



Western States Water

Addressing Water Needs and Strategies for a Sustainable Future

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CONGRESS/WATER RESOURCES NOAA/USBR/Corps Appropriations

On July 31, the House of Representatives passed a \$1.3T six-bill appropriations minibuss (H.R. 7617), which included Defense, Commerce-Justice-Science (CJS), Energy and Water Development, Financial Services and General Government, Labor-Health and Human Services-Education, and Transportation-Housing and Urban Development subcommittees. The Senate has not yet taken up any appropriations bills for FY2021.

The Corps of Engineers (Corps) was appropriated \$151M for research and investigations pertaining to river and harbor, flood, and storm damage reduction, shore protection, aquatic ecosystem restoration, and related efforts; \$2.6B for planning and construction of authorized projects; \$3.8B for operation and maintenance of authorized projects; \$205M for regulation of navigable waters and wetlands; \$365M for flood damage reduction projects within the Mississippi Basin; \$35M for flood control and coastal emergencies; \$200M for expenses of the Civil Works program; and \$5M for the Office of the Assistant Secretary.

None of the funds may be used to reorganize or transfer authority or function of the Corps to another department or agency, and additional funding provided can only be allocated to projects deemed eligible by the Chief of Engineers. In addition, the Corps is directed to initiate seven new projects during fiscal year 2021, subject to the work plan submitted to the Committees on Appropriations.

Other Corps appropriations include \$110M for research and investigations of currently authorized projects; \$10B for construction of projects, of which \$500M is for environmental infrastructure assistance and \$3B for inland waterways projects; \$875M for the Mississippi Basin; \$5B for operation and maintenance; \$50M for their regulatory program; \$415M for flood control and coastal emergencies; and \$50M for expenses.

For the Department of Interior, the Bureau of Reclamation (USBR) was appropriated \$1.5B for the management, development and restoration of water-related resources. Of this amount, \$58.5M is specifically

appropriated to the Upper Colorado River Basin Fund, \$5.6M to the Lower Colorado River Basin Development Fund, and \$25.8M to the Blackfeet Water Settlement Implementation Fund. Additional appropriations included \$55.8M for the Central Valley Project Restoration Fund, \$33M for the California Bay-Delta Restoration Fund, and \$600M for Water Management Improvements under the Omnibus Public Lands Management Act of 2009 (PL 111-11), which authorized the WaterSMART program. The Office of the Commissioner was appropriated \$60M for policy and administrative services. The Central Utah Project received \$20M.

Changes were also made to the Aamodt Litigation Settlement Act (PL 111-291), ratifying the amended agreement and increasing funds to \$243.4M (up from \$106.4M) to construct the Pueblo Water Facilities, and to \$187M (up from \$50M) for the planning, construction and environmental compliance activities of the Regional Water System, with deadlines extended until 2028.

The bill amends the Reclamation Water Settlements Fund (PL 111-11), removing the end dates to make the fund permanent and restricting the use of funds within the account to authorized projects.

Further USBR appropriations include \$3B for water-related resources, of which \$50M is to be used for water reclamation and reuse projects, \$300M for WaterSMART grants, and \$200M for construction activities. An additional \$605M is provided for tribal settlements, including White Mountain Apache, Crow, Taos Pueblo, and Aamodt settlements within the Claims Resolution Act of 2010 (PL 111-291); Blackfeet Water Rights Settlement within the Water Infrastructure Improvements for the Nation Act (PL 114-322); the Navajo Gallup Water Supply Project within the Omnibus Public Land Management Act of 2009 (PL 111-11) and the settlements within the Arizona Water Settlements Act (PL 108-451).

In addition, \$100M is included for rural water infrastructure projects; \$100M for environmental restoration and compliance; \$8.5M for emergency repairs for Reclamation facilities that may affect irrigation deliveries in 2020; \$100M for transfer to the Department of Interior for the Central Utah Project; \$250M for the Central Valley Project; \$250M for the California Bay-

Delta Restoration Project; and \$200M for the San Joaquin settlement.

The Department of Energy received \$259M for the Western Area Power Administration (WAPA), from the Reclamation Fund. Of the offsetting collections made by WAPA from customers, \$21.4M is to be transferred to the Upper Colorado River Basin Fund for USBR for environmental stewardship and endangered species recovery efforts.

The National Oceanic and Atmospheric Administration (NOAA) was appropriated \$3.8B for maintenance, operation and to hire of aircraft and ocean vessels; pilot programs for state-led fisheries management; grants, contracts, or other payments for cooperative agreements; and relocation of facilities. Reporting requirements designated within the CJS Appropriations Act of 2012 (PL 112-55) and 2013 (PL 113-6) were adopted by reference, limiting the life-cycle costs for the Joint Polar Satellite System at \$11.3B and the Geostationary Operational Environmental Satellite R-Series Program at \$10.8B.

WATER RESOURCES/ENVIRONMENT

Texas/Drought/Climate

The August issue of the journal *Earth's Future*, published by the American Geophysical Union, includes an article summarizing a study by the Texas Water Research Network and State Climatologist John Nielsen-Gammon, titled *Unprecedented Drought Challenges for Texas Water Resources in a Changing Climate: What Do Researchers and Stakeholders Need to Know?*

Texas takes a regional approach to water planning, "beginning at the local level, then expanding to regional water planning groups, and concluding at the state level. The most recent Texas State Water Plan assesses water supply and demand over a 50-year horizon and provides a cost analysis of implementing management strategies designed to meet demand where and when it exceeds supply. Texas water planning is based on the goal of having an adequate supply of water to meet the needs of future water users even if the worst drought in history, the 'drought of record', returns. In most parts of the state, the drought of record is the six-year drought of the 1950's, the worst drought in the 125 years of the instrumental record." The plans have a five-year cycle to respond to recent climate changes, but the study notes that the water plan at the state level "does not take into consideration potential declines in water supply related to future climate change.... The plan states that forecasts of future changes in water resources due to climate change are not used due to a lack of reliable, usable estimates of such changes."

The study recognizes that water users, managers and planners need reliable information about potential

climate change impacts before they can make long-term decisions for the future. It also acknowledges that in order for climate models to offer results relevant to decision making, the uncertainties associated with future projections must be thoroughly quantified. The study asserts that the uncertainties come primarily from five sources: carbon emission scenarios, global climate models, downscaling methods that infer future local weather conditions from broader-scale simulated trends, hydrologic models, and natural variability.

The report illustrates the types of knowledge needed with four case studies on: (1) agricultural producers; (2) large surface water suppliers; (3) small groundwater planning districts; and (4) regional water planning districts, as representative of the kinds of knowledge all stakeholders need. For each of the four case studies, "actionable, incompatible, and unavailable climate science information is identified from the perspective of the stakeholder." The study notes, "Other stakeholders and sectors in Texas, such as power generation, oil and gas exploration, wildlife management, and manufacturing, have future water information needs that are similarly specific and difficult to satisfy with generic climate change information."

The report addresses the geologic and hydrologic variability across the State of Texas, as well as the potential range of impacts on different land uses, aquifer types, and reservoir operations. It talks about paleoclimate data obtained from tree-ring studies, growth rates of speleothems (cave water mineral deposits), and soil thickness. It talks about natural variations in temperature, precipitation, large-scale weather and climate patterns. It notes the upward trend in overall precipitation, but also in extreme events, where intense rain leads to less infiltration to aquifers and greater runoff.

The study ends with an example of a researcher-stakeholder alignment effort in Austin, Texas. Following the 2011 drought, the city sought to prepare a 100-year integrated water resources plan that considers climate change. The planning task force included various stakeholders and climate scientists, who met frequently during the planning process to improve communication and understanding about the status of climate science and the need to plan for future conditions. "The process helped raise the level of understanding and confidence for the non-climate scientists who were involved in creating the plan....The sources of uncertainty in generating climate change information were acknowledged in the planning process including the influence of natural variability, human choices, scientific uncertainty, and uncertainty in translating regional-scale changes in climate into local-scale changes in hydrology." <https://news.utexas.edu/2020/07/08/texas-needs-to-start-preparing-for-possibility-of-10-year-megadroughts/>.

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