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Testimony Before the United States Senate
Committee on Energy and Natural Resources

**Hearing to receive testimony on opportunities to improve and expand infrastructure
important to federal lands, recreation, water, and resources.**

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Chairman Murkowski, Ranking Member Cantwell, and Members of the Committee:

Thank you for the opportunity to appear before you to discuss the importance of water infrastructure in the Western United States. My name is Chris Treese, and I am the external affairs manager for the Colorado River Water Conservation District (River District), located in Glenwood Springs, Colorado. The River District is the principal water policy and planning agency for the fifteen counties of northwest and west central Colorado. We are responsible for the conservation, use, protection, and development of Colorado's apportionment of the Colorado River. The River District comprises approximately 29,000 square miles, roughly 28% of the land area of Colorado. Seventy percent of our district is made up of lands managed by the federal government.

Our district belongs to the National Water Resources Association (NWRA) and the Family Farm Alliance (Alliance), two organizations that I also represent with this testimony. NWRA represents state water associations, irrigation districts, municipal water providers, end water users and their collective interests in the management of irrigation and municipal water supplies throughout the western United States and portions of the South. NWRA advocates for federal policies, legislation, and regulations promoting protection, management, development, and beneficial use of water resources in these regions. The Alliance advocates for family farmers, ranchers, irrigation districts, and allied industries in seventeen Western states. The Alliance is focused on one mission – to ensure the availability of reliable, affordable irrigation water supplies to Western farmers and ranchers.

The NWRA and the Alliance are organizations that represent the water users that are the cornerstone of western communities and their economies.

In the world of Western water, a massive flood event or devastating drought is sure to get policy makers focused on the need to update and create more effective water management policy. The recent, multi-year drought in the arid Southwest has ramped up Congressional interest in legislation that would allow Western water providers to better address the current drought as well as improve preparations for future dry times. Now, the heaviest rains in a decade have

overwhelmed parts of the West Coast underscoring the critical importance of having modernized infrastructure in place to optimize water resources management.

Many communities of the semi-arid and arid West – as well as the farms and ranches they are intertwined with – owe their existence, in large part, to the certainty provided by water stored and delivered by the Bureau of Reclamation and other state and local water storage projects. The federal government has an enduring role in water supply infrastructure development and management that, consistent with state water laws, includes working with local water managers on a policy level and, in partnership with them, providing available federal funding and federal cost-share opportunities in support of their efforts to secure a stable and sustainable water supply.

Importance of Water Infrastructure

I appreciate the opportunity to testify about the importance of water infrastructure before the Committee today. This historically Western Committee also has strong representation from the Eastern and Southern United States. Water challenges vary from region to region; however, water's importance is paramount regardless of location.

Today's hearing, and the chance to discuss water infrastructure, is especially timely as it coincides with Water Week 2017, a week when water and wastewater organizations from around the nation travel to D.C. to highlight the national importance of water. Like members of this Committee, the groups participating in Water Week recognize the critical importance of water to every part of our nation and society. They recognize that different communities have different kinds of water needs and that an "all of the above" response to our nation's water challenges is necessary to solve important but complex and varied water problems.

Water managers from throughout the West are actively investing in new water supply options, embracing technology, utilizing green infrastructure and looking to use water as efficiently as possible. Thanks in large part to these efforts, water usage in the U.S. for agricultural, industrial and municipal uses have declined since the mid 1980's while at the same time populations, crop production, and demands have increased. Local water managers are looking to their federal partners to ensure that this impressive track record of water innovation can continue and be improved.

As a part of this "all-of-the-above" solution, it is critical that water infrastructure for both agricultural and municipal water providers is recognized as nationally important and qualified as such in potential infrastructure legislation. We believe qualifying projects should include water conveyance, surface water storage, aquifer storage and recovery, wastewater, water reuse, desalination, and efficiency investments. We also believe that infrastructure legislation must apply to the remediation of aging infrastructure as well as to the development of new infrastructure. Moreover, meaningful infrastructure legislation should encourage integrated water planning from watershed to wastewater discharge. Investments in forest health and watershed management can have as high or greater returns as traditional brick-and-mortar capital investments.

Water is the lifeblood of our nation. Without reliable water, every sector of our economy would suffer – from agriculture, to manufacturing, to high-tech. Food cannot be grown, businesses cannot operate, and homes and schools cannot be built or operate without water. Critical water infrastructure must be maintained and modernized to ensure the delivery and safety of water today and for future generations. As Congress discusses the development of an infrastructure package, it is of paramount importance that maintenance and rehabilitation of water infrastructure is a high priority.

Western water managers face significant regulatory and policy-related challenges. Water infrastructure that was built early in the last century is aging, and once-reliable federal grant and loan programs have been greatly diminished. Meanwhile, little progress has been made at the federal level towards developing new and improved water infrastructure to keep up with the growing water demands of expanding cities, energy production, and environmental needs. While water conservation, water efficiency, and water transfers are important tools for addressing certain water supply challenges, these tools must be balanced with supply enhancement measures that provide long-term solutions for the varying and specific circumstances in the West.

Water infrastructure is perhaps the most important, yet overlooked, form of infrastructure in our nation. An investment in water infrastructure is an investment in the very foundation of our nation's economy, its health, and its future. Access to a sustainable supply of water is a fundamental necessity for all economic development. Conversely, adverse economic consequences are certain if we do not invest and reinvest in our water infrastructure. According to the American Society of Civil Engineers 2016 Infrastructure Report Card, released last week, lack of investment in water and wastewater systems will cause the U.S. to lose nearly 500,000 jobs by 2025 and 956,000 jobs by 2040. This lack of investment will also lead to a loss of \$3.2 trillion in GDP by 2040.

Western irrigated agriculture is a significant contributor to the national economy. The Family Farm Alliance in 2015 published "The Economic Importance of Western Irrigated Agriculture" (prepared by the Pacific Northwest Project), a white paper specifically drafted for policy makers seeking to better understand the direct economic impact of Western irrigated agriculture and to acknowledge the growing chorus of voices bringing attention to food security and irrigated agriculture as a national economic issue. For the 17 Western states studied in the 2015 report, the total household income impacts from irrigated agriculture, associated service industries, and food processing sectors is \$172 billion annually. Irrigated farming and ranching is a huge economic driver in the West, particularly in rural communities. Further the fact that Americans spend less of their disposable income on food than any other nation in the world ensures a vibrant, consumer-driven economy. However, this economic force would virtually disappear, along with the rural American communities dependent on farming and ranching, if the water infrastructure that supports it crumbles. Given the magnitude of the food security issue to the nation's economic and social wellbeing, policy makers must prioritize protection of our water infrastructure.

This economically critical infrastructure is aging and is in need of improvement. Many of the Bureau of Reclamation facilities are between 50 and 100 years old. Reclamation has reported an infrastructure and maintenance backlog of approximately \$3 billion. Such aging infrastructure presents a further challenge because it requires ever increasing maintenance and replacement investments. As of 2013, the replacement value of Reclamation's infrastructure assets was \$94.5 billion. As the saying goes, an ounce of prevention is worth a pound of cure. Investing in this infrastructure on the front end will save taxpayers' money in the long run and allow us to preserve it, and the many benefits it provides, for future generations.

In addition to maintaining existing infrastructure, there are also numerous opportunities to expand water supply operations in a manner that supports the economy, ecosystems and western communities.

Case Studies in “All of the Above” Infrastructure Investment Opportunities

New Surface Water Storage: Sites Reservoir

Sites Reservoir is designed to be a large, off-stream reservoir located west of Colusa in the Sacramento Valley of Northern California. The estimated water yield would be between 470,000 to 640,000 acre-feet per year. The reservoir would be operated as part of the California State Water Project and is projected to cost between \$2.3–3.2 billion. According to a 2013 Bureau of Reclamation study, it would provide economic benefits of between \$248.8–276.2 million per year, while annual operating costs would be in the range of \$10–20 million.

Infrastructure for Water Delivery: Columbia Basin Project East Low Canal Widening

The Columbia Basin Project delivers water to over 670,000 acres in central Washington state allowing land to flourish providing specialty crop production worth over \$1.6 billion through the economy. The local irrigation districts and the State of Washington are working with the Bureau of Reclamation to boost water delivery by expanding the East Low Canal bringing a sustainable surface water supply to an area that suffers from a declining aquifer. The Washington State Department of Ecology estimates moving irrigators from groundwater, to surface water, prevents 3,600 jobs from being lost and saves \$840 million each year in agricultural production.

Integrated Water Management: Yakima Basin

The Yakima Basin in Washington State is home to some of the most productive agricultural land in the world. Yakima County ranks first in the nation in the production of numerous crops, including apples and hops. The importance of the hop crop should be especially apparent to those that just celebrated St. Patrick's Day. Agricultural producers, state, tribal and local governments, and the federal government are working through the implementation of the Yakima Basin Water Enhancement Project. This basin-wide integrated water management project has brought diverse groups together to work on water management and is supporting agricultural industries in the Yakima basin that produce more than \$1.8 billion in crops and \$1.4 billion in food processing while supporting more than 5,700 jobs. This type of integrated planning could benefit other water

projects as well. I know that water managers in the Yakima Basin greatly appreciate Senator Cantwell's work and dedication to this process.

Surface Water Delivery to Move Rural Communities off Impaired Groundwater: Arkansas Valley Conduit

The Arkansas Valley Conduit would utilize clean water stored in the Bureau of Reclamation's Pueblo Reservoir to replace groundwater supplies for 50,000 people in rural southeastern Colorado. Those groundwater supplies are contaminated with radionuclides at levels which violate the Safe Drinking Water Act, and the water providers are under enforcement orders from the Colorado Department of Public Health. This project, now in final feasibility, has a revenue stream sufficient to fully repay the capital costs, as defined in PL 11-111.

Expansion of Existing Surface Storage: Fontenelle Reservoir

The Fontenelle Dam, located in southwest Wyoming on the Green River, is a principal feature of the federal Seedskafee Project. The current active storage capacity of the reservoir is 260,000 acre-feet. Since 2011, Wyoming has proposed expanding the active storage capacity of the reservoir. The House of Representatives recently passed H.R. 648, this bill allows the Fontenelle Dam to be modified to increase the active storage capacity to 345,000 acre-feet. The expansion of this project will increase storage without noticeable change to the environmental footprint of the project.

Reallocation of Existing Storage: Chatfield Reservoir

Chatfield Reservoir in metro Denver, Colorado is a U.S. Army Corps of Engineers' (Corps) facility with flood control as its primary purpose. The Corps determined Chatfield Reservoir can accommodate an additional 20,600 acre feet of water storage for water supply without compromising its flood control function. This additional storage space will be used by municipal and agricultural water providers to help meet the diverse needs of the state. Project participants will undertake recreational modifications and environmental mitigations at Chatfield State Park to address the impacts of additional water storage.

Innovative Aquifer Storage: Groundwater Recharge in California and Arizona

Metropolitan Water District of Southern California (MWD) has been exploring a water purification project to reuse water currently discharged to the ocean to recharge regional groundwater basins. Through a partnership with the Sanitation Districts of Los Angeles County, MWD is expected to build a new water purification plant and up to 60 miles of distribution lines to convey the water to four groundwater basins in Los Angeles and Orange counties, allowing for additional natural filtration. According to MWD, the estimated construction cost is \$2.7 billion. The program would produce up to 168,000 acre feet per year (150 million gallons of purified water per day), enough water to serve more than 335,000 homes.

In Arizona, the Salt River Project (SRP) has partnered with cities to develop two groundwater recharge facilities. These facilities, the Granite Reef Underground Storage Project and the New River Agua Fria Underground Storage Project, enable Arizona to use its allocation of Colorado River Water. These facilities are permitted to store 168,000 acre-feet of water each year. SRP has been working in aquifer storage since 1994 and continues to look for innovative options to store water underground.

The Role of the Federal Government in Modernizing and Expanding Water Infrastructure

We need new water storage to adapt to our changing hydrology and develop usable and sustainable supplies to meet growing demands for water. Even with downward pressures on the budget, the federal government must be a partner with non-federal water users in solving water problems in the West by developing innovative policy and financing mechanisms with a very low federal cost. These types of programs should make water infrastructure development more attractive and affordable for non-federal interests to invest in projects the federal government can no longer fund. New water supply infrastructure must be developed to capture water in good years and replace diminishing snowpack during drought conditions, provide for growing recreational and environmental needs, address climate change and variability, allow for continued economic and population growth, and protect the vitality of the West and the Nation.

a) Federal Funding and Competitive Cost-Shared Grant Programs

Western water providers have invested billions in local and regional projects and strategies in recent years to improve water supply reliability. Those investments have been a major factor in the West's ability to manage through years of severe drought.

New federally-backed tools to assist in financing new and improved water infrastructure will be needed in the coming years. Water infrastructure is a long-term investment, and longer repayment and lower interest terms will be crucial to attracting investment in these water supply facilities. Such arrangements could include investments in everything from new water storage reservoirs (both on- and off-stream as well as groundwater storage), regulating reservoirs, canal lining, piping open channels, computerized water management and delivery systems, real-time monitoring of ecosystem functions and river flows to manage limited water supplies to benefit both fish and people, and watershed-based integrated regional water management project planning and implementation.

We need to develop innovative ways to encourage non-federal investments in new water infrastructure without requiring that the federal government actually build or fully fund that infrastructure. We believe such investments would allow for more cost-effective construction and operation and maintenance of much needed new water supply infrastructure and not impact federal budgets. Bridging the overall funding gap will require a partnership between the federal, state and local governments. This partnership will necessitate diverse revenue streams to ensure that communities, both large and small, along with agricultural, municipal and industrial water providers are all able to meet the water infrastructure needs of the future.

We encourage Congress to:

- **Make water infrastructure a high priority in any infrastructure legislation.**
- **Maintain the tax-exempt status of municipal bonds, one of the most valuable financing tools used by our nation’s water suppliers to build and improve infrastructure.**
- **Maximize the use of State Revolving Funds (SRF) for investments in drinking water and wastewater management.**
- **Strategically target funding increases for the Bureau of Reclamation and the Army Corps of Engineers to assist in the development of projects that increase water supply, address current and future drought and water shortage concerns, meet aging infrastructure needs, address rural water needs, and increase project operational efficiency.**
- **Fully fund the Water Infrastructure Finance and Innovation Act (WIFIA).** The WIFIA program was recently updated by the 114th Congress in the passage of the Water Infrastructure Improvements for the Nation (WIIN) Act of 2016 and WIFIA loans were funded for the first time to the tune of \$17 million in the continuing resolution funding the federal government through April 28, 2017.
- **Consider a “WIFIA-like” alternative for agricultural water providers.** The proposed Reclamation Infrastructure Finance and Innovation Act (RIFIA) and the New WATER Act (H.R. 434) would authorize a new affordable financing mechanism for certain large water supply projects in the West. The RIFIA provisions would be similar to WIFIA but focused on water supply infrastructure.
- **Jump start investments authorized by WIIN that provided critical new authorizations for water infrastructure development.**
- **Expand Reclamation’s Water SMART grants to include a larger (up to \$20 million) competitive 50-50 cost-shared grant for water supply management projects integrated into a regional watershed plan could help fund larger water conveyance and conservation infrastructure.**
- **Find ways to improve coordination of WaterSMART and other water management programs at Reclamation with existing conservation programs at the U.S. Department of Agriculture’s Natural Resources Conservation Service (NRCS).** This would lead to more effective federal investments in on- and off-farm water management improvements.
- **Make maximum use of existing financing tools for project beneficiaries, including direct loans and loan guarantees, such as those authorized by The Rural Water**

Supply Act of 2006 (PL 109-451). Efforts must continue to compel Reclamation and the Office of Management and Budget to implement this program, that is already authorized by Congress, and to investigate opportunities to develop similar loan and loan guarantee programs that can help fund new water infrastructure projects.

- **Fully funding the State Revolving Fund (SRF) programs for new and modernized drinking water and wastewater infrastructure.** SRF programs provide vital, grants and low interest loans to predominantly rural communities to ensure safe drinking water and compliance with evolving Clean Water Act requirements.

We fully understand that the federal funding mechanisms used in the past to build Reclamation water infrastructure may be gone. We view the future of water infrastructure as one where local districts plan, design, finance, construct, operate and maintain new water facilities, sometimes on federally-owned lands, as integrated features of existing federal projects. Innovative ideas currently being explored (and potentially in need of federal legislative authorities) include long-term leases of federally owned property, full or partial title transfers of federal property to project beneficiaries. We need to encourage the innovative nature embedded in private-public partnerships (P3) to build non-federal water infrastructure, while also recognizing that a P3 relationship may not work for many smaller or rural water providers. More can be done to engage the unique relationships Reclamation has with project water users who depend on Department of the Interior infrastructure.

We also encourage Congress to look for opportunities to reduce costs without adverse ecosystem impacts. Water users are responsible members of the regulated community. We recognize that reasonable regulations provide warranted environmental protections without creating unnecessary regulatory burdens or delays. Nevertheless, Congress should look for opportunities to improve the federal regulatory process by streamlining regulations, improving coordination, reducing duplication, and increasing transparency. Clarity on rule development and better-coordinated federal permitting processes would reduce permitting timelines and save taxpayer dollars without compromising environmental protections.

b) Bureau of Reclamation Policy Recommendations

Of all federal agencies, Western water users work closest with the Bureau of Reclamation, whose core mission is to provide for the delivery of water and power from its Western U.S. facilities in a manner that meets applicable requirements of state and federal law. Essential components of the core mission are: 1) providing for the operation and maintenance of existing facilities that are likely to remain in federal ownership; 2) providing for the rehabilitation and replacement of infrastructure that is likely to remain in federal ownership; and 3) possessing the ability to manage the construction of new projects that Congress may fund through Reclamation.

Even casual observers would note that Reclamation has carried out few major new construction projects in recent decades. Even though the designers and builders of Reclamation's most

impressive works have long since retired, Reclamation staff members from regional and area offices can continue to play a key role in helping to find the right path to make multi-agency processes and projects work, as well as direct strategic investment in capital maintenance and rehabilitations. When strong relationships are developed between Reclamation employees (especially those in area or regional offices) and local water users, strong, cooperative and innovative solutions can and have been reached (such as in the Yakima River Basin (Washington)). There are other models in the West where successful projects have been completed as well. A template for success might be one where state and federal agency regulators establish criteria, federal and non-federal funding agencies write the checks, and local districts and their consultants implement and satisfy regulatory criteria and funding-eligibility requirements.

The Bureau of Reclamation must either hire skilled and experienced engineers and managers or turn to their non-federal project managers and the private sector partners to provide the human resources necessary to maintain and improve Reclamation's facilities. Meeting the challenge of modernizing the West's aging water infrastructure will require highly qualified professionals serving in the public and private sectors. Reclamation's February 2006 *Managing for Excellence* Action Plan should be updated and used as a key resource to help address these concerns.

Congress should work to establish a simpler approach to facilitate transferring the title from federal ownership to non-Federal ownership of small-scale, single-purpose Reclamation projects and facilities. Title transfers are a positive means of strengthening control of water resources at the local level. In addition, they help reduce federal costs and allow for a better allocation of federal resources. Reclamation should work with Congress to develop a legislative concept for a programmatic approach intended to simplify transfer of "non-complicated" facilities. This would greatly reduce the hurdles and expense that can impede title transfers beneficial to local interests and to the federal government. NWRA and the Alliance are happy to commit to working with Congress to accomplish this.

c) Forest Health Threats to Water Supply and Infrastructure

Improving the condition of our nation's forested lands is of primary importance to water providers. National Forest lands are overwhelmingly the largest, single source of water in the U.S. and, in most regions of the West, contribute nearly all of the water that supplies our farms and cities. In addition, water infrastructure can be severely damaged or rendered useless by fire and post-fire flooding and debris flows.

The unhealthy state of our national forests, which were reserved specifically to protect water resources, has led to catastrophic wildfires that threaten the reliability, volume, and quality of water for tens of millions of Americans, along with the wildlife, recreational, and multi-purpose values of these lands. Large-scale, catastrophic wildfires today are more frequent and significantly larger than in the past. In Colorado alone, from 2004 through 2007, fires burned an average of 40,000 acres annually. However, from 2008 to 2015, that annual average jumped to 140,000 acres.

Unfortunately, Colorado is not alone. Increasingly, wildfires are threatening water supplies and water infrastructure throughout the west. In recent years:

- Denver Water has spent tens of millions of dollars to remove around 1 million cubic yards of fire related debris from Strontia Springs Reservoir,
- In Arizona, water providers have had to upgrade water treatment facilities by adding carbon filtration to handle the increased levels of organics and sediment at a cost of hundreds of millions of dollars.
- The Greater Wenatchee Irrigation District in Washington lost power to pump irrigation water during a critical growing time due to wildfire threatening crops and the livelihoods of farmers that depend on them.
- Placer County Water Agency and other local agencies in California spent \$8 million to repair and protect water and energy infrastructure following the King Fire.

We believe it is critical that both forest management reforms and resolution of the “fire borrowing” issue are addressed in comprehensive legislation focused on improving the health and resiliency of our federal forests. Only by addressing both issues together can we ensure that on-the-ground forest management and restoration activities will proceed at the pace and scale equal to the problem and begin to improve the forest conditions that led to the recent devastating and costly fire seasons.

d) Opportunities for Water Storage Infrastructure Development

For many reasons – political, economic, societal, environmental – the construction of traditional surface storage projects is undertaken on a much more limited basis than in decades past. The most frequent reasons center around economics or an inadequate water market associated with the given facilities. In other cases, environmental, safety or geologic challenges came to light during a project’s development, and rendered its construction, completion or operation unfeasible. Political opposition often contributed to a project’s demise, leaving the facilities “on the books” awaiting further action, but with external events and new priorities passing them by. Even if funding and authorization is secured for a new storage project, the existing procedures for developing additional water supplies can make project approval incredibly burdensome and time consuming with companion costs outstripping the ability of local water providers to accommodate.

Individual surface storage proposals must be evaluated and the associated benefits and risks must be viewed in a net, comprehensive manner. While some critics of new storage projects focus on perceived negative impacts associated with new facility construction (e.g., loss of habitat, disruption of “natural” stream flow patterns, and potential evaporative losses), these perceived impacts must also be compared to the wide range of multi-purpose benefits that storage projects provide. Properly designed and constructed surface storage projects provide additional water management flexibility to better meet downstream urban, industrial and agricultural water needs,

improve flood control, generate clean hydropower, provide recreation opportunities, and create additional instream flows that benefit downstream habitats.

The aforementioned WIIN Act contains provisions that allow irrigation districts to voluntarily prepay contracts with the federal government. The funding that is expected to be generated by these prepayments over the next ten years would be placed into an account to fund (finance) either the construction of new state-led water storage projects or the expansion of current federally-owned water storage reservoirs. The WIIN Act also authorizes Reclamation to implement a water storage enhancement program to fund new or expanded surface and groundwater storage construction for the purposes of increased municipal supply, agricultural irrigation, and to reduce impacts to fish and wildlife. The Trump Administration's Bureau of Reclamation should work to ensure that these authorities are implemented as a priority.

Conclusion

In closing I want to re-emphasize the importance of water infrastructure to our nation, its economy, and its health. A strong commitment to water infrastructure must be made in any infrastructure package that Congress and the Administration considers.

The infrastructure challenges our Nation faces are daunting, and they will require innovative solutions. The infrastructure investments made by prior generations have benefited this country for over a hundred of years. Now it is this generation's responsibility to invest in infrastructure and invest for future generations. It is our hope that you and others in the 115th Congress will embrace a core philosophy shared by the River District, Family Farm Alliance and NWRA: the best solutions are driven locally by people with an "on-the-ground" reality who are willing to partner with state and/or federal agencies to achieve our national goals of safe, reliable and sustainable water supplies.

Thank you again for the opportunity to testify and for your attention to the many infrastructure challenges facing our nation. Please know that the NWRA, the Family Farm Alliance and our members stand ready to assist you in your efforts.