
5 tics, chemical transformation, and transport;

6 (C) wildland fire and smoke impacts to
7 contaminant containment and remediation;

8 (D) the contribution of wildland fire emis-
9 sions to climate forcing emissions;

10 (E) differences between the impacts of pre-
11 scribed fires compared to other wildland fires
12 on communities and air and water quality; and

13 (F) climate change and variability on
14 wildland fires and smoke plumes, including on
15 smoke exposure;

16 (2) develop and improve tools, sensors, and
17 technologies including databases and computational
18 models, to accelerate the understanding, monitoring,
19 and prediction of wildland fires and smoke exposure;

20 (3) better integrate observational data into
21 wildland fire and smoke characterization models to
22 improve modeling at finer temporal and spatial reso-
23 lution; and

24 (4) improve communication of wildland fire and
25 smoke risk reduction strategies to the public in co-

1 ordination with relevant stakeholders and other Fed-
2 eral agencies.

3 (g) DEPARTMENT OF ENERGY.—The Secretary of
4 Energy shall carry out activities to research and develop
5 tools, techniques, and technologies for—

6 (1) withstanding and addressing the current
7 and projected impact of wildland fires on energy sec-
8 tor infrastructure;

9 (2) providing real-time or near-time awareness
10 of the risks posed by wildland fires to the operation
11 of energy infrastructure in affected and potentially
12 affected areas;

13 (3) early detection of malfunctioning electrical
14 equipment on the transmission and distribution grid,
15 including detection of spark ignition causing
16 wildland fires;

17 (4) assisting with the planning, safe execution
18 of, and safe and timely restoration of power after
19 emergency power shut offs following wildland fires
20 started by grid infrastructure;

21 (5) improving electric grid and energy sector
22 safety and resilience in the event of multiple simul-
23 taneous or co-located weather or climate events lead-
24 ing to extreme conditions, such as extreme wind,
25 wildland fires, extreme cold, and extreme heat;

1 (6) coordinating data across relevant entities to
2 promote resilience and wildland fire prevention in
3 the planning, design, construction, operation, and
4 maintenance of transmission infrastructure; and

5 (7) considering optimal building energy effi-
6 ciency practices, as practicable, in wildland fire re-
7 search.

8 **SEC. 7. BUDGET ACTIVITIES.**

9 The Director of the National Institute of Standards
10 and Technology, the Director of the National Science
11 Foundation, the Administrator of the National Oceanic
12 and Atmospheric Administration, the Director of the Fed-
13 eral Emergency Management Agency, the Administrator
14 of the National Aeronautics and Space Administration,
15 the Administrator of the Environmental Protection Agen-
16 cy, and the Secretary of Energy shall each include in the
17 annual budget request to Congress of each respective
18 agency a description of the projected activities of such
19 agency under the Program for the fiscal year covered by
20 the budget request and an estimate of the amount such
21 agency plans to spend on such activities for the relevant
22 fiscal year.

23 **SEC. 8. DEFINITIONS.**

24 In this Act:

1 (1) DIRECTOR.—The term “Director” means
2 the Director of the Office of Science and Technology
3 Policy.

4 (2) PROGRAM.—The term “Program” means
5 the program established under section 2.

6 (3) PROGRAM AGENCIES.—The term “Program
7 agencies” means any Federal agency with respon-
8 sibilities under the Program.

9 (4) STAKEHOLDERS.—The term “stakeholders”
10 means any public or private organization engaged in
11 addressing wildland fires, associated smoke, and
12 their impacts, and shall include relevant Federal
13 agencies, States, territories, Tribes, State and local
14 governments, businesses, not-for-profit organiza-
15 tions, including national standards and building code
16 organizations, firefighting departments and organi-
17 zations, academia, and other users of wildland fire
18 data products.

19 (5) WILDLAND FIRE.—The term “wildland
20 fire” means any non-structure fire that occurs in
21 vegetation or natural fuels and includes wildfires
22 and prescribed fires.

23 (6) WILDLAND-URBAN INTERFACE.—The term
24 “Wildland-Urban Interface” has the meaning given
25 such term in section 4(11) of the Federal Fire Pre-

1 vention and Control Act of 1974 (15 U.S.C.
2 2203(11)).

3 (7) FIRE ENVIRONMENT.—The term “fire envi-
4 ronment” means surrounding conditions, influences,
5 and modifying forces of topography, fuel, and weath-
6 er that determine fire behavior.

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

8 (a) NATIONAL INSTITUTE OF STANDARDS AND
9 TECHNOLOGY.—There are authorized to be appropriated
10 to the National Institute of Standards and Technology for
11 carrying out this Act—

12 (1) \$35,800,000 for fiscal year 2022;

13 (2) \$36,100,000 for fiscal year 2023;

14 (3) \$36,400,000 for fiscal year 2024;

15 (4) \$36,700,000 for fiscal year 2025; and

16 (5) \$37,100,000 for fiscal year 2026.

17 (b) NATIONAL SCIENCE FOUNDATION.—There are
18 authorized to be appropriated to the National Science
19 Foundation for carrying out this Act—

20 (1) \$50,000,000 for fiscal year 2022;

21 (2) \$53,000,000 for fiscal year 2023;

22 (3) \$56,200,000 for fiscal year 2024;

23 (4) \$59,600,000 for fiscal year 2025; and

24 (5) \$63,100,000 for fiscal year 2026.

1 (c) NATIONAL OCEANIC AND ATMOSPHERIC ADMIN-
2 ISTRATION.—There are authorized to be appropriated to
3 the National Oceanic and Atmospheric Administration for
4 carrying out this Act—

5 (1) \$200,000,000 for fiscal year 2022;

6 (2) \$215,000,000 for fiscal year 2023;

7 (3) \$220,000,000 for fiscal year 2024;

8 (4) \$230,000,000 for fiscal year 2025; and

9 (5) \$250,000,000 for fiscal year 2026.

10 (d) NATIONAL AERONAUTICS AND SPACE ADMINIS-
11 TRATION.—There are authorized to be appropriated to the
12 National Aeronautics and Space Administration for car-
13 rying out this Act—

14 (1) \$95,000,000 for fiscal year 2022;

15 (2) \$100,000,000 for fiscal year 2023;

16 (3) \$110,000,000 for fiscal year 2024;

17 (4) \$110,000,000 for fiscal year 2025; and

18 (5) \$110,000,000 for fiscal year 2026.

19 (e) ENVIRONMENTAL PROTECTION AGENCY.—There
20 are authorized to be appropriated to the Environmental
21 Protection Agency for carrying out this Act—

22 (1) \$11,000,000 for fiscal year 2022;

23 (2) \$11,700,000 for fiscal year 2023;

24 (3) \$12,400,000 for fiscal year 2024;

25 (4) \$13,100,000 for fiscal year 2025; and

1 (5) \$13,900,000 for fiscal year 2026.