



Western States Water

Addressing Water Needs and Strategies for a Sustainable Future

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ADMINISTRATION/WATER RESOURCES

NOAA/S2S Forecasting

The National Oceanic and Atmospheric Administration (NOAA) released its 2020 report to Congress titled “*Subseasonal and Seasonal (S2S) Forecasting Innovation: Plans for the Twenty-First Century.*” The report outlines NOAA’s existing use of S2S products and services, and “how NOAA plans to improve the usability and transference of data, information, and forecasts.” The 37-page report was developed in response to Section 201 of the Weather Research and Forecasting Innovation Act of 2017 (P.L. 115-25). The report lists 17 major S2S products developed since the 1990s, and 11 S2S-relevant climate monitoring products. It then discusses NOAA’s plans to improve the skill of S2S predictive guidance, and goals to enhance the value of S2S products for stakeholders. The report describes needs for increased computing capability, increased observations and monitoring networks, and more research and development to understand physical processes incorporated into algorithms.

Of particular interest for western states, Section IV G discusses four regional projects to accelerate the improvement of S2S predictive skills, one of which addresses winter precipitation forecasts for water management in the western U.S. “The dominant fraction of the annual mean precipitation along the west coast of the United States and in the mountain regions west of the Mississippi River occurs from October through April. In many regions, this precipitation falls as snow, and the mountains act as a natural reservoir. Key science challenges to improving these forecasts include: inadequate model resolution (horizontal and vertical) to resolve the mountainous terrain, which influences the intensity of precipitation and the relative fraction of precipitation that falls as rain versus snow; improved fidelity in modeling of the atmospheric boundary layer in mountainous regions; and an inability to predict periods of blocked versus unblocked flow over the eastern North Pacific Ocean and western U.S.”

The second regional project addresses spring and summer precipitation forecasts for agriculture in the central U.S. “The dominant share of precipitation in the central U.S. falls during the spring and summer. This

rainfall is critical for farmers and ranchers. When drought occurs, it can have devastating consequences as seen with the 2017 flash drought that occurred in South Dakota, Montana, and North Dakota. Key science challenges for improving these forecasts include: lack of observations and inaccurate modeling of the land surface and hydrologic cycle, especially soil moisture and the processes leading to flash drought; improved fidelity in modeling of warm season precipitation processes; and understanding and prediction of large-scale upper-level dynamical flow anomalies that occur in this region at this time of year.”

The other regional S2S projects include accurate forecasts of Arctic sea ice (“critical for stakeholders from the national defense, mineral extraction, environmental stewardship, and tourism communities”), and forecasts of tropical cyclone activity.

The report notes that the four regional projects “were chosen based on the existence of major climate phenomena that have huge economic impacts and for which current S2S predictive skill is too low to be effectively used by many stakeholders.” One deficiency the pilot projects aim to improve is the ability to forecast tropical convection beyond a few days. “[A] significant fraction of the predictable part of mid-latitude variability is driven by tropical convection, which causes slowly evolving changes in the upper level steering flow, i.e. the jet stream. Therefore, a key aspect to improving S2S predictive skill for each of the pilot projects is improving the forecast skill for tropical convection and its associated teleconnections to other regions in the NOAA unified global model.” NOAA anticipates that improving the predictive skill in these regions will improve skill for other regions also. See <https://repository.library.noaa.gov/view/noaa/27408>.

CONGRESS/ADMINISTRATION

Congressional Letter/BLM Headquarters

On January 26, 18 members of the House, led by the Republican Colorado delegation, signed a letter of support for the Biden Administration to retain the Bureau of Land Management (BLM) headquarters in Grand Junction, Colorado. The Department of the Interior established the new headquarters in August 2020. The letter said: “The agency is responsible for overseeing 245

million acres of surface area and 700 million acres of subsurface mineral estate. Today, over 99% of the surface area managed by the [BLM] is located in the Western half of the United States.... Prior to this relocation, the agency's headquarters was located thousands of miles away from the land and people most directly impacted by the Bureau's management decisions. The establishment of the headquarters in Grand Junction has reduced the number of long cross-country flights, improved training, delegated more responsibility to employees in the field, improved customer service and coordination with local communities, ensured better decisions earlier in the decision-making process, reduced commute times for employees, and provided good-paying local jobs.... People from nearby states that would have never traveled to Washington D.C. for a meeting have already found their way to Grand Junction including sheriffs, ranchers, and county commissioners.... Housing the [BLM] Headquarters in Grand Junction, Colorado, has consistently enjoyed bipartisan support." Western members that signed the letter include Representatives Andy Biggs (R-AZ), Paul Gosar (R-AZ), Jay Obernolte (R-CA), Doug LaMalfa (R-CA), Lauren Boebert (R-CO), Doug Lamborn (R-CO), Ken Buck (R-CO), Louie Gohmert (R-TX), Randy Weber (R-TX), Michael Cloud (R-TX), and Dan Newhouse (R-WA). See <https://boebert.house.gov/media/press-releases/rep-boebert-leads-effort-ensure-blm-headquarters-remains-grand-junction>.

WATER QUALITY/WATER RESOURCES **New Mexico/Legislation**

On January 19, New Mexico's 55th Legislature opened its first session with several water-related bills already pre-filed for consideration. Proposed legislation included: (1) amendments to the Produced Water Act of 2019, to offer more protections against spills for people and the environment; (2) a state constitutional amendment to provide environmental rights for residents; (3) a fracking bill to halt permits while studies are conducted to determine the impacts on water resources, agriculture, and the environment; (4) a bill to amend the provisions of water leasing legislation, limiting the ability of the State Engineer's Office to grant preliminary or temporary approval for water leasing until the application has been presented to the public for comment and has been finally approved; and (5) a bill to create a statewide environmental database, to house all information about groundwater quality, surface water resources, impaired waters under the Clean Water Act, locations of National Pollutant Discharge Elimination System (NPDES) permits, floodplains and wetlands, Superfund sites, active mines, oil and gas well locations, and other environmental data in a single location. <https://nmpoliticalreport.com/2021/01/15/environmental-bills-for-the-2021-legislative-session/>

WATER RESOURCES **Nebraska/Water Sustainability Fund**

On January 21, the Nebraska Natural Resources Commission (NRC) and Department of Natural Resources (DNR) announced a new story map that details the projects that have received support from the Water Sustainability Fund (WSF) since it was enacted in 2015 (Neb. Rev. Stat. §2-1506). DNR initially reviews the applications received each July to ensure they meet minimum statutory requirements, then forwards them on to the NRC for scoring, ranking, and awards. Priority is given to projects that are the result of federal mandates. From 2015-2019, 60 projects received \$61.7M.

The WSF provides financial assistance, often in the form of grants and loans, to eligible projects, programs or activities that support sustainability of Nebraska's water resources. Examples include activities that: (1) increase aquifer recharge, reduce aquifer depletion, and increase streamflow; (2) remediate or mitigate threats to drinking water; (3) promote the goals and objectives of approved integrated management plans or ground water management plans; (4) contribute to multiple water supply management goals including flood control, reducing threats to property damage, agricultural uses, municipal and industrial uses, recreational benefits, wildlife habitat, conservation, and preservation of water resources; (5) assist municipalities with the cost of constructing, upgrading, developing, and replacing sewer infrastructure facilities as part of a combined sewer overflow project; (6) provide increased water productivity and enhanced water quality; (7) improve research, data, and modeling; (8) rehabilitate or restore water supply infrastructure, build new water supply infrastructure, or water supply infrastructure maintenance or flood prevention for protection of critical infrastructure; (9) improve conjunctive management, storage, and integrated management of groundwater and surface water; (10) use the most cost-effective solutions available; and (11) comply with interstate compacts, decrees, other state contracts and agreements, and federal law. "Of the annual funding appropriated by the Nebraska Legislature, ten percent is designated by statute for projects separating storm and sewer water. The NRC also reserves ten percent for projects requesting \$250,000 or less."

The story map spotlights the results of several projects involving Airborne Electromagnetic (AEM) surveys to provide a three-dimensional framework of the glaciated aquifer in eastern Nebraska. It also provides an interactive map that highlights information about twelve of the WSF projects located around the state. See <https://nrc.nebraska.gov/water-sustainability-fund-0>.

The WESTERN STATES WATER COUNCIL is a government entity of representatives appointed by the Governors of Alaska, Arizona, California, Colorado, Idaho, Kansas, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Texas, Utah, Washington, and Wyoming.