

tion only to the extent that appropriated funds are provided by the Secretary of Energy for that purpose.

(f) Authorization of appropriations

There are authorized to be appropriated such sums as are necessary to carry out this section for each of fiscal years 2009 through 2023, to remain available until expended.

(Pub. L. 111-11, title IX, §9505, Mar. 30, 2009, 123 Stat. 1336.)

§ 10366. Climate change and water intragovernmental panel

(a) Establishment

The Secretary and the Administrator shall establish and lead a climate change and water intragovernmental panel—

(1) to review the current scientific understanding of each impact of global climate change on the quantity and quality of freshwater resources of the United States; and

(2) to develop any strategy that the panel determines to be necessary to improve observational capabilities, expand data acquisition, or take other actions—

(A) to increase the reliability and accuracy of modeling and prediction systems to benefit water managers at the Federal, State, and local levels; and

(B) to increase the understanding of the impacts of climate change on aquatic ecosystems.

(b) Membership

The panel shall be comprised of—

(1) the Secretary;

(2) the Director;

(3) the Administrator;

(4) the Secretary of Agriculture (acting through the Under Secretary for Natural Resources and Environment);

(5) the Commissioner;

(6) the Secretary of the Army, acting through the Chief of Engineers;

(7) the Administrator of the Environmental Protection Agency; and

(8) the Secretary of Energy.

(c) Review elements

In conducting the review and developing the strategy under subsection (a), the panel shall consult with State water resource agencies, the Advisory Committee, drinking water utilities, water research organizations, and relevant water user, environmental, and other non-governmental organizations—

(1) to assess the extent to which the conduct of measures of streamflow, groundwater levels, soil moisture, evapotranspiration rates, evaporation rates, snowpack levels, precipitation amounts, flood risk, and glacier mass is necessary to improve the understanding of the Federal Government and the States with respect to each impact of global climate change on water resources;

(2) to identify data gaps in current water monitoring networks that must be addressed to improve the capability of the Federal Government and the States to measure, analyze, and predict changes to the quality and quan-

tity of water resources, including flood risks, that are directly or indirectly affected by global climate change;

(3) to establish data management and communication protocols and standards to increase the quality and efficiency by which each Federal agency acquires and reports relevant data;

(4) to consider options for the establishment of a data portal to enhance access to water resource data—

(A) relating to each nationally significant freshwater watershed and aquifer located in the United States; and

(B) that is collected by each Federal agency and any other public or private entity for each nationally significant freshwater watershed and aquifer located in the United States;

(5) to facilitate the development of hydrologic and other models to integrate data that reflects groundwater and surface water interactions; and

(6) to apply the hydrologic and other models developed under paragraph (5) to water resource management problems identified by the panel, including the need to maintain or improve ecological resiliency at watershed and aquifer system scales.

(d) Report

Not later than 2 years after March 30, 2009, the Secretary shall submit to the appropriate committees of Congress a report that describes the review conducted, and the strategy developed, by the panel under subsection (a).

(e) Demonstration, research, and methodology development projects

(1) Authority of Secretary

The Secretary, in consultation with the panel and the Advisory Committee, may provide grants to, or enter into any contract, cooperative agreement, interagency agreement, or other transaction with, an appropriate entity to carry out any demonstration, research, or methodology development project that the Secretary determines to be necessary to assist in the implementation of the strategy developed by the panel under subsection (a)(2).

(2) Requirements

(A) Maximum amount of Federal share

The Federal share of the cost of any demonstration, research, or methodology development project that is the subject of any grant, contract, cooperative agreement, interagency agreement, or other transaction entered into between the Secretary and an appropriate entity under paragraph (1) shall not exceed \$1,000,000.

(B) Report

An appropriate entity that receives funds from a grant, contract, cooperative agreement, interagency agreement, or other transaction entered into between the Secretary and the appropriate entity under paragraph (1) shall submit to the Secretary a report describing the results of the demonstration, research, or methodology devel-

opment project conducted by the appropriate entity.

(f) Authorization of appropriations

(1) In general

There is authorized to be appropriated to carry out subsections (a) through (d) \$2,000,000 for each of fiscal years 2009 through 2011, to remain available until expended.

(2) Demonstration, research, and methodology development projects

There is authorized to be appropriated to carry out subsection (e) \$10,000,000 for the period of fiscal years 2009 through 2013, to remain available until expended.

(Pub. L. 111–11, title IX, §9506, Mar. 30, 2009, 123 Stat. 1338.)

§ 10367. Water data enhancement by United States Geological Survey

(a) National streamflow information program

(1) In general

The Secretary, in consultation with the Advisory Committee and the Panel and consistent with this section, shall proceed with implementation of the national streamflow information program, as reviewed by the National Research Council in 2004.

(2) Requirements

In conducting the national streamflow information program, the Secretary shall—

(A) measure streamflow and related environmental variables in nationally significant watersheds—

(i) in a reliable and continuous manner; and

(ii) to develop a comprehensive source of information on which public and private decisions relating to the management of water resources may be based;

(B) provide for a better understanding of hydrologic extremes (including floods and droughts) through the conduct of intensive data collection activities during and following hydrologic extremes;

(C) establish a base network that provides resources that are necessary for—

(i) the monitoring of long-term changes in streamflow; and

(ii) the conduct of assessments to determine the extent to which each long-term change monitored under clause (i) is related to global climate change;

(D) integrate the national streamflow information program with data collection activities of Federal agencies and appropriate State water resource agencies (including the National Integrated Drought Information System)—

(i) to enhance the comprehensive understanding of water availability;

(ii) to improve flood-hazard assessments;

(iii) to identify any data gap with respect to water resources; and

(iv) to improve hydrologic forecasting; and

(E) incorporate principles of adaptive management in the conduct of periodic reviews

of information collected under the national streamflow information program to assess whether the objectives of the national streamflow information program are being adequately addressed.

(3) Improved methodologies

The Secretary shall—

(A) improve methodologies relating to the analysis and delivery of data; and

(B) investigate, develop, and implement new methodologies and technologies to estimate or measure streamflow in a more cost-efficient manner.

(4) Network enhancement

(A) In general

Not later than 10 years after March 30, 2009, in accordance with subparagraph (B), the Secretary shall—

(i) increase the number of streamgages funded by the national streamflow information program to a quantity of not less than 4,700 sites; and

(ii) ensure all streamgages are flood-hardened and equipped with water-quality sensors and modernized telemetry.

(B) Requirements of sites

Each site described in subparagraph (A) shall conform with the National Streamflow Information Program plan as reviewed by the National Research Council.

(5) Federal share

The Federal share of the national streamgaging network established pursuant to this subsection shall be 100 percent of the cost of carrying out the national streamgaging network.

(6) Authorization of appropriations

(A) In general

Except as provided in subparagraph (B), there are authorized to be appropriated such sums as are necessary to operate the national streamflow information program for the period of fiscal years 2009 through 2023, to remain available until expended.

(B) Network enhancement funding

There is authorized to be appropriated to carry out the network enhancements described in paragraph (4) \$10,000,000 for each of fiscal years 2009 through 2019, to remain available until expended.

(b) National groundwater resources monitoring

(1) In general

The Secretary shall develop a systematic groundwater monitoring program for each major aquifer system located in the United States.

(2) Program elements

In developing the monitoring program described in paragraph (1), the Secretary shall—

(A) establish appropriate criteria for monitoring wells to ensure the acquisition of long-term, high-quality data sets, including, to the maximum extent possible, the inclusion of real-time instrumentation and reporting;