

## HISTORY OF THE VIRGINIA WATER RESOURCES RESEARCH CENTER

### **The Water Resources Research Act and the Establishment of the Virginia Water Resources Research Center**

The Virginia Water Resources Research Center was established under the Water Resources Research Act of 1964<sup>1</sup>, signed into law on July 17, 1964, by President Lyndon B. Johnson. The legislation can be traced to the formation of the Senate Select Committee on National Water Resources in the late 1950s<sup>2</sup>. Title I of the Act provided for the establishment of State Water Resources Research Institutes or Centers in each of the 50 states and Puerto Rico. The Act stipulated that these centers or institutes were to be located at the 1862 land grant institutions of each state unless otherwise designated by the state legislature. However, Congress' 1965 appropriation bill only provided funding for 14 centers and institutes, which were to be selected competitively. The chosen institutions already had ongoing water resources research programs, but Virginia was not among the original 14. Appropriated funds were available to match, dollar-for-dollar, with funds provided by states or other non-federal sources for specific water resources research projects and programs. Initially, the program was administered by the U.S. Department of the Interior, Office of Water Resources Research.

The Water Resources Research Act centers and institutes were intended to enlist the intellectual powers of universities in a nationwide effort to conserve and utilize our water resources “in order to assist in assuring the Nation at all times of a supply of water sufficient in quantity and quality to meet the requirements of its expanding population, [and] to stimulate, sponsor, provide for, and supplement present programs for the conduct of research, investigations, experiments, and the training of scientists in the fields of water and of resources which affect water.” The theme of training of scientists in water resources came from the Report of the Senate Select Committee on National Water Resources<sup>3</sup>, which recognized that there was “limited availability of competent research scientists” in water research, and that “additional steps may be necessary to see that our colleges and universities expand their training facilities, and get increasing numbers of competent people to select this field in order that the additional research can be carried out.”

After the 1964 federal legislation was passed, Dr. T. Marshall Hahn, Jr., the president of Virginia Polytechnic Institute (VPI; as it was named at this time) worked closely with the then governor, Albert S. Harrison, Jr. to have a water center located at VPI. On May 7, 1965, a Memorandum of Agreement was signed by the Director of the Office of Water Resources Research establishing a water center at VPI. In the formal application for the creation of the Virginia Water Resources Research Center, the purpose of the Center was to:

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<sup>1</sup> P.L. 88-379

<sup>2</sup> Burton, J. S. (1984). *History of the State Water Resources Research Institute Program* (Vol. 84, No. 736). US Geological Survey.

<sup>3</sup> Senate Select Committee on National Water Resources, United States Congress. 1961. *Report of the Select Committee on National Water Resources, Pursuant to S.Res.48, Eighty-sixth Congress: Together with Supplemental and Individual Views*. U.S. Government Printing Office.

- Coordinate, stimulate, and sponsor interdisciplinary activities at VPI and throughout the state,
- Coordinate and stimulate graduate education in water resource management whenever it can be beneficial,
- Provide a focal point and direction for research and educational activities in Virginia related to water resources, and
- Provide a formal contact with agencies, public and private, in and outside of Virginia to further the development of the water resources programs.

In May 1964, a Statewide Advisory Committee was formed to enable state and federal agencies, local governments, concerned citizens, and the industrial community concerned with water resources development in the Commonwealth to have direct communication with the Center. On August 13, 1964, President Hahn received official notification from Governor Harrison that the Water Center was officially recognized. In late 1964, an Administrative Committee was formed and made up of Dr. Warren Brandt, vice-president, Academic Affairs; Dr. Wilson Bell, Dean of Agriculture; and Dr. Willis Worcester, Dean of Engineering. This committee was to develop policy for the new center. Also, a Technical Advisory Committee was formed with representation from the various disciplines on campus that had an interest in water resources. William R. Walker was designated as secretary to both committees and was given administration responsibility for implementing the Center. Walker began at Virginia Tech in 1964 to fill in for a professor in civil engineering and had only planned on staying for nine months<sup>4</sup>. Because the Virginia Water Resources Research Center was not among the original 14, funding for the remaining centers (including Virginia) was not approved by Congress until May 7, 1965.

In September 1965, Walker was appointed Director of the Center. This was a half time position but there was consideration given to making it a full-time position in the beginning. This position and a full-time clerical assistant were paid from the allotment of program monies. On July 1, 1968, the Administrative Committee met and recommended the position of Director be a full-time position and that the director would report to the Dean of Research. Beginning in 1969, oversight of the Center was with the newly established Research Division at Virginia Tech. The Technical Advisory Committee continued to support the director for several years following the Center's establishment.

### **Changes to the Federal Program**

In 1974, the Office of Water Resources Research, part of the U.S. Department of the Interior, merged with the Office of Saline Water in 1974 and was renamed the Office of Water Research and Technology<sup>5</sup>. On October 17, 1978, President Jimmy Carter signed into law the Water Research and Development Act of 1978<sup>6</sup>, which was administered by the Office of Water Research and Technology. This law repealed the Water Resources Research Act of 1964 and its amendments. Under the new Act, the water resources institutes and centers program were

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<sup>4</sup> Reed, D. (1992, May 6). Water Researcher Retires, With Dream Unfulfilled. Richmond Times-Dispatch, pp. C-6.

<sup>5</sup> Records of the Office of Saline Water, 1955-72 [Electronic Record]; Record Group 380; National Archives at College Park, College Park, MD [retrieved from the Access to Archival Databases at [www.archives.gov](http://www.archives.gov), April 15, 2025].

<sup>6</sup> P.L. 95-467

changed to expand the scope of the institutes' function. Instead of focusing on research, the institutes were to look at water resources development and were designated as "research and technology institutes." The state water centers and institutes were to work with the Secretary of Interior to develop 5-year water resources research and development goals and objectives. State institutes and centers were to carry out a program of technology transfer and/or information dissemination for the "...purpose of transferring research and development results to other organizations for further development, demonstration, and practical applications." Cost sharing was implemented for the grant program. The Department of Interior implemented a research assessment and technology transfer program "...which transfer[ed] research and development results to other organizations and individuals for further development and practical application to water and water-related problems." The Water Research and Development Act extended certain authorities of the Secretary of Interior and the programs of the Office of Water Research and Technology until the end of fiscal year 1982. When the authorization ended in 1982, President Ronald Reagan did not reauthorize the program and the administration did not include funds in its budget. On August 25, 1982, the Acting Secretary of the Interior terminated the Office of Water Research and Technology and transferring the remaining functions of the Office to the Bureau of Reclamation, the U.S. Geological Survey (USGS), and the Office of Water Policy.

Following the termination of the Office of Water Research and Technology, Congress repealed the Water Research and Development Act. However, due to strong Congressional support, the Water Resources Research Act of 1984 was established on March 22<sup>nd</sup> over President Reagan's veto. The Secretary of the Interior delegated administration of the program to the USGS, expanding it to include the Commonwealth of Puerto Rico, the District of Columbia, the Virgin Islands, Guam, American Samoa, the Commonwealth of the Mariana Islands and the Trust Territory of the Pacific Islands. This expansion eventually led to a total 54 centers and institutes. The 1984 Act has been reauthorized and amended multiple times<sup>7</sup>.

Under the reauthorized and amended legislation, water centers and institutes coordinate applications and awards for the USGS National Competitive Grant program<sup>8</sup> and participate in the USGS Coordination Grant program<sup>9</sup>. This latter program allows other federal departments and agencies to leverage the expertise of the water research institutes and centers. These departments and agencies can provide funds to the USGS, which then passes them through to an institute or center established by the Water Resources Research Act to advance the science of hydrology or related disciplines<sup>10</sup>. The 1996 amendments also introduced a program to support USGS internships for qualified individuals at the undergraduate and graduate levels, aiming to fulfill the educational and training objectives of the Act in association with USGS Water Science Centers.

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<sup>7</sup> Pub. L. 98-242, title I, § 104, Mar. 22, 1984, 98 Stat. 98; Pub. L. 101-397, § 1(b)-(h), (m), Sept. 28, 1990, 104 Stat. 852, 853; Pub. L. 104-147, §§ 3-6, May 24, 1996, 110 Stat. 1376; Pub. L. 106-374, Oct. 27, 2000, 114 Stat. 1434; Pub. L. 109-471, § 2(a)-(e), Jan. 11, 2007, 120 Stat. 3552, 3553; Pub. L. 117-58, div. E, title II, § 50221, Nov. 15, 2021, 135 Stat. 1180

<sup>8</sup> Pub. L. 101-397, § 104(g)

<sup>9</sup> Pub. L. 104-147, § 104(h)

<sup>10</sup> Donohue, M.J., Greene, E.A., and Lerner, D.T., 2021, Water Resources Research Act Program—Current status, development opportunities, and priorities for 2020–30: U.S. Geological Survey Circular 1488, 27 p., <https://doi.org/10.3133/cir1488>.

A comprehensive listing of federal laws, provisions, and amendments related to the Water Resources Research Act is included in the appendix of this document.

### **Incorporation of the Virginia Water Resources Research Center in the Code of Virginia**

In early 1982, before President Reagan decided to not reauthorize the Water Research and Development Act of 1978, Delegate Glenn B. McClanan (D-Virginia Beach) filed a house bill to officially establish the Virginia Water Resources Research Center in the state under the control of Virginia Tech. This bill was eventually incorporated into the *Code of Virginia*<sup>11</sup> outlining the Center's functions, powers, duties, and structure. The code has been updated several times<sup>12</sup>. Former Director William R. Walker stated, "The decision to seek state status is in keeping with the Center's increased emphasis on trying to provide information on Virginia's high-priority water problems and recognizes the growing trend in Washington to turn over to the states the responsibility and authority to solve their own problems."

The *Code of Virginia* also provided provisions for a Statewide Advisory Board, replacing the Statewide Advisory Committee created by Virginia Tech and the Center in the 1960s. Representatives are appointed by the Governor, subject to confirmation by the General Assembly, and include balanced representation from industries, federal, state, and local agencies, water user groups, and concerned citizens. The Statewide Advisory Board recommends policy guidelines for implementing the functions of the Water Center, evaluates its programs, advises the executive director, and makes recommendations for carrying out the functions, powers and duties as expressed in the legislation. These functions, powers, and duties include:

- i. consult with the General Assembly, federal, state, and local agencies, nonprofit organizations, private industry, and other potential users of research,
- ii. establish and administer agreements with other public institutions of higher education and private institutions of higher education to carry out research projects,
- iii. disseminate new information and research results,
- iv. facilitate the application and transfer of new technologies to housing, and
- v. stimulate and perform research that deals with housing policy issues facing the General Assembly and aids the Commonwealth's housing and housing finance agencies.

### **College of Natural Resources and Environment**

A proposal to relocate the Center to the College of Natural Resources (now called the College of Natural Resources and Environment) originated in 2002 during Dean Gregory Brown's tenure. This followed Len Shabman's resignation as Director of the Center when he accepted a resident scholar position with Resources for the Future in Washington, D.C. Interim Director Tamim Younos initiated efforts to sustain and enhance the Center's programs amidst Virginia Tech's consolidation of smaller research centers. At the time, the Center was housed in Agnew Hall, where space was limited.

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<sup>11</sup> *Code of Virginia*, 1982, c. 379, § 23-135.7:8

<sup>12</sup> Acts of the General Assembly 1984, c. 734; 1985, c. 448; 2016, c. 588

The proposal aimed to transfer the Center’s administrative home from the Office of Vice President for Research and Interdisciplinary Programs to the College of Natural Resources to better support the Center’s state and federal mission. Additionally, the College of Natural Resources would provide space and initiate a search for the next Director. This administrative change required transferring the base budget and salary allocation to the College of Natural Resources, along with performance evaluation responsibilities.

The agreement was signed in September 2005 by Mike Kelly, Dean of the College of Natural Resources; Bradley Fenwick, Vice President for Research; and James Blair, Associate Vice President for Research. The Center would continue its mission in water resources research, education, and outreach across the university and the Commonwealth, with ongoing guidance from its Statewide Advisory Board.

### **Directors of the Virginia Water Resources Research Center**

William R. Walker	1965 to 1992
James E. Hackett, Acting Director	1970 to 1971
Diana L. Weigmann, Interim Director	1992 to 1995
Leonard A. Shabman	1995 to 2002
Tamim Younos, Interim Director	2002 to 2006
Stephen H. Schoenholtz	2006 to 2024
Kevin J. McGuire, Acting Director	2015
Kevin J. McGuire	2024 to present

### **Acknowledgements**

Much of the material for this history was gathered from the Water Center’s vast correspondence, reports, and files. In 2003, a Water Center staff member, Judy Poff, compiled the early history of the Center. Poff’s resources also included a report written by James S. Burton, 1984, “History of the State Water Resources Research Institute Program, U.S. Geological Survey, Reston, Virginia,” and a VWRRC Special Report, “A Comparison of the 1977 Water Policy Review and the 1978 Federal Water Policy Proposals,” by Warren Viessman, Jr.

— Kevin McGuire, Director  
May 2025

## Appendix: Federal Funds and Matching Changes

YEAR	Funds for Centers and Institutes – with required match ratio	Funds for Research by Centers and Institutes – with required match ratio	Funds for Research by Entities other than Centers and Institutes
1964	<p>Title I, Sec. 100</p> <p>\$75,000 per center – FY 65 \$87,500 per center – FYs 66-67 \$100,000 per center – thereafter through 10 years.</p> <p>Language is to “establish and carry on the work” of an “institute” in each state.</p> <p>No match identified.</p>	<p>Title I, Sec. 101 (a)</p> <p>\$1 million – FY 65 \$2 million – FY 66 \$3 million – FY 67 \$4 million – FY 68 \$5 million per year for succeeding five years.</p> <p>Language is for “necessary expenses of specific water resources research projects which could not otherwise be undertaken...”</p> <p>Match is 1:1 from states or other non-federal sources.</p>	<p>Title II, Sec. 200</p> <p>\$1 million per year for FYs 65 and subsequent nine year.</p> <p>Language is for the “Secretary of the Interior [to make] grants, contracts, matching or other arrangements with educational institutions (other than those establishing institutes under Title I of this Act), private foundates or other institutions, private firms and individuals, and ...local, State, and Federal government agencies to undertake research...”</p>
1978	<p>Title IV, Sec, 401 (a) (1)</p> <p>\$150,000 per center – FY 79 \$175,000 per center – FY 80</p> <p>Langugage is to carry out the program described in Title I, Sec. 101(a).</p> <p>Match is 1 dollar in non-federal funds to each 2 dollars of federal funds.</p> <p>Funds not to be used for indirect costs.</p> <p>Title IV, Sec. 403 – Additional money “to</p>	<p>Title I, Sec, 105 (a) gives authorization; Title IV, Sec. 401 (2) (b) gives authorized amounts.</p> <p>\$6 million - FY 79 \$8.5 million – FY 80.</p> <p>Match is 1:1 from non-federal funds.</p> <p>Language (in Title I, Sec. 105) is “Secretary is authorized to make grants to institutes to match...funds available...from non-federal sources to meet...expenses of...research projects which</p>	<p>Title I, Sec. 105 (b) gives authorization. Title IV, Sec. 401 (c) (2) gives authorized amounts.</p> <p>\$5.2 million – FY 79 \$8 million – FY 80.</p> <p>Match is 1:1 from non-federal funds.</p> <p>Language (in Title I, Sec. 105 [b]) is that the Secretary is authorized to make grants, contracts, etc., with the same list of entities identified in 1964, but not excluding centers/institutes (as 1964 did).</p>

<b>YEAR</b>	<b>Funds for Centers and Institutes – with required match ratio</b>	<b>Funds for Research by Centers and Institutes – with required match ratio</b>	<b>Funds for Research by Entities other than Centers and Institutes</b>
	<p>carry out sections of Titles I-IV...other than those for which specific authorizations are made.” \$4.464 million in FY 79. \$5.1 million in FY 80. (This appears to additional money to be used at Secretary’s discretion.).</p>	<p>the institute could not otherwise undertake,” including regional projects by two or more institutes.</p> <p>Title I, Sec. 101 (c) authorizes a program of technology transfer and information dissemination, made available on a competitive basis to projects proposed to the Secretary.</p> <p>Funds for this [from Title IV, Sec. 401 (a) (2)]: \$750,000 – FY 79 \$1.35 million – FY 80. Match is 1 dollar in non-federal funds to each 2 dollars of federal funds. Funds not to be used for indirect costs.</p>	
1984	<p>Title I, Sec. 104 (f) (1) Appropriation authorization for Sec 104.</p> <p>\$10 million per year for FYs 85-89.</p> <p>Match is 1:1 for FYs 85 and 86, 1.5 non-federal to 1 federal for FYs 87 and 88, and 2 non-federal to 1 federal for FY 89.</p>	<p>Title I, Sec. 105 c.</p> <p>\$20 million per year for FYs 85-89. This designated for centers/institutes plus other entities [see 105 (a) (1)]. Match is 1:1.</p> <p>Title I, Sec. 106 (a) (1) authorized program for grants by Secretary to various entities (not excluding centers/ institutes) for technology development. Values in Sec. 106 c 1. \$6 million per year for FYs 85-89. Secretary to identify matching</p>	No information found in this area.

YEAR	Funds for Centers and Institutes – with required match ratio	Funds for Research by Centers and Institutes – with required match ratio	Funds for Research by Entities other than Centers and Institutes
		requirements (Sec. 106 a 2). No more that 15 percent per year for administrative costs.	
1990	<p>Sec. 1 (g) – Extending authorization of Sec. 104 (f) (1) of 1984 Act. Same amount as 1984.</p> <p>\$10 million/year for FYs 89-95.</p> <p>No change to match.</p> <p>Funds only for direct expenditures (see note below under 1990 “Additionally Noteworthy Items”).</p>	<p>Sec. 1 (j) (1) amends Sec. 105 (c) of 1984. Funds for research by centers/institutes plus other entities.</p> <p>\$10 million/year for FYs 89-95.</p> <p>No change to match.</p> <p>Sec. m adds new Sec. 104 (g) to 1984 Act, for competitive grants for research by institutes on problems of a regional/interstate nature.</p> <p>\$5 million/year for FYs 91-95 for direct costs.</p> <p>Match is 1:1; awarded on competitive basis.</p> <p>Sec. n, amending Title I, Sec. 106 of 1984, authorizing program for grants by Secretary to various entities (not excluding centers/institutes) for <b>technology development</b>.</p> <p>\$6 million per year for FYs 90-95. (The 1984 Act authorized Secretary to identify matching requirements, and allowed no more that 15 percent per year for administrative costs; those provisions do</p>	<p>Sec. 2 authorized Secretary to enter into contracts or cooperative agreements with national laboratories to carry out water research, development, and demonstration projects.</p> <p>\$10 million/year for FYs 91-95.</p>



<b>YEAR</b>	<b>Funds for Centers and Institutes – with required match ratio</b>	<b>Funds for Research by Centers and Institutes – with required match ratio</b>	<b>Funds for Research by Entities other than Centers and Institutes</b>
		not appear to have been amended in 1990.)	
1996	<p>Section 4, amends Sec. 104 (f) (1) of 1984. \$5 million for FY 96 \$7 million for FYs 97 and 98. \$9 million for FYs 99 and 2000.</p> <p>Match is 2 non-federal to 1 federal.</p>	<p>Sec. 5 amends Sec. 104 (g) of 1990, regarding competitive grants for research by institutes on problems of a regional/interstate nature.</p> <p>\$3 million per year for FYs 96 through 2000.</p> <p>No change to match requirements.</p>	<p>Sec. 6 amends Sec. 104 of 1984 to include (h), Coordination. Authorized Secretary to encourage other federal departments and agencies to use the expertise of the water research institutes. Secretary can enter into contracts and agreements without needing to follow certain standard procedures, and can accept funds from other federal entities to support grants and contracts.</p> <p>Secretary can support internship programs for undergraduate and graduate students to help with the educational goals of the Act.</p>
2000	<p>Sec. 1 amends Sec. 104 (f) (1) of 1984. \$9 million for FY 01. \$10 million per year for FYs 02 and 03. \$12 million per year for FYs 04 and 05.</p> <p>No change to match.</p>	<p>Sec. 2 amends Sec. 104 (g) of 1990, regarding competitive grants for research by institutes on problems of a regional/interstate nature.</p> <p>\$3 million for FY 01. \$4 million per year for FYs 02 and 03. \$6 million per year for FYs 04 and 05.</p>	No provisions in this area.
2007	<p>Sec. 2 (c) amends Sec. 104 (f) (1) of 1984. \$12 million per year for FYs 07 through 11.</p>	<p>Sec. 2 (d) amends Sec. 104 (g) of 1990, regarding competitive grants for research by institutes on</p>	No provisions in this area.

<b>YEAR</b>	<b>Funds for Centers and Institutes – with required match ratio</b>	<b>Funds for Research by Centers and Institutes – with required match ratio</b>	<b>Funds for Research by Entities other than Centers and Institutes</b>
	Sec. 2 (f) amends Sec. 107 of 1984 to reduce indirect cost allowance from 15% to 7.5%.	problems of a regional/interstate nature.  \$6 million per year for FYs 07 through 11.	
2021	Amending Section 104 (f) (1) from 1984.  \$12 million per year for FYs 22 through 25.  Match is 1:1 – amendment to Section 104 (c) of 1984.	Amending Section 104 (g) (1) of 1990, regarding competitive grants for research by institutes on problems of a regional/interstate nature.  \$3 million per year for FYs 22-25.  Match is 1:1.	No provisions in this area.

## **Other Noteworthy Items or Changes, By Year**

### **1964**

Title I, Sec. 100 (b) identifies only a two-part mission: conduct research and provide for training of scientists. It also lists the allowable areas of research and calls for institutes to be mindful of state needs and other research projects being conducted by other agencies.

Title III, Sec. 304, calls for establishment of a water research “cataloging” center “in such agency and location as the President determines to be desirable....

### **1978**

Title I, Secs. 101 (b) (1 and 2) re-do the research charges first stated in 1964’s Title I, Sec. 100 (b), and adds “scientific information dissemination activities”; this seems to be the first statement of the three-part mission.

Title I, Sec. 101 (b) (3) describes required annual reports.

Title I, Sec. 101 (b) (4) calls for five-year goals and objectives.

Title I, Sec. 102 encourages institutes to plan and conduct research financed under this title “in cooperation with each other and with such other agencies and individuals...”

Title I, Sec. 103 (b) charges the Secretary to develop a five-year water resources research program.

Title II calls for a program of research and development for “saline and other impaired waters” (defined in Sec. 204). Funds were \$12 million for FY 79, \$14 million for FY 80 (funds authorized are in Title IV, Sec. 402).

Title III, Sec. 300 authorizes Secretary to conduct a “research assessment and technology transfer program which transfers research and development results to other organizations and individuals....” Allows Secretary to enter into agreements, including cost-sharing, with state and local governments and other public and private organizations and individuals for “transfer and application of research results....”

Title III, Sec. 301 authorizes Secretary to “maintain a national center for the acquisition, processing, and dissemination of information dealing with all areas of water resources research, technology development, and demonstration.” (This is separate from the “cataloguing center,” which is in Title III, Sec. 302.)

Title IV, Sec. 400 (b) lists several authorizations for the Secretary, including making grants and cooperating with other entities.

Title IV, Sec. 404 identifies grant application requirements; this was in Title I, Sec. 101 (b) in 1964.

## **1984**

Moves language around and has only Title I to cover 1978’s Title I and II.

Technology development support is in Sec. 106; was in Title I, Sec. 101 (c) in 1978.

Title I, Sec. 104 (a) adds the following to the states previously covered: D.C., Virgin Islands, Guam, American Samoa, Mariana Islands, and the Trust Territory of the Pacific Islands.

Title I, Sec. 104 (b) (1) states the three-part mission.

## **1990**

Sec. 1 (d) amends Sec. 104 (b) (1) of 1984 to revise the statement on the three-part mission, restating it as that the centers/institutes shall conduct research that fosters the following four things: entry of new scientists in water resource fields; training and education of future water scientists, engineers, and technicians; the preliminary exploration of new ideas that address water problems or expand understanding of water and water-related phenomena; and the dissemination of research results to water managers and the public.

Sec. 1 (e) amends Sec. 104 (c) of 1984 to allow funds to “be used only for reimbursement of direct cost expenditures...”; this refers to the funds for the centers/institutes, as identified in Sec. 104 (f) of 1984.

## **1996**

Secs. 1 and 2 make some language changes to Findings (Sec. 102 in 1984 Act) and Purpose (Sec. 103 in 1984 Act).

Sec. 6 – Coordination. Adds a new Sec. 104 (h) to the 1984 law. Calls for Secretary to encourage other federal entities to coordinate with centers and allows contracts/funds from other agencies.

Also authorizes “support for a program of internships” for undergraduates and graduate students “to carry out the educational and training objectives of the Act.”

Also states that “Nothing in this Act shall preempt the rights and authorities of any State with respect to its water resources or management of those resources.”

## **2000**

No additional items this year.

## **2007**

Sec. 2 (a) amends Sec. 104 (b) (1) of 1984 on the mission, adding “improvements in water reliability” as a goal of research.

Sec. 2 (e) amends Sec. 104 (h) (2) (first appeared in 1996), on coordination, to add a requirement for the Secretary to provide annually to Congress “a crosscut budget detailing expenditures” and “a report which details the level of applied research and the results of activities authorized by this chapter, including the potential and actual (A) increases in annual water supplies; (B) increases in annual water yields; (C) advances in water infrastructure and water quality improvements; (D) methods for identifying and determining the effectiveness of treatment technologies and efficiencies.”

## **2021**

Amending Section 104 (e) – Change to requiring Secretary to evaluate each center/institute every 5 years (was every 3 years previously). Also changes the language of what the evaluation is to cover, to the following:

A – quality and relevance of the water resources research of the institute;

B – effectiveness of the institute at producing measure results and applied water supply research;

C – whether the effectiveness of the institute as an institution for planning, conducting, and arranging for research warrants continued support.