

110<sup>th</sup> Congress  
1<sup>st</sup> Session

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To authorize and facilitate improved water management by the Bureau of Reclamation; to direct the Secretary of the Interior and the Secretary of Energy to increase water-related data acquisition and analysis to assess the long-term availability of water for irrigation, hydroelectric power, municipal, and environmental uses; and for other purposes.

**SECTION 1. SHORT TITLE.**

This Act may be cited as the “Science and Engineering to Comprehensively Understand and Responsibly Enhance Water Act” or the “SECURE Water Act”.

**SEC 2. FINDINGS.**

The Congress finds and declares that—

- (1) Adequate and safe supplies of water are fundamental to the nation’s health, economy, security, and ecology;
- (2) Systematic data-gathering, and research and development on the nation’s water resources will help ensure there will be sufficient water available to support increasing populations, economic growth, irrigated agriculture, energy production, and the quality of aquatic ecosystems;
- (3) Global climate change poses a significant problem due to increased uncertainty in the distribution and amount of precipitation which may have serious affects on water supplies for agriculture, hydroelectric power, industry, domestic supply, and environmental needs.
- (3) States bear primary responsibility and authority for water resource management, but the federal government should support the states, as well as regional, local, and tribal governments by assisting with nationwide data collection and monitoring activities, relevant research, and increased efficiency in the use of water.
- (4) Federal agencies involved in water management and related activities have a responsibility to take a lead role in assessing risks to water resources in the United States, such as those posed by global climate change, and to develop strategies to mitigate impacts and help ensure that water resources management is sustainable in the long-term;
- (5) It is critical to continue and expand research and monitoring efforts to better understand the water cycle, its variability and relation to global climate change, and to provide basic

information necessary to manage and efficiently use water and identify new supplies capable of being reclaimed; and

(6) The study of water use is vital to understanding human impacts on water and ecological resources and to assessing whether available surface and groundwater supplies will be available to meet future needs.

### **SEC 3. DEFINITIONS.**

In this Act:

(1) Climate Division.– The term “climate division” means one of 359 divisions in the 50 states which represent regions within a State that are as climatically homogeneous as possible. Climate divisions are defined by NOAA.

(2) Commissioner.– The term “Commissioner” means the Commissioner of the United States Bureau of Reclamation.

(3) Director.– The term “Director” means the Director of the United States Geological Survey.

(4) Hydrologic Accounting Units.– The term “hydrologic accounting units” means the 352 river basin hydrologic accounting units used by the USGS.

(5) Major Aquifer Systems.– The term “major aquifer systems” means significant groundwater systems identified by the USGS and included in its Groundwater Atlas of the United States.

(6) Major Reclamation River Basins.– The term “major Reclamation river basin” means the major river systems within Reclamation’s Service Area that contain federally-authorized Reclamation projects, including the Colorado River, Columbia River, Klamath River, Missouri River, Rio Grande, Sacramento River, San Joaquin River, and Truckee River.

(7) National Advisory Committee on Water Information.– The term “National Advisory Committee on Water Information” means the federal advisory committee chartered under Office of Management and Budget Circular 92-01 to coordinate water data activities.

(8) NOAA.– The term “NOAA” means the National Oceanic and Atmospheric Administration.

(9) NRCS.– The term “NRCS” means the Natural Resources Conservation Service.

(10) Power Marketing Administration.– The term “Power Marketing Administration”

means the Bonneville Power Administration; Western Area Power Administration; Southwestern Power Administration; and Southeastern Power Administration.

(11) Reclamation's Service Area.— The term “Reclamation's Service Area” means the areas encompassing the watersheds which contain federally authorized Reclamation projects within the States and areas referred to in the first section of the Act of June 17, 1902 (43 U.S.C. 391).

(12) RISA.— The term “RISA” means the Regional Integrated Sciences and Assessments Program established by NOAA, and consisting of eight regional programs which use advances in integrated climate sciences to assist decision-making processes.

(13) Secretary.— The term “Secretary” means the Secretary of the Interior.

(14) USGS.— The term “USGS” means the United States Geological Survey.

#### **SEC. 4. RECLAMATION CLIMATE CHANGE ADAPTATION PROGRAM.**

(a) General.— The Secretary, acting through the Commissioner, shall establish a climate change adaptation program to assess the effects and risks of climate change to water resources in Reclamation's service area, and to ensure to the extent possible that strategies are developed to address potential water shortages, conflicts, and other impacts to water users and the environment in Reclamation's service area.

(b) Required Elements.— In implementing the climate change adaptation program, the Secretary, acting through the Commissioner, shall—

(1) Consult with the USGS, NOAA, RISA projects, and applicable State water resource agencies to ensure that Reclamation has access to the best available scientific information concerning presently observed impacts and projected future impacts of climate change on water resources;

(2) Assess specific risks to water supply in each major Reclamation river basin, including changes in snowpack; timing of runoff; increases in water demand due to increasing temperatures; and increases in reservoir evaporation;

(3) Analyze for each major Reclamation river basin, how changes in water supply will impact Reclamation's delivery of water to its contractors; hydroelectric power generation; recreation at Reclamation facilities; fish and wildlife habitat and potential ESA issues; and water quality issues such as salinity levels;

(4) Consider and develop appropriate strategies to mitigate the impacts of climate change identified pursuant to paragraph (3), including the modification of existing reservoir storage and

operating guidelines; water conservation; improved hydrologic models and other decision support systems; and conjunctive groundwater and surface water storage needs;

(5) Develop, in consultation with the USGS, NOAA, NRCS, and applicable State water resource agencies, a monitoring plan to acquire and maintain water resources data that will strengthen an understanding of water supply trends that will assist the analyses called for in paragraphs (2) and (3).

(c) Reporting.— The Secretary, acting through the Commissioner, shall report to the Congress not later than 1 year after the date of enactment of this Act, and every 5 years thereafter, on

(1) the effects and risks of climate change on water resources in Reclamation’s service area and each major Reclamation river basin;

(2) the impacts to Reclamation’s operations in each major Reclamation river basin;

(3) mitigation and adaptation strategies being considered and implemented by Reclamation to address identified impacts; and

(4) coordination activities with USGS, NOAA, NRCS, and relevant agencies, and implementation of the monitoring plan developed to track and analyze the impacts of climate change.

(d) Feasibility Studies.—

(1) The Secretary, acting through the Commissioner, is authorized to participate with appropriate Federal, State, regional, and local authorities, and non-governmental organizations, in studies to determine the feasibility of implementing strategies identified pursuant to this Section, including the construction of water supply, water management, and environmental/habitat enhancement water infrastructure that is deemed necessary to address the effects of climate change on water resources in Reclamation’s service area.

(2) In accordance with paragraphs (A) and (B) below, the Federal share of the cost of a feasibility study carried out under this section shall not exceed 50 percent of the study costs.

(A) The non-Federal share may be in the form of any in-kind services that the Secretary determines would contribute substantially toward the conduct and completion of the study.

(B) The Secretary may increase the Federal share of the costs of a feasibility study if the Secretary determines, based on a demonstration of financial hardship, that the non-Federal participant is unable to contribute at least 50 percent of the costs of the study.

(e) Appropriations.— There are authorized to be appropriated such sums as are necessary to carry out this Section for each of fiscal years 2008 through 2022, to remain available until expended..

## **SEC. 5. RECLAMATION WATER MANAGEMENT IMPROVEMENT.**

(a) Authorization of Grants and Cooperative Agreements.–

(1) In General.– The Secretary is authorized to enter into grants and cooperative agreements with states, tribes, irrigation districts, water districts, or other organizations with water delivery authority, to fund up to 50 percent of the cost of planning, designing, or constructing improvements that will conserve water, increase water use efficiency, facilitate water markets, enhance water management, or implement other actions to address climate-related impacts to water supplies or prevent water-related crises or conflicts in watersheds that have a nexus to federal Reclamation projects in Reclamation’s Service Area.

(2) Criteria.– Grants and cooperative agreements entered into pursuant to this authority shall meet the following criteria–

(A) Financial assistance provided to an agricultural water user to conserve water shall provide that the water user shall not use associated water savings to bring new land under irrigated production or otherwise increase the consumptive use of water on lands of the water user.

(B) The Federal financial assistance provided under any grant or cooperative agreement shall not exceed \$5,000,000 per improvement or action.

(C) When such improvements are to federally-owned facilities, funds provided under any such grant or cooperative agreement may be provided on a non-reimbursable basis to an entity operating affected transferred works or may be deemed non-reimbursable for non-transferred works.

(D) Title to improvements made to federally-owned facilities shall be held by the United States.

(E) The calculation of the non-federal contribution shall provide for consideration of the value of any in-kind contributions which the Secretary determines materially contribute to the completion of the proposed action, but shall not include funds received from other federal agencies.

(F) The cost of operating and maintaining improvements for which funding is provided shall be the responsibility of the non-federal entity.

(G) The United States shall not be held liable by any court for monetary damages of any kind arising out of any act, omission, or occurrence relating to non-federally owned facilities created or improved under this Section, except for damages caused by acts of negligence committed by the United States or by its employees or agents. Nothing in this section increases the liability of the United States beyond that provided in chapter 171 of title 28, United States Code (popularly known as the Federal Tort Claims Act).

(b) Relationship to Project-Specific Authority.– This Section shall not supersede any existing project-specific funding authority.

(c) Research Agreements.– The Secretary is also authorized to enter into cooperative agreements with universities, non-profit research institutions, or organizations with water or power delivery authority to fund research to conserve water, increase water use efficiency, or enhance water management under such terms and conditions as the Secretary deems appropriate.

(d) Mutual Benefit.— Grants or cooperative agreements made pursuant to this Section may be for the mutual benefit of the United States and the other party.

(e) Authorization of Appropriations.— There is authorized to be appropriated \$100,000,000 to carry out the purposes of this Section, to remain available until expended.

(f) Reclamation Law.— This Section shall amend and supplement the Act of June 17, 1902 (32 Stat. 388, chapter 1093) and Acts supplementary thereto and amendatory thereof (43 U.S.C. 371 et seq.).

## **SEC. 6. HYDROELECTRIC POWER ASSESSMENT**

(a) General.— The Secretary of Energy, in consultation with the Administrator for each Power Marketing Administration, shall assess the effects and risks of climate change on water supplies necessary for hydroelectric power generation from federal water projects applicable to each Power Marketing Administration.

(b) Data.— (1) The Secretary of Energy, in carrying out the assessment in subsection (a), shall consult with the USGS, NOAA, RISA projects, and applicable State water resource agencies to ensure access to the best available scientific information concerning presently observed impacts and projected future impacts of climate change on water supplies for hydroelectric power production.

(2) The Secretary of Energy shall consult with the Commissioner to access data and other relevant information acquired by the Bureau of Reclamation, in carrying out the assessment in subsection (a) for the Bonneville Power Administration and the Western Area Power Administration.

(c) Reporting.— The Secretary of Energy shall report to Congress not later than 2 years after the date of enactment of this Act, and every 5 years thereafter, on

(1) the effects and risks of climate change on water supplies used for hydroelectric power generation and power supplies marketed by the Power Marketing Administrations pursuant to

- (A) long-term power contracts;
- (B) contingent capacity contracts; and
- (C) short-term sales; and

(2) recommendations by the Power Marketing Administrations on changes in operations or contracting practices to address the identified effects and risks, including the use of purchased power to meet long-term commitments.

(d) Appropriations.— There are authorized to be appropriated such sums as are necessary to carry out this Section for each of fiscal years 2008 through 2022, to remain available until expended.

## **SEC. 7. CLIMATE CHANGE AND WATER INTRA-GOVERNMENTAL PANEL**

(a) Establishment.— The Secretary shall establish and lead a Climate Change and Water Intra-Governmental Panel to review current scientific understandings of the impacts of climate change on water resources in the United States, and, as necessary, develop a strategy to improve observational capabilities and expand data acquisition to increase the reliability and accuracy of modeling and prediction systems in a manner that will benefit local, state, and federal water managers.

(b) Participants.— The Panel established in subsection (a) shall include the agency heads, or their designees, from the following:

- (1) United States Geological Survey;
- (2) National Oceanic and Atmospheric Administration;
- (3) National Weather Service;
- (4) Natural Resources Conservation Service;
- (5) Bureau of Reclamation; and
- (6) U.S. Army Corps of Engineers.

(c) Review Elements.— In performing the review and developing the strategy called for in subsection (a), the Panel shall—

(1) assess how measures of streamflow; groundwater levels; soil moisture; evapotranspiration rates; evaporation rates; snowpack levels; precipitation amounts; and glacier mass are needed to better understand the impacts of climate change on water resources;

(2) identify data gaps existing in current water monitoring networks that need to be addressed to improve the Nation's capability to measure, analyze, and predict changes to water resources which are related directly and indirectly to climate change;

(3) establish data management and communication protocols and standards that will increase the quality and efficiency in which the agencies acquire and report data;

(4) consider options for establishing a data portal to enhance access to the water resource data collected by various entities and agencies for the major river basins and aquifers of the United States;

(5) build on and integrate with, to the extent possible, existing cross-agency initiatives, including the National Integrated Drought Information System and National Weather Service's Advanced Hydrologic Prediction Services.

(6) attempt to facilitate the development of hydrologic models that will integrate groundwater and surface water interactions and apply these models to a diversity of water resource management problems; and

(7) consider the need and mechanisms to effectively couple global climate models; regional climate models; and hydrologic models to produce water resource information that is useful for water managers to develop adaptation strategies that can be incorporated into long-term water management decisions.

(d) Report.— The Secretary shall report to the Congress not later than 1 year after the date of

enactment of this Act on the review and strategy development called for in subsection (a).

(e) Demonstration, Research, and Methods Development Projects.—

(1) Authority.— The Secretary, in consultation with the Climate Change and Water Intra-Governmental Panel and the Federal Advisory Committee on Water Information is authorized to provide grants, or enter into any contract, cooperative agreement, interagency agreement, or other transaction as the Secretary determines to be necessary with appropriate entities, to implement demonstration, research, and methods development projects that will help implement the strategy developed pursuant to subsection (a).

(2) Limitation.— Funding provided by the Secretary pursuant to paragraph (1) shall not exceed \$1,000,000 to any particular entity, and must result in a peer-reviewed report describing the results of the demonstration, research, or methods development project.

(f) Appropriations.—

(1) In General.— There is authorized to be appropriated to carry-out subsections (a)-(d) a total of \$2,000,000 for fiscal years 2008 and 2009, to remain available until expended.

(2) Demonstration Projects.— There is authorized to be appropriated to carry out subsection (e) a total of \$10,000,000 for the period of fiscal years 2008 through 2012.

## **SEC. 8. USGS WATER DATA ENHANCEMENT**

(a) National Streamflow Information Program.—

(1) General.— The Secretary, acting through the Director, shall review the National Streamflow Information Program including the federal objectives for a national streamgaging network and the geographic information based methods that were used to select sites to achieve those objectives.

(2) Objectives.— The objectives of the Program shall include the following—

(A) measuring streamflow and related environmental variables reliably and continuously in nationally significant watersheds, to form a sound basis for public and private decisions about water;

(B) providing for a better understanding of hydrologic extremes (e.g. floods and droughts) through intensive data collection during and after such events;

(C) establishing a base network critical to monitoring long-term changes in streamflow and assessing how such changes are related to climate change;

(D) Integration with data collection activities by other Federal and state agencies, including the National Drought Information System, to enhance a comprehensive understanding of water availability; identify data gaps; and improve hydrologic forecasting;

(E) incorporating principles of adaptive management to periodically review the information provided by the National Streamflow Information program to assess whether the objectives of the Program are being adequately addressed.

(3) Improved Methodologies.— The Secretary, acting through the Director, utilizing existing authority and the authority provided in subsection (d), shall--

(A) improve the methods for data analysis and delivery; and

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

(4) Goal.— The Secretary, acting through the Director, at a time not later than ten years after the date of enactment of this Act, shall increase the National Streamflow measuring network so that streamflow is being measured at a minimum of 4,700 sites in nationally significant watersheds by streamgages or other effective means implemented by the Secretary.

(5) Funding.— The national streamgaging network established pursuant to this subsection shall be 100% federally-funded.

(6) Appropriations.—

(A) In General.— There is authorized to be appropriated such sums as are necessary to carry-out the National Streamflow Information Program for the period of fiscal years 2008 through 2022, to remain available until expended.

(B) Achieving Goal.— There is authorized to be appropriated to implement paragraph (4) \$7,500,000 for each of fiscal years 2008 through 2018.

(b) National Groundwater Resources Monitoring.—

(1) General.— The Secretary, acting through the Director, shall develop a systematic groundwater monitoring program for major aquifer systems in the United States.

(2) Program Elements. In developing the monitoring program, the Secretary, acting through the Director, shall—

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

(B) assess, in coordination with the National Advisory Committee on Water Information and state and local water resource agencies, the current scope of groundwater monitoring based on access to and capabilities of existing monitoring wells; and

(C) Develop and implement, in consultation with the National Advisory Committee on Water Information, and state and local water resource agencies, a monitoring plan that maximizes coverage for major aquifer systems.

(3) Objectives.— The objectives of the groundwater level monitoring program shall include the following—

(A) providing data critical to better understand surface water-groundwater interactions;

(B) support the Groundwater Climate Response Network by expanding the network of monitoring wells to all of the nation’s climate divisions, and to improve the understanding of the effects of climate change on groundwater recharge and availability; and

(C) to support the objectives of the Water Use and Availability Program authorized in Section 9.

(4) Improved Methodologies.— The Secretary, acting through the Director, and utilizing existing authority and the authority provided in subsection (d), shall—

(A) improve the methods for data analysis and delivery; and

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

(5) Funding.— The groundwater monitoring program established in this subsection, may be 100% federally-funded, but a priority shall be given for establishing monitoring wells or other measuring devices pursuant to the program where a significant state or local cost-share is provided for implementation purposes.

(6) Appropriations.— There is authorized to be appropriated such sums as are necessary to carry-out the groundwater level monitoring program for major aquifer systems for the period of fiscal years 2008 through 2022, to remain available until expended.

(c) Brackish Groundwater Assessment.—

(1) Study.— The Secretary, acting through the Director, and in consultation with state and local water resource agencies, shall conduct a study of available data and other relevant information to identify significant brackish groundwater resources in the United States, and consolidate existing available data related to such resources.

(2) Report.— The Secretary, acting through the Director, shall provide a report to the Congress not later than 2 years after the date of enactment of this Act, that identifies significant brackish aquifers, including maps; summarizes the information currently available for each significant aquifer, including known levels of total dissolved solids; identifies data gaps that need to be addressed to fully characterize each significant aquifer; and identifies any current uses of brackish groundwater from each significant aquifer.

(3) Appropriations.— There is authorized to be appropriated to carry out this subsection, a total of \$3,000,000 for the period of fiscal years 2008 and 2009, to remain available until expended.

(d) Improved Water Estimation, Measurement, and Monitoring Technologies.—

(1) Grants.— The Secretary is authorized to provide grants to appropriate entities with expertise in water resource data acquisition and reporting, to

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

(B) improve methods for water resource data analysis and delivery.

(2) Specific Objectives.— Specific objectives of the grant program authorized in paragraph (1) shall be to facilitate the development of new methods and technologies for—

(A) predicting and measuring streamflows;

(B) estimating changes in storage of groundwater;

(C) improving data standards and analysis methods, including validation of data entered into GIS databases;

(D) measuring precipitation, streamflow, and potential evapotranspiration;

(E) descriptive and predictive models that link groundwater and surface water;

and

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

(3) Limitations.— Financial Assistance under this subsection--

(A) shall not exceed \$500,000 for any project;

(B) shall be matched in value by the entity receiving the grant, including in the form of any in-kind services that the Secretary determines would contribute substantially toward the development of new methods and technologies; and

(C) may be in addition to assistance provided by the Federal Government pursuant to other provisions of law.

(4) Appropriations.— There is authorized to be appropriated to carry out this subsection \$5,000,000 for each of fiscal years 2008 through 2018.

## **SEC 9. USGS WATER USE AND AVAILABILITY ASSESSMENT PROGRAM**

(a) Establishment. The Secretary, acting through the Director, and in coordination with the Federal Advisory Committee on Water Information and state and local water resource agencies, shall establish a USGS Water Availability and Use Assessment Program to achieve the following objectives:

(1) provide a clearer knowledge of the status of the Nation's water resources to help determine how much water is available for beneficial uses;

(2) identify long-term trends in water availability and use to help understand how water availability is changing; and

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

(b) Program Elements. The USGS Water Availability and Use Assessment Program shall include the following elements—

(1) Water Use. – The Director shall conduct an ongoing assessment of water use in the hydrologic accounting units and major aquifer systems in the United States, including:

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

(B) incorporating water use science principles, emphasizing applied research and statistical estimation techniques in assessing water use;

(C) integrating datasets maintained by other Federal and state agencies into the datasets maintained by the USGS; and

(D) focusing on the scientific integration of water use, water flow, and water quality to generate relevant information about human impacts on water and ecological resources.

(2) Water Availability. – The Director shall conduct an ongoing assessment of water availability by developing and evaluating nationally consistent indicators reflecting the status

and trends in water availability in the United States, including:

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

(B) groundwater indicators, such as groundwater level measurements and changes in such levels due to natural recharge, withdrawals, saltwater intrusion, mine dewatering, land drainage, artificial recharge, and other relevant factors;

(C) impaired water supplies, both surface and groundwater, that are known, accessible, and utilized to some extent to meet ongoing water demands; and

(D) maintaining a national database of water availability data, including maps, reports, and other forms of interpreted data, as well as internet-based access to archived data and real-time data collection.

(c) Grant Program.— (1) Authorization.— The Secretary, acting through the Director, is authorized to award grants in an amount not to exceed \$250,000, to State water resource agencies to assist with state efforts to establish, or integrate existing water use and availability datasets into the datasets maintained or created under subsection (a).

(2) Criteria.— The Secretary, acting through the Director, shall provide grants pursuant to paragraph (1) only to those State water resource agencies that demonstrate that the water use and availability data to be collected and provided under the state program--

(A) meets standards developed by the Director to assure that the data will be of sufficient quality and standards to be integrated with national datasets; and

(B) will enhance the ability of state officials to carry-out water management and regulatory responsibilities pursuant to state law.

(d) Reporting.— Beginning in 2010, and every 5 years thereafter, the Secretary, acting through the Director, shall prepare a report that provides an in-depth assessment of---

(1) the current availability of water resources in the United States, including historic trends and annual updates of river basin inflows and outflows; surface water storage; groundwater reserves; and estimates of undeveloped potential resources (e.g. saline waters and wastewater);

(2) significant trends affecting water availability, including documented and projected impacts to water availability due to climate change;

(3) withdrawals and use of surface water and groundwater by various sectors including agriculture, municipalities, industry, thermoelectric power generators, and hydroelectric power generators;

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

(5) significant water use conflicts or shortages which have occurred, or are likely to occur, and a discussion of the factors causing such conflicts or shortages.

(e) Appropriations.—

(1) In General.— There is authorized to be appropriated to carry-out subsection (a), (b), and (d) \$20,000,000 for each of fiscal years 2008 through 2022, to remain available until expended.

(2) Grant Program.— There is authorized to be appropriated to carry out subsection (c ) a total of \$12,500,000 for the period of fiscal years 2008 through 2012.

**SEC. 10. MISCELLANEOUS**

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

(b) Effect on State Water Law.—

(1) Nothing in this title preempts or affects State water law or an interstate compact governing water.

(2) The Secretary shall comply with all applicable State water laws in carrying out this title.