Testimony of the Western States Water Council

Submitted to the
House Natural Resources Committee, Subcommittee on Water, Oceans and Wildlife

Regarding "The State of Water Supply Reliability in the 21st Century"

February 26, 2019

Introduction/Vision Statement

Chairman Huffman, Ranking Member McClintock and Members of the Subcommittee:

My name is Tony Willardson and I am the Executive Director of the Western States Water Council (WSWC). The Council is a bi-partisan government entity created by western governors in 1965 as a policy advisory body representing eighteen western states. Our members are appointed by their governors, and we have a small staff located in Salt Lake City, Utah.

My testimony is based on our existing policy position statements covering many water issues that fall under the jurisdiction of the Subcommittee and Committee. All our policy positions are available online at www.westernstateswater.org/policies-2/.

Water is an increasingly scarce and precious resource and should be a public policy priority. In the West, water is critically important to our public health, economy, food security, environment, and western way of life. We must cultivate a water conservation ethic through greater understanding of, and appreciation for, water's value.

Population growth, competing economic and ecological demands, and changing social values have stressed surface and groundwater supplies in many areas. As a result, the number and complexity of conflicts among users and uses is increasing. A secure water future is becoming increasingly uncertain. Numerous factors contribute to the uncertainty, including our unpredictable climate, aging and often inadequate infrastructure, data limitations regarding water supplies and demands, competing or poorly defined water rights, and a constantly evolving regulatory landscape.

An integrated, collaborative, and grassroots approach to water resources management is essential to ensure an adequate, secure and sustainable supply of water of suitable quality to meet our diverse economic and environmental needs now and in the future. This will require stronger collaboration and cooperation that transcends political and geographic boundaries between states, federal agencies, tribes, and local communities. We should work together to identify water problems and develop optimal solutions at the lowest appropriate level of government. Striving for cooperation rather than conflict and litigation, we must recognize and respect national, state, regional, local and tribal differences in values related to water resources.

The States' primary stewardship over water resources is fundamental to a sustainable water future. Federal water planning, policy development, regulation, protection, and management must recognize, defer to, and support state water laws, plans, policies, and

programs, as well as state water rights administration, adjudication and regulation, compacts and settlements. Rather than attempt to dictate water policy, the federal government should engage states early in meaningful consultation – avoiding, or at least minimizing, the need for federal regulatory mandates. Further, the federal government should contribute its fair share of funding in support of federal obligations and objectives that may be implemented as part of state water planning, management, and protection programs and projects.

A secure and sustainable water future will be determined by our ability to maintain, replace, expand and make the most efficient use of critical water infrastructure. We must preserve and improve existing infrastructure, as well as encourage and support innovative water supply strategies and new storage options to better balance supplies with demands.

All levels of government must prioritize the collection, analysis and open sharing of reliable data regarding water availability, quality, and usage given its importance to research for sound science and data driven decision making.

Water Data

The Western States Water Council urges the Congress and the Administration to give a high priority to the allocation and appropriation of sufficient funds for vital water data programs, which benefit so many, yet have been, or are being allowed to erode to the point that it threatens the quantity and quality of basic water data provided to a myriad, growing and diffuse number of decisionmakers and stakeholders, with significantly adverse consequences. (WSWC Position #428, October 26, 2018)

This includes the Bureau of Reclamation's Agrimet network of weather stations and similar networks that provide data used for improving agricultural water use efficiency and ground-truthing, calibrating and validating remote-sensing platforms such Landsat. (WSWC Position #418, March 14, 2018)

Quoting from a 2007 National Science and Technology Council report, A Strategy for Federal Science and Technology to Support Water Availability and Quality in the United States, September 2007: "Many effective programs are underway to measure aspects of our water resources. However, simply stated quantitative knowledge of U.S. water supply is currently inadequate. A robust process for measuring the quantity and quality of the Nation's water resources requires a systems approach. Surface water, groundwater, rainfall, and snow-pack all represent quantities of water to be assessed and managed – from the perspectives of quantity, quality, timing, and location."

Sound decisionmaking demands accurate and timely data on precipitation, temperature, evapo-transpiration, soil moisture, snow depth, snow water content, streamflow, groundwater, water quality and similar information.

The demands for water and related climate data continue to increase, and this information is used by federal, state, tribal, and local government agencies, as well as private entities and individuals to: (1) forecast flooding, drought and other climate-related events; (2) project future water supplies for agricultural, municipal, and industrial uses; (3) estimate streamflows for

hydropower production, recreation, and environmental purposes, such as for fish and wildlife management, including endangered species needs; (4) facilitate water management and administration of water rights, decrees, and interstate compacts; and (5) design and construct resilient water infrastructure projects.

Without timely and accurate information, human life, health, welfare, property, and environmental and natural resources are at considerably greater risk of loss. Data gathering and analysis needs transcend administrative agency boundaries and congressional committee jurisdiction requiring collaboration. State-of-the-art technology has been and is being developed to provide real or near real-time data in formats that can be shared and used by different computer programs with the potential to vastly improve the water-related information available to decisionmakers in natural resources and emergency management, and thus better protect the public safety, welfare and the environment.

Vital information is gathered and disseminated through a number of important federal programs that provide useful products to assist in visualizing and interpreting data on water and snow, making water supply and availability information more accessible, and easy to interpret.

These include, but are not limited to: (1) the Snow Survey and Water Supply Forecasting Program, administered by the National Water and Climate Center (NWCC) in Portland, Oregon, and funded through USDA's Natural Resources Conservation Service (NRCS); (2) NWCC's Soil and Climate Analysis Network (SCAN); (3) the U.S. Geological Survey's (USGS) Groundwater and Streamflow Information Program (GWSIP) and National Streamflow Network, which are funded through the Department of the Interior; (4) Landsat thermal data, archived and distributed by the USGS, and other remotely-sensed data acquired through the National Atmospheric and Space Administration (NASA) and its water-related missions; (5) the National Oceanic and Atmospheric Administration's (NOAA) National Weather Service and Climate Programs Office; and (6) the Environmental Protection Agency's National Environmental Information Exchange Network (NEIEN).

Over many years, the lack of capital investments in water data programs has led to the discontinuance, disrepair, or obsolescence of vital equipment needed to maintain existing water resources related data gathering activities. There is a serious need for adequate and consistent federal funding to maintain, restore, modernize, and upgrade federal water, weather and climate observation programs, not only to avoid the loss or further erosion of critical information and data, but also to address emerging needs, with a primary focus on coordinated data collection and dissemination.

Climate Adaptation

The Council supports state and federal applied research and hydroclimate data collection programs that would assist water agencies at all levels of government in adapting to climate variability and making sound scientific decisions. (WSWC Position #421, March 14, 2018)

Climate variability has serious potential consequences for water supply availability, water resources planning and management, water rights administration, flood management, and water

quality management. Further, much of the West's water infrastructure was designed and constructed prior to our current understanding of climate variability, often from short hydrologic records from the first half of the 20th century. The impacts of climate variability can include increased frequency and intensity of severe weather (droughts and floods), reduction of mountain snowpacks, changes in timing and amount of snowmelt runoff, and changes in plant and crop evapotranspiration resulting in changed water demand patterns.

Climate variability leads to additional stress on western water resources, which are already challenged by population growth, competition for scarce resources, increasingly stringent environmental regulations, and other factors. Water resources planning and management at all levels of government and sound future decisionmaking depend on our ability to understand, monitor, predict, and adapt to climate variability. The Council has over the years co-sponsored several workshops to gather input on climate adaptation and research needs, including research on extreme events. These workshops and various federal reports have helped in identifying knowledge gaps, research needs, opportunities to improve planning capabilities, and other activities that would assist in climate adaptation including those that could impact water quality and thus, available water supply.

Applied research needs and improvements to water resources planning capabilities include subjects such as evaluation of modifications to reservoir flood control rule curves, evaluation of the adequacy of existing federal hydroclimate monitoring networks, improvements to extreme precipitation observing networks and forecasting capabilities, development and improvement of applications for remote sensing data (satellite imagery), preparation of reconstructed paleoclimate datasets for drought analyses, and development of new guidelines for estimation of flood flow frequencies.

Drought Preparedness

The Council supports the Bureau of Reclamations Drought Response Program, as well as other federal programs including, but not limited to, the National Integrated Drought Information System (NIDIS), under the National Oceanic and Atmospheric Administration (NOAA), and other programs designed to improve our forecasting and response capabilities. Further, the Council urges and encourages the Congress and the Administration to assess and consider the need for a comprehensive national drought preparedness and response program on par with federal efforts to address natural disasters such as hurricanes, tornadoes, floods and similar extreme events. (WSWC Policy Position #430, October 26, 2018)

Since its inception the Council has been actively involved in national drought preparedness, planning and response, as well as related policy and program development and implementation. Drought is a recurring threat. According to the National Oceanic and Atmospheric Administration (NOAA), National Centers for Environmental Information, from 2015-2017, economic losses due to drought have been estimated at $11.1 billion.

The Bureau of Reclamation's current Drought Response Program supports a proactive approach to drought and provides financial assistance to water managers and users via its WaterSMART program to: (1) develop drought contingency plans; (2) implement drought

resiliency projects to build the capacity of communities to mitigate and respond to drought – increasing the reliability of water supplies, improving water management and operational flexibility, facilitating voluntary sales, transfers or exchanges of water, and providing benefits for fish and wildlife and the environment; and (3) undertake emergency actions to minimize losses due to drought through temporary construction activities and other activities, including water purchases and the use of Reclamation facilities to convey and store water.

The Council strongly supports legislation to permanently authorize Title I activities under the Reclamation States Emergency Drought Relief Act and provide adequate appropriations to meet priority needs and continue the Reclamation Drought Response Program. There is a continuing need for making permanent the temporary authority allowing Reclamation the flexibility to continue delivering water to meet authorized project purposes, meet environmental requirements, respect state water rights, work with all stakeholders, and provide leadership, innovation, and assistance.

There is a need for maintaining and improving existing monitoring networks that help provide drought early warning signals, as well as for tracking the impacts of drought. There is a continuing need for developing new monitoring technologies, such as remote sensing, that provide more timely data on water availability and better spatial coverage for assessing water supplies and drought impacts. The collection of basic monitoring data on streamflow, snow pack, groundwater levels, and weather and climate data are essential to understanding water availability and interpreting the early signs of drought. (WSWC Position #429, October 26, 2018)

Subseasonal and Seasonal Forecasting

The Council urges the federal government to support and place a priority on research to improve subseasonal to seasonal (S2S) forecasts and research related to extreme events, including research on better understanding of hydroclimate processes, paleoflood analysis, design of monitoring networks, and probabilistic outlooks of climate extremes. Further, the Council supports development of an improved observing system for Western extreme precipitation events such as atmospheric river storms, as well as baseline and enhanced stream, snow and soil moisture monitoring capabilities.

Western States experience great subseasonal, seasonal, and annual variability in precipitation, with serious impacts and consequences for water supply planning and management, drought and flood preparedness and response, water rights administration, operation of water projects, and aging water infrastructure. Sound decisionmaking to protect life and property by reducing flood risks and to inform decisions involving billions of dollars of economic activity for urban centers, agriculture, hydropower generation, and fisheries depends on our ability to observe, understand, model, predict, and adapt to precipitation variability on operational time scales ranging from a few weeks to a season or more. Investments in observations, modeling, high-performance computing capabilities, research and operational forecasting of precipitation provide an opportunity to significantly improve planning and water

project operations to reduce flood damages, mitigate economic and environmental damages, and maximize water storage and water use efficiency. (WSWC Position #399, April 14, 2017)

The federal government should place a priority on continuing federal research to develop new and improved predictive capabilities for precipitation at subseasonal to seasonal time scales (as described in the report to Congress prepared by NOAA pursuant to Title II of PL 115-25). Our present scientific capability for forecasting beyond the weather time domain – beyond the ten-day time horizon – and at the subseasonal to interannual timescales important for water management is not skillful enough to support water management decision-making. The Council has sponsored a number of workshops on hydroclimate data and extreme events, to identify actions that can be taken at planning to operational time scales to improve readiness for extreme events. Multiple approaches have been identified at these workshops that could be employed at the planning time scale, including ensembles of global circulation models, paleoclimate analyses, and improved statistical modeling, to improve flood frequency analysis and/or seasonal forecasting. (WSWC Position #407, June 29, 2017)

Advances in forecasting research, such as the hydrometeorological testbed program on West Coast atmospheric rivers, demonstrate the potential for improving extreme event forecasting at an operational time scale. The federal government should sustain and expand its Hydrometeorology Testbed – West program, in partnership with states and regional centers, to build upon the initial progress made in that program for developing and installing new technologies for precipitation observations.

The responsibility for operational weather forecasting rests with the National Weather Service (NWS), but improvements through Forecast Informed Reservoir Operations (FIRO) is also of particular interest to the Bureau of Reclamation and U.S. Army Corps of Engineers, which can also contribute to this effort.

Infrastructure Financing

The Council supports appropriate federal investments in water infrastructure projects and programs that provide jobs and economic security, while protecting the environment – as well as dedicated federal water infrastructure funding. (WSWC Position #419, March 14, 2018)

The West and the Nation depend on an intricate and aging system of weirs, diversions, dams, reservoirs, pipelines, aqueducts, pumps, canals, laterals, drains, levees, wells, stormwater channels, and water and wastewater treatment and hydroelectric power plants. Maintaining and delivering sufficient supplies of water of suitable quality is key to maintaining the Nation's and the West's economic prosperity, meeting our environmental needs, and sustaining our quality of life, both now and in the future. Appropriate water-related infrastructure investments ensure our continued ability to store, manage, conserve, and control water during both floods and droughts – as well as protect and treat our water resources. Existing and new infrastructure is critical to meet drinking water, wastewater treatment, irrigation, hydropower, flood control, interstate compact, tribal and international treaty, fish and wildlife habitat needs.

Water infrastructure in the West is financed and maintained under a complex network of state, tribal, local, private, and federal ownership, benefitting a broad segment of water users and other stakeholders. Aging water infrastructure has deteriorated – due to underfunded and deferred maintenance, repair, and replacement needs – and in many cases has exceeded its useful lifespan, raising public health and safety issues, risking loss of life and threatening public and private property. Inconsistent, inadequate, and untimely funding increases project construction and financing costs, as well as risk, including the failure of critical infrastructure. Substantial and sustained investments in water project construction, maintenance, rehabilitation and replacement is necessary and pays long-term dividends to the economy, public health and safety, and the environment. The Council supports appropriate infrastructure asset management and capital budgeting.

Existing federal, state and local programs to publicly finance water-related infrastructure projects are crucial, but insufficient to meet water quality and water resources management challenges related to future growth, including municipal, industrial, agricultural, environmental, and energy needs. Water infrastructure systems require ongoing, thoughtful investments to account for life-cycle costs, and should be managed with planned retirement or replacement in mind.

The federal government has a significant role to play in financing and cost-sharing for water-related infrastructure given federal economic and environmental objectives, federal tribal trust and treaty obligations, other past commitments, and federal regulatory mandates. Federal financial resources are limited, and many authorized federal water infrastructure projects have not been started or remain incomplete for decades due to inconsistent, incremental, or insufficient appropriations; permitting and licensing backlogs; duplicative environmental reviews; litigation delays; and oversight by multiple federal agencies without adequate interagency coordination.

Further, current federal budget scoring guidelines assess the full cost of infrastructure investments up front, while disproportionately discounting long-term economic, public health and safety, and environmental benefits – sometimes making new water project investments challenging to justify financially.

Local water district and state agency investments, private capital markets, performance-based contracting, and other alternatives offer help to close the federal funding, delivery, and maintenance gaps, and meet some of our national water infrastructure needs in partnership with federal agencies. Such partnerships have the potential to reduce overall project development costs and risks associated with such capital investments, expedite project delivery and associated water resource benefits, improve efficiencies and cost effectiveness, and maximize the respective strengths of the public and private sectors. Opportunities exist to leverage federal and non-federal funding through grants, loans and credit enhancements, as well as provide greater access to private sources of financing.

One challenge is that federal agencies often lack legislative authority to dedicate a sustained revenue stream to assure non-federal investors are fairly compensated for the costs and

risks of constructing or maintaining federal water projects, sometimes requiring approval through an act of Congress to proceed. The Council supports a method of congressional budget scoring that considers the unique timing of the costs and benefits of water infrastructure investments, and accounts for long-term public health and safety, economic and environmental benefits, with fair and appropriate discounting.

There is no one-size-fits-all program, but several federal financial and technical assistance programs, grants, loans, cost-share programs, and federal-state-local or public-private partnerships have proven beneficial to the timely completion and ongoing maintenance of infrastructure projects at all scales.

The Congress and the Administration should work together to ensure adequate, stable, and continuing federal appropriations for constructing, maintaining, and replacing critical federal water projects and to assist States and local governments as they address their water infrastructure needs. Further, they should work together and with the States to streamline permitting processes and coordinate environmental and other regulatory reviews to eliminate duplicative procedures, reduce costs of compliance and construction, and ensure timely completion, maintenance, or relicensing of authorized infrastructure projects so vital to the West and the Nation.

Moreover, the Council supports the creation and maintenance of dedicated water infrastructure funding through special accounts with dedicated receipts to be promptly appropriated for authorized purposes following their deposit, as well as a variety of grant, loan, credit enhancement and other financial incentive programs to help meet diverse needs at all scales.

Rural Water Projects

The Council strongly supports Congressional action to expedite construction of authorized rural water supply projects in a timely manner, including projects that meet tribal trust and other federal responsibilities -- recognizing and continuing to defer to the primacy of western water laws and tribal settlements in allocating water among users. (WSWC Position #423, August 3, 2018)

Across the West, rural and tribal communities are experiencing water supply shortages due to drought, declining streamflows and groundwater supplies, and inadequate infrastructure, with some communities hauling water over substantial distances to satisfy their potable water needs. Often water supplies that are available to these communities are of poor quality and may be impaired by naturally occurring and man-made contaminants, including arsenic and carcinogens, which impact communities' health and their ability to comply with increasingly stringent federal water quality and drinking water mandates. At the same time, many rural and tribal communities in the West are suffering from significant levels of unemployment and simply lack the financial capacity and expertise to finance and construct needed drinking water system improvements.

In 2014, the Bureau of Reclamation working with other federal agencies and the Western States Water Council sought to identify and evaluate rural water needs and the demand for new rural water supply projects. Reclamation estimated the costs for rural potable water supply system improvements in the 17 western States to be in the range of $5 billion to $9 billion for non-Indian projects and approximately $1.5 billion for specific Indian water supply projects. Reclamation also estimated that the cost to complete currently authorized projects that are under construction rose from the $2 billion originally authorized to $2.4 billion (in 2014) and costs continue rising. Given past levels of funding these priority projects will not likely be completed until well after 2065 at a cost of more than $4.8 billion.

Reclamation has not requested funds for grants to undertake additional appraisal investigations or feasibility studies for new rural water projects, given the significant backlog of authorized projects and lack of federal funding. Federal expenditures for rural water projects generate significant returns on the investment through increased national and local economic benefits, as well as improvements in quality of life. However, project benefits can not be fully realized until the projects are completed.

Reclamation Fund Spending

The Council has a long-standing policy in support of fully appropriating receipts accruing to the Reclamation Fund for authorized projects, including rural and tribal water supply projects, as well as supporting an investigation of converting it to a true revolving trust fund. (WSWC Position #408, June 29, 2017)

Under the Reclamation Act of 1902, the Reclamation Fund was envisioned as the principle means for financing federal western water and power projects with revenues from western resources – but these receipts are only available for expenditure pursuant to annual appropriation acts. Receipts are largely derived from water and power sales, project repayments, and receipts from public land sales and leases, as well as oil and mineral-leasing and related royalties, almost exclusively from western lands, many adjacent to rural and tribal communities. With growing receipts – in part due to energy development across the rural West – and declining federal appropriations for Reclamation Act purposes, the unobligated balance grows larger and larger (and is expected to soon exceed $16 billion), while the money is actually spent elsewhere, for other federal purposes, contrary to the Congress' original intent.

The Council is committed to continuing to work cooperatively with the Congress, the Department of the Interior and Bureau of Reclamation to meet our present rural water needs in the West for present and future generations, within the framework of state water law. The Council recommends that the Congress and the Administration investigate the advantages of converting the Reclamation Fund from a special account to a true revolving trust fund with annual receipts to be appropriated for authorized purposes in the year following their deposit (similar to some other federal authorities and trust accounts).

Tribal Water Rights Settlements

The Council has consistently supported negotiated settlement of disputed tribal water claims, as well as steps to ensure that settlements, once enacted, will be funded. Unresolved tribal claims leave tribal and non-tribal water supply reliability uncertain. (WSWC Position #412, October 20, 2017)

The settlement of Native American water right claims is one of the most important aspects of the United States' trust obligation and is of vital importance to the country as a whole and not just individual tribes or States. The public interest and sound public policy require the resolution of tribal water rights claims in a manner that is equitable and least disruptive to existing uses of water. Negotiated quantification of tribal water rights claims is a highly desirable process which can achieve quantifications fairly, efficiently, and with the least cost. The advantages of negotiated settlements include: (1) the ability to be flexible and to tailor solutions to the unique circumstances of each situation; (2) the ability to promote conservation and sound water management practices; and (3) the ability to establish a foundation for cooperative partnerships between Native American and non-tribal communities.

The successful resolution of certain claims may require physical solutions, such as development of federal water projects and improved water delivery and application techniques that provide tribes with "wet water." The United States has developed many major water projects that compete for use of waters claimed by Native American and non-tribal communities and has a responsibility to assist in resolving such conflicts. Tribal water rights settlements involve a waiver of tribal water right claims and tribal breach of trust claims that otherwise could result in court-ordered judgments against the United States and increase costs for federal taxpayers. The obligation to fund resulting settlements is analogous to, and no less serious than, the obligation of the United States to pay judgments rendered against it.

Current federal budgetary pressures and legislative policies make it difficult for the Administration, the States and the tribes to negotiate settlements knowing that they may not be funded because either they are considered earmarks or because funding must be offset by a corresponding reduction in some other expenditure, such as another tribal or essential Interior Department program. Tribal water rights settlements are not and should not be defined as Congressional earmarks.

Steps should be taken to ensure that any water settlement, once authorized by the Congress and approved by the President, will be funded. Congress should expand opportunities to provide funding for the Bureau of Reclamation to undertake project construction related to settlements from revenues accruing to the Reclamation Fund, recognizing the existence of other legitimate needs that may be financed by these reserves.

Energy & Water Planning

The Council supports integrating water and energy program and project planning, including promoting conservation and use efficiency, while seeking to minimize economic, environmental and other costs. (WSWC Position #420, March 16, 2018)

The West enjoys diverse and abundant energy resources, including renewable and non-renewable resources, and the West is a leader in the planning, development, diversification, management and protection of the Nation's water and energy resources. Maintaining adequate and sustainable supplies of clean water and energy present interrelated challenges. Water is scarce in much of the region and may or may not always be sufficient for all proposed uses. Power plant cooling and other energy development related water requirements can be significant on state, local and westwide scales.

An integrated approach to water and energy resource planning, development, diversification, management and protection is necessary to achieve a thriving and sustainable future for the West. Effectively planning for the future requires gathering and integrating data and information on past, present and future water and energy supplies and demands, including demands by different sectors, uses and users. In general, current water use data (especially consumptive water use data) are not sufficient for detailed and comprehensive analyses to support many water/energy decisions and policymakers' needs. The Council has worked collaboratively with state and federal agencies to develop a better understanding of water and energy supplies and demands.

Public-private partnerships are increasingly important in addressing our future water and energy challenges; and there is a continuing need for federal and state water and energy resource agencies, public utility commissions, and other planners, regulators and policymakers to better define and consider the nexus between water and energy resources in their respective areas of jurisdiction. Continuing water and energy nexus research and development is needed to further our understanding and evaluate the effectiveness of different policies and programs given various future scenarios.

Hydropower

The Council supports federal legislative and administrative actions to authorize and implement reasonable hydropower projects and programs that enhance our electric generation capacity and promote economic development, through streamlined permitting processes, while appropriately protecting environmental resources. The future development of potential hydropower resources should be appropriately undertaken in compliance with substantive and procedural state water law and interstate compacts, and consistent with the States' authority under Clean Water Act Section 401. Further, all rights and preference privileges of existing water and power users should be respected. (WSWC Position #391, March 22, 2016)

The hydropower resources of the West have been developed through partnerships between energy and water users and continue to be inextricably connected. Clean, efficient, inexpensive hydropower is a vital part of the energy resources needed to meet our present and future energy demands. Hydropower is a prominent component of electricity generation in a number of western states, and important part of state renewable portfolio standards. Hydropower is the largest source of renewable electricity in the United States, representing about 48% of total renewable electricity generation, with approximately 101 gigawatts (GW) of capacity and nearly

7% of total electricity generation. (www.energy.gov/sites/prod/files/2016/10/f33/ Hydropower-Vision-Chapter-2-10212016.pdf - p. 76)

The potential exists for further public and private hydropower development by upgrading existing generators, developing small hydro and the power potential from existing man-made conduits and canals, as well as hydroelectric pumped storage projects. Such development can often be undertaken with little impact on the environmental and important ecological resources, requiring minimal further environmental review. Permitting requirements may be appropriately minimized and streamlined so as to promote reasonable development while avoiding unnecessary costs.

Thank you for the opportunity to testify.