



CALAVERAS COUNTY WATER DISTRICT

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April 18, 2017

The Little Hoover Commission
925 L Street, Suite 805
Sacramento, CA 95814
Transmitted via email to ciana.gallardo@ljh.ca.gov

Re: Written Testimony Regarding Forest Management for April 27, 2017, Hearing

Dear Honorable Commission Members:

Thank you very much for this opportunity to testify on behalf of Calaveras County Water District (CCWD), where I am privileged to serve as General Manager. CCWD provides potable water service to approximately 21,000 people across Calaveras County for human consumption and fire flow protection. Calaveras County is located in the heart of the Sierra Nevada between Lake Tahoe and Yosemite National Park, spanning more than 1,000 square miles of three watersheds of the Sacramento/San Joaquin Bay-Delta, including the upper reaches of the Mokelumne, Calaveras and Stanislaus Rivers from an elevation range of over 8,000 feet (ft.) at mountain crest to 200 ft. in the foothills near the valley floor.

The conifer forests, oak woodlands, mountain meadows, and grasslands of these source water areas store, filter and convey snow and rain-fed water supplies to communities and ecosystems both within Calaveras County and downstream throughout the State of California. With the footprint of rim reservoirs such as Pardee, Camanche, Hogan, and New Melones of the Central Valley Project within its boundaries, water stored in Calaveras County supports many of the municipal, agricultural, environmental, and recreational needs of the San Francisco Bay Area, City of Stockton, San Joaquin Valley, Bay-Delta, and beyond. The natural resources of Calaveras County, such as its magnificent sequoias and trout-filled streams, attract thousands of visitors each year from the Valley and Bay Area to enjoy its beauty and recreation. Yet, while rich in natural resources, many of the communities within Calaveras County are economically disadvantaged – some severely with a median household income of less than 60% of the statewide average. The challenge of managing such an incredibly important resource, both for our communities and other beneficiaries throughout the state, with very limited local financial resources requires by necessity that we join with other local agencies and stakeholders and state and federal partners to provide for the public health and safety needs of our county while investing in the stewardship of our water resources.

For these reasons, in 2013 CCWD joined other local water agencies across the state in leading the Association of California Water Agencies' (ACWA) creation of its first-ever policy statement on the necessity of investing in the improvement of source water areas of California such as the Sierra Nevada and Calaveras County. Entitled, "Improving the Resiliency of California's Headwaters," the policy principles and accompanying policy framework recognize the vital importance of the natural infrastructure to California's continued access to clean, reliable water supplies for its human and environmental needs. Moreover, it calls upon all levels of government, and all beneficiaries, to join together to prioritize and achieve the restoration of its natural function by overcoming obstacles to increase the pace and scale of forest restoration, fuels treatment, and reestablish the storage and filtration capabilities of mountain meadows. Today, in partnership with the California Farm Bureau, The Nature Conservancy, The California Forestry Association, the Rural County Representatives of California, and ACWA this effort continues through the work of the California Forest Watershed Alliance (CAFWA) in Sacramento and Washington D.C. I feel incredibly privileged to follow in the footsteps of former CCWD Director Robert Dean who championed the creation of the policy framework to now help lead its implementation through ACWA and CAFWA.

The importance of the Sierra Nevada snowpack to the state's developed water supply is well chronicled in seminal documents such as the California Water Plan as are the threats to its continued reliability after more than a century of fire suppression on forested lands, compounded by the impacts of changing climate. I have witnessed, firsthand, the adverse consequences of living and managing a public water system in areas choked with overgrown forests, ravaged by extreme drought and bark beetle infestation, exposed to the growing danger of more frequent and severe catastrophic fire events. The convergence of these dangerous conditions escalated into a nightmare scenario in September of 2015, when for nearly a month the Butte Fire ripped through the heart of Calaveras County, burning more than 70,000 acres and incinerating over 40% of the Calaveras River watershed; resulting in the loss of life, and destruction of more than 800 homes and buildings. The devastating aftermath of the Butte fire still lingers today, impacting the citizens of the region including many of my employees and colleagues.

In providing this written testimony to the Little Hoover Commission and appearing at its hearing on forest management on April 27, 2016, I hope to convey the importance of this effort to restore the health and function of our forests, not only for my community but the entire state. Please see my written testimony below in response to questions provided by Little Hoover Commission staff.

How is water quality is affected by forest conditions?

CCWD advocates for the prioritization of state and federal planning, projects, and funding to advance the pace and scale of forest management to realize large-scale improvements in forest thinning, vegetation management, and controlled burns that reduce fuel loading and, consequently, the damage resulting from large wildfires and secondary impacts to California's

water resources. All of these actions contribute to increasing water quality and quantity within the watershed.

Investing in headwaters management, particularly the reduction of vegetative fuels in overly dense forests, improves the quality and quantity of water percolating through the forest into mountain streams and rivers, thus reducing the potential for catastrophic fire and resulting contamination during transport through a burned landscape. The introduction of sediment, organics, debris, and heavy metals post-fire can require more advanced and costly water treatment downstream to produce potable water and diminish the capacity of existing reservoirs such as New Hogan downstream of the Butte Fire. The natural purification and transport functions of forest lands in headwater areas are impaired by unnaturally dense forests and excessive fuel loading. These weakened forests and the associated adverse impacts to water quality and supply are further compounded by the stress of extreme drought and a bark beetle epidemic. With the death of more than 100 million trees since 2010, the vast majority of which will remain on the landscape as additional fuel load for the next fire, the natural water system is in great peril.

Additionally, projects to improve road location, construction and associated drainage facilities can reduce other adverse impacts of erosion to water quality. Similarly, the restoration of the natural water storage and filtration functions of mountain meadows further reduce sediment loads and augment the flows of adjoining streams and rivers. Likewise, local and state efforts to protect the watershed from the deleterious effects of illegal cannabis cultivation are necessary to protect against the degradation of water quality and supply as a result of illegal diversions, unauthorized grading, and the introduction of prohibited rodenticides, fungicides, herbicides and insecticides into the watershed.

In addressing these issues of local and statewide concern, it must be noted that each affected area of the state is diverse in its particular geographic characteristics, socioeconomic conditions, land ownership, beneficial uses of water, land use, landowner goals and objectives, and local expectations. Given these differences, there is no “one-size-fits-all” approach when it comes to developing effective management strategies. For example, a strategy that is effective for the forested headwaters on the North Coast may not work in the Sierra Nevada, while the upper watersheds of the South Coast may require a different approach altogether to serve local conditions and priorities.

How has tree mortality impacted the Calaveras County Water District?

The Calaveras County Water District is located at the center of an area that is under local emergency declaration due to the tree-mortality crisis.

After an unprecedented drought, coniferous forests throughout the Sierra Nevada have become highly susceptible to attacks from bark beetles. Over the past few years, California has seen startling tree mortality trends in the southern Sierra. Unfortunately, the wave of tree mortality swiftly moved northward, and Calaveras County was added to the priority list for

Governor Brown's Tree Mortality Task Force in April 2016. At last count, more than 700,000 trees were dead in Calaveras County. Statewide, that number exceeds 100 million since 2010. Once the beetles have passed through an area, the dead trees left behind become serious hazards. These hazards include grave risks to public safety, including civilians, property damage and wildfire. Mitigating these hazards is a task shared by federal, state, and local government as well as private property owners.

The dead conifers covering hillsides throughout the county often contain trees that are more than 100 feet tall and between 2 and 5 feet in diameter. Cutting these trees down is no small task, and large trees can cost thousands of dollars to safely remove. Many private homeowners cannot afford to remove the dead trees on their properties, and there is very limited public assistance to aid in these efforts.

The Calaveras County Water District has six separate water service areas, 12 separate wastewater service areas and hundreds of miles of water and sewer pipelines. These service areas are located in diverse geographic and topographic regions throughout the county, ranging from near the Central Valley floor all the way up to near the crest of the Sierra. The eastern portions of the District's service areas are higher in elevation and have been especially hard hit by the bark beetle infestation that has devastated many portions of the county. To help find creative ways to mitigate challenges created by the tree mortality crisis, CCWD joined the Calaveras County Tree Mortality Task Force, which includes the major public and private stakeholders affected by the beetle epidemic.

In spring and summer 2016, the District worked with a volunteer forester to survey the properties it owns throughout the eastern portion of Calaveras County in West Point, Wilseyville, Arnold, Dorrington and Big Trees – along with private properties nearby – to identify trees that were killed by beetles that threatened District facilities or adjacent private properties. This survey identified hundreds of dead trees in each town. The trees killed by bark beetles do not just threaten the District's above-ground infrastructure. They also pose a risk to miles of underground water and wastewater transmission pipelines that could be damaged by the roots of fallen trees or the impact of trees hitting the ground. Additionally, the District has many miles of easements used to access critical infrastructure necessary to operate drinking water and wastewater treatment systems that support public health and safety that are threatened by the dead and dying trees.

For the District to legally remove trees from private property, property owners must authorize the District's entry with execution of a Right-of-Entry form, something that property owners are often reluctant to sign. In summer and fall 2016 and winter 2017, CCWD has partnered with Cal Fire and the Department of Corrections' Vallecito Conservation Camp to utilize their inmate crews to remove hundreds of the highest priority trees killed by bark beetles; many more trees still need to be removed. This incredibly effective partnership is a cost-effective option for removing trees, and without it the District would have faced significant financial challenges to remove the trees under its responsibility. The leadership and support of Cal Fire in making these resources available to the District and other local agencies are greatly appreciated.

The District is also in the process of applying for grant funding through the California Office of Emergency Services that would cover up to 75% of tree removal cost. However, funding for these projects also includes time-intensive requirements: a certified arborist must confirm that a tree was killed by bark beetles, GPS coordinates must be logged for each tree, and the trees must be removed by a contracted certified arborist or forester. While the tree-removal emergency funding from the state is much appreciated, it does present administrative challenges when compared to the District's partnership with the Department of Corrections and Cal Fire.

How do the Butte Fire's impacts on the water district demonstrate the consequences that catastrophic fire can have on water quality?

In September 2015 the Butte Fire, which burned both the Amador and especially Calaveras sides of the Mokelumne River, ravaged more than 70,000 acres, destroyed more than 800 buildings, and killed two people. The fire burned about 40% (52,000 acres) of the Calaveras River Watershed, which drains into New Hogan Reservoir near Valley Springs and is used by CCWD to supply more than 10,000 people with potable water. The District owns and operates the Jenny Lind Water Treatment Plant, which is used to treat water to supply customers in the greater Valley Springs area. The intake to the water treatment plant is located in the Calaveras River, about 1 mile downstream from the New Hogan Reservoir outlet. Long after the fire was extinguished, the District continues to face long-term issues with the resultant high sediment and organics loads at the water treatment plant; inhibiting the preferred margin of safety in our staff operations of the facilities during times of peak demands.

The effects of wildfires have been studied by U.S. Geological Survey (USGS) to determine the impact on drinking water source water quality. Findings from this study concluded that the following problems may occur following wildfire events:

- Increased nutrient loading in reservoirs, which may promote algal blooms and associated taste and odor problems.
- Increased turbidity (100 to 10,000 Nephelometric Turbidity Unit (NTU)) increasing load on a water treatment facility's clarification, filtration and solids handling processes.
- Increased iron and manganese concentrations increasing load on a water treatment facility's clarification, filtration and solids handling processes.
- Increased total organic carbon concentrations (up to 20 mg/L), which increases the likelihood of the formation of unwanted disinfection byproducts.

Since the Butte Fire, the District has experienced all of the impacts identified by the USGS study, with some of the worst impacts coming in the wake of large storm events that stripped the barren hillsides of the Calaveras watershed of soils and organic material and washed them into New Hogan Reservoir. The raw water quality at the District's Jenny Lind Water Treatment Plant was so bad at times that the plant had to be taken off-line, because it was unable to treat the water. CCWD staff often had to perform twice the normal number of backwash operations

to clean the filters because of the increased sediment and organics washing down stream. The District's water treatment plant operator at Jenny Lind said he has never seen such consistently poor water quality coming into his plant in all the years he has worked for CCWD. This poor water quality is expected to continue to pose challenges to the District for the next 10 to 20 years.

In the fall of 2015, the District applied for emergency grant funding from the Federal Emergency Management Agency (FEMA) to help mitigate the short and long-term impacts of the Butte Fire. On December 29, 2015, the District's grant application was approved by FEMA with total eligible costs of \$3,758,000 (\$2,818,500 federal share and \$939,000 District share) to construct a pretreatment facility at the Jenny Lind WTP.

Once completed (planned for 2018), this pretreatment facility will remove the high levels of turbidity and organics in the water due to the Butte Fire. Once water has passed through the pretreatment facility, the District's existing plant will once again be able to treat the water normally to meet the needs of the 10,000 customers in the greater Valley Springs area. This would not have been possible without the incredible financial support of FEMA.

How is the Calaveras County Water District responding to the challenges brought by current forest conditions? Does the District have any recommendations on how the state could help mitigate those challenges, including regulatory changes?

In recognition of extremely challenging forest conditions throughout many portions of the state, the Calaveras County Water District took a leadership role in the Association of California Water Agencies' (ACWA) development of the first-ever policy statement on the necessity of investing in the improvement of source water areas of California entitled, "Improving the Resiliency of California's Headwaters". These policy principles are accompanied by a framework that recognizes the vital importance of healthy forests to California's continued access to clean, reliable water supplies for its human and environmental needs. The document also calls on government, and all beneficiaries, to join together to prioritize and achieve the restoration of the headwaters' natural function by overcoming obstacles to increase the pace and scale of forest restoration, fuels treatment, and reestablish the storage and filtration capabilities of mountain meadows. The District is actively working with ACWA and the California Forestry Association to advocate for state and federal policies that would increase the pace and scale of forest restoration and fuels treatment. To further these efforts, the District employs representatives at both the state and federal level.

The District been working with members of Congress and the Bureau of Reclamation to pursue a storage pool in New Melones Reservoir to provide vital redundancy and flexibility for regional wildfire response. This could allow the District to provide a backup water supply to Cal Fire's Air Attack Base in Columbia, which is located directly between the burn scars of the catastrophic Rim and Butte Fires. This air base is responsible for protecting a 3.6-million-acre swath of some of the most fire-prone forests in the state. Currently, the base's sole water supply is provided through a historical ditch and wooden flume system that travels through densely forested areas

and is highly susceptible to wildfire and mudslides. If this conveyance system were damaged or destroyed, the consequences of an interruption to the air base water supply would be devastating to the areas under its protection. The state can play an important role in supporting projects such as this, as Cal Fire operates the air base that protects public natural resources, communities, firefighters and the public purse from expensive fire suppression activities.

As articulated in greater detail later in this testimony, CCWD is working collaboratively through the Upper Mokelumne River Watershed Authority (UMRWA) to establish local partnerships with the United States Forest Service and Bureau of Land Management to plan and implement forest management projects in the Upper Mokelumne River watershed. CCWD believes that replicating the success of the partnerships and stewardship agreements on the Upper Mokelumne River in the Stanislaus River Watershed would be a simple measure to implement projects necessary to sustain a healthy forest and watershed. The Stanislaus River is a pristine watershed located directly between the Butte Fire and Rim Fire burn scars with extraordinary value, but has been lagging in forest management activities. Unless the State and federal government work with a unified group of local stakeholders to implement forest management activities soon, we fear the Stanislaus watershed will also be destroyed by wildfire in time.

On a smaller scale, the District has applied for State Responsibility Area (SRA) grants that provide funding for fuels treatment projects. These treated areas would provide protection for District infrastructure along with creating fire breaks that could help firefighters combat the uncontrolled spread of wildfires. Additionally, the District has partnered with Cal Fire and the Department of Corrections' Vallecito Conservation Camp to utilize their inmate crews to manage properties owned by the District in a manner that provides fire protection to communities within Calaveras County. The District suggests the state increases funding for the SRA fuels management grant program, as many critical applications have been denied due to lack of funding. We also urge the state to advocate for improvements to fire infrastructure in key locations that serve more remote areas of Calaveras County that do not have access to water supplies adequate for fighting wildfires.

Finally, one of the biggest challenges with fuels management is responsibly disposing of the organic materials removed from the forest. We need financial and regulatory (air quality and environmental regulations) support from the State to site and operate biomass energy generation facilities, composting plants and other facilities within each locality to process woody material to increase the pace and scale of fuels treatment. This is particularly important with the closure of many existing facilities across the state. The cost of trucking such voluminous woody debris out of county severely limits the cost-effectiveness of fuels treatment and processing dead and dying trees from the bark beetle infestation. Success of forest thinning and restoration projects is reliant on local facilities necessary for the beneficial reuse of harvested biomass. We ask for assistance from the State in pursuing all avenues to potentially offset the disadvantaged costs of operating woody biomass energy or composting facilities locally, either through subsidy or advocating for legislation.

Inadequate financing has been repeatedly raised as a deterrent to effectively responding to the tree mortality crisis and building resilient forests, and some have suggested a statewide water ratepayer fee to help fund watershed improvements. From the water district's perspective, would this be a viable form of financing? Are there other financing options?

Sustainable financing, primarily at the state and federal levels, is essential to realizing improved forest management throughout California. In recognizing the natural water resource infrastructure function of headwater areas of the state, there is a compelling justification for properly investing in the ongoing maintenance and repair of those assets just as pipes, treatment plants and other human-engineered infrastructure. With this understanding and the realization that failing to address the impaired condition of these watersheds will result in other costs and adverse consequences of public concern, there should be attention paid to these assets of the state and nation whenever contemplating any expenditure of public funds for water supply infrastructure.

Going forward, general obligation bonds of the state must provide meaningful and proportional funds for investing in the health and well-being of the natural water infrastructure of headwater areas such as the Sierra Nevada. Unlike past water bonds that largely focused on more heavily populated areas of the state and engineered infrastructure, future bonds must properly account for, and invest in, the improvement of our natural infrastructure. With such funding, and other resources through the Greenhouse Gas Reduction Fund, General Fund, and U.S. Forest Service and other federal programs, coupled with the assets of local communities, there is a pathway to meaningful, sustainable funding for landscape-scale forest restoration.

While a general statewide ratepayer fee may appear attractive to some as a continuous source of funding for watershed improvements, it poses significant challenges for affected local water agencies and their ratepayers. With very limited capacity for additional rate increases in a community such as Calaveras, passing through fees from the state would greatly diminish or even preclude our agency's ability to increase rates when necessary to meet the rising costs of operating and maintaining existing facilities in compliance with state and federal permits and regulations. For all intents and purposes, a general state-mandated fee passed through to our ratepayers would be perceived and felt as any other rate increase of the District but without the accountability, transparency, and independent local decision-making authority provided under Proposition 218. As a result, dedicated and talented Board members could potentially lose their seats and agencies could be thrown into chaos. And unlike other rates charged, collected and utilized directly by the local agency, such state mandated fees could require the disbursement of funds to the state administering agency by the local agency for partial redistribution back to the locality at some later date. This approach seems highly inefficient and lacks the transparency of other rates.

Please provide a description of the Upper Mokelumne River Watershed Authority's projects and collaboration with federal, non-profit and other partners on fuels managements, forest health and connecting upstream and downstream communities. What lessons have been

learned through these experiences that could perhaps be helpful to other areas of the state confronting similar problems?

The Upper Mokelumne River Watershed Authority (UMRWA) is a joint powers authority established in 2000 to promote, facilitate and execute actions for the protection and enhancement of water and natural resources in the Upper Mokelumne River Watershed. A local public agency, UMRWA is governed by an eight-member Board of Directors comprised of representatives from Alpine County, Amador County, Amador Water Agency, Calaveras County, Calaveras County Water district, Calaveras Public Utilities District, Jackson Valley Irrigation District and East Bay Municipal Utility District.

In July 2015, the UMRWA Board of Directors held a public workshop to learn about the U.S. Forest Service's Cornerstone Collaborative Forest Landscape Restoration Project (CFLR) in the Eldorado and Stanislaus National Forests, the potential for establishing a Mokelumne Community Forest for Bureau of Land Management (BLM) lands in Amador and Calaveras Counties, and the work of the Amador Calaveras Consensus Group (ACCG) to achieve broadly supported resources management actions affecting the lands managed by the two federal agencies. UMRWA's interest in serving as a supportive partner with the federal management agencies quickened following the September 2015 Butte Fire and the devastation it brought to foothill communities on both sides of the Upper Mokelumne River (Amador County north, Calaveras County south).

By establishing partnerships with the USFS and BLM, and by cooperatively developing the required financial resources, UMRWA seeks to work collaboratively with its federal partners to plan and implement resource management projects vetted through the ACCG that protect and preserve Upper Mokelumne River watershed forests, rivers, meadows and other natural resources for present and future generations. The Authority's budding forestry initiative received a timely boost when in September 2016 it secured \$500,000 of Proposition 1 funding from the Sierra Nevada Conservancy for costs to be incurred for implementing the Pumpkin Hollow Restoration Project, the first Cornerstone Project initiative with UMRWA serving as lead agency.

USFS Partnership – Cornerstone CFLR Project

The Cornerstone CFLR Project contains 390,000 acres of federal lands within the Eldorado and Stanislaus National Forests. One of 23 Collaborative Forest Landscape Restoration Projects established nationwide in 2011, it is targeted to receive \$16.6M in federal funding through 2020. Under federal rules, the assigned USFS funding amount represents a 50% match; the additional 50% funding must be raised from non-USFS sources.

On May 18, 2016, the USFS and UMRWA entered into a Master Stewardship Agreement (MSA) thereby formalizing the local-federal partnership to implement the Cornerstone Project. The MSA, formulated under Department of Agriculture guidelines, lays out the Authority's and the USFS's mutual interests (e.g. fire risk reduction, water quality protection, reforestation, water supply protection) and the parameters for working to implement the Cornerstone Project. The

MSA also designates UMRWA as the lead agency for implementing agreed-upon phased portions of the Cornerstone Project. This means UMRWA takes the lead role for: ensuring compliance with the California Environmental Quality Act and other applicable state laws; developing bid packages for project work and awarding associated contracts; securing grant funds to satisfy the non-federal funding requirements prescribed for the Cornerstone Project; performing accounting and treasury functions associated with incoming grant and federal revenues and payment of project related expenses; overseeing contractors and ensuring work performed meets applicable specifications; and managing all related procurement, contracting and grant-related administration tasks. Before work on any Cornerstone project can begin, the two partners must enter into a Supplemental Project Agreement (SPA). The SPA is a nuts and bolts document that defines the boundaries and parameters of the intended project and lays out each partner's project-specific obligations.

The first Cornerstone SPA, entered into August 10, 2016, is for the Pumpkin Hollow Restoration Project. This 972-acre project, located in the Calaveras Ranger District (Stanislaus National Forest) at an elevation of 6,100 – 7,300 feet is considered a high priority for implementation due to dense, overstocked, homogeneous conditions resulting in forest structures that are susceptible to mortality from drought, pests, pathogens, and catastrophic wildfire. It was also a clear candidate to proceed first because the USFS had completed the applicable Environmental Assessment (under NEPA) in late October. UMRWA's decision to move ahead with Pumpkin Hollow was assured when in September 2016 it was awarded a \$500,000 grant from Sierra Nevada Conservancy (SNC) Proposition 1 Healthy Watersheds program toward the project's nearly \$1 million total cost. UMRWA is presently working with USFS officials to develop the work specifications, schedules, and related details necessary to implement the Pumpkin Hollow Project. Actual work is expected to begin early summer 2017 (once the snow has melted and contractors have access to project work sites) and conclude in late 2018.

BLM Partnership – Mokelumne Community Forest

UMRWA and the BLM are presently formulating a Community Forest Agreement (as provided under Department of Interior guidelines) to establish the Mokelumne Community Forest (MCF). Under this agreement, UMRWA's role will be similar to its role under the U.S. Forest Service MSA in which the Authority effectively serves as lead agency for projects conducted on BLM lands lying within the boundaries of the MCF. The proposed MCF includes approximately 15,000 acres of BLM-administered public land, of which about 4,000 are in the Butte Fire burn area. These lands are within the wildland-urban interface (this is a zone of transition between unoccupied land and human development) and are in acute need of forest health and hazardous fuels reduction treatments consistent with the requirements of BLM's 2008 Sierra Resource Management Plan and 2011 Mother Lode Field Office Fire Management Plan.

The establishment of the MCF will create a more effective platform to address resource issues affecting these lands including implementation of projects designed to reduce risk to wildfire and to enhance the health of those forestry resources. Projects are expected to include: removal of vegetation or other activities to promote healthy forest stands and reduce fire hazards; restore and maintain wildlife and fish habitat; control noxious and exotic weeds;

enhance soil productivity; reintroduce prescribed fire into the ecosystem to improve the composition, structure and health of forest stands; water quality protections and enhancements; and protect cultural resources. BLM and UMWRA intend to achieve these objectives by developing Stewardship Project Operation and Management Plans that reflect broad community support through a comprehensive program of community outreach and involvement.

Lessons learned

The use of broad-based consensus groups like ACCG that bring a wide range of stakeholders together toward common goals can be very effective in laying the groundwork for large scale restoration efforts such as the partnership between UMWRA and USFS and potentially BLM. And with the collective participation of local government through a joint powers authority such as UMRWA there is a vehicle to contract with the state and federal granting authorities and contractors and consultants to perform the work on the ground. This model should be replicated in other watersheds across the state to more effectively leverage local, state and federal resources.

Why do forest health challenges faced by the Calaveras County Water District matter to the people living in other parts of the state?

Many Californians, including policymakers, do not fully appreciate the critical role the state's headwaters play in a resilient water management system. This results in a relatively low level of attention on headwaters until a catastrophic wildfire, bark beetle outbreak or other large-scale emergency occurs and puts the issue on the radar. These challenges in headwater areas have lasting impacts on water supply and quality that impact people living in all parts of the state, not just those within the directly affected communities. To bring these issues to the attention of all affected stakeholders, outreach and education must be integral components of a comprehensive headwaters management strategy. Without an informed public and increased understanding by legislators and administrative officials, it will be difficult to make large-scale improvements that will not only benefit the headwaters themselves, but the millions of people who rely on them.

It will be important to quantify the benefits of these improvements to secure a large-scale buy-in from California residents and policymakers that may not have a first-hand understanding of the issues on the ground. Perhaps the best way to do this would be through the development of a planning and coordination model that examines headwaters across large areas, bridging land ownership, vegetation/forest types, and affected upstream and downstream communities. While such research is most effective when it is collaborative (e.g. the Amador Calaveras Consensus Group), water utilities in particular are well suited for investing in these projects because they can contribute to improving long-term resiliency of the state's water resources both in headwaters and downstream areas.

Those who live in other parts of the state would also be interested to learn that significant costs can be avoided due to proactive forest management, such as the savings to state and federal

firefighting and disaster funds that occur when fuel treatments reduce the severity or even prevent wildfires. The Butte Fire cost \$90 million to fight in 2015 and the nearby Rim Fire cost \$127 million in 2014. Thousands of firefighters from across the state and nation put their lives at risk fighting these fires. Per the Sierra Nevada Conservancy, carbon emissions during the Rim Fire alone were equal to the annual greenhouse gas emissions from 2.3 million cars, or the annual emissions of 3.2 coal-fired power plants. This nexus was examined in CCWD's region by the Sierra Nevada Conservancy when it conducted the Mokelumne Watershed Avoided Cost Analysis, which demonstrates that strategic fuel reduction treatments are a good investment and produce multiple benefits to landowners, residents and other stakeholders.

CCWD believes that landscape-scale projects that help quantify the water supply, quality and other benefits of forest vegetation changes will help facilitate financing of long-term headwaters restoration and maintenance strategies, especially by downstream water users who can then point to a nexus between their investment and a water supply or water quality benefit. If agencies like CCWD can work with other stakeholders to provide policymakers with quality information about the headwaters, they are more likely to support large-scale investments in the headwaters.

In Calaveras County, agencies such as EBMUD are able to make a clear connection between the importance of being good stewards of the headwaters because of its direct impact on their drinking water supply stored in Pardee Reservoir, which travels more than 90 miles before it reaches their customers in the Bay Area. This connection is not as easy to make when water is provided through intermediaries such as the State Water Project, Central Valley Project or water transfers, where the link from headwaters to tap is not as direct.

CCWD will continue to invest in the stewardship of its precious natural resources for the benefit of our local communities and others across the state. This includes state treasures such as Calaveras Big Trees State Park, thousands of acres of forest land, and lakes, streams and rivers that attract thousands of visitors a year. Water that originates in Calaveras County is used by millions of people across the state and they should know that the actions agencies such as CCWD take to manage these resources do matter. It is the District's hope that a much stronger partnership between upstream and downstream stakeholders will be formed through education, advocacy and collaboration that will lead to a sustainable, long-term natural resource management plan that will serve the interest of all Californians well into the future.

Thank you again for the opportunity to comment on these very important issues.

Sincerely,

Dave Eggerton
General Manager
Calaveras County Water District