PUBLIC LAW 111–11—MAR. 30, 2009 (Hyperlinked here)

Subtitle F—Secure Water SEC. 9501. FINDINGS.

Congress finds that—

(1) adequate and safe supplies of water are fundamental to the health, economy, security, and ecology of the United States;

(2) systematic data-gathering with respect to, and research and development of, the water resources of the United States will help ensure the continued existence of sufficient quantities of water to support—

(A) increasing populations;

(B) economic growth;

(C) irrigated agriculture;

(D) energy production; and

(E) the protection of aquatic ecosystems;

(3) global climate change poses a significant challenge to the protection and use of the water resources of the United States due to an increased uncertainty with respect to the timing, form, and geographical distribution of precipitation, which may have a substantial effect on the supplies of water for agricultural, hydroelectric power, industrial, domestic supply, and environmental needs;

(4) although States bear the primary responsibility and authority for managing the water resources of the United States, the Federal Government should support the States, as well as regional, local, and tribal governments, by carrying out—

(A) nationwide data collection and monitoring activities;

(B) relevant research; and

(C) activities to increase the efficiency of the use of water in the United States;

(5) Federal agencies that conduct water management and related activities have a responsibility—

(A) to take a lead role in assessing risks to the water resources of the United States **(including risks posed by global climate change)**; and

(B) to develop strategies—

(i) to mitigate the potential impacts of each risk described in subparagraph (A); and

(ii) **to help ensure that the long-term water resources management of the United States is sustainable and will ensure sustainable quantities of water;**

(6) it is critical to continue and expand research and monitoring efforts—

(A) **to improve the understanding of the variability of the water cycle**; and

(B) to provide basic information necessary—

(i) to manage and efficiently use the water resources of the United States; and

(ii) to identify new supplies of water that are capable of being reclaimed; and (7) the study of water use is vital—

(A) to the **understanding of the impacts of human activity on water and ecological resources**; and

(B) to the assessment of whether available surface and **groundwater supplies** will be available to meet the future needs of the United States.

SEC. 9502. DEFINITIONS.

(1) ADMINISTRATOR.—The term ‘‘Administrator’’ means the Administrator of the National Oceanic and Atmospheric Administration.

(2) ADVISORY COMMITTEE.—The term ‘‘Advisory Committee’’ means the National Advisory Committee on Water Information established—

(A) under the Office of Management and Budget Circular 92–01; and

(B) to coordinate water data collection activities.

(3) ASSESSMENT PROGRAM.—The term ‘‘assessment program’’ means the water availability and use assessment program established by the Secretary under section 9508(a).

(4) CLIMATE DIVISION.—The term ‘‘climate division’’ means 1 of the 359 divisions in the United States that represents 2 or more regions located within a State that are as climatically homogeneous as possible, as determined by the Administrator.

(5) COMMISSIONER.—The term ‘‘Commissioner’’ means the Commissioner of Reclamation.

(6) DIRECTOR.—The term ‘‘Director’’ means the Director of the United States Geological Survey.

(7) ELIGIBLE APPLICANT.—The term ‘‘eligible applicant’’ means any State, Indian tribe, irrigation district, water district, or other organization with water or power delivery authority.

(8) FEDERAL POWER MARKETING ADMINISTRATION.—The term ‘‘Federal Power Marketing Administration’’ means—

(A) the Bonneville Power Administration;

(B) the Southeastern Power Administration;

(C) the Southwestern Power Administration; and

(D) the Western Area Power Administration.

(9) HYDROLOGIC ACCOUNTING UNIT.—The term ‘‘hydrologic accounting unit’’ means 1 of the 352 river basin hydrologic accounting units used by the United States Geological Survey.

(10) 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 U.S.C. 450b).

(11) MAJOR AQUIFER SYSTEM.—The term ‘‘major aquifer system’’ means a groundwater system that is—

(A) identified as a significant groundwater system by the Director; and

(B) included in the Groundwater Atlas of the United States, published by the United States Geological Survey.

(12) MAJOR RECLAMATION RIVER BASIN.—

(A) IN GENERAL.—The term ‘‘major reclamation river basin’’ means each major river system (including tributaries)—

(i) that is located in a service area of the Bureau of Reclamation; and

(ii) at which is located a federally authorized project of the Bureau of Reclamation.

(B) INCLUSIONS.—The term ‘‘major reclamation river basin’’ includes—

(i) the Colorado River;

(ii) the Columbia River;

(iii) the Klamath River;

(iv) the Missouri River;

(v) the Rio Grande;

(vi) the Sacramento River;

(vii) the San Joaquin River; and

(viii) the Truckee River.

(13) NON-FEDERAL PARTICIPANT.—The term ‘‘non-Federal participant’’ means—

(A) a State, regional, or local authority;

(B) an Indian tribe or tribal organization; or

(C) any other qualifying entity, such as a water conservation district, water conservancy district, or rural water district or association, or a nongovernmental organization.

(14) PANEL.—The term ‘‘panel’’ means the climate change and water intragovernmental panel established by the Secretary under section 9506(a).

(15) PROGRAM.—The term ‘‘program’’ means the regional integrated sciences and assessments program—

(A) established by the Administrator; and

(B) that is comprised of 8 regional programs that use advances in integrated climate sciences to assist decision-making processes.

(16) SECRETARY.—

(A) IN GENERAL.—Except as provided in subparagraph (B), the term ‘‘Secretary’’ means the Secretary of the Interior.

(B) EXCEPTIONS.—The term ‘‘Secretary’’ means—

(i) in the case of sections 9503, 9504, and 9509, the Secretary of the Interior (acting through the Commissioner); and

(ii) in the case of sections 9507 and 9508, the Secretary of the Interior (acting through the Director).

(17) SERVICE AREA.—The term ‘‘service area’’ means any area that encompasses a watershed that contains a federally authorized reclamation project that is located in any State or area described in the first section of the Act of June 17, 1902 (43 U.S.C. 391).

SEC. 9503. RECLAMATION CLIMATE CHANGE AND WATER PROGRAM.

(a) IN GENERAL.—The Secretary shall establish a climate change adaptation program —

(1) to coordinate with the Administrator and other appropriate agencies to assess each effect of, and risk resulting from, global climate change with respect to the quantity of water resources located in a service area; and

(2) to ensure, to the maximum extent possible, that strategies are developed at watershed and aquifer system scales to address potential water shortages, conflicts, and other impacts to water users located at, and the environment of, each service area.

(b) REQUIRED ELEMENTS.—In carrying out the program described in subsection (a), the Secretary shall—

(1) coordinate with the United States Geological Survey, the National Oceanic and Atmospheric Administration, the program, and each appropriate State water resource agency, to ensure that the Secretary has access to the best available scientific information with respect to presently observed and projected future impacts of global climate change on water resources;

(2) assess specific risks to the water supply of each major reclamation river basin, including any risk relating to—

(A) a change in snowpack;

(B) changes in the timing and quantity of runoff;

(C) changes in groundwater recharge and discharge; and

(D) any increase in—

(i) the demand for water as a result of increasing temperatures; and

(ii) the rate of reservoir evaporation;

(3) with respect to each major reclamation river basin, analyze the extent to which changes in the water supply of the United States will impact—

(A) the ability of the Secretary to deliver water to the contractors of the Secretary;

(B) hydroelectric power generation facilities;

(C) recreation at reclamation facilities;

(D) **fish and wildlife habitat**;

(E) **applicable species listed as an endangered, threatened, or candidate species** under the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.);

(F) water quality issues (including salinity levels of each major reclamation river basin);

(G) flow and water dependent **ecological resiliency**; and

(H) **flood control management**;

(4) in consultation with appropriate non-Federal participants, consider and develop appropriate strategies to mitigate each impact of water supply changes analyzed by the Secretary under paragraph (3), including strategies relating to—

(A) the modification of any reservoir storage or operating guideline in existence as of the date of enactment of this Act;

(B) the development of new water management, operating, or habitat restoration plans;

(C) water conservation;

(D) improved hydrologic models and other decision support systems; and

(E) **groundwater and surface water storage needs**; and (5) in consultation with the Director, the Administrator, the Secretary of Agriculture (acting through the Chief of the Natural Resources Conservation Service), and applicable State water resource agencies, develop a monitoring plan to acquire and maintain water resources data—

(A) to strengthen the understanding of water supply trends; and

(B) to assist in each assessment and analysis conducted by the Secretary under paragraphs (2) and (3).

(c) REPORTING.—**Not later than 2 years after the date of enactment of this Act, and every 5 years thereafter**, the Secretary shall submit to the appropriate committees of Congress a report that describes—

(1) each effect of, and risk resulting from, global climate change with respect to the quantity of water resources located in each major reclamation river basin;

(2) the impact of global climate change with respect to the operations of the Secretary in each major reclamation river basin;

(3) each mitigation and adaptation strategy considered and implemented by the Secretary to address each effect of global climate change described in paragraph (1);

(4) each coordination activity conducted by the Secretary with—

(A) the Director;

(B) the Administrator;

(C) the Secretary of Agriculture (acting through the Chief of the Natural Resources Conservation Service); or (D) any appropriate State water resource agency; and (5) the implementation by the Secretary of the monitoring plan developed under subsection (b)(5).

(D) FEASIBILITY STUDIES.—

(1) AUTHORITY OF SECRETARY.—The Secretary, in cooperation with any non-Federal participant, may conduct 1 or more studies to determine the feasibility and impact on ecological resiliency of implementing each mitigation and adaptation strategy described in subsection (c)(3), including the construction of any water supply, water management, environmental, or habitat enhancement water infrastructure that the Secretary determines to be necessary to address the effects of global climate change on water resources located in each major reclamation river basin.

(2) COST SHARING.—

(A) FEDERAL SHARE.—

(i) IN GENERAL.—Except as provided in clause (ii), the Federal share of the cost of a study described in paragraph (1) shall not exceed 50 percent of the cost of the study.

(ii) EXCEPTION RELATING TO FINANCIAL HARDSHIP.—The Secretary may increase the Federal share of the cost of a study described in paragraph (1) to exceed 50 percent of the cost of the study if the Secretary determines that, due to a financial hardship, the non-Federal participant of the study is unable to Monitoring plan contribute an amount equal to 50 percent of the cost of the study.

(B) NON-FEDERAL SHARE.—The non-Federal share of the cost of a study described in paragraph (1) may be provided in the form of any in-kind services that substantially contribute toward the completion of the study, as determined by the Secretary.

(e) NO EFFECT ON EXISTING AUTHORITY.—Nothing in this section amends or otherwise affects any existing authority under reclamation laws that govern the operation of any Federal reclamation project.

(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.

SEC. 9504. WATER MANAGEMENT IMPROVEMENT.

(a) AUTHORIZATION OF GRANTS AND COOPERATIVE AGREEMENTS.—

(1) AUTHORITY OF SECRETARY.—The Secretary may provide any grant to, or enter into an agreement with, any eligible applicant to assist the eligible applicant in planning, designing, or constructing any improvement—

(A) to conserve water;

(B) to increase water use efficiency;

(C) to facilitate water markets;

(D) to enhance water management, including **increasing the use of renewable energy** in the management and delivery of water;

(E) to accelerate the adoption and use of advanced water treatment technologies to increase water supply;

(F) to **prevent the decline of species** that the United States Fish and Wildlife Service and National Marine Fisheries Service have proposed for listing under the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq.) (or candidate species that are being considered by those agencies for such listing but are not yet the subject of a proposed rule);

(G) **to accelerate the recovery of threatened species, endangered species, and designated critical habitats** that are adversely affected by Federal reclamation projects or are subject to a recovery plan or conservation plan under the Endangered

Species Act of 1973 (16 U.S.C. 1531 et seq.) under which the Commissioner of Reclamation has implementation responsibilities; or

(H) to carry out any other activity—

(i) to address any climate-related impact to the water supply of the United States that **increases ecological resiliency** to the impacts of climate change; or

(ii) to **prevent any water-related crisis or conflict** at any watershed that has a nexus to a Federal reclamation project located in a service area.

(2) APPLICATION.—To be eligible to receive a grant, or enter into an agreement with the Secretary under paragraph (1), an eligible applicant shall—

(A) be located within the States and areas referred to in the first section of the Act of June 17, 1902 (43 U.S.C. 391); and

(B) submit to the Secretary an application that includes a proposal of the improvement or activity to be planned, designed, constructed, or implemented by the eligible applicant.

(3) REQUIREMENTS OF GRANTS AND COOPERATIVE AGREEMENTS.—

(A) COMPLIANCE WITH REQUIREMENTS.—Each grant and agreement entered into by the Secretary with any eligible applicant under paragraph (1) shall be in compliance with each requirement described in subparagraphs (B) through (F).

(B) AGRICULTURAL OPERATIONS.—In carrying out paragraph (1), the Secretary shall not provide a grant, or enter into an agreement, for an improvement to conserve irrigation water unless the eligible applicant agrees not—

(i) to use any associated water savings to increase the total irrigated acreage of the eligible applicant; or

(ii) to otherwise increase the consumptive use of water in the operation of the eligible applicant, as determined pursuant to the law of the State in which the operation of the eligible applicant is located.

(C) NONREIMBURSABLE FUNDS.—Any funds provided by the Secretary to an eligible applicant through a grant or agreement under paragraph (1) shall be nonreimbursable.

(D) TITLE TO IMPROVEMENTS.—If an infrastructure improvement to a federally owned facility is the subject of a grant or other agreement entered into between the Secretary and an eligible applicant under paragraph (1), the Federal Government shall continue to hold title to the facility and improvements to the facility.

(E) COST SHARING.—

(i) FEDERAL SHARE.—The Federal share of the cost of any infrastructure improvement or activity that is the subject of a grant or other agreement entered into between the Secretary and an eligible applicant under paragraph (1) shall not exceed 50 percent of the cost of the infrastructure improvement or activity.

(ii) CALCULATION OF NON-FEDERAL SHARE.—In calculating the non-Federal share of the cost of an infrastructure improvement or activity proposed by an eligible applicant through an application submitted by the eligible applicant under paragraph (2), the Secretary shall—

(I) consider the value of any in-kind services that substantially contributes toward the completion of the improvement or activity, as determined by the Secretary; and

(II) not consider any other amount that the eligible applicant receives from a Federal agency.

(iii) MAXIMUM AMOUNT.—The amount provided to an eligible applicant through a grant or other agreement under paragraph (1) shall be not more than $5,000,000.

(iv) OPERATION AND MAINTENANCE COSTS.—The non-Federal share of the cost of operating and maintaining any infrastructure improvement that is the subject of a grant or other agreement entered into between the Secretary and an eligible applicant under paragraph (1) shall be 100 percent.

(F) LIABILITY.—

(i) IN GENERAL.—Except as provided under chapter 171 of title 28, United States Code (commonly known as the ‘‘Federal Tort Claims Act’’), the United States shall not be liable for monetary damages of any kind for any injury arising out of an act, omission, or occurrence that arises in relation to any facility created or improved under this section, the title of which is not held by the United States.

(ii) TORT CLAIMS ACT.—Nothing in this section increases the liability of the United States beyond that provided in chapter 171 of title 28, United States Code (commonly known as the ‘‘Federal Tort Claims Act’’).

(b) RESEARCH AGREEMENTS.—

(1) AUTHORITY OF SECRETARY.—The Secretary may enter into 1 or more agreements with any university, nonprofit research institution, or organization with water or power delivery authority to fund any research activity that is designed—

(A) to conserve water resources;

(B) to increase the efficiency of the use of water resources; or

(C) to enhance the management of water resources, including increasing the use of renewable energy in the management and delivery of water.

(2) TERMS AND CONDITIONS OF SECRETARY.—

(A) IN GENERAL.—An agreement entered into between the Secretary and any university, institution, or organization described in paragraph (1) shall be subject to such terms and conditions as the Secretary determines to be appropriate.

(B) AVAILABILITY.—The agreements under this sub-section shall be available to all Reclamation projects and programs that may benefit from project-specific or programmatic cooperative research and development.

(c) MUTUAL BENEFIT.—Grants or other agreements made under this section may be for the mutual benefit of the United States and the entity that is provided the grant or enters into the cooperative agreement.

(d) RELATIONSHIP TO PROJECT-SPECIFIC AUTHORITY.—This section shall not supersede any existing project-specific funding authority.

(e) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to carry out this section $200,000,000, to remain available until expended.

SEC. 9505. HYDROELECTRIC POWER ASSESSMENT.

(a) DUTY OF SECRETARY OF ENERGY.—The Secretary of Energy, in consultation with the Administrator of each Federal Power Marketing Administration, shall assess each effect of, and risk resulting from, global climate change with respect to water supplies that are required for the generation of hydroelectric power at each Federal water project that is applicable to a Federal Power Marketing Administration.

(b) ACCESS TO APPROPRIATE DATA.—

(1) IN GENERAL.—In carrying out each assessment under subsection (a), the Secretary of Energy shall consult with the United States Geological Survey, the National Oceanic and Atmospheric Administration, the program, and each appropriate State water resource agency, to ensure that the Secretary of Energy has access to the best available scientific information with respect to presently observed impacts and projected future impacts of global climate change on water supplies that are used to produce hydroelectric power.

(2) ACCESS TO DATA FOR CERTAIN ASSESSMENTS.—In carrying out each assessment under subsection (a), with respect to the Bonneville Power Administration and the Western Area Power Administration, the Secretary of Energy shall consult with the Commissioner to access data and other information that—

(A) is collected by the Commissioner; and

(B) the Secretary of Energy determines to be necessary for the conduct of the assessment.

(c) REPORT.—Not later than 2 years after the date of enactment of this Act, and every 5 years thereafter, the Secretary of Energy shall submit to the appropriate committees of Congress a report that describes—

(1) each effect of, and risk resulting from, global climate change with respect to—

(A) water supplies used for hydroelectric power generation; and

(B) power supplies marketed by each Federal Power Marketing Administration, pursuant to—

(i) long-term power contracts;

(ii) contingent capacity contracts; and (iii) short-term sales; and

(2) each recommendation of the Administrator of each Federal Power Marketing Administration relating to any change in any operation or contracting practice of each Federal Power Marketing Administration to address each effect and risk described in paragraph (1), including the use of purchased power to meet long-term commitments of each Federal Power Marketing Administration.

(d) AUTHORITY.—The Secretary of Energy may enter into contracts, grants, or other agreements with appropriate entities to carry out this section.

(e) COSTS.—

(1) NONREIMBURSABLE.—Any costs incurred by the Secretary of Energy in carrying out this section shall be nonreimbursable.

(2) PMA COSTS.—Each Federal Power Marketing Administration shall incur costs in carrying out this section 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.

Consultation.

SEC. 9506. 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 nongovernmental 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 quantity 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 the date of enactment of this Act, 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 development 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.

SEC. 9507. WATER DATA ENHANCEMENT BY UNITED STATES 42 USC 10367.

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 the date of enactment of this Act, 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;

(B) in coordination with the Advisory Committee and State and local water resource agencies—

(i) assess the current scope of groundwater monitoring based on the access availability and capability of each monitoring well in existence as of the date of enactment of this Act; and

(ii) develop and carry out a monitoring plan that maximizes coverage for each major aquifer system that is located in the United States; and

(C) prior to initiating any specific monitoring activities within a State after the date of enactment of this Act, consult and coordinate with the applicable State water resource agency with jurisdiction over the aquifer that is the subject of the monitoring activities, and comply with all applicable laws (including regulations) of the State.

(3) PROGRAM OBJECTIVES.—In carrying out the monitoring program described in paragraph (1), the Secretary shall—

(A) provide data that is necessary for the improvement of understanding with respect to surface water and groundwater interactions;

(B) by expanding the network of monitoring wells to reach each climate division, support the groundwater climate response network to improve the understanding of the effects of global climate change on groundwater recharge and availability; and

(C) support the objectives of the assessment program.

(4) 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 ground-water recharge, discharge, and storage in a more cost-efficient manner.

(5) FEDERAL SHARE.—The Federal share of the monitoring program described in paragraph (1) may be 100 percent of the cost of carrying out the monitoring program.

(6) PRIORITY.—In selecting monitoring activities consistent with the monitoring program described in paragraph (1), the Secretary shall give priority to those activities for which a State or local governmental entity agrees to provide for a substantial share of the cost of establishing or operating a monitoring well or other measuring device to carry out a monitoring activity.

(7) AUTHORIZATION OF APPROPRIATIONS.—There are authorized to be appropriated such sums as are necessary to carry out this subsection for the period of fiscal years 2009 through 2023, to remain available until expended.

(c) BRACKISH GROUNDWATER ASSESSMENT.—

(1) STUDY.—The Secretary, in consultation with State and local water resource agencies, shall conduct a study of available data and other relevant information—

(A) to identify significant brackish groundwater resources located in the United States; and

(B) to consolidate any available data relating to each groundwater resource identified under subparagraph (A). (2) REPORT.—Not later than 2 years after the date of

enactment of this Act, the Secretary shall submit to the appropriate committees of Congress a report that includes—

(A) a description of each—

(i) significant brackish aquifer that is located in the United States (including 1 or more maps of each significant brackish aquifer that is located in the United States);

(ii) data gap that is required to be addressed to fully characterize each brackish aquifer described in clause (i); and

(iii) current use of brackish groundwater that is supplied by each brackish aquifer described in clause (i); and

(B) a summary of the information available as of the date of enactment of this Act with respect to each brackish aquifer described in subparagraph (A)(i) (including the known level of total dissolved solids in each brackish aquifer).

(3) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to carry out this subsection $3,000,000 for the period of fiscal years 2009 through 2011, to remain available until expended.

(d) IMPROVED WATER ESTIMATION, MEASUREMENT, AND MONITORING TECHNOLOGIES.—

(1) AUTHORITY OF SECRETARY.—The Secretary may provide grants on a nonreimbursable basis to appropriate entities with expertise in water resource data acquisition and reporting, including Federal agencies, the Water Resources Research Institutes and other academic institutions, and private entities, to—

(A) investigate, develop, and implement new methodologies and technologies to estimate or measure water resources data in a cost-efficient manner; and

(B) improve methodologies relating to the analysis and delivery of data.

(2) PRIORITY.—In providing grants to appropriate entities under paragraph (1), the Secretary shall give priority to appropriate entities that propose the development of new methods and technologies for—

(A) predicting and measuring streamflows;

(B) estimating changes in the storage of groundwater; (C) improving data standards and methods of analysis

(including the validation of data entered into geographic information system databases);

(D) measuring precipitation and potential evapotranspiration; and

(E) water withdrawals, return flows, and consumptive use.

(3) PARTNERSHIPS.—In recognition of the value of collaboration to foster innovation and enhance research and development efforts, the Secretary shall encourage partnerships, including public-private partnerships, between and among Federal agencies, academic institutions, and private entities to promote the objectives described in paragraph (1).

(4) AUTHORIZATION OF APPROPRIATIONS.—There is authorized to be appropriated to carry out this subsection $5,000,000 for each of fiscal years 2009 through 2019.

SEC. 9508. NATIONAL WATER AVAILABILITY AND USE ASSESSMENT 42 USC 10368. **PROGRAM.**

(a) ESTABLISHMENT.—The Secretary, in coordination with the Advisory Committee and State and local water resource agencies, shall establish a national assessment program to be known as the ‘‘national water availability and use assessment program’’—

(1) to provide a more accurate assessment of the status of the water resources of the United States;

(2) to assist in the determination of the quantity of water that is available for beneficial uses;

(3) to assist in the determination of the quality of the water resources of the United States;

(4) to identify long-term trends in water availability;

(5) to use each long-term trend described in paragraph (4) to provide a more accurate assessment of the change in the availability of water in the United States; and

(6) to develop the basis for an improved ability to forecast the availability of water for future economic, energy production, and environmental uses.

(b) PROGRAM ELEMENTS.—

(1) WATER USE.—In carrying out the assessment program, the Secretary shall conduct any appropriate activity to carry out an ongoing assessment of water use in hydrologic accounting units and major aquifer systems located in the United States, including—

(A) the maintenance of a comprehensive national water use inventory to enhance the level of understanding with respect to the effects of spatial and temporal patterns of water use on the availability and sustainable use of water resources;

(B) the incorporation of water use science principles, with an emphasis on applied research and statistical estimation techniques in the assessment of water use;

(C) the integration of any dataset maintained by any other Federal or State agency into the dataset maintained by the Secretary; and

(D) a focus on the scientific integration of any data relating to water use, water flow, or water quality to generate relevant information relating to the impact of human activity on water and ecological resources.

(2) WATER AVAILABILITY.—In carrying out the assessment program, the Secretary shall conduct an ongoing assessment of water availability by—

(A) developing and evaluating nationally consistent indicators that reflect each status and trend relating to the availability of water resources in the United States, including—

(i) surface water indicators, such as streamflow and surface water storage measures (including lakes, reservoirs, perennial snowfields, and glaciers);

(ii) groundwater indicators, including groundwater level measurements and changes in groundwater levels due to—

(I) natural recharge;

(II) withdrawals;

(III) saltwater intrusion; (IV) mine dewatering; (V) land drainage;

(VI) artificial recharge; and

(VII) other relevant factors, as determined by the Secretary; and

(iii) impaired surface water and groundwater supplies that are known, accessible, and used to meet ongoing water demands;

(B) maintaining a national database of water availability data that—

(i) is comprised of maps, reports, and other forms of interpreted data;

(ii) provides electronic access to the archived data of the national database; and

(iii) provides for real-time data collection; and

(C) developing and applying predictive modeling tools that integrate groundwater, surface water, and ecological systems.

(c) GRANT PROGRAM.—

(1) AUTHORITY OF SECRETARY.—The Secretary may provide grants to State water resource agencies to assist State water resource agencies in—

(A) developing water use and availability datasets that are integrated with each appropriate dataset developed or maintained by the Secretary; or

(B) integrating any water use or water availability dataset of the State water resource agency into each appropriate dataset developed or maintained by the Secretary.

(2) CRITERIA.—To be eligible to receive a grant under paragraph (1), a State water resource agency shall demonstrate to the Secretary that the water use and availability dataset proposed to be established or integrated by the State water resource agency—

(A) is in compliance with each quality and conformity standard established by the Secretary to ensure that the data will be capable of integration with any national dataset; and

(B) will enhance the ability of the officials of the State or the State water resource agency to carry out each water management and regulatory responsibility of the officials of the State in accordance with each applicable law of the State.

(3) MAXIMUM AMOUNT.—The amount of a grant provided to a State water resource agency under paragraph (1) shall be an amount not more than $250,000.

(d) REPORT.—Not later than December 31, 2012, and every 5 years thereafter, the Secretary shall submit to the appropriate committees of Congress a report that provides a detailed assessment of—

(1) the current availability of water resources in the United States, including—

(A) historic trends and annual updates of river basin inflows and outflows;

(B) surface water storage;

(C) groundwater reserves; and

(D) estimates of undeveloped potential resources (including saline and brackish water and wastewater);

(2) significant trends affecting water availability, including each documented or projected impact to the availability of water as a result of global climate change;

(3) the withdrawal and use of surface water and ground-water by various sectors, including—

(A) the agricultural sector;

(B) municipalities;

(C) the industrial sector;

(D) thermoelectric power generators; and (E) hydroelectric power generators;

(4) significant trends relating to each water use sector, including significant changes in water use due to the development of new energy supplies;

(5) significant water use conflicts or shortages that have occurred or are occurring; and

(6) each factor that has caused, or is causing, a conflict or shortage described in paragraph (5).

(e) AUTHORIZATION OF APPROPRIATIONS.—

(1) IN GENERAL.—There is authorized to be appropriated to carry out subsections (a), (b), and (d) $20,000,000 for each of fiscal years 2009 through 2023, to remain available until expended.

(2) GRANT PROGRAM.—There is authorized to be appropriated to carry out subsection (c) $12,500,000 for the period of fiscal years 2009 through 2013, to remain available until expended.

SEC. 9509. RESEARCH AGREEMENT AUTHORITY.

The Secretary may enter into contracts, grants, or cooperative agreements, for periods not to exceed 5 years, to carry out research within the Bureau of Reclamation.

SEC. 9510. EFFECT.

(a) IN GENERAL.—Nothing in this subtitle supersedes or limits any existing authority provided, or responsibility conferred, by any provision of law.

(b) EFFECT ON STATE WATER LAW.—

(1) IN GENERAL.—Nothing in this subtitle preempts or affects any—

(A) State water law; or

(B) interstate compact governing water.

(2) COMPLIANCE REQUIRED.—The Secretary shall comply with applicable State water laws in carrying out this subtitle.