

WATER RESOURCES TEAM

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INFRASTRUCTURE AND POLICY

The Water Resources Team has identified six policy and infrastructure priorities for the 2021 program. The issues include the following priorities and are explained in greater detail below.

- Sacramento Regional Water Bank
- RiverArc Project
- Sites Reservoir
- Voluntary Agreements
- Folsom Dam Temperature Control Device
- PFAS Remediation

Business Nexus | Sacramento Regional Water Bank

The economy of the Sacramento region relies on a reliable, sustainable supply of drinking water for businesses to thrive. The construction of the Water Bank project will help the region maintain its water supply now and into the future.

Requested Action

Federal acknowledgement by U.S. Bureau of Reclamation and funding to build out the infrastructure and governance of the Water Bank through various water resource programs within the Bureau of Reclamation and the Environmental Protection Agency.

Brief Background A Reservoir Under Our Feet

Water providers in the Sacramento region are developing the Sacramento Regional Water Bank (Water Bank). The Water Bank is an innovative groundwater storage program that will improve regional water supply reliability in the near-term and into the future. The Sacramento region's unique setting—at the confluence of the Sacramento and American rivers near Folsom Reservoir and



overlying the North American and South American groundwater subbasins—is ideal for the Water Bank’s development.

The Water Bank will allow the region to sustainably increase use of groundwater as a local water source during dry periods and reduce surface water diversions which helps to meet local environmental needs. In addition, the region’s location north of the Sacramento-San Joaquin Delta provides potential opportunities to collaborate and develop solutions to benefit the environment and communities downstream after local needs are met.

How the Water Bank Works

The Water Bank will operate by coordinating the use of surface water and groundwater. When surface water supplies are plentiful, water providers in the region will draw more water from Folsom Lake or local rivers and use it to offset existing demand for groundwater. This effectively increases groundwater in storage, resulting in a deposit in the Water Bank. During dry years, recovery of stored groundwater will occur through additional pumping, resulting in a withdrawal from the Water Bank. The Water Bank will be managed consistent with local groundwater sustainability plans.

The Water Bank could be operational with existing facilities as early as 2022.

The Water Bank has received crucial financial and technical support from the U.S. Bureau of Reclamation as well as support from the Water Infrastructure and Innovation (WIIN) Act and seeks to receive additional WIIN Act funding in future years.

Additional planning, technical analyses, environmental review, and broad stakeholder engagement are needed to make the Water Bank a reality. Timing for the Water Bank’s full implementation is focused on ensuring that its development is compatible with and supports Groundwater Sustainability Plans currently under development in the North and South American subbasins to comply with California’s Sustainable Groundwater Management Act of 2014.

More than a dozen water providers are expected to actively store and/or recover water from the Water Bank at the outset of operations. Participation in the Water Bank will be voluntary. The groundwater subbasins will be monitored, and mitigation measures will be in place, to avoid impacts to groundwater users in the region that are not participating in the Water Bank.

Local water providers have also identified opportunities to expand the Water Bank well beyond its initial capacity. This will require new investments to expand the region’s capacity to divert surface water; construct more water system inerties; build additional aquifer storage and recovery wells; and add additional booster pumps, pipelines, and groundwater wells to recover stored groundwater.

These improvements would substantially increase the region’s ability to store and recover water from the underlying subbasins. Other potential future expansion opportunities include incorporating direct recharge through spreading basins and applying storm water or flood water on dormant agricultural crops.

The Water Bank is an ambitious effort requiring involvement from a diversity of stakeholders, including those in the environmental community, urban and agricultural groundwater users, recycled water



producers, and the public. To learn more and to stay up to date on Water Bank activities, visit rwah2o.org.

Business Nexus | RiverArc Project

Construction of a regional water supply from the Sacramento River (branded as RiverArc) will help Sacramento maintain reliable water supply well into the future by diversifying its portfolio, which is currently concentrated on the American River.

Requested Action

Federal support and funding to plan and build the RiverArc project through various water resource programs within the Bureau of Reclamation and the Environmental Protection Agency.

Background

In the early 2000s, local water agencies realized the Sacramento region was overly reliant on a single source of water, the American River, and began to investigate balancing water supply needs on an alternate source, the much larger Sacramento River.

The need to diversify the Sacramento region's water supply has grown exponentially in recent years with the droughts of 2014-2016 and 2020-202, accelerating efforts by local water agencies to reimagine our region's water future. The RiverArc Project, will use water rights from the Sacramento River to benefit not only the Sacramento region, but also California's statewide water delivery system. The statewide benefits come from relieving pressure from Folsom Lake.

Opportunities for Regional & Statewide Water Reliability

Folsom Lake is part of the statewide water delivery system. It's used by federal water managers to balance environmental and water supply needs for the Sacramento region, the Bay Delta and the farms in the Central Valley. Because of changes to environmental regulations, climate change impacts and population increases, the state's current water delivery system has been stretched too thin. These effects are dramatically visible in the Sacramento region, where pressure on the American River has led to perilously low water levels in Folsom. By diversifying the region's supplies, we can ensure our economic future and do our part to make the entire state's water delivery system better. The proposed RiverArc Project is a key piece of water supply, treatment and delivery infrastructure to help us accomplish this goal.

Time Is of The Essence

Over the past several years, the region and much of the state has seen the devastating effects from droughts and a growing economy. Over the next few years, the proposed RiverArc Project can benefit from recent momentum and opportunities that may not exist in the future. RiverArc could benefit from various available

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funding streams from state and federal sources. Some of the key criteria to qualify for this funding includes:

- Watershed restoration and habitat protection
- Groundwater sustainability
- Improved flexibility in operating the statewide water system
- Allows U.S. Bureau of Reclamation to operate to meet cold water temperatures

How RiverArc Works

RiverArc will use an existing water diversion facility on the Sacramento River near the Sacramento International Airport that was constructed to serve agricultural needs and has recently been upgraded with state-of-the-art fish screens. Water will move inland through a new pipeline and be treated for residential and commercial use at a new water treatment plant. Using a mix of existing and new pipelines, water will serve most of the Sacramento and west Placer region north of the American River.

Along the way, groundwater and American River supplies will be integrated so that water supplies can be shared throughout the region and enhance the operation of the Water Bank.

What's Next?

Phase 1: 2020-30 Includes the backbone infrastructure necessary to connect the Sacramento River to the American River and incorporates the region's groundwater along the way.

Phase 2: 2030-40 Expansion of water supply network to sustain a growing population in northern Sacramento and western Placer County.

Phase 3: 2040-50 Completion of the regional Water Bank infrastructure that provides statewide benefit.

RiverArc will:

- Reduce regional reliance on overburdened Folsom Lake and Lower American River.
- Increase flexibility for state & federal managers to operate statewide water systems.
- Allow for better management of cold-water flows along the Lower American River to benefit the environment and Delta water quality.
- Further protect the region's rivers and watersheds.
- Enhance groundwater sustainability through increased opportunities for conjunctive use, the coordinated use of surface water and groundwater.
- Bring surface water to communities with few other viable water options, assuring regional economic vitality and supporting a sustainable local economy.
- Allows the U.S. Bureau of Reclamation to change the operations schedule to accommodate different needs like water temperature, quality, and demand.

Well Balanced Benefits

RiverArc is an important part of the region's strategy to diversify its water supply portfolio for current residents and plan for future economic growth. By integrating our regional water supply infrastructure, we can more efficiently utilize our groundwater basins to help protect against prolonged droughts.

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Using less groundwater and more river water in wet years, our region's groundwater basins will fill up just like a reservoir.

When in a drought, our groundwater reservoirs will be full and able to supply the Sacramento region with clean water. This will also strengthen Folsom Lake and the Lower American River. To bank groundwater, the region needs to invest in significant infrastructure so that local water districts have access to river water in wet years, and groundwater in dry years.

RiverArc is central to ensuring delivery of Sacramento River water to all areas of the greater Sacramento Region north of the American River.

Business Nexus | Sites Reservoir Project

The economy of the Sacramento region relies on a reliable, sustainable supply of drinking water for businesses to thrive. The construction of the Sites Reservoir project will help the region maintain its water supply now and into the future.

Requested Action

Federal support and funding for the construction and planning of Sites Reservoir from the Environmental Protection Agency's Water Infrastructure Finance and Innovation Act (WIFIA) and the Bureau of Reclamation's Water Infrastructure Improvement Act (WIIN).

Background

Sites Reservoir is generational opportunity to construct a multi-benefit water storage facility that helps restore flexibility, reliability, and resiliency to our statewide water supply.

Currently, no other storage project under consideration in California can positively influence the operational efficiencies of our existing statewide water. What makes Sites Reservoir so unique is that it is not a "traditional" reservoir project. It is an off-stream facility that does not dam a major river system and would not block fish migration or spawning.

Sites Reservoir offers a significant water storage opportunity that benefits both people and the environment. Sites Reservoir captures and stores stormwater flows from the Sacramento River—after all other water rights and regulatory requirements are met—for release primarily in dry and critical years for environmental use and for California communities, farms, and businesses when it is so desperately needed.

Sites Reservoir is designed to be adaptable to a changing climate. As snowpack declines due to climate change and more of our water comes in the form of atmospheric rivers – Sites Reservoir will become vital to the future resiliency of our statewide water supply.



How Sites Reservoir Works

Located 10 miles west of the town of Maxwell in rural Glenn and Colusa counties, the Sites Reservoir would be an off-stream storage facility that captures and stores stormwater flows in the Sacramento River. When operated in coordination with other Northern California reservoirs such as Shasta, Oroville and Folsom, which function as the backbone to both the Central Valley Project and the State Water Project, Sites Reservoir will greatly increase flexibility, reliability and resiliency of statewide water supplies in drier periods.

With Sites Reservoir, California has a rare opportunity to enhance statewide water supplies and provide a dedicated allocation of water specifically for the environment.

Sites Reservoir provides federal and state resource agencies with a dedicated and reliable supply of water they can manage to provide environmental benefits, especially during drier years.

A significant portion of the project's annual water supplies will be provided for environmental flows, which will help to improve conditions for fish; help preserve cold-water pools in Shasta later into the summer months to support salmon development, spawning and rearing; and improve Pacific Flyway habitat for migratory birds and other native species.

Support & Funding

A bipartisan group of more than 175 organizations, agencies, businesses, and elected officials support the Sites Reservoir Project.

Widely supported both regionally and statewide, the project has made significant progress toward its funding goal.

In 2018, the project was awarded \$816 million in funding from California's Proposition 1 water bond and secured a \$449 million investment from the United States Department of Agriculture. The United States Bureau of Reclamation is also a significant project partner. In 2021 an application was made for a Water Infrastructure Finance and Innovation Act loan which is still pending. Sites has also previously received \$90 million in WIIN Act funding and will seek to receive more WIIN Act funding in the future.

Business Nexus | Voluntary Agreement

The economy of the Sacramento region relies on a reliable, sustainable supply of drinking water for businesses to thrive. The Voluntary Agreement will help the region maintain its water supply now and into the future.

Requested Action

Federal support for the Voluntary Agreements from both the Biden Administration and Congress will be critical to its success. Specifically, that:

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- The Biden Administration engage in negotiations with the Newsom Administration and stakeholders to successfully complete the VAs.
- Resolve the litigation between the federal government, State of California, public water agencies and NGOs regarding the Incidental Take Permit and the Biological Opinion.
- Support and assist water agencies that have proposed early implementation projects to accelerate improvements for fish and wildlife, including with direct funding, a mechanism to collect fees and streamlined permitting processes.

Brief Background

The Voluntary Agreements (VAs) represent a collaborative and holistic approach to improve the California Bay-Delta ecosystem and water supply reliability. Through the VAs, a group of public water agencies are proposing a comprehensive suite of actions that will improve habitat and flows in the Sacramento- San Joaquin Delta and its tributaries to help native fish and wildlife species.

This integrated approach presents an opportunity to protect and restore the Bay-Delta ecosystem, while improving habitat for native species and water reliability for the 35 million people, nearly 8 million acres of farmland, and remaining California wetlands dependent on the Delta watershed and its water supply. Governor Gavin Newsom’s Water Resilience Portfolio recognizes the VAs as an alternative to the California State Water Resources Control Board’s unimpaired flows approach to updating the State’s Bay-Delta Water Quality Control Plan and that the VAs hold “the promise to adaptively manage enhanced flows and habitat to improve conditions for fish and wildlife.”

The decades old regulatory approach has not served any interests well. Species have continued to decline, and water supplies have continued to diminish. California cannot afford to adhere to a regulatory and operational framework solely based on additional flows which will result in years of protracted litigation, while at-risk fish populations continue to decline, and California’s water supply becomes less resilient to the increasing effects of climate change. Now is the time to complete the VAs to put California on a path of success for the environment, the public, farms and businesses.

A Watershed-Wide Approach



The VAs would encompass the Sacramento-San Joaquin Delta and each of the following tributaries to improve reliability for the 35 million people and nearly 8 million acres of farmland dependent on the Delta watershed and its water supply.

- American River
- Feather River
- Mokelumne River
- Putah Creek
- Sacramento River
- San Joaquin River Settlement Upstream of the Merced River (Friant Diversion)
- Tuolumne River
- Yuba River

Integrated Solutions

A Delta watershed-wide solution should provide a substantial “budget” of water for the environment, coupled with significant new habitat, an integrated science program, and adaptive management to provide a more comprehensive framework to recover fish populations, as opposed to a flows-only approach.

Coequal Goals

- A Delta watershed-wide solution must recognize the coequal goals of increasing water supply in California and improving the Delta ecosystem for hundreds of native fish and wildlife species.

Expedited Implementation

- The VAs commitment of functional flows and habitat can help fish populations recover more quickly, holistically and with fewer negative social and economic impacts than traditional regulatory requirements. As water agencies stand ready to implement a comprehensive series of ecological restoration and stewardship projects, state and federal agencies must also work

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to increase permitting effectiveness, expedite project review and approval, and improve cross-jurisdictional collaboration.

Governance

- Consistent with the VAs, a structured decision-making process that informs the implementation of flow and nonflow measures to achieve outcomes should be the foundation of any solution. This process should be collaborative and informed by a robust science program. To the extent possible, the governance structure should coordinate with and be implemented through any existing management structures in the Delta tributaries.

Science and Adaptive Management

- A Delta watershed-wide agreement should include the development of a sound, shared, modern science program that explores all assets available to manage the Delta and monitors and evaluates their success in achieving the biological and environmental outcomes. This will serve as the basis for adaptive management decision-making. The VAs would establish both a Science Program and Independent Science Advisory Team to address uncertainties in current science using testable hypotheses to refine management solutions over time.

Funding Portfolio

- A Delta watershed-wide agreement should identify resources from a variety of agencies and programs for a large- sustained investment for fish and wildlife measures, habitat restoration projects and science programs. Under the VAs approach, the total estimated contributions from the public water agencies to a Water Revolving Fund are projected to be \$1 billion. The state and federal financial commitment should be commensurate to the local investment.

Business Nexus | Folsom Dam Temperature Control Device

The economy of the Sacramento region relies on a reliable, sustainable supply of drinking water for businesses to thrive. The addition of a new Temperature Control Device at Folsom Dam will help the region maintain its water supply now and into the future.

Requested Action

The Temperature Control Device is already an authorized project by the U.S. Army Corps of Engineers and is awaiting a \$35 million appropriation.

Brief Background

Temperature management provides protection to endangered and threatened fishery species and provides suitable habitat for fish hatchery operations.

The current Temperature Control Device shutter configuration at Folsom Dam results in larger than desired changes in release temperature, which can adversely affect fisheries and other aquatic life. The proposed refinement of the shutter system would allow finer control of release temperature changes, which would benefit the downstream fisheries as well as conserve cold water pool, thus allowing temperature control to be effective for a longer time into the fall. This would also have an added benefit of minimizing the frequency of times when power bypass may be necessary to maintain temperatures below Nimbus Dam.

Temperature Control Device Details

Folsom Dam's existing temperature control device is a series of large, solid metal panels that can be lowered or raised manually to determine the depth at which water is permitted to enter the dam's three power penstocks and turbines.

The three intakes are enclosed by the temperature control system that supports a set of 27 removable, 13-foot-high shutter panels. The 27 shutter panels are arranged in 3 vertical groups of nine panels. A varying number of shutters can be lifted to draw water from various elevations within the reservoir, thereby controlling the temperature of water entering the Lower American River. Each shutter change is time and labor-consuming, requiring approximately 3 hours per shutter group which delays implementation of needed water temperature changes.

Currently, the 27 shutters cannot be individually and independently raised automatically. Instead, shutters are bolted together so that the 9 shutters comprising each vertical column have a 3-2-4 configuration. This means that the top three, middle two, and bottom four panels are bolted together and are raised as a unit.

The design is intended to automate the process of changing the position of the shutters. The project will involve replacing the existing system with two 13-foot-tall panels in each of 5 new vertical tracks. These new tracks and panels will be placed between the three piers comprising the existing temperature control structures on each of the three Folsom power penstocks. By expanding and reconfiguring the number of temperature control panels within the temperature control system, operators would be able to preserve the amount of cold water behind Folsom Dam and deliver the water downstream as needed to promote a suitable aquatic habitat for downstream fish and fisheries.

Time Is of The Essence

Climate change has accelerated the need for cold water. The U.S. Bureau of Reclamation operates Folsom Lake for flood protection, water supply use, power generation, recreation, and environmental

purposes, including water temperature management in the Lower American River. Thermal stratification of Folsom Lake affords the opportunity for selective withdrawal of water of various temperatures at different elevations. A temperature device structure at Folsom Dam blends the selected waters for desired downstream performance. Seasonal temperature strategies are developed annually, depending on the hydrologic year type, storage conditions, cold-water reserves and fishery objectives.

Operational challenges to temperature management include uncertain future hydrologic, downstream water demands, and meteorological conditions. Additional challenges include balancing trade-offs between water release volumes, different fishery species, power generation and water temperature. To assist in temperature management, computational tools are employed to project the efficiency of cold-water reserve use, future downstream temperature performance, physical shutter operations and bypass of power generation. Drought periods are particularly challenging for temperature management due to limited water supply and cold-water reserves.

Business Nexus | PFAS Chemicals in the Sacramento Region

There is a silent, invisible threat to public health and economic prosperity in the Sacramento region. Per- and Polyfluoroalkyl substances (PFAS) are a large group of manufactured organic chemicals that are used in a variety of products for their nonstick properties (e.g., Teflon, Scotchgard), as well as in industrial applications such as firefighting. Aqueous Film Forming Foam (AFFF) usage at military bases and airports are sources of PFAS in drinking water systems. In the Sacramento region groundwater contamination has been linked to the use of AFFF at Mather Airfield.

Requested Action

The Federal government should provide funding for abatement and treatment of these chemicals to protect public health and ensure that local ratepayers are not responsible for funding the clean-up of contamination caused by the US Air Force or other parties.

PFAS have been linked to various toxicological issues for people and are highly persistent in the environment. The U.S. Environmental Protection Agency (EPA) has set a non-enforceable Health Advisory Level of 70 nanograms per liter or parts per trillion (ppt) for combined PFOA and PFOS. The Office of Environmental Health Hazard Assessment (OEHHA) of the California Environmental Protection Agency has developed proposed Public Health Goals (PHGs) for perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS) in drinking water, the first step in developing a Maximum Contaminant Level (MCL) for drinking water. The State Water Resources Control Board has set California response levels at 10 parts per trillion (ppt) for PFOA and 40 ppt for PFOS.

PFAS contamination is a national issue impacting communities around the state and around the nation. There are multiple legislative proposals to reduce the use of PFAS, set a national MCL for drinking water and fund clean-up efforts. Drinking water providers in the Sacramento region support the establishment of reasonable new MCL's to protect public health and confidence in the safety of

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our drinking water. We vigorously endorse the “polluter pays” principle to ensure that our customers are not forced to bear the burden of paying to remediate contamination caused by the US military, industry, and manufacturers of this class of chemicals.