

110TH CONGRESS
1ST SESSION

S. 2156

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

IN THE SENATE OF THE UNITED STATES

OCTOBER 4, 2007

Mr. BINGAMAN (for himself, Mr. DOMENICI, Ms. CANTWELL, and Mr. JOHNSON) introduced the following bill; which was read twice and referred to the Committee on Energy and Natural Resources

A BILL

To authorize and facilitate the improvement of water management by the Bureau of Reclamation, to require the Secretary of the Interior and the Secretary of Energy to increase the acquisition and analysis of water-related data to assess the long-term availability of water resources for irrigation, hydroelectric power, municipal, and environmental uses, 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,*

1 **SECTION 1. SHORT TITLE; TABLE OF CONTENTS.**

2 (a) SHORT TITLE.—This Act may be cited as the
 3 “Science and Engineering to Comprehensively Understand
 4 and Responsibly Enhance Water Act” or the “SECURE
 5 Water Act”.

6 (b) TABLE OF CONTENTS.—The table of contents of
 7 this Act is as follows:

- Sec. 1. Short title; table of contents.
- Sec. 2. Findings.
- Sec. 3. Definitions.
- Sec. 4. Climate change adaptation program.
- Sec. 5. Water management improvement.
- Sec. 6. Hydroelectric power assessment.
- Sec. 7. Climate change and water intragovernmental panel.
- Sec. 8. Water data enhancement by United States Geological Survey.
- Sec. 9. Water use and availability assessment program.
- Sec. 10. Effect.

8 **SEC. 2. FINDINGS.**

9 Congress finds that—

10 (1) adequate and safe supplies of water are fun-
 11 damental to the health, economy, security, and ecol-
 12 ogy of the United States;

13 (2) systematic data-gathering with respect to,
 14 and research and development of, the water re-
 15 sources of the United States will help ensure the
 16 continued existence of sufficient quantities of water
 17 to support—

- 18 (A) increasing populations;
- 19 (B) economic growth;
- 20 (C) irrigated agriculture;
- 21 (D) energy production; and

1 (E) the protection of aquatic ecosystems;

2 (3) global climate change poses a significant
3 challenge to the protection and use of the water re-
4 sources of the United States due to an increased un-
5 certainty with respect to the timing, form, and geo-
6 graphical distribution of precipitation, which may
7 have a substantial effect on the supplies of water for
8 agricultural, hydroelectric power, industrial, domes-
9 tic supply, and environmental needs;

10 (4) although States bear the primary responsi-
11 bility and authority for managing the water re-
12 sources of the United States, the Federal Govern-
13 ment should support the States, as well as regional,
14 local, and tribal governments, by carrying out—

15 (A) nationwide data collection and moni-
16 toring activities;

17 (B) relevant research; and

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

20 (5) Federal agencies that conduct water man-
21 agement and related activities have a responsi-
22 bility—

23 (A) to take a lead role in assessing risks
24 to the water resources of the United States (in-

1 including risks posed by global climate change);
2 and

3 (B) to develop strategies—

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

7 (ii) to help ensure that the long-term
8 water resources management of the United
9 States is sustainable and will ensure sus-
10 tainable quantities of water;

11 (6) it is critical to continue and expand re-
12 search and monitoring efforts—

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

15 (B) to provide basic information nec-
16 essary—

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

19 (ii) to identify new supplies of water
20 that are capable of being reclaimed; and

21 (7) the study of water use is vital—

22 (A) to the understanding of the impacts of
23 human activity on water and ecological re-
24 sources; and

1 (B) to the assessment of whether available
2 surface and groundwater supplies will be avail-
3 able to meet the future needs of the United
4 States.

5 **SEC. 3. DEFINITIONS.**

6 In this Act:

7 (1) ADMINISTRATOR.—The term “Adminis-
8 trator” means the Administrator of the National
9 Oceanic and Atmospheric Administration.

10 (2) ADVISORY COMMITTEE.—The term “Advi-
11 sory Committee” means the National Advisory Com-
12 mittee on Water Information established—

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

15 (B) to coordinate water data collection ac-
16 tivities.

17 (3) ASSESSMENT PROGRAM.—The term “assess-
18 ment program” means the water availability and use
19 assessment program established by the Secretary
20 under section 9(a).

21 (4) CLIMATE DIVISION.—The term “climate di-
22 vision” means 1 of the 359 divisions in the United
23 States that represents 2 or more regions located
24 within a State that are as climatically homogeneous
25 as possible, as determined by the Administrator.

1 (5) COMMISSIONER.—The term “Commis-
2 sioner” means the Commissioner of Reclamation.

3 (6) DIRECTOR.—The term “Director” means
4 the Director of the United States Geological Survey.

5 (7) ELIGIBLE APPLICANT.—The term “eligible
6 applicant” means any State, Indian tribe, irrigation
7 district, water district, or other organization with
8 water delivery authority.

9 (8) FEDERAL POWER MARKETING ADMINISTRA-
10 TION.—The term “Federal Power Marketing Admin-
11 istration” means—

12 (A) the Bonneville Power Administration;

13 (B) the Southeastern Power Administra-
14 tion;

15 (C) the Southwestern Power Administra-
16 tion; and

17 (D) the Western Area Power Administra-
18 tion.

19 (9) HYDROLOGIC ACCOUNTING UNIT.—The
20 term “hydrologic accounting unit” means 1 of the
21 352 river basin hydrologic accounting units used by
22 the United States Geological Survey.

23 (10) INDIAN TRIBE.—The term “Indian tribe”
24 has the meaning given the term in section 4 of the

1 Indian Self-Determination and Education Assistance
2 Act (25 U.S.C. 450b).

3 (11) MAJOR AQUIFER SYSTEM.—The term
4 “major aquifer system” means a groundwater sys-
5 tem that is—

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

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

11 (12) MAJOR RECLAMATION RIVER BASIN.—

12 (A) IN GENERAL.—The term “major rec-
13 lamation river basin” means each major river
14 system (including tributaries)—

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

17 (ii) at which is located a federally au-
18 thorized project of the Bureau of Reclama-
19 tion.

20 (B) INCLUSIONS.—The term “major rec-
21 lamation river basin” includes—

22 (i) the Colorado River;

23 (ii) the Columbia River;

24 (iii) the Klamath River;

25 (iv) the Missouri River;

- 1 (v) the Rio Grande;
2 (vi) the Sacramento River;
3 (vii) the San Joaquin River; and
4 (viii) the Truckee River.

5 (13) NON-FEDERAL PARTICIPANT.—The term
6 “non-Federal participant” means—

- 7 (A) a State, regional, or local authority;
8 (B) an Indian tribe or tribal organization;
9 or
10 (C) any other qualifying entity, such as a
11 water conservation district, water conservancy
12 district, or rural water district or association, or
13 a nongovernmental organization.

14 (14) PANEL.—The term “panel” means the cli-
15 mate change and water intragovernmental panel es-
16 tablished by the Secretary under section 7(a).

17 (15) PROGRAM.—The term “program” means
18 the regional integrated sciences and assessments
19 program—

- 20 (A) established by the Administrator; and
21 (B) that is comprised of 8 regional pro-
22 grams that use advances in integrated climate
23 sciences to assist decisionmaking processes.

24 (16) SECRETARY.—

1 (A) IN GENERAL.—Except as provided in
2 subparagraph (B), the term “Secretary” means
3 the Secretary of the Interior.

4 (B) EXCEPTIONS.—The term “Secretary”
5 means—

6 (i) in the case of section 4, the Sec-
7 retary of the Interior (acting through the
8 Commissioner); and

9 (ii) in the case of sections 8 and 9,
10 the Secretary of the Interior (acting
11 through the Director).

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

18 **SEC. 4. CLIMATE CHANGE ADAPTATION PROGRAM.**

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

21 (1) to assess each effect of, and risk resulting
22 from, global climate change with respect to the
23 quantity of water resources located in a service area;
24 and

1 (2) to ensure, to the maximum extent possible,
2 that strategies are developed to address potential
3 water shortages, conflicts, and other impacts to
4 water users located at, and the environment of, each
5 service area.

6 (b) **REQUIRED ELEMENTS.**—In carrying out the pro-
7 gram described in subsection (a), the Secretary shall—

8 (1) consult with the United States Geological
9 Survey, the National Oceanic and Atmospheric Ad-
10 ministration, the program, and each appropriate
11 State water resource agency, to ensure that the Sec-
12 retary has access to the best available scientific in-
13 formation with respect to presently observed and
14 projected future impacts of global climate change on
15 water resources;

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

19 (A) a change in snowpack;

20 (B) the timing of runoff; and

21 (C) any increase in—

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

24 (ii) the rate of reservoir evaporation;

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

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

6 (B) hydroelectric power generation facili-
7 ties;

8 (C) recreation at reclamation facilities;

9 (D) fish and wildlife habitat;

10 (E) applicable species listed as an endan-
11 gered, threatened, or candidate species under
12 the Endangered Species Act of 1973 (16 U.S.C.
13 1531 et seq.); and

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

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

21 (A) the modification of any reservoir stor-
22 age or operating guideline in existence as of the
23 date of enactment of this Act;

24 (B) the development of new water manage-
25 ment, operating, or habitat restoration plans;

1 (C) water conservation;

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

4 (E) groundwater and surface water storage
5 needs; and

6 (5) in consultation with the Director, the Ad-
7 ministrator, the Secretary of Agriculture (acting
8 through the Chief of the Natural Resources Con-
9 servation Service), and applicable State water re-
10 source agencies, develop a monitoring plan to ac-
11 quire and maintain water resources data—

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

14 (B) to assist in each assessment and anal-
15 ysis conducted by the Secretary under para-
16 graphs (2) and (3).

17 (c) REPORTING.—Not later than 1 year after the date
18 of enactment of this Act, and every 5 years thereafter,
19 the Secretary shall submit to the appropriate committees
20 of Congress a report that describes—

21 (1) each effect of, and risk resulting from, glob-
22 al climate change with respect to the quantity of
23 water resources located in each major reclamation
24 river basin;

1 (2) the impact of global climate change with re-
2 spect to the operations of the Secretary in each
3 major reclamation river basin;

4 (3) each mitigation and adaptation strategy
5 considered and implemented by the Secretary to ad-
6 dress each effect of global climate change described
7 in paragraph (1);

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

10 (A) the Director;

11 (B) the Administrator;

12 (C) the Secretary of Agriculture (acting
13 through the Chief of the Natural Resources
14 Conservation Service); or

15 (D) any appropriate State water resource
16 agency; and

17 (5) the implementation by the Secretary of the
18 monitoring plan developed under subsection (b)(5).

19 (d) FEASIBILITY STUDIES.—

20 (1) AUTHORITY OF SECRETARY.—The Sec-
21 retary, in cooperation with any non-Federal partici-
22 pant, may conduct 1 or more studies to determine
23 the feasibility of implementing each mitigation and
24 adaptation strategy described in subsection (c)(3),
25 including the construction of any water supply,

1 water management, environmental, or habitat en-
2 hancement water infrastructure that the Secretary
3 determines to be necessary to address the effects of
4 global climate change on water resources located in
5 each major reclamation river basin.

6 (2) COST SHARING.—

7 (A) FEDERAL SHARE.—

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

13 (ii) EXCEPTION RELATING TO FINAN-
14 CIAL HARDSHIP.—The Secretary may in-
15 crease the Federal share of the cost of a
16 study described in paragraph (1) to exceed
17 50 percent of the cost of the study if the
18 Secretary determines that, due to a finan-
19 cial hardship, the non-Federal participant
20 of the study is unable to contribute an
21 amount equal to 50 percent of the cost of
22 the study.

23 (B) NON-FEDERAL SHARE.—The non-Fed-
24 eral share of the cost of a study described in
25 paragraph (1) may be provided in the form of

1 any in-kind services that substantially con-
2 tribute toward the completion of the study, as
3 determined by the Secretary.

4 (e) AUTHORIZATION OF APPROPRIATIONS.—There
5 are authorized to be appropriated such sums as are nec-
6 essary to carry out this section for each of fiscal years
7 2008 through 2022, to remain available until expended.

8 **SEC. 5. WATER MANAGEMENT IMPROVEMENT.**

9 (a) AUTHORIZATION OF GRANTS AND COOPERATIVE
10 AGREEMENTS.—

11 (1) AUTHORITY OF SECRETARY.—The Sec-
12 retary may provide any grant to, or enter into any
13 cooperative agreement with, any eligible applicant to
14 assist the eligible applicant in planning, designing,
15 or constructing any improvement—

16 (A) to conserve water;

17 (B) to increase water use efficiency;

18 (C) to facilitate water markets;

19 (D) to enhance water management; or

20 (E) to carry out any other activity—

21 (i) to address any climate-related im-
22 pact to the water supply of the United
23 States; or

24 (ii) to prevent any water-related crisis
25 or conflict at any watershed that has a

1 nexus to a Federal reclamation project lo-
2 cated in a service area.

3 (2) APPLICATION.—To be eligible to receive a
4 grant, or enter into a cooperative agreement with
5 the Secretary under paragraph (1), an eligible appli-
6 cant shall submit to the Secretary an application
7 that includes a proposal of the improvement to be
8 planned, designed, constructed, or implemented by
9 the eligible applicant.

10 (3) REQUIREMENTS OF GRANTS AND COOPERA-
11 TIVE AGREEMENTS.—

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

18 (B) CERTAIN IMPROVEMENTS OR ACTIVI-
19 TIES RELATING TO AGRICULTURAL OPER-
20 ATIONS.—In carrying out paragraph (1), the
21 Secretary shall not provide a grant to, or enter
22 into a cooperative agreement with, an eligible
23 applicant to provide financial assistance for an
24 improvement to conserve water with respect to
25 an agricultural operation unless the Secretary

1 first determines that the improvement will re-
2 sult in a net savings in groundwater or surface
3 water resources in the agricultural operation of
4 the eligible applicant.

5 (C) NONREIMBURSABLE FUNDS.—Any
6 funds provided by the Secretary to an eligible
7 applicant through a grant or cooperative agree-
8 ment under paragraph (1) shall be non-
9 reimbursable.

10 (D) TITLE TO IMPROVEMENTS.—If an in-
11 frastructure improvement to a facility under the
12 jurisdiction of a Federal agency is the subject
13 of a grant or a cooperative agreement entered
14 into between the Secretary and an eligible ap-
15 plicant under paragraph (1), the Federal Gov-
16 ernment shall hold title to the improvement of
17 the facility.

18 (E) COST SHARING.—

19 (i) FEDERAL SHARE.—The Federal
20 share of the cost of any infrastructure im-
21 provement or activity that is the subject of
22 a grant or a cooperative agreement entered
23 into between the Secretary and an eligible
24 applicant under paragraph (1) shall not ex-

1 ceed 50 percent of the cost of the infra-
2 structure improvement or activity.

3 (ii) CALCULATION OF NON-FEDERAL
4 SHARE.—In calculating the non-Federal
5 share of the cost of an infrastructure im-
6 provement or activity proposed by an eligi-
7 ble applicant through an application sub-
8 mitted by the eligible applicant under
9 paragraph (2), the Secretary shall—

10 (I) consider the value of any in-
11 kind services that substantially con-
12 tributes toward the completion of the
13 improvement or activity, as deter-
14 mined by the Secretary; and

15 (II) not consider any other
16 amount that the eligible applicant re-
17 ceives from a Federal agency.

18 (iii) MAXIMUM AMOUNT.—The
19 amount provided to an eligible applicant
20 through a grant or cooperative agreement
21 under paragraph (1) shall be not more
22 than \$5,000,000.

23 (iv) OPERATION AND MAINTENANCE
24 COSTS.—The non-Federal share of the cost
25 of operating and maintaining any infra-

1 structure improvement that is the subject
2 of a grant or a cooperative agreement en-
3 tered into between the Secretary and an el-
4 igible applicant under paragraph (1) shall
5 be 100 percent.

6 (F) LIABILITY.—

7 (i) IN GENERAL.—Except as provided
8 in clause (ii), the United States shall not
9 be liable for monetary damages of any kind
10 for any injury arising out of an act, omis-
11 sion, or occurrence that arises in relation
12 to any facility created or improved under
13 this section, the title of which is not held
14 by the United States.

15 (ii) EXCEPTION.—Clause (i) shall not
16 apply to liability for monetary damages re-
17 sulting from an injury caused by any act
18 of negligence committed by the United
19 States (or by any officer, employee, or
20 agent of the United States) that arises in
21 relation to any facility created or improved
22 under this section, the title of which is not
23 held by the United States.

24 (iii) TORT CLAIMS ACT.—Nothing in
25 this section increases the liability of the

1 United States beyond that provided in
2 chapter 171 of title 28, United States
3 Code.

4 (b) RESEARCH AGREEMENTS.—

5 (1) AUTHORITY OF SECRETARY.—The Sec-
6 retary may enter into 1 or more cooperative agree-
7 ments with any university, nonprofit research insti-
8 tution, or organization with water or power delivery
9 authority to fund any research activity that is de-
10 signed—

11 (A) to conserve water resources;

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

14 (C) to enhance the management of water
15 resources.

16 (2) TERMS AND CONDITIONS OF SECRETARY.—

17 A cooperative agreement entered into between the
18 Secretary and any university, institution, or organi-
19 zation described in paragraph (1) shall be subject to
20 such terms and conditions as the Secretary deter-
21 mines to be appropriate.

22 (c) MUTUAL BENEFIT.—Grants or cooperative agree-
23 ments made under this section may be for the mutual ben-
24 efit of the United States and the entity that is provided
25 the grant or enters into the cooperative agreement.

1 (d) RELATIONSHIP TO PROJECT-SPECIFIC AUTHOR-
2 ITY.—This section shall not supersede any existing
3 project-specific funding authority.

4 (e) AUTHORIZATION OF APPROPRIATIONS.—There is
5 authorized to be appropriated to carry out this section
6 \$100,000,000, to remain available until expended.

7 **SEC. 6. HYDROELECTRIC POWER ASSESSMENT.**

8 (a) DUTY OF SECRETARY OF ENERGY.—The Sec-
9 retary of Energy, in consultation with the Administrator
10 of each Federal Power Marketing Administration, shall as-
11 sess each effect of, and risk resulting from, global climate
12 change with respect to water supplies that are required
13 for the generation of hydroelectric power at each Federal
14 water project that is applicable to a Federal Power Mar-
15 keting Administration.

16 (b) ACCESS TO APPROPRIATE DATA.—

17 (1) IN GENERAL.—In carrying out each assess-
18 ment under subsection (a), the Secretary of Energy
19 shall consult with the United States Geological Sur-
20 vey, the National Oceanic and Atmospheric Adminis-
21 tration, the program, and each appropriate State
22 water resource agency, to ensure that the Secretary
23 of Energy has access to the best available scientific
24 information with respect to presently observed im-
25 pacts and projected future impacts of global climate

1 change on water supplies that are used to produce
2 hydroelectric power.

3 (2) ACCESS TO DATA FOR CERTAIN ASSESS-
4 MENTS.—In carrying out each assessment under
5 subsection (a), with respect to the Bonneville Power
6 Administration and the Western Area Power Admin-
7 istration, the Secretary of Energy shall consult with
8 the Commissioner to access data and other informa-
9 tion that—

10 (A) is collected by the Commissioner; and

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

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

17 (1) each effect of, and risk resulting from, glob-
18 al climate change with respect to—

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

21 (B) power supplies marketed by each Fed-
22 eral Power Marketing Administration, pursuant
23 to—

24 (i) long-term power contracts;

25 (ii) contingent capacity contracts; and

1 (iii) short-term sales; and

2 (2) each recommendation of the Administrator
3 of each Federal Power Marketing Administration re-
4 lating to any change in any operation or contracting
5 practice of each Federal Power Marketing Adminis-
6 tration to address each effect and risk described in
7 paragraph (1), including the use of purchased power
8 to meet long-term commitments of each Federal
9 Power Marketing Administration.

10 (d) COSTS NONREIMBURSABLE.—Any costs incurred
11 by the Secretary of Energy in carrying out this section
12 shall be nonreimbursable.

13 (e) AUTHORIZATION OF APPROPRIATIONS.—There
14 are authorized to be appropriated such sums as are nec-
15 essary to carry out this section for each of fiscal years
16 2008 through 2022, to remain available until expended.

17 **SEC. 7. CLIMATE CHANGE AND WATER INTRAGOVERNMENTAL**
18 **PANEL.**

19 (a) ESTABLISHMENT.—The Secretary shall establish
20 and lead a climate change and water intragovernmental
21 panel—

22 (1) to review the current scientific under-
23 standing of each impact of global climate change on
24 the water resources of the United States; and

1 (2) to develop any strategy that the panel deter-
2 mines to be necessary to improve observational capa-
3 bilities and expand data acquisition to increase the
4 reliability and accuracy of modeling and prediction
5 systems to benefit water managers at the Federal,
6 State, and local levels.

7 (b) MEMBERSHIP.—The panel shall be comprised
8 of—

9 (1) the Secretary;

10 (2) the Director;

11 (3) the Administrator;

12 (4) the Secretary of Agriculture (acting through
13 the Chief of the Natural Resources Conservation
14 Service);

15 (5) the Commissioner; and

16 (6) the Chief of Engineers.

17 (c) REVIEW ELEMENTS.—In conducting the review
18 and developing the strategy under subsection (a), the
19 panel shall consult with State water resource agencies, the
20 Advisory Committee, and relevant water user, environ-
21 mental, and other nongovernmental organizations—

22 (1) to assess the extent to which the conduct of
23 measures of streamflow, groundwater levels, soil
24 moisture, evapotranspiration rates, evaporation
25 rates, snowpack levels, precipitation amounts, and

1 glacier mass is necessary to improve the under-
2 standing of the Federal Government and the States
3 with respect to each impact of global climate change
4 on water resources;

5 (2) to identify data gaps in current water moni-
6 toring networks that must be addressed to improve
7 the capability of the Federal Government and the
8 States to measure, analyze, and predict changes to
9 water resources that are directly or indirectly af-
10 fected by global climate change;

11 (3) to establish data management and commu-
12 nication protocols and standards to increase the
13 quality and efficiency by which each Federal agency
14 acquires and reports relevant data;

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

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

21 (B) that is collected by each Federal agen-
22 cy and any other public or private entity for
23 each nationally significant watershed and aquifer
24 located in the United States;

1 (5) to expand, and integrate each initiative of
2 the panel with, to the maximum extent possible, any
3 interagency initiative in existence as of the date of
4 enactment of this Act, including—

5 (A) the national integrated drought infor-
6 mation system of the National Oceanic and At-
7 mospheric Administration; and

8 (B) the advanced hydrologic prediction
9 service of the National Weather Service;

10 (6) to facilitate the development of hydrologic
11 models to integrate data that reflects groundwater
12 and surface water interactions;

13 (7) to apply the hydrologic models developed
14 under paragraph (6) to water resource management
15 problems identified by the panel; and

16 (8) to consider the need for, and the develop-
17 ment of, mechanisms to effectively combine global
18 climate models, regional climate models, and hydro-
19 logic models to produce water resource information
20 to assist water managers at the Federal, State, and
21 local levels in the development of adaptation strate-
22 gies that can be incorporated into long-term water
23 management decisions.

24 (d) REPORT.—Not later than 1 year after the date
25 of enactment of this Act, the Secretary shall submit to

1 the appropriate committees of Congress a report that de-
2 scribes the review conducted, and the strategy developed,
3 by the panel under subsection (a).

4 (e) DEMONSTRATION, RESEARCH, AND METHOD-
5 OLOGY DEVELOPMENT PROJECTS.—

6 (1) AUTHORITY OF SECRETARY.—The Sec-
7 retary, in consultation with the panel and the Advi-
8 sory Committee, may provide grants to, or enter into
9 any contract, cooperative agreement, interagency
10 agreement, or other transaction with, an appropriate
11 entity to carry out any demonstration, research, or
12 methodology development project that the Secretary
13 determines to be necessary to assist in the imple-
14 mentation of the strategy developed by the panel
15 under subsection (a)(2).

16 (2) REQUIREMENTS.—

17 (A) MAXIMUM AMOUNT OF FEDERAL
18 SHARE.—The Federal share of the cost of any
19 demonstration, research, or methodology devel-
20 opment project that is the subject of any grant,
21 contract, cooperative agreement, interagency
22 agreement, or other transaction entered into be-
23 tween the Secretary and an appropriate entity
24 under paragraph (1) shall not exceed
25 \$1,000,000.

1 (B) REPORT.—An appropriate entity that
2 receives funds from a grant, contract, coopera-
3 tive agreement, interagency agreement, or other
4 transaction entered into between the Secretary
5 and the appropriate entity under paragraph (1)
6 shall submit to the Secretary a report describ-
7 ing the results of the demonstration, research,
8 or methodology development project conducted
9 by the appropriate entity.

10 (f) AUTHORIZATION OF APPROPRIATIONS.—

11 (1) IN GENERAL.—There is authorized to be
12 appropriated to carry out subsections (a) through
13 (d) \$2,000,000 for each of fiscal years 2008 and
14 2009, to remain available until expended.

15 (2) DEMONSTRATION, RESEARCH, AND METH-
16 ODOLOGY DEVELOPMENT PROJECTS.—There is au-
17 thorized to be appropriated to carry out subsection
18 (e) \$10,000,000 for the period of fiscal years 2008
19 through 2012, to remain available until expended.

20 **SEC. 8. WATER DATA ENHANCEMENT BY UNITED STATES**
21 **GEOLOGICAL SURVEY.**

22 (a) NATIONAL STREAMFLOW INFORMATION PRO-
23 GRAM.—

1 (1) IN GENERAL.—The Secretary shall conduct
2 a review of the national streamflow information pro-
3 gram, including a review of—

4 (A) each Federal objective with respect to
5 the establishment of a national streamgaging
6 network; and

7 (B) each geographic information-based
8 method that the Secretary used to select sites
9 to achieve each objective reviewed under sub-
10 paragraph (A).

11 (2) REQUIREMENTS.—In conducting the na-
12 tional streamflow information program, the Sec-
13 retary shall—

14 (A) measure streamflow and related envi-
15 ronmental variables in nationally significant wa-
16 tersheds—

17 (i) in a reliable and continuous man-
18 ner; and

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

23 (B) provide for a better understanding of
24 hydrologic extremes (including floods and
25 droughts) through the conduct of intensive data

1 collection activities during and following hydro-
2 logic extremes;

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

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

7 (ii) the conduct of assessments to de-
8 termine the extent to which each long-term
9 change monitored under clause (i) is re-
10 lated to global climate change;

11 (D) integrate the national streamflow in-
12 formation program with data collection activi-
13 ties of Federal agencies and appropriate State
14 water resource agencies (including the national
15 drought information system)—

16 (i) to enhance the comprehensive un-
17 derstanding of water availability;

18 (ii) to identify any data gap with re-
19 spect to water resources; and

20 (iii) to improve hydrologic forecasting;

21 and

22 (E) incorporate principles of adaptive man-
23 agement in the conduct of periodic reviews of
24 information collected under the national
25 streamflow information program to assess

1 whether the objectives of the national
2 streamflow information program are being ade-
3 quately addressed.

4 (3) IMPROVED METHODOLOGIES.—The Sec-
5 retary shall—

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

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

12 (4) MEASUREMENT GOAL.—

13 (A) IN GENERAL.—Not later than 10 years
14 after the date of enactment of this Act, in ac-
15 cordance with subparagraph (B), the Secretary
16 shall increase the number of sites measured
17 under the national streamflow information pro-
18 gram to a quantity of not less than 4,700 sites.

19 (B) REQUIREMENTS OF SITES.—Each site
20 described in subparagraph (A) shall be—

21 (i) located in a nationally significant
22 watershed, as determined by the Secretary;
23 and

1 (ii) measured by a streamgage or any
2 other effective means implemented by the
3 Secretary.

4 (5) FEDERAL SHARE.—The Federal share of
5 the national streamgaging network established pur-
6 suant to this subsection shall be 100 percent of the
7 cost of carrying out the national streamgaging net-
8 work.

9 (6) AUTHORIZATION OF APPROPRIATIONS.—

10 (A) IN GENERAL.—Except as provided in
11 subparagraph (B), there are authorized to be
12 appropriated such sums as are necessary to
13 carry out this subsection for the period of fiscal
14 years 2008 through 2022, to remain available
15 until expended.

16 (B) ACHIEVEMENT OF MEASUREMENT
17 GOAL.—There is authorized to be appropriated
18 to carry out paragraph (4) \$7,500,000 for each
19 of fiscal years 2008 through 2018, to remain
20 available until expended.

21 (b) NATIONAL GROUNDWATER RESOURCES MONI-
22 TORING.—

23 (1) IN GENERAL.—The Secretary shall develop
24 a systematic groundwater monitoring program for

1 each major aquifer system located in the United
2 States.

3 (2) PROGRAM ELEMENTS.—In developing the
4 monitoring program described in paragraph (1), the
5 Secretary shall—

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

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

14 (i) assess the current scope of ground-
15 water monitoring based on the access
16 availability and capability of each moni-
17 toring well in existence as of the date of
18 enactment of this Act; and

19 (ii) develop and carry out a moni-
20 toring plan that maximizes coverage for
21 each major aquifer system that is located
22 in the United States; and

23 (C) prior to initiating any specific moni-
24 toring activities within a State after the date of
25 enactment of this Act, consult and coordinate

1 with the applicable State water resource agency
2 with jurisdiction over the aquifer that is the
3 subject of the monitoring activities, and comply
4 with all applicable laws (including regulations)
5 of the State.

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

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

12 (B) by expanding the network of moni-
13 toring wells to reach each climate division, sup-
14 port the groundwater climate response network
15 to improve the understanding of the effects of
16 global climate change on groundwater recharge
17 and availability; and

18 (C) support the objectives of the assess-
19 ment program.

20 (4) IMPROVED METHODOLOGIES.—The Sec-
21 retary shall—

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

24 (B) investigate, develop, and implement
25 new methodologies and technologies to estimate

1 or measure groundwater recharge, discharge,
2 and storage in a more cost-efficient manner.

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

7 (6) PRIORITY.—In selecting monitoring activi-
8 ties consistent with the monitoring program de-
9 scribed in paragraph (1), the Secretary shall give
10 priority to those activities for which a State or local
11 governmental entity agrees to provide for a substan-
12 tial share of the cost of establishing or operating a
13 monitoring well or other measuring device to carry
14 out a monitoring activity.

15 (7) AUTHORIZATION OF APPROPRIATIONS.—
16 There are authorized to be appropriated such sums
17 as are necessary to carry out this subsection for the
18 period of fiscal years 2008 through 2022, to remain
19 available until expended.

20 (c) BRACKISH GROUNDWATER ASSESSMENT.—

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

1 (A) to identify significant brackish ground-
2 water resources located in the United States;
3 and

4 (B) to consolidate any available data relat-
5 ing to each groundwater resource identified
6 under subparagraph (A).

7 (2) REPORT.—Not later than 2 years after the
8 date of enactment of this Act, the Secretary shall
9 submit to the appropriate committees of Congress a
10 report that includes—

11 (A) a description of each—

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

17 (ii) data gap that is required to be ad-
18 dressed to fully characterize each brackish
19 aquifer described in clause (i); and

20 (iii) current use of brackish ground-
21 water that is supplied by each brackish aq-
22 uifer described in clause (i); and

23 (B) a summary of the information avail-
24 able as of the date of enactment of this Act
25 with respect to each brackish aquifer described

1 in subparagraph (A)(i) (including the known
2 level of total dissolved solids in each brackish
3 aquifer).

4 (3) AUTHORIZATION OF APPROPRIATIONS.—

5 There is authorized to be appropriated to carry out
6 this subsection \$3,000,000 for the period of fiscal
7 years 2008 through 2009, to remain available until
8 expended.

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

11 (1) AUTHORITY OF SECRETARY.—The Sec-
12 retary may provide grants to appropriate entities
13 with expertise in water resource data acquisition and
14 reporting—

15 (A) to investigate, develop, and implement
16 new methodologies and technologies to estimate
17 or measure water resources data in a cost-effi-
18 cient manner; and

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

21 (2) PRIORITY.—In providing grants to appro-
22 priate entities under paragraph (1), the Secretary
23 shall give priority to appropriate entities that pro-
24 pose the development of new methods and tech-
25 nologies for—

1 (A) predicting and measuring streamflows;

2 (B) estimating changes in the storage of
3 groundwater;

4 (C) improving data standards and methods
5 of analysis (including the validation of data en-
6 tered into geographic information system data-
7 bases);

8 (D) measuring precipitation and potential
9 evapotranspiration;

10 (E) developing descriptive and predictive
11 models that take into account groundwater and
12 surface water; and

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

15 (3) COST SHARING.—

16 (A) FEDERAL SHARE.—The Federal share
17 of the cost of the development of any new meth-
18 od or technology that is the subject of a grant
19 under this subsection shall not exceed the lesser
20 of—

21 (i) 50 percent of the cost of the devel-
22 opment of the new method or technology;

23 or

24 (ii) \$500,000.

1 (B) NON-FEDERAL SHARE.—The non-Fed-
2 eral share of the cost of the development of any
3 new method or technology that is the subject of
4 a grant under this subsection may be provided
5 in the form of any in-kind services that sub-
6 stantially contribute toward the development of
7 any new method or technology, as determined
8 by the Secretary.

9 (C) OTHER FEDERAL ASSISTANCE.—As-
10 sistance under this subsection may be in addi-
11 tion to assistance provided by the Federal Gov-
12 ernment pursuant to other provisions of law.

13 (4) AUTHORIZATION OF APPROPRIATIONS.—

14 There is authorized to be appropriated to carry out
15 this subsection \$5,000,000 for each of fiscal years
16 2008 through 2018.

17 **SEC. 9. WATER USE AND AVAILABILITY ASSESSMENT PRO-**
18 **GRAM.**

19 (a) ESTABLISHMENT.—The Secretary, in coordina-
20 tion with the Advisory Committee and State and local
21 water resource agencies, shall establish an assessment pro-
22 gram to be known as the “water availability and use as-
23 sessment program”—

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

4 (2) to assist in the determination of the quan-
5 tity of water that is available for beneficial uses;

6 (3) to identify long-term trends in water avail-
7 ability;

8 (4) to use each long-term trend described in
9 paragraph (3) to provide a more accurate assess-
10 ment of the change in the availability of water in the
11 United States; and

12 (5) to develop the basis for an improved ability
13 to forecast the availability of water for future eco-
14 nomic, energy production, and environmental uses.

15 (b) PROGRAM ELEMENTS.—

16 (1) WATER USE.—In carrying out the assess-
17 ment program, the Secretary shall conduct any ap-
18 propriate activity to carry out an ongoing assess-
19 ment of water use in hydrologic accounting units
20 and major aquifer systems located in the United
21 States, including—

22 (A) the maintenance of a comprehensive
23 national water use inventory to enhance the
24 level of understanding with respect to the ef-
25 fects of spatial and temporal patterns of water

1 use on the availability and sustainable use of
2 water resources;

3 (B) the incorporation of water use science
4 principles, with an emphasis on applied re-
5 search and statistical estimation techniques in
6 the assessment of water use;

7 (C) the integration of any dataset main-
8 tained by any other Federal or State agency
9 into the dataset maintained by the Secretary;
10 and

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

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

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

23 (i) surface water indicators, such as
24 streamflow and surface water storage

- 1 measures (including lakes, reservoirs, pe-
2 rennial snowfields, and glaciers);
- 3 (ii) groundwater indicators, including
4 groundwater level measurements and
5 changes in groundwater levels due to—
- 6 (I) natural recharge;
7 (II) withdrawals;
8 (III) saltwater intrusion;
9 (IV) mine dewatering;
10 (V) land drainage;
11 (VI) artificial recharge; and
12 (VII) other relevant factors, as
13 determined by the Secretary; and
- 14 (iii) impaired surface water and
15 groundwater supplies that are known, ac-
16 cessible, and used to meet ongoing water
17 demands; and
- 18 (B) maintaining a national database of
19 water availability data that—
- 20 (i) is comprised of maps, reports, and
21 other forms of interpreted data;
- 22 (ii) provides electronic access to the
23 archived data of the national database; and
- 24 (iii) provides for real-time data collec-
25 tion.

1 (c) GRANT PROGRAM.—

2 (1) AUTHORITY OF SECRETARY.—The Sec-
3 retary may provide grants to State water resource
4 agencies to assist State water resource agencies in—

5 (A) developing water use and availability
6 datasets that are integrated with each appro-
7 priate dataset developed or maintained by the
8 Secretary; or

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

13 (2) CRITERIA.—To be eligible to receive a grant
14 under paragraph (1), a State water resource agency
15 shall demonstrate to the Secretary that the water
16 use and availability dataset proposed to be estab-
17 lished or integrated by the State water resource
18 agency—

19 (A) is in compliance with each quality and
20 conformity standard established by the Sec-
21 retary to ensure that the data will be capable
22 of integration with any national dataset; and

23 (B) will enhance the ability of the officials
24 of the State of the State water resource agency
25 to carry out each water management and regu-

1 latory responsibility of the officials of the State
2 in accordance with each applicable the law of
3 the State.

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

8 (d) REPORT.—Not later than January 1, 2010, and
9 every 5 years thereafter, the Secretary shall submit to the
10 appropriate committees of Congress a report that provides
11 a detailed assessment of—

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

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

16 (B) surface water storage;

17 (C) groundwater reserves; and

18 (D) estimates of undeveloped potential re-
19 sources (including saline water and waste-
20 water);

21 (2) significant trends affecting water avail-
22 ability, including each documented or projected im-
23 pact to the availability of water as a result of global
24 climate change;

1 (3) the withdrawal and use of surface water
2 and groundwater by various sectors, including—

3 (A) the agricultural sector;

4 (B) municipalities;

5 (C) the industrial sector;

6 (D) thermoelectric power generators; and

7 (E) hydroelectric power generators;

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

11 (5) significant water use conflicts or shortages
12 that have occurred, or are likely to occur; and

13 (6) each factor that has caused, or will likely
14 cause, a conflict or shortage described in paragraph
15 (5).

16 (e) AUTHORIZATION OF APPROPRIATIONS.—

17 (1) IN GENERAL.—There is authorized to be
18 appropriated to carry out subsections (a), (b), and
19 (d) \$20,000,000 for each of fiscal years 2008
20 through 2022, to remain available until expended.

21 (2) GRANT PROGRAM.—There is authorized to
22 be appropriated to carry out subsection (c)
23 \$12,500,000 for the period of fiscal years 2008
24 through 2012, to remain available until expended.

1 **SEC. 10. EFFECT.**

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

5 (b) EFFECT ON STATE WATER LAW.—

6 (1) IN GENERAL.—Nothing in this Act pre-
7 empts or affects any—

8 (A) State water law; or

9 (B) interstate compact governing water.

10 (2) COMPLIANCE REQUIRED.—The Secretary
11 shall comply with applicable State water laws in car-
12 rying out this Act.

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