

Calendar No. 979110TH CONGRESS
2^D 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, Mr. JOHNSON, Mr. SALAZAR, and Mr. TESTER) introduced the following bill; which was read twice and referred to the Committee on Energy and Natural Resources

SEPTEMBER 16, 2008

Reported by Mr. BINGAMAN, with an amendment

[Strike out all after the enacting clause and insert the part printed in *italic*]

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,*

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

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

8 (b) **TABLE OF CONTENTS.**—The table of contents of
 9 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.

10 **SEC. 2. FINDINGS.**

11 Congress finds that—

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

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

20 (A) increasing populations;

1 (~~B~~) economic growth;

2 (~~C~~) irrigated agriculture;

3 (~~D~~) energy production; and

4 (~~E~~) the protection of aquatic ecosystems;

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

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

18 (~~A~~) nationwide data collection and moni-
19 toring activities;

20 (~~B~~) relevant research; and

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

23 (5) Federal agencies that conduct water man-
24 agement and related activities have a responsi-
25 bility—

1 (A) to take a lead role in assessing risks
2 to the water resources of the United States (in-
3 cluding risks posed by global climate change);
4 and

5 (B) to develop strategies—

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

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

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

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

17 (B) to provide basic information nec-
18 essary—

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

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

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

1 (A) to the understanding of the impacts of
2 human activity on water and ecological re-
3 sources; and

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

8 **SEC. 3. DEFINITIONS.**

9 In this Act:

10 (1) ADMINISTRATOR.—The term “Adminis-
11 trator” means the Administrator of the National
12 Oceanic and Atmospheric Administration.

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

16 (A) under the Office of Management and
17 Budget Circular 92-01; and

18 (B) to coordinate water data collection ac-
19 tivities.

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

24 (4) CLIMATE DIVISION.—The term “climate di-
25 vision” means 1 of the 359 divisions in the United

1 States that represents 2 or more regions located
 2 within a State that are as climatically homogeneous
 3 as possible, as determined by the Administrator.

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

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

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

12 (8) FEDERAL POWER MARKETING ADMINISTRA-
 13 TION.—The term “Federal Power Marketing Admin-
 14 istration” means—

15 (A) the Bonneville Power Administration;

16 (B) the Southeastern Power Administra-
 17 tion;

18 (C) the Southwestern Power Administra-
 19 tion; and

20 (D) the Western Area Power Administra-
 21 tion.

22 (9) HYDROLOGIC ACCOUNTING UNIT.—The
 23 term “hydrologic accounting unit” means 1 of the
 24 352 river basin hydrologic accounting units used by
 25 the United States Geological Survey.

1 (10) INDIAN TRIBE.—The term “Indian tribe”
 2 has the meaning given the term in section 4 of the
 3 Indian Self-Determination and Education Assistance
 4 Act (25 U.S.C. 450b).

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

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

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

13 (12) MAJOR RECLAMATION RIVER BASIN.—

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

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

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

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

24 (i) the Colorado River;

25 (ii) the Columbia River;

- 1 (iii) the Klamath River;
 2 (iv) the Missouri River;
 3 (v) the Rio Grande;
 4 (vi) the Sacramento River;
 5 (vii) the San Joaquin River; and
 6 (viii) the Truckee River.

7 (13) ~~NON-FEDERAL PARTICIPANT.~~—The term
 8 “non-Federal participant” means—

- 9 (A) a State, regional, or local authority;
 10 (B) an Indian tribe or tribal organization;

11 or

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

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

19 (15) ~~PROGRAM.~~—The term “program” means
 20 the regional integrated sciences and assessments
 21 program—

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

1 (16) SECRETARY.—

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

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

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

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

13 (17) SERVICE AREA.—The term “service area”
14 means any area that encompasses a watershed that
15 contains a federally authorized reclamation project
16 that is located in any State or area described in the
17 first section of the Act of June 17, 1902 (43 U.S.C.
18 391).

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

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

22 (1) to assess each effect of, and risk resulting
23 from, global climate change with respect to the
24 quantity of water resources located in a service area;
25 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 ministrators, 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 (e) 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 streamgauge 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 ac-
22 quifer 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 ~~pect 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 ~~(c)~~ 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 ear-
12 rying out this Act.

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

14 (a) **SHORT TITLE.**—*This Act may be cited as the*
15 *“Science and Engineering to Comprehensively Understand*
16 *and Responsibly Enhance Water Act” or the “SECURE*
17 *Water Act”.*

18 (b) **TABLE OF CONTENTS.**—*The table of contents of this*
19 *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. National water availability and use assessment program.

Sec. 10. Research agreement authority.

Sec. 11. Effect.

1 **SEC. 2. FINDINGS.**

2 *Congress finds that—*

3 *(1) adequate and safe supplies of water are fun-*
4 *damental to the health, economy, security, and ecol-*
5 *ogy of the United States;*

6 *(2) systematic data-gathering with respect to,*
7 *and research and development of, the water resources*
8 *of the United States will help ensure the continued ex-*
9 *istence of sufficient quantities of water to support—*

10 *(A) increasing populations;*

11 *(B) economic growth;*

12 *(C) irrigated agriculture;*

13 *(D) energy production; and*

14 *(E) the protection of aquatic ecosystems;*

15 *(3) global climate change poses a significant*
16 *challenge to the protection and use of the water re-*
17 *sources of the United States due to an increased un-*
18 *certainty with respect to the timing, form, and geo-*
19 *graphical distribution of precipitation, which may*
20 *have a substantial effect on the supplies of water for*
21 *agricultural, hydroelectric power, industrial, domestic*
22 *supply, and environmental needs;*

23 *(4) although States bear the primary responsi-*
24 *bility and authority for managing the water resources*
25 *of the United States, the Federal Government should*

1 *support the States, as well as regional, local, and*
2 *tribal governments, by carrying out—*

3 *(A) nationwide data collection and moni-*
4 *toring activities;*

5 *(B) relevant research; and*

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

8 *(5) Federal agencies that conduct water manage-*
9 *ment and related activities have a responsibility—*

10 *(A) to take a lead role in assessing risks to*
11 *the water resources of the United States (includ-*
12 *ing risks posed by global climate change); and*

13 *(B) to develop strategies—*

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

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

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

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

1 (B) to provide basic information nec-
2 essary—

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

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

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

8 (A) to the understanding of the impacts of
9 human activity on water and ecological re-
10 sources; and

11 (B) to the assessment of whether available
12 surface and groundwater supplies will be avail-
13 able to meet the future needs of the United
14 States.

15 **SEC. 3. DEFINITIONS.**

16 *In this Act:*

17 (1) *ADMINISTRATOR.*—The term “Adminis-
18 trator” means the Administrator of the National Oce-
19 anic and Atmospheric Administration.

20 (2) *ADVISORY COMMITTEE.*—The term “Advisory
21 Committee” means the National Advisory Committee
22 on Water Information established—

23 (A) under the Office of Management and
24 Budget Circular 92-01; and

1 (B) to coordinate water data collection ac-
2 tivities.

3 (3) *ASSESSMENT PROGRAM.*—The term “assess-
4 ment program” means the water availability and use
5 assessment program established by the Secretary
6 under section 9(a).

7 (4) *CLIMATE DIVISION.*—The term “climate divi-
8 sion” means 1 of the 359 divisions in the United
9 States that represents 2 or more regions located with-
10 in a State that are as climatically homogeneous as
11 possible, as determined by the Administrator.

12 (5) *COMMISSIONER.*—The term “Commissioner”
13 means the Commissioner of Reclamation.

14 (6) *DIRECTOR.*—The term “Director” means the
15 Director of the United States Geological Survey.

16 (7) *ELIGIBLE APPLICANT.*—The term “eligible
17 applicant” means any State, Indian tribe, irrigation
18 district, water district, or other organization with
19 water or power delivery authority.

20 (8) *FEDERAL POWER MARKETING ADMINISTRA-*
21 *TION.*—The term “Federal Power Marketing Adminis-22 tration” means—

23 (A) the Bonneville Power Administration;

24 (B) the Southeastern Power Administration;

1 (C) *the Southwestern Power Administra-*
2 *tion; and*

3 (D) *the Western Area Power Administra-*
4 *tion.*

5 (9) *HYDROLOGIC ACCOUNTING UNIT.*—*The term*
6 *“hydrologic accounting unit” means 1 of the 352*
7 *river basin hydrologic accounting units used by the*
8 *United States Geological Survey.*

9 (10) *INDIAN TRIBE.*—*The term “Indian tribe”*
10 *has the meaning given the term in section 4 of the In-*
11 *Indian Self-Determination and Education Assistance*
12 *Act (25 U.S.C. 450b).*

13 (11) *MAJOR AQUIFER SYSTEM.*—*The term*
14 *“major aquifer system” means a groundwater system*
15 *that is—*

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

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

21 (12) *MAJOR RECLAMATION RIVER BASIN.*—

22 (A) *IN GENERAL.*—*The term “major rec-*
23 *lamation river basin” means each major river*
24 *system (including tributaries)—*

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

3 (ii) at which is located a federally au-
4 thorized project of the Bureau of Reclama-
5 tion.

6 (B) *INCLUSIONS*.—The term “major rec-
7 lamation river basin” includes—

8 (i) the Colorado River;

9 (ii) the Columbia River;

10 (iii) the Klamath River;

11 (iv) the Missouri River;

12 (v) the Rio Grande;

13 (vi) the Sacramento River;

14 (vii) the San Joaquin River; and

15 (viii) the Truckee River.

16 (13) *NON-FEDERAL PARTICIPANT*.—The term
17 “non-Federal participant” means—

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

19 (B) an Indian tribe or tribal organization;

20 or

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

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

4 (15) *PROGRAM.*—*The term “program” means the*
5 *regional integrated sciences and assessments pro-*
6 *gram—*

7 (A) *established by the Administrator; and*

8 (B) *that is comprised of 8 regional pro-*
9 *grams that use advances in integrated climate*
10 *sciences to assist decisionmaking processes.*

11 (16) *SECRETARY.*—

12 (A) *IN GENERAL.*—*Except as provided in*
13 *subparagraph (B), the term “Secretary” means*
14 *the Secretary of the Interior.*

15 (B) *EXCEPTIONS.*—*The term “Secretary”*
16 *means—*

17 (i) *in the case of sections 4, 5, and 10,*
18 *the Secretary of the Interior (acting through*
19 *the Commissioner); and*

20 (ii) *in the case of sections 8 and 9, the*
21 *Secretary of the Interior (acting through the*
22 *Director).*

23 (17) *SERVICE AREA.*—*The term “service area”*
24 *means any area that encompasses a watershed that*
25 *contains a federally authorized reclamation project*

1 *that is located in any State or area described in the*
2 *first section of the Act of June 17, 1902 (43 U.S.C.*
3 *391).*

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

5 *(a) IN GENERAL.—The Secretary shall establish a cli-*
6 *mate change adaptation program—*

7 *(1) to assess each effect of, and risk resulting*
8 *from, global climate change with respect to the quan-*
9 *tity of water resources located in a service area; and*

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

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

17 *(1) consult with the United States Geological*
18 *Survey, the National Oceanic and Atmospheric Ad-*
19 *ministration, the program, and each appropriate*
20 *State water resource agency, to ensure that the Sec-*
21 *retary has access to the best available scientific infor-*
22 *mation with respect to presently observed and pro-*
23 *jected future impacts of global climate change on*
24 *water resources;*

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

4 (A) *a change in snowpack;*

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

7 (C) *changes in groundwater recharge and*
8 *discharge; and*

9 (D) *any increase in—*

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

12 (ii) *the rate of reservoir evaporation;*

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

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

18 (B) *hydroelectric power generation facili-*
19 *ties;*

20 (C) *recreation at reclamation facilities;*

21 (D) *fish and wildlife habitat;*

22 (E) *applicable species listed as an endan-*
23 *gered, threatened, or candidate species under the*
24 *Endangered Species Act of 1973 (16 U.S.C. 1531*
25 *et seq.);*

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

3 (G) flow and water dependent ecological re-
4 siliency; and

5 (H) flood control management;

6 (4) in consultation with appropriate non-Federal
7 participants, consider and develop appropriate strate-
8 gies to mitigate each impact of water supply changes
9 analyzed by the Secretary under paragraph (3), in-
10 cluding strategies relating to—

11 (A) the modification of any reservoir stor-
12 age or operating guideline in existence as of the
13 date of enactment of this Act;

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

16 (C) water conservation;

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

19 (E) groundwater and surface water storage
20 needs; and

21 (5) in consultation with the Director, the Ad-
22 ministrators, the Secretary of Agriculture (acting
23 through the Chief of the Natural Resources Conserva-
24 tion Service), and applicable State water resource

1 *agencies, develop a monitoring plan to acquire and*
2 *maintain water resources data—*

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

5 *(B) to assist in each assessment and anal-*
6 *ysis conducted by the Secretary under para-*
7 *graphs (2) and (3).*

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

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

16 *(2) the impact of global climate change with re-*
17 *spect to the operations of the Secretary in each major*
18 *reclamation river basin;*

19 *(3) each mitigation and adaptation strategy con-*
20 *sidered and implemented by the Secretary to address*
21 *each effect of global climate change described in para-*
22 *graph (1);*

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

25 *(A) the Director;*

1 (B) *the Administrator;*

2 (C) *the Secretary of Agriculture (acting*
3 *through the Chief of the Natural Resources Con-*
4 *servaion Service); or*

5 (D) *any appropriate State water resource*
6 *agency; and*

7 (5) *the implementation by the Secretary of the*
8 *monitoring plan developed under subsection (b)(5).*

9 (d) *FEASIBILITY STUDIES.—*

10 (1) *AUTHORITY OF SECRETARY.—The Secretary,*
11 *in cooperation with any non-Federal participant,*
12 *may conduct 1 or more studies to determine the feasi-*
13 *bility and impact on ecological resiliency of imple-*
14 *menting each mitigation and adaptation strategy de-*
15 *scribed in subsection (c)(3), including the construc-*
16 *tion of any water supply, water management, envi-*
17 *ronmental, or habitat enhancement water infrastruc-*
18 *ture that the Secretary determines to be necessary to*
19 *address the effects of global climate change on water*
20 *resources located in each major reclamation river*
21 *basin.*

22 (2) *COST SHARING.—*

23 (A) *FEDERAL SHARE.—*

24 (i) *IN GENERAL.—Except as provided*
25 *in clause (ii), the Federal share of the cost*

1 of a study described in paragraph (1) shall
2 not exceed 50 percent of the cost of the
3 study.

4 (ii) *EXCEPTION RELATING TO FINAN-*
5 *CIAL HARDSHIP.*—*The Secretary may in-*
6 *crease the Federal share of the cost of a*
7 *study described in paragraph (1) to exceed*
8 *50 percent of the cost of the study if the Sec-*
9 *retary determines that, due to a financial*
10 *hardship, the non-Federal participant of the*
11 *study is unable to contribute an amount*
12 *equal to 50 percent of the cost of the study.*

13 (B) *NON-FEDERAL SHARE.*—*The non-Fed-*
14 *eral share of the cost of a study described in*
15 *paragraph (1) may be provided in the form of*
16 *any in-kind services that substantially contribute*
17 *toward the completion of the study, as deter-*
18 *mined by the Secretary.*

19 (e) *NO EFFECT ON EXISTING AUTHORITY.*—*Nothing*
20 *in this section amends or otherwise affects any existing au-*
21 *thority under reclamation laws that govern the operation*
22 *of any Federal reclamation project.*

23 (f) *AUTHORIZATION OF APPROPRIATIONS.*—*There are*
24 *authorized to be appropriated such sums as are necessary*

1 *to carry out this section for each of fiscal years 2009*
2 *through 2023, to remain available until expended.*

3 **SEC. 5. WATER MANAGEMENT IMPROVEMENT.**

4 *(a) AUTHORIZATION OF GRANTS AND COOPERATIVE*
5 *AGREEMENTS.—*

6 *(1) AUTHORITY OF SECRETARY.—The Secretary*
7 *may provide any grant to, or enter into an agreement*
8 *with, any eligible applicant to assist the eligible ap-*
9 *plicant in planning, designing, or constructing any*
10 *improvement—*

11 *(A) to conserve water;*

12 *(B) to increase water use efficiency;*

13 *(C) to facilitate water markets;*

14 *(D) to enhance water management, includ-*
15 *ing increasing the use of renewable energy in the*
16 *management and delivery of water;*

17 *(E) to accelerate the adoption and use of*
18 *advanced water treatment technologies to in-*
19 *crease water supply;*

20 *(F) to prevent the decline of species that the*
21 *United States Fish and Wildlife Service and Na-*
22 *tional Marine Fisheries Service have proposed*
23 *for listing under the Endangered Species Act of*
24 *1973 (16 U.S.C. 1531 et seq.) (or candidate spe-*
25 *cies that are being considered by those agencies*

1 *for such listing but are not yet the subject of a*
2 *proposed rule);*

3 *(G) to accelerate the recovery of threatened*
4 *species, endangered species, and designated crit-*
5 *ical habitats that are adversely affected by Fed-*
6 *eral reclamation projects or are subject to a re-*
7 *covery plan or conservation plan under the En-*
8 *dangered Species Act of 1973 (16 U.S.C. 1531 et*
9 *seq.) under which the Commissioner of Reclama-*
10 *tion has implementation responsibilities; or*

11 *(H) to carry out any other activity—*

12 *(i) to address any climate-related im-*
13 *port to the water supply of the United*
14 *States that increases ecological resiliency to*
15 *the impacts of climate change; or*

16 *(ii) to prevent any water-related crisis*
17 *or conflict at any watershed that has a*
18 *nexus to a Federal reclamation project lo-*
19 *cated in a service area.*

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

23 *(A) be located within the States and areas*
24 *referred to in the first section of the Act of June*
25 *17, 1902 (43 U.S.C. 391); and*

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

5 (3) *REQUIREMENTS OF GRANTS AND COOPERA-*
 6 *TIVE AGREEMENTS.—*

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

13 (B) *AGRICULTURAL OPERATIONS.—*In car-
 14 rying out paragraph (1), the Secretary shall not
 15 provide a grant, or enter into an agreement, for
 16 an improvement to conserve irrigation water un-
 17 less the eligible applicant agrees not—

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

21 (ii) to otherwise increase the consump-
 22 tive use of water in the operation of the eli-
 23 gible applicant, as determined pursuant to
 24 the law of the State in which the operation
 25 of the eligible applicant is located.

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

5 (D) *TITLE TO IMPROVEMENTS.*—If an in-
6 *frastructure improvement to a federally owned*
7 *facility is the subject of a grant or other agree-*
8 *ment entered into between the Secretary and an*
9 *eligible applicant under paragraph (1), the Fed-*
10 *eral Government shall continue to hold title to*
11 *the facility and improvements to the facility.*

12 (E) *COST SHARING.*—

13 (i) *FEDERAL SHARE.*—The Federal
14 *share of the cost of any infrastructure im-*
15 *provement or activity that is the subject of*
16 *a grant or other agreement entered into be-*
17 *tween the Secretary and an eligible appli-*
18 *cant under paragraph (1) shall not exceed*
19 *50 percent of the cost of the infrastructure*
20 *improvement or activity.*

21 (ii) *CALCULATION OF NON-FEDERAL*
22 *SHARE.*—In calculating the non-Federal
23 *share of the cost of an infrastructure im-*
24 *provement or activity proposed by an eligi-*
25 *ble applicant through an application sub-*

1 *mitted by the eligible applicant under para-*
2 *graph (2), the Secretary shall—*

3 *(I) consider the value of any in-*
4 *kind services that substantially con-*
5 *tributes toward the completion of the*
6 *improvement or activity, as deter-*
7 *mined by the Secretary; and*

8 *(II) not consider any other*
9 *amount that the eligible applicant re-*
10 *ceives from a Federal agency.*

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

15 *(iv) OPERATION AND MAINTENANCE*
16 *COSTS.—The non-Federal share of the cost*
17 *of operating and maintaining any infra-*
18 *structure improvement that is the subject of*
19 *a grant or other agreement entered into be-*
20 *tween the Secretary and an eligible appli-*
21 *cant under paragraph (1) shall be 100 per-*
22 *cent.*

23 *(F) LIABILITY.—*

24 *(i) IN GENERAL.—Except as provided*
25 *under chapter 171 of title 28, United States*

1 Code (commonly known as the “Federal
2 Tort Claims Act”), the United States shall
3 not be liable for monetary damages of any
4 kind for any injury arising out of an act,
5 omission, or occurrence that arises in rela-
6 tion to any facility created or improved
7 under this section, the title of which is not
8 held by the United States.

9 (ii) *TORT CLAIMS ACT.*—Nothing in
10 this section increases the liability of the
11 United States beyond that provided in
12 chapter 171 of title 28, United States Code
13 (commonly known as the “Federal Tort
14 Claims Act”).

15 (b) *RESEARCH AGREEMENTS.*—

16 (1) *AUTHORITY OF SECRETARY.*—The Secretary
17 may enter into 1 or more agreements with any uni-
18 versity, nonprofit research institution, or organiza-
19 tion with water or power delivery authority to fund
20 any research activity that is designed—

21 (A) to conserve water resources;

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

24 (C) to enhance the management of water re-
25 sources, including increasing the use of renew-

1 *able energy in the management and delivery of*
2 *water.*

3 (2) *TERMS AND CONDITIONS OF SECRETARY.—*

4 (A) *IN GENERAL.—An agreement entered*
5 *into between the Secretary and any university,*
6 *institution, or organization described in para-*
7 *graph (1) shall be subject to such terms and con-*
8 *ditions as the Secretary determines to be appro-*
9 *priate.*

10 (B) *AVAILABILITY.—The agreements under*
11 *this subsection shall be available to all Reclama-*
12 *tion projects and programs that may benefit*
13 *from project-specific or programmatic coopera-*
14 *tive research and development.*

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

19 (d) *RELATIONSHIP TO PROJECT-SPECIFIC AUTHOR-*
20 *ITY.—This section shall not supersede any existing project-*
21 *specific funding authority.*

22 (e) *AUTHORIZATION OF APPROPRIATIONS.—There is*
23 *authorized to be appropriated to carry out this section*
24 *\$200,000,000, to remain available until expended.*

1 **SEC. 6. HYDROELECTRIC POWER ASSESSMENT.**

2 (a) *DUTY OF SECRETARY OF ENERGY.*—*The Secretary*
3 *of Energy, in consultation with the Administrator of each*
4 *Federal Power Marketing Administration, shall assess each*
5 *effect of, and risk resulting from, global climate change with*
6 *respect to water supplies that are required for the genera-*
7 *tion of hydroelectric power at each Federal water project*
8 *that is applicable to a Federal Power Marketing Adminis-*
9 *tration.*

10 (b) *ACCESS TO APPROPRIATE DATA.*—

11 (1) *IN GENERAL.*—*In carrying out each assess-*
12 *ment under subsection (a), the Secretary of Energy*
13 *shall consult with the United States Geological Sur-*
14 *vey, the National Oceanic and Atmospheric Adminis-*
15 *tration, the program, and each appropriate State*
16 *water resource agency, to ensure that the Secretary of*
17 *Energy has access to the best available scientific in-*
18 *formation with respect to presently observed impacts*
19 *and projected future impacts of global climate change*
20 *on water supplies that are used to produce hydro-*
21 *electric power.*

22 (2) *ACCESS TO DATA FOR CERTAIN ASSESS-*
23 *MENTS.*—*In carrying out each assessment under sub-*
24 *section (a), with respect to the Bonneville Power Ad-*
25 *ministration and the Western Area Power Adminis-*
26 *tration, the Secretary of Energy shall consult with the*

1 *Commissioner to access data and other information*
2 *that—*

3 *(A) is collected by the Commissioner; and*

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

6 *(c) REPORT.—Not later than 2 years after the date of*
7 *enactment of this Act, and every 5 years thereafter, the Sec-*
8 *retary of Energy shall submit to the appropriate committees*
9 *of Congress a report that describes—*

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

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

14 *(B) power supplies marketed by each Fed-*
15 *eral Power Marketing Administration, pursuant*
16 *to—*

17 *(i) long-term power contracts;*

18 *(ii) contingent capacity contracts; and*

19 *(iii) short-term sales; and*

20 *(2) each recommendation of the Administrator of*
21 *each Federal Power Marketing Administration relat-*
22 *ing to any change in any operation or contracting*
23 *practice of each Federal Power Marketing Adminis-*
24 *tration to address each effect and risk described in*
25 *paragraph (1), including the use of purchased power*

1 *to meet long-term commitments of each Federal Power*
 2 *Marketing Administration.*

3 *(d) COSTS NONREIMBURSABLE.—Any costs incurred*
 4 *by the Secretary of Energy in carrying out this section shall*
 5 *be nonreimbursable.*

6 *(e) AUTHORIZATION OF APPROPRIATIONS.—There are*
 7 *authorized to be appropriated such sums as are necessary*
 8 *to carry out this section for each of fiscal years 2009*
 9 *through 2023, to remain available until expended.*

10 **SEC. 7. CLIMATE CHANGE AND WATER**
 11 **INTRAGOVERNMENTAL PANEL.**

12 *(a) ESTABLISHMENT.—The Secretary shall establish*
 13 *and lead a climate change and water intragovernmental*
 14 *panel—*

15 *(1) to review the current scientific understanding*
 16 *of each impact of global climate change on the quan-*
 17 *tity and quality of water resources of the United*
 18 *States; and*

19 *(2) to develop any strategy that the panel deter-*
 20 *mines to be necessary to improve observational capa-*
 21 *bilities, expand data acquisition, or take other ac-*
 22 *tions—*

23 *(A) to increase the reliability and accuracy*
 24 *of modeling and prediction systems to benefit*

1 *water managers at the Federal, State, and local*
2 *levels; and*

3 *(B) to increase the understanding of the im-*
4 *pacts of climate change on aquatic ecosystems.*

5 *(b) MEMBERSHIP.—The panel shall be comprised of—*

6 *(1) the Secretary;*

7 *(2) the Director;*

8 *(3) the Administrator;*

9 *(4) the Secretary of Agriculture (acting through*
10 *the Chief of the Natural Resources Conservation Serv-*
11 *ice);*

12 *(5) the Commissioner;*

13 *(6) the Chief of Engineers;*

14 *(7) the Administrator of the Environmental Pro-*
15 *tection Agency; and*

16 *(8) the Secretary of Energy.*

17 *(c) REVIEW ELEMENTS.—In conducting the review*
18 *and developing the strategy under subsection (a), the panel*
19 *shall consult with State water resource agencies, the Advi-*
20 *sory Committee, drinking water utilities, water research or-*
21 *ganizations, and relevant water user, environmental, and*
22 *other nongovernmental organizations—*

23 *(1) to assess the extent to which the conduct of*
24 *measures of streamflow, groundwater levels, soil mois-*
25 *ture, evapotranspiration rates, evaporation rates,*

1 *snowpack levels, precipitation amounts, flood risk,*
2 *and glacier mass is necessary to improve the under-*
3 *standing of the Federal Government and the States*
4 *with respect to each impact of global climate change*
5 *on water resources;*

6 *(2) to identify data gaps in current water moni-*
7 *toring networks that must be addressed to improve the*
8 *capability of the Federal Government and the States*
9 *to measure, analyze, and predict changes to the qual-*
10 *ity and quantity of water resources, including flood*
11 *risks, that are directly or indirectly affected by global*
12 *climate change;*

13 *(3) to establish data management and commu-*
14 *nication protocols and standards to increase the qual-*
15 *ity and efficiency by which each Federal agency ac-*
16 *quires and reports relevant data;*

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

20 *(A) relating to each nationally significant*
21 *watershed and aquifer located in the United*
22 *States; and*

23 *(B) that is collected by each Federal agency*
24 *and any other public or private entity for each*

1 *nationally significant watershed and aquifer lo-*
2 *cated in the United States;*

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

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

10 (B) *the advanced hydrologic prediction serv-*
11 *ice of the National Weather Service;*

12 (C) *the National Water Information System*
13 *of the United States Geological Survey; and*

14 (D) *the Hydrologic Information System of*
15 *the Consortium of Universities for the Advance-*
16 *ments of Hydrologic Sciences;*

17 (6) *to facilitate the development of hydrologic*
18 *and other models to integrate data that reflects*
19 *groundwater and surface water interactions;*

20 (7) *to apply the hydrologic and other models de-*
21 *veloped under paragraph (6) to water resource man-*
22 *agement problems identified by the panel, including*
23 *the need to maintain or improve ecological resiliency*
24 *at watershed and aquifer system scales; and*

1 (8) *to facilitate the development of mechanisms*
2 *to effectively combine global and regional climate*
3 *models with hydrologic and ecological models to*
4 *produce water resource information to assist water*
5 *managers at the Federal, State, and local levels in the*
6 *development of adaptation strategies that can be in-*
7 *corporated into long-term water management and*
8 *flood-hazard mitigation decisions.*

9 (d) *REPORT.*—*Not later than 2 years after the date*
10 *of enactment of this Act, the Secretary shall submit to the*
11 *appropriate committees of Congress a report that describes*
12 *the review conducted, and the strategy developed, by the*
13 *panel under subsection (a).*

14 (e) *DEMONSTRATION, RESEARCH, AND METHODOLOGY*
15 *DEVELOPMENT PROJECTS.*—

16 (1) *AUTHORITY OF SECRETARY.*—*The Secretary,*
17 *in consultation with the panel and the Advisory Com-*
18 *mittee, may provide grants to, or enter into any con-*
19 *tract, cooperative agreement, interagency agreement,*
20 *or other transaction with, an appropriate entity to*
21 *carry out any demonstration, research, or method-*
22 *ology development project that the Secretary deter-*
23 *mines to be necessary to assist in the implementation*
24 *of the strategy developed by the panel under sub-*
25 *section (a)(2).*

1 (2) *REQUIREMENTS.*—

2 (A) *MAXIMUM AMOUNT OF FEDERAL*
3 *SHARE.*—*The Federal share of the cost of any*
4 *demonstration, research, or methodology develop-*
5 *ment project that is the subject of any grant,*
6 *contract, cooperative agreement, interagency*
7 *agreement, or other transaction entered into be-*
8 *tween the Secretary and an appropriate entity*
9 *under paragraph (1) shall not exceed \$1,000,000.*

10 (B) *REPORT.*—*An appropriate entity that*
11 *receives funds from a grant, contract, cooperative*
12 *agreement, interagency agreement, or other*
13 *transaction entered into between the Secretary*
14 *and the appropriate entity under paragraph (1)*
15 *shall submit to the Secretary a report describing*
16 *the results of the demonstration, research, or*
17 *methodology development project conducted by*
18 *the appropriate entity.*

19 (f) *AUTHORIZATION OF APPROPRIATIONS.*—

20 (1) *IN GENERAL.*—*There is authorized to be ap-*
21 *propriated to carry out subsections (a) through (d)*
22 *\$2,000,000 for each of fiscal years 2009 through 2011,*
23 *to remain available until expended.*

24 (2) *DEMONSTRATION, RESEARCH, AND METHOD-*
25 *LOGY DEVELOPMENT PROJECTS.*—*There is author-*

1 *ized to be appropriated to carry out subsection (e)*
2 *\$10,000,000 for the period of fiscal years 2009*
3 *through 2013, to remain available until expended.*

4 **SEC. 8. WATER DATA ENHANCEMENT BY UNITED STATES**
5 **GEOLOGICAL SURVEY.**

6 (a) *NATIONAL STREAMFLOW INFORMATION PRO-*
7 *GRAM.—*

8 (1) *IN GENERAL.—The Secretary, in consultation*
9 *with the Advisory Committee and consistent with this*
10 *section, shall proceed with implementation of the na-*
11 *tional streamflow information program, as reviewed*
12 *by the National Research Council in 2004.*

13 (2) *REQUIREMENTS.—In conducting the na-*
14 *tional streamflow information program, the Secretary*
15 *shall—*

16 (A) *measure streamflow and related envi-*
17 *ronmental variables in nationally significant*
18 *watersheds—*

19 (i) *in a reliable and continuous man-*
20 *ner; and*

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

1 (B) provide for a better understanding of
2 hydrologic extremes (including floods and
3 droughts) through the conduct of intensive data
4 collection activities during and following hydro-
5 logic extremes;

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

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

10 (ii) the conduct of assessments to deter-
11 mine the extent to which each long-term
12 change monitored under clause (i) is related
13 to global climate change;

14 (D) integrate the national streamflow infor-
15 mation program with data collection activities of
16 Federal agencies and appropriate State water re-
17 source agencies (including the national drought
18 information system)—

19 (i) to enhance the comprehensive un-
20 derstanding of water availability;

21 (ii) to improve flood-hazard assess-
22 ments;

23 (iii) to identify any data gap with re-
24 spect to water resources; and

1 (iv) to improve hydrologic forecasting;

2 and

3 (E) incorporate principles of adaptive man-
4 agement in the conduct of periodic reviews of in-
5 formation collected under the national
6 streamflow information program to assess wheth-
7 er the objectives of the national streamflow infor-
8 mation program are being adequately addressed.

9 (3) *IMPROVED METHODOLOGIES.*—The Secretary
10 shall—

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

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

17 (4) *NETWORK ENHANCEMENT.*—

18 (A) *IN GENERAL.*—Not later than 10 years
19 after the date of enactment of this Act, in accord-
20 ance with subparagraph (B), the Secretary
21 shall—

22 (i) increase the number of streamgages
23 funded by the national streamflow informa-
24 tion program to a quantity of not less than
25 4,700 sites; and

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

4 (B) *REQUIREMENTS OF SITES.*—Each site
5 described in subparagraph (A) shall conform
6 with the National Streamflow Information Pro-
7 gram plan as reviewed by the National Research
8 Council.

9 (5) *FEDERAL SHARE.*—The Federal share of the
10 national streamgaging network established pursuant
11 to this subsection shall be 100 percent of the cost of
12 carrying out the national streamgaging network.

13 (6) *AUTHORIZATION OF APPROPRIATIONS.*—

14 (A) *IN GENERAL.*—Except as provided in
15 subparagraph (B), there are authorized to be ap-
16 propriated such sums as are necessary to operate
17 the national streamflow information program for
18 the period of fiscal years 2009 through 2023, to
19 remain available until expended.

20 (B) *NETWORK ENHANCEMENT FUNDING.*—
21 There is authorized to be appropriated to carry
22 out the network enhancements described in para-
23 graph (4) \$10,000,000 for each of fiscal years
24 2009 through 2019, to remain available until ex-
25 pended.

1 (b) *NATIONAL GROUNDWATER RESOURCES MONI-*
2 *TORING.*—

3 (1) *IN GENERAL.*—*The Secretary shall develop a*
4 *systematic groundwater monitoring program for each*
5 *major aquifer system located in the United States.*

6 (2) *PROGRAM ELEMENTS.*—*In developing the*
7 *monitoring program described in paragraph (1), the*
8 *Secretary shall—*

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

14 (B) *in coordination with the Advisory Com-*
15 *mittee and State and local water resource agen-*
16 *cies—*

17 (i) *assess the current scope of ground-*
18 *water monitoring based on the access avail-*
19 *ability and capability of each monitoring*
20 *well in existence as of the date of enactment*
21 *of this Act; and*

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

1 (C) prior to initiating any specific moni-
2 toring activities within a State after the date of
3 enactment of this Act, consult and coordinate
4 with the applicable State water resource agency
5 with jurisdiction over the aquifer that is the sub-
6 ject of the monitoring activities, and comply
7 with all applicable laws (including regulations)
8 of the State.

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

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

15 (B) by expanding the network of monitoring
16 wells to reach each climate division, support the
17 groundwater climate response network to im-
18 prove the understanding of the effects of global
19 climate change on groundwater recharge and
20 availability; and

21 (C) support the objectives of the assessment
22 program.

23 (4) *IMPROVED METHODOLOGIES.*—The Secretary
24 shall—

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

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

7 (5) *FEDERAL SHARE.—The Federal share of the*
8 *monitoring program described in paragraph (1) may*
9 *be 100 percent of the cost of carrying out the moni-*
10 *toring program.*

11 (6) *PRIORITY.—In selecting monitoring activi-*
12 *ties consistent with the monitoring program described*
13 *in paragraph (1), the Secretary shall give priority to*
14 *those activities for which a State or local govern-*
15 *mental entity agrees to provide for a substantial*
16 *share of the cost of establishing or operating a moni-*
17 *toring well or other measuring device to carry out a*
18 *monitoring activity.*

19 (7) *AUTHORIZATION OF APPROPRIATIONS.—*
20 *There are authorized to be appropriated such sums as*
21 *are necessary to carry out this subsection for the pe-*
22 *riod of fiscal years 2009 through 2023, to remain*
23 *available until expended.*

24 (c) *BRACKISH GROUNDWATER ASSESSMENT.—*

1 (1) *STUDY.*—*The Secretary, in consultation with*
2 *State and local water resource agencies, shall conduct*
3 *a study of available data and other relevant informa-*
4 *tion—*

5 (A) *to identify significant brackish ground-*
6 *water resources located in the United States; and*

7 (B) *to consolidate any available data relat-*
8 *ing to each groundwater resource identified*
9 *under subparagraph (A).*

10 (2) *REPORT.*—*Not later than 2 years after the*
11 *date of enactment of this Act, the Secretary shall sub-*
12 *mit to the appropriate committees of Congress a re-*
13 *port that includes—*

14 (A) *a description of each—*

15 (i) *significant brackish aquifer that is*
16 *located in the United States (including 1 or*
17 *more maps of each significant brackish aq-*
18 *uifer that is located in the United States);*

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

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

1 (B) a summary of the information available
2 as of the date of enactment of this Act with re-
3 spect to each brackish aquifer described in sub-
4 paragraph (A)(i) (including the known level of
5 total dissolved solids in each brackish aquifer).

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

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

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

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

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

1 (2) *PRIORITY.*—*In providing grants to appro-*
2 *priate entities under paragraph (1), the Secretary*
3 *shall give priority to appropriate entities that pro-*
4 *pose the development of new methods and technologies*
5 *for—*

6 (A) *predicting and measuring streamflows;*

7 (B) *estimating changes in the storage of*
8 *groundwater;*

9 (C) *improving data standards and methods*
10 *of analysis (including the validation of data en-*
11 *tered into geographic information system data-*
12 *bases);*

13 (D) *measuring precipitation and potential*
14 *evapotranspiration; and*

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

17 (3) *PARTNERSHIPS.*—*In recognition of the value*
18 *of collaboration to foster innovation and enhance re-*
19 *search and development efforts, the Secretary shall en-*
20 *courage partnerships, including public-private part-*
21 *nerships, between and among Federal agencies, aca-*
22 *demie institutions, and private entities to promote the*
23 *objectives described in paragraph (1).*

24 (4) *AUTHORIZATION OF APPROPRIATIONS.*—

25 *There is authorized to be appropriated to carry out*

1 *this subsection \$5,000,000 for each of fiscal years*
2 *2009 through 2019.*

3 **SEC. 9. NATIONAL WATER AVAILABILITY AND USE ASSESS-**
4 **MENT PROGRAM.**

5 *(a) ESTABLISHMENT.—The Secretary, in coordination*
6 *with the Advisory Committee and State and local water re-*
7 *source agencies, shall establish a national assessment pro-*
8 *gram to be known as the “national water availability and*
9 *use assessment program”—*

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

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

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

16 *(4) to identify long-term trends in water avail-*
17 *ability;*

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

22 *(6) to develop the basis for an improved ability*
23 *to forecast the availability of water for future eco-*
24 *nomie, energy production, and environmental uses.*

25 *(b) PROGRAM ELEMENTS.—*

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

6 (A) *the maintenance of a comprehensive na-*
7 *tional water use inventory to enhance the level of*
8 *understanding with respect to the effects of spa-*
9 *tial and temporal patterns of water use on the*
10 *availability and sustainable use of water re-*
11 *sources;*

12 (B) *the incorporation of water use science*
13 *principles, with an emphasis on applied research*
14 *and statistical estimation techniques in the as-*
15 *essment of water use;*

16 (C) *the integration of any dataset main-*
17 *tained by any other Federal or State agency into*
18 *the dataset maintained by the Secretary; and*

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

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

4 (A) *developing and evaluating nationally*
5 *consistent indicators that reflect each status and*
6 *trend relating to the availability of water re-*
7 *sources in the United States, including—*

8 (i) *surface water indicators, such as*
9 *streamflow and surface water storage meas-*
10 *ures (including lakes, reservoirs, perennial*
11 *snowfields, and glaciers);*

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

15 (I) *natural recharge;*

16 (II) *withdrawals;*

17 (III) *saltwater intrusion;*

18 (IV) *mine dewatering;*

19 (V) *land drainage;*

20 (VI) *artificial recharge; and*

21 (VII) *other relevant factors, as de-*
22 *termined by the Secretary; and*

23 (iii) *impaired surface water and*
24 *groundwater supplies that are known, acces-*

1 sible, and used to meet ongoing water de-
2 mands;

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

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

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

9 (iii) provides for real-time data collec-
10 tion; and

11 (C) developing and applying predictive
12 modeling tools that integrate groundwater, sur-
13 face water, and ecological systems.

14 (c) GRANT PROGRAM.—

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

18 (A) developing water use and availability
19 datasets that are integrated with each appro-
20 priate dataset developed or maintained by the
21 Secretary; or

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

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

6 (A) *is in compliance with each quality and*
7 *conformity standard established by the Secretary*
8 *to ensure that the data will be capable of inte-*
9 *gration with any national dataset; and*

10 (B) *will enhance the ability of the officials*
11 *of the State or the State water resource agency*
12 *to carry out each water management and regu-*
13 *latory responsibility of the officials of the State*
14 *in accordance with each applicable law of the*
15 *State.*

16 (3) *MAXIMUM AMOUNT.*—*The amount of a grant*
17 *provided to a State water resource agency under*
18 *paragraph (1) shall be an amount not more than*
19 *\$250,000.*

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

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

- 1 (A) historic trends and annual updates of
2 river basin inflows and outflows;
- 3 (B) surface water storage;
- 4 (C) groundwater reserves; and
- 5 (D) estimates of undeveloped potential re-
6 sources (including saline and brackish water and
7 wastewater);
- 8 (2) significant trends affecting water avail-
9 ability, including each documented or projected im-
10 pact to the availability of water as a result of global
11 climate change;
- 12 (3) the withdrawal and use of surface water and
13 groundwater by various sectors, including—
- 14 (A) the agricultural sector;
- 15 (B) municipalities;
- 16 (C) the industrial sector;
- 17 (D) thermoelectric power generators; and
- 18 (E) hydroelectric power generators;
- 19 (4) significant trends relating to each water use
20 sector, including significant changes in water use due
21 to the development of new energy supplies;
- 22 (5) significant water use conflicts or shortages
23 that have occurred or are occurring; and
- 24 (6) each factor that has caused, or is causing, a
25 conflict or shortage described in paragraph (5).

1 (e) *AUTHORIZATION OF APPROPRIATIONS.*—

2 (1) *IN GENERAL.*—*There is authorized to be ap-*
 3 *propriated to carry out subsections (a), (b), and (d)*
 4 *\$20,000,000 for each of fiscal years 2009 through*
 5 *2023, to remain available until expended.*

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

10 **SEC. 10. RESEARCH AGREEMENT AUTHORITY.**

11 *The Secretary may enter into contracts, grants, or co-*
 12 *operative agreements, for periods not to exceed 5 years, to*
 13 *carry out research within the Bureau of Reclamation.*

14 **SEC. 11. EFFECT.**

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

18 (b) *EFFECT ON STATE WATER LAW.*—

19 (1) *IN GENERAL.*—*Nothing in this Act preempts*
 20 *or affects any—*

21 (A) *State water law; or*

22 (B) *interstate compact governing water.*

23 (2) *COMPLIANCE REQUIRED.*—*The Secretary*
 24 *shall comply with applicable State water laws in car-*
 25 *rying out this Act.*

Calendar No. 979

110TH CONGRESS
2^D SESSION
S. 2156

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.

SEPTEMBER 16, 2008

Reported with an amendment