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Western States Water

Addressing Water Needs and Strategies for a Sustainable Future

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ADMINISTRATION/PEOPLE
National Weather Service

On June 7, Richard (Rick) Spinrad, Administrator, National Oceanic and Atmospheric Administration (NOAA), introduced Ken Graham as the new Director of the National Weather Service (NWS). "Ken brings 28 years of scientific expertise and program management experience to the position, with emphasis on improving field operations, cultivating partnerships internal and external to government, and being an innovative and trusted leader of teams. Most recently, he served as director of the National Hurricane Center at the National Weather Service, where he oversaw hurricane forecast operations and public communications for numerous hurricanes, including 30 named storms during the record-breaking 2020 hurricane season. "

Graham started out as an intern meteorologist in 1994, later serving as the meteorologist-in-charge, at the New Orleans/Baton Rouge weather forecast office, and in the same position in Birmingham, Alabama, and Corpus Christi, Texas. He replaces Mary Erickson, the Acting Director, who will resume her permanent position as the NWS Deputy Assistant Administrator.

ADMINISTRATION/WATER QUALITY
EPA/CWA 401 Certification

On June 1, the Environmental Protection Agency (EPA) released a pre-publication version of a revised rule for CWA (Clean Water Act) §401 certification. The 239-page proposed rule retains some elements of the 2020 CWA §401 rule, but also includes substantive changes. The proposed rule provides States and other certifying authorities with more flexibility and involvement in the §401 certification process by: (1) allowing States to determine the necessary elements of a "request for certification" (aka, an application); (2) requiring that federal permitting agencies collaborate with States to determine a "reasonable period of time" for each certification; (3) limiting federal agency review of certification decisions to issues of process; and (4) ensuring that the certification review process "clock" does not begin until a complete application, as defined by the State, has been received. The proposed rule also includes a requirement that applicants request a pre-filing meeting 30-days before submitting a request for certification and that the request include a draft of the federal license or permit. The proposed rule expands the scope of review to the whole activity associated with a federally licensed or permitted project, provides clarification on issues of neighboring jurisdictions and modifications to certification decisions, and removes enforcement and inspection text from the rule. See https://www.epa.gov/cwa-401/proposed-clean-water-act-section-401-water-quality-certification-improvement-rule.

EPA/PFAS

On May 31, EPA published notice of an extension (87 FR 32410) to the public comment period for the draft CWA §304(a) aquatic life criteria for PFOA and PFOS (87 FR 26199). The CWA §304(a) recommended criteria provide guidance to States and authorized tribes for adopting water quality standards that ultimately provide a basis for controlling discharges of pollutants. EPA's draft criteria provide a review of toxicity data, quantify toxicity to aquatic life, and provide separate PFOA and PFOS criteria to protect aquatic life. Comments are now due on July 2, and may be submitted to www.regulations.gov dockets EPA-HQ-OW-2022-0365 (PFOA) and EPA-HQ-OW-2022-0365 (PFOS).

ADMINISTRATION/WATER RESOURCES
White House/Global Water Security

On June 1, the White House released an action plan on global water security. The 16-page document briefly describes key water resource issues in six large regions around the world, including the Western Hemisphere. It lists various tasks, activities, and collaborative international efforts to address water insecurity and related inequities, and to reduce conflict. Examples include: (1) providing technical support for water treatment, wastewater, water reuse, and recycling systems; (2) strengthening water quality monitoring programs; (3) utilizing government agencies to provide loans and other financial assistance to support investments in the water sector; (4) improving data collection and using data to understand locations most vulnerable to water security challenges; (5) developing and deploying modular energy-efficient technologies for

desalination and waste water recovery; (6) providing technical assistance to develop local and national water plans that are sustainable for diverse stakeholders; (7) improving climate and hydrological monitoring of watersheds to enable reliable water resource forecasting, including improved drought prediction; (8) developing and applying advanced integrative, open-source modeling, data-driven machine learning, and hybrid simulation methods to design sustainable solutions; (9) collaborating with global agricultural participants to foster private investment in water conserving technologies and farming practices; (10) advising on the development of cooperative agreements to manage transboundary water resources with good governance practices; and (11) working through multilateral diplomatic engagements to facilitate greater collaboration and stronger regional ties. See https://www.whitehouse.gov/wp-content/uploads/2022/06/water-action-plan_final_formatted.pdf.

WATER RESOURCES

Colorado River

In May, a team of researchers from Los Alamos published a study in Earth and Space Science on Characterizing Drought Behavior in the Colorado River Basin Using Unsupervised Machine Learning. The study used results from large data sets and large-scale models of climate and water, applying a pattern recognition computer program, to estimate how drought will change in the future. The report notes that as the climate model simulations "have increased in scale and complexity, so has the need for improved processing and explainability of model results. Emerging techniques such as machine learning to study changes across these vast amounts of data are only now being applied to better understand and inform decision making within the climate, hydrology, and earth science realms." They grouped together similar behaviors of sub-watersheds in the Colorado River Basin (CRB) and found a significant shift in snowpack and the timing of peak streamflow.

The journal article said: "Previous studies of snowpack trends in the western United States have found that while large snowpack losses have been observed in mid-altitude areas, the relatively higher altitude regions have experienced little to no change in the snowpack. However, high elevation areas of the CRB are projected to see a large loss of snowpack as temperatures continue to rise The [machine learning (ML)]-detected behavior shifts for snowmelt regimes in the CRB is interesting. This finding demonstrates the capability of the ML algorithm in separating the shifts in hydrologic behavior related to climate change. For example, ML results for two extracted signals clearly identify the areas of large runoff changes due to snowmelt in the mountainous regions of the CRB. Further, at a greater number of signals, the algorithm was able to separate the mountainous regions exhibiting snowmelt into separate groups where snowmelt changes were more or less severe, delineating where differences in behavior exist based on threshold hydrologic responses to gradients of temperature change." The report also notes the limitations of the algorithm, requiring additional human interpretation. https://agupubs.onlinelibrary.wiley.com/doi/10.1029/2021EA002086

WATER RESOURCES/WATER RIGHTS

Arizona/Little Colorado River Adjudication

On May 25, the Special Master filed a final report in the Hopi Reservation subcase of the Little Colorado River Adjudication (Arizona Superior Court, CV 6417-203). The case adjudicates the claims for federal reserved water rights asserted by the Hopi Tribe, allottees, and the United States from water sources that are appurtenant to the Hopi Reservation, which consists of two non-contiguous geographic areas covering approximately 3,000 square miles. The Hopi Tribe has additional water rights claims under state law that are part of the comprehensive stream adjudication, which began in 1985. Following years of settlement negotiations, the Arizona Department of Water Resources (ADWR) began its investigation of claims in 2004, and in 2008, the Court initiated this subcase to determine priority dates for the federal reserved water rights. In 2016, after ADWR filed its Hopi Reservation hydrographic survey report, the Court bifurcated the case into two phases, first to determine past and present water uses, and the second to consider future water uses. The two trials took place in 2018 and 2020.

The 408-page report includes: (1) a procedural history of the case; (2) a legal description of the attributes of federal water rights, tied to the 1882 date of the reservation, and of aboriginal water rights that have a priority of time immemorial, including a right to access to groundwater that is hydrologically tied to surface waters used by the tribe; (3) a description of the physical landscape of the Hopi Reservation; (4) a description of tribal history and culture; (5) a description of past, present and future uses and sources of water for domestic, commercial, municipal, industrial, agricultural, recreational, mining, power, and livestock and wildlife uses; and (6) a recommended decree of the Hopi Tribe's federal reserved water rights, 28,988 acre-feet per year (parsed out by type of use), from waters appurtenant to the Hopi Reservation. The priority dates vary: (a) time immemorial for aboriginal water uses within Land Management District 6; (b) 1882 for water diverted on the Hopi Reservation; and (c) 1934 for water diverted on Moenkopi Island and on allotment lands. Objections to the report are due by November 21. http://www.superiorcourt.maricopa.gov/SuperiorCourt/GeneralStreamAdjudication/docs/Final-Report-6417-203-05-25-2022.pdf