BAY AREA WATER SUPPLY AND CONSERVATION AGENCY

BOARD POLICY COMMITTEE MEETING

September 13, 2019

Correspondence and media coverage of interest between August 14, 2019 and September 11, 2019

Correspondence

Date: August 31, 2019
From: Chavan & Associates, LLP
To: BAWSCA Board of Directors
Re: Chavan & Associates engagement to audit the basic financial statements of BAWSCA

Date: August 14, 2019
From: Curtis Knight, Executive Director, California Trout
Spreck Rosekrans, Executive Director, Restore Hetch Hetchy
To: Harlan Kelly, General Manager, San Francisco Public Utilities Commission
Re: Public access and recreation at Hetch Hetchy in Yosemite National Park

Media Coverage

Water Supply Management:

Date: September 10, 2019
Source: California Environmental Protection Agency
Article: News Release: EPA Seeks Comment and Commitment on Draft National Water Reuse Action Plan

Date: September 6, 2019
Source: Sacramento Bee
Article: There's a silver lining to California's wildfires: More snowpack and water storage, study finds

Date: September 3, 2019
Source: Stanford Water in the West
Article: Making California's Water Supply Resilient

Date: August 29, 2019
Source: Edhat Santa Barbara
Article: Meeting Water Demands During Drought Years

Water Policy:

Date: September 8, 2019
Source: California Water News Daily
Article: California State Senate Confirms Two Appointees to State Water Resources Control Board

Date: September 5, 2019
Source: Maven's Notebook
Article: Droughts, Tunnels & Clean Water: A Conversation on California Water Policy

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Chavan & Associates, LLP
Certified Public Accountants

COMMUNICATION WITH THOSE CHARGED WITH GOVERNANCE DURING PLANNING

August 31, 2019

The Honorable Board of Directors
Bay Area Water Supply and Conservation Agency
San Mateo, California

This letter is provided in connection with our engagement to audit the basic financial statements of Bay Area Water Supply and Conservation Agency (the Agency) as of and for the year ended June 30, 2019. Professional standards require that we communicate with you certain items including our responsibilities with regard to the financial statement audit, and the planned scope and timing of our audit.

Our Responsibilities

As stated in our engagement letter dated June 30, 2019, we are responsible for conducting our audit in accordance with auditing standards generally accepted in the United States of America (U.S. GAAS) and *Government Auditing Standards* of the Comptroller General of the United States of America for the purpose of forming and expressing opinions on the financial statements. Our audit does not relieve you or management of your respective responsibilities.

With respect to any nonattest services we perform, the Agency's management is responsible for (a) making all management decisions and performing all management functions; (b) assigning a competent individual to oversee the services; (c) evaluating the adequacy of the services performed; (d) evaluating and accepting responsibility for the results of the services performed; and (e) establishing and maintaining internal controls, including monitoring ongoing activities. Nonattest services include the following:

1. Preparation of the basic financial statements.
2. Preparation of a template MD&A for the Agency to utilize in its preparation of the MD&A.
3. Preparation of updated tables for the MD&A (no analysis will be provided).
4. Preparation of RSI schedules except for the MD&A.
5. Preparation of supplementary information schedules.
6. Preparation of the notes to financial statements and not disclosures related to each deliverable previously noted.

These items will be prepared from information prepared and provided by the Agency and/or third parties during our audit, such as the Agency's trial balance or actuarial valuation reports. We will not prepare or create any of the information to be included in these schedules. The objective is to present this information in the District's reporting packages as required by GASB.

Our responsibility as it relates to the combining and individual financials is to evaluate its presentation for the purpose of forming and expressing an opinion as to whether the information is fairly stated in all material respects in relation to the financial statements as a whole.

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Planned Scope of the Audit

Our audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements; therefore, our audit involves judgment about the number of transactions to be examined and the areas to be tested. Our audit is designed to provide reasonable, but not absolute, assurance about whether the financial statements as a whole are free of material misstatement, whether due to error, fraudulent financial reporting, misappropriation of assets, or violations of laws or governmental regulations. Because of this concept of reasonable assurance and because we are not examining all transactions, there is a risk that material misstatements may exist and not be detected by us.

Our audit includes obtaining an understanding of the entity and its environment, including its internal control, sufficient to assess the risks of material misstatement of the financial statements and as a basis for designing the nature, timing, and extent of further audit procedures. However, we will communicate to you at the conclusion of our audit, significant matters that are relevant to your responsibilities in overseeing the financial reporting process, including any material weaknesses, significant deficiencies, and violation of laws or regulations that come to our attention.

Testing started in August and is expected to be completed and report issued no later than mid-November.

This information is intended solely for the information and use of the Board of Directors and is not intended to be and should not be used by anyone other than these specified parties.

Respectfully,

C & A LLP

San Jose, California

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August 14, 2019

Mr. Harlan Kelly, General Manager
San Francisco Public Utilities Commission
Via email

Subject: Public access and recreation at Hetch Hetchy in Yosemite National Park

Dear Mr. Kelly:

Thank you for your response to our letter of June 21, 2019.

We stand by our assertion that San Francisco's promises to increase access and improve recreation at Hetch Hetchy, made while lobbying to pass the Raker Act in 1913, have not been realized and that the public has been shortchanged.

We disagree with the characterization that San Francisco is cooperating with the National Park Service to provide "*members of the public with ample opportunities to visit and recreate in the area surrounding O'Shaughnessy Dam and Hetch Hetchy Reservoir".* The camping and lodging anticipated by the Raker Act have never materialized. Trail and road access, as described by the Raker Act, have been at best minimally established. Were recreation opportunities at Hetch Hetchy truly "ample", annual visitation would exceed 40,000 (1% of the number who visit neighboring Yosemite Valley).

We continue to believe that electric- and/or human-powered boats would provide environmentally sensible access to Yosemite's magnificent Hetch Hetchy canyon. Further, boating could be easily implemented without disruption to the landscape or reservoir operations. We do understand your concerns about protecting water quality, but we note that water supply reservoirs in California and beyond routinely allow boating (and in most cases, gasoline-powered boats area allowed). We are confident that San Francisco Public Utilities Commission staff is fully capable of treating all water supplies to ensure that all customers receive clean and safe water.

We appreciate that San Francisco has a close relationship with Yosemite National Park as formalized by the most recent Memorandum of Understanding, which commits the City to $33,000,000 in payments to the park over 4 years. It might be instructive to review and parse the MOU to determine what part of these payments are truly public benefits and what part constitutes reimbursement for expenses related to maintaining the dam and reservoir at Hetch Hetchy. Regardless of the outcome of such analysis, however, the benefits San Francisco has derived and continues to derive from its use of Hetch Hetchy vastly outweigh whatever contributions it makes to Yosemite National Park.

Most importantly, your letter fails to address commitments the City made when it so eagerly sought to build a dam and reservoir in Hetch Hetchy Valley, and its express assurances that the reservoir would enhance public access and recreation. We ask the San Francisco Public Utilities Commission to join a constructive conversation with federal officials in the National Park Service and/or Department of the Interior to determine how best to provide additional recreation benefits at Hetch Hetchy.

Restore Hetch Hetchy and CalTrout have great respect for the San Francisco Public Utilities Commission, and for the essential services it provides to Bay Area communities. San Francisco, however, was granted an unprecedented permission to build a reservoir in Yosemite's Hetch Hetchy Valley only after assuring Congress and the American people that the Hetch Hetchy region would be used "for park purposes and for water supply purposes". After more than a century, the City has not yet lived up to its side of this bargain. We ask that it do so now.

Sincerely,

Curtis Knight
California Trout

Spreck Rosekrans
Restore Hetch Hetchy

CC: The Honorable London Breed, Mayor of San Francisco
The Honorable David Bernhard, Secretary of the Interior
The Honorable Wade Crowfoot, Secretary, California Department of Natural Resources
The Honorable Michael Reynolds, Superintendent, Yosemite National Park
The Honorable Ann Moller Caen, President, San Francisco Public Utilities Commission

News Releases from Headquarters | Water (OW)
Contact Information:
EPA Press Office (press@epa.gov)
09/10/2019

EPA Seeks Comment and Commitment on Draft National Water Reuse Action Plan

SAN DIEGO — Today, at the 34th Annual WateReuse Symposium in San Diego, California, the U.S. Environmental Protection Agency (EPA) announced the release of a draft National Water Reuse Action Plan that identifies priority actions and the leadership and collaboration that is needed between governmental and nongovernmental organizations to implement these actions. Water reuse represents a major opportunity to support our nation's communities and economy by bolstering safe and reliable water supplies for human consumption, agriculture, business, industry, recreation and healthy ecosystems.

"Forty states anticipate experiencing fresh water shortages in certain regions within their borders over the next decade," said U.S. EPA's Assistant Administrator for Water David Ross. "Diversifying our nation's water portfolio must be a nationwide priority, and water reuse has the potential to ensure the viability of our water economy for generations to come."

The draft National Water Reuse Action Plan is the first initiative of this magnitude that is coordinated across the water sector. It was built upon extensive outreach, research and prior engagement with the water sector. The inclusive approach used to develop the draft plan recognizes that meaningful advancement of water reuse is best accomplished by working cooperatively with all water sector stakeholders. The draft plan incorporates federal, state, tribal and local water perspectives and highlights key actions that support consideration and implementation of water reuse. EPA's goal is to issue a final plan that will include clear commitments and milestones for actions that will further water reuse to bolster the sustainability, security and resilience of the nation's water resources.

The draft plan was announced during a panel discussion with federal partners—the Department of Agriculture, the U.S. Department of Energy, Department of Interior, Department of the Army, Bureau of Reclamation, and the Council on Environmental Quality (CEQ). During the panel, the federal partners noted the work of their departments and agencies and highlighted the importance of federal coordination and leadership on water reuse, which supports last year's Presidential Memorandum on Promoting the Reliable Supply and Delivery of Water in the West.

"The Water Reuse Action Plan is a dynamic collaboration of federal partners and stakeholders to innovate and utilize water reuse technology to meet water challenges of today and prepare for the water needs of tomorrow. Developing and deploying these technologies to secure a safe water supply for our nation is a top priority of this administration" said Assistant Secretary for Water and Science at the Department of the Interior Tim Petty.

"Ensuring reliable water supplies for the future takes a combination of innovation approaches, from advancing critical infrastructure projects to implementing new conservation strategies. Water reuse is an important component of Reclamation's all-of-the-above model, and we are committed to continuing our investment in water reuse for local communities throughout the West," said Brenda Burman, Commissioner of the Bureau of Reclamation.

“Water and energy are intrinsically intertwined critical resources for America,” said Department of Energy’s Assistant Secretary for the Office of Energy Efficiency and Renewable Energy Daniel Simmons. “New research and technology innovation, along with increased collaborations identified in the new Water Reuse Action Plan will help advance our nations’ water security and reduce water-related risks for our energy systems.”

“USDA works side-by-side with agricultural producers—with the help of public and private partners—to make land management decisions that benefit natural resources, including conservation and reuse of water,” said Bill Northey, U.S. Department of Agriculture’s Under Secretary for Farm Production and Conservation. “Voluntary conservation on agricultural lands is one of the tools we have to address water challenges.”

“The Corps of Engineers looks forward to working with our federal partners and local sponsors to identify water reuse opportunities as we deploy infrastructure solutions,” said Principal Deputy Assistant Secretary of the Army for Civil Works Ryan Fisher.

“The National Water Reuse Action Plan will be a game changer,” said Patricia Sinicropi, Executive Director of the WateReuse Association. “WateReuse commends EPA and Assistant Administrator Ross for bringing together the federal family and moving forward a bold plan for water recycling. Communities across the country are incorporating water reuse into their water management strategies as a proven method for ensuring a safe, reliable, locally controlled water supply--essential for livable communities, healthy environments, robust economies and a high quality of life. We look forward to working with EPA, other federal agencies, and the broader stakeholder community to further develop and strengthen the Action Plan in the months ahead.”

“Water scarcity is a real and pressing challenge for many parts of our country, and is something this administration is dedicated to addressing,” said CEQ Chairman Mary Neumayr. “The WRAP is a practical example of federal agencies coming together to address our Nation’s most pressing water challenges and I look forward to working with all the agencies and bureaus represented as we continue to promote coordinated water resource management across the country.”

EPA seeks to collaborate with all stakeholder groups on this plan and is soliciting public input through a 90-day public comment period. For more information, including opportunities to engage with EPA on this effort, visit https://www.epa.gov/waterreuse/water-reuse-action-plan.

Background:

Water reuse—sometimes referred to as water recycling—is an innovative and dynamic strategy that can dramatically change the future of water availability in the U.S. Water reuse can be used to meet water demands and mitigate the risks posed by droughts. Recycled water can be used for a wide variety of applications, including agriculture, potable water supplies, groundwater replenishment, industrial processes and environmental restoration. Further developments in water reuse provide more secure, sustainable and safe water supplies across the country.

# # #

There's a silver lining to California's wildfires: More snowpack and water storage, study finds

Sacramento Bee | September 6, 2019 | Michael Finch II

Wildfires in California leave behind acres of scorched land that make snowpack formation easier and more water runoff downstream from the Sierra Nevada to basins in the Central Valley, increasing the amount of water stored underground.

That's the finding from researchers at Lawrence Berkeley National Laboratory, who discovered that blazes in some parts of the state could result in more water availability.

Scorching the earth and killing a forest also can lead to changes the makeup of the snowpack, researchers said. Because wildfires usually burn through many tree canopies, there's more room for snow to build up, said Fadji Maina, the lead author of the study.

"You just have surface soil without any vegetation which means the snow is going to reach the soil and then accumulate," Maina, an expert in earth and environmental sciences.

"After a wildfire, because you have good snow accumulation that means in the summer when you have the snowmelt your runoff is going to increase," she said. "And because the runoff is going to increase, your groundwater is also going to increase because the river is going to feed the groundwater."

About 70 percent of the state's water comes from the Sierra. The study examined the Cosumnes River watershed which flows southwest from the mountain range to the south of Elk Grove. Researchers said the pattern resembles many watersheds in California since more than half of it runs through forests.

The location of the wildfire could have a significant influence. Historically, wildfires have burned in various spots between the valley and the Sierras. The study concluded a wildfire created in the valley would have less of an impact on water since it's further downstream and snow usually piles up in the mountains.

"If it happened downstream it will not impact the water availability," Maina.

Maina said the goal was to determine how changes to the landscape could affect other areas in the same watershed. Previous studies examined runoff and groundwater individually but the study ties them all together.

The result could be useful for water resource managers as wildfires become more common, said Erica Woodburn, a co-author. This case shows how the water systems in the two areas are deeply connected.

"The changes to stream flow and groundwater levels following a wildfire are especially important metrics for water management stakeholders, who largely rely on this natural resource but have little way of understanding how they might be impacted given wildfires in the future," Woodburn said.

The study relied on a predictive model and does not address questions about quality. However, Berkeley Lab researchers are conducting a separate experiment that examines how the Russian River watershed was affected by the 2017 Sonoma County wildfires.

“Developing a predictive understanding of the influence of wildfire on both water availability and water quality is critically important for California water resiliency,” Susan Hubbard, the associate lab director of earth and environmental sciences at Berkeley Lab, said in a prepared statement.

# # #

Making California's Water Supply Resilient

In the face of climate impacts, aging infrastructure, growing populations and depleted groundwater, a diverse water portfolio may quench the thirst of California's future water needs.

Stanford Water in the West | September 3, 2019 | Michelle Horton

As with the stock market, climate change requires a diversified portfolio of solutions. California Gov. Gavin Newsom recently signed an executive order to develop a comprehensive strategy for making the state's water system climate-resilient. The order calls for a broad portfolio of collaborative strategies to deal with outdated water infrastructure, unsafe drinking water, flood risks and depleted groundwater aquifers.

In a related study published earlier this year, Stanford researchers Newsha Ajami and Patricia (Gonzales) Whitby examined effective strategies to rising water scarcity concerns. Ajami is director of Urban Water Policy at Stanford's Water in the West program and a hydrologist specializing in sustainable water resource management. Whitby is a recent Ph.D. graduate from Stanford's civil and environmental engineering department and currently a water engineer at environmental consulting firm Brown and Caldwell. Below, they discuss their research and how a diversified water portfolio can meet the water needs of California into the future.

San Luis Reservoir, the fifth largest in California, stores water from the San Joaquin-Sacramento River Delta. Credit: Flickr/mlhradio

How does a diversified water portfolio reduce risks associated with water supply?

Ajami: Developing a water supply portfolio means moving away from dependence on one water source such as imported water or groundwater in order to develop a number of other water sources by incorporating local and regional solutions including conservation and efficiency, water recycling and reuse, rainwater and stormwater harvesting and desalination. The golden rule in an investment portfolio is to have diversification which prevents short-term and long-term risks. The same rule applies to a diversified water portfolio. In order to minimize the risk of short-term and long-term challenges and disruptions due to failing infrastructure or climate change impacts including intensified droughts and floods, it is important to rely on more than one supply source and develop a water portfolio that is comprised of multiple water options in order to increase systematic flexibility and resiliency. In developing such a portfolio, utilities and regions should not only focus on the number of sources but also need to think about the capacity of each supply. Our team has developed a water reliance index which can help measure these goals at both the utility and regional level.

Whitby: A water supply portfolio is the combination of water supply sources available to a utility. Diversifying means we're not putting all of our eggs in one basket, so if something happens to one of the supplies like a disruption to the physical infrastructure or a water quality concern or a cutback due to drought, we still have a portfolio of other options available. Water supply diversification should pursue different types of water sources such that each supply has different risks and also different strengths. For example, water reuse is typically considered a robust supply that is resilient to drought. Similarly, diversification means not only having many different water sources available, but also leveraging those sources to reduce stress on the more traditional supplies.

What key priorities would you expect California's water resilience portfolio to focus on?

Ajami: A water resilience portfolio can look different from region to region as California faces different challenges, opportunities, risks and limitations across the state. It is important for regions to identify the value and risks of existing and potential water supply options and focus on projects that not only enhance access to clean water but also deliver broader environmental and societal benefits such as green infrastructure. In highly urbanized regions, solutions such as on-site reuse work well, while communities with lower densities may find a centralized recycling plant as a better solution. The state needs to recognize these parameters and provide regions with broad guidelines while enabling and encouraging development of collaborative regional strategies. A model similar to the Renewable Energy Portfolio comes to mind, where regional and a statewide water diversification portfolio goals are set and then incentivized.

In a recent study our team developed a cap and trade goal-based trading model that enables a region to reach their water diversification portfolio goals by working together and taking advantage of regional opportunities to develop a diverse set of water solutions. Such innovative system level solutions can help water utilities coordinate their efforts, overcome fragmentation and share both financial and water resources while also gradually adjusting their business model.

What role does climate change play in future planning?

Ajami: Climate change is magnifying many of our current water challenges. Intensified droughts and floods are demonstrating the limitations of our traditional infrastructure model such as dams and wastewater treatment plants. The shift in our hydrological cycle means the conventional ways we managed our complex water systems aren't working. The new normal looks very different, as precipitation patterns have shifted, and we are receiving more rain than snow. Also due to higher temperatures, snow melts earlier and faster than before, depriving us from our

natural reservoir that used to hold much of our summer supply. Sea level rise is threatening our coastal groundwater basins and wastewater treatment plants. Increased wildfires especially in urban/wildland interface is affecting water quality. Overall climate change is interrupting our water systems. This means climate change has to be front and center in every infrastructure planning process. Our 21st century infrastructure model should look very different from our 20th century model, incorporating more nature-based solutions that can increase our system's resiliency and flexibility.

Can this order also help fix California's outdated drinking water infrastructure?

Ajami: Absolutely! Replacing and fixing our aging infrastructure requires a holistic approach and it should also include changing and revamping our funding and financial model. If you look at your energy or telephone bill there is a line item that provides funding to ensure access to telecommunication and energy infrastructure for rural and low-income communities. This model provides long-term sustainable and stable funding that is essential. This is exactly what we need in the water sector and what we do not have. Gov. Newsom has certainly identified access to clean water as one of his administrations major issues. His team has certainly tried to find resources to make it happen – which is a great first step – but I believe a model similar to energy and telecommunications sectors are needed to guarantee long-term sustainable and resilient solutions for every community in California.

Whitby: Definitely. Aging infrastructure is one of the risk factors affecting our water systems today. A fair amount of water is lost to system leaks before it even reaches customers. Incentives to diversify and strengthen our water portfolios provide an opportunity to not only retrofit and expand infrastructure, but also to re-invent and fortify our water system for the next century.

Based on your research what factors are necessary for successful implementation of a state-wide portfolio?

Ajami: Encouraging regional collaboration, system-level thinking and innovation especially in water governance and business models are essential elements of any state-wide water strategy. In response to some of our statewide water challenges, communities around California have started embracing alternative water solutions and diversifying their water portfolio by introducing demand side management strategies such as water reuse, stormwater and rainwater harvesting and desalinization among others. These new water sources are slowly disrupting the top-down model of the water sector and introducing more flexibility and resilience to local water systems, especially during droughts and other natural disasters. But these efforts are not often coordinated, and their implementation suffers from our outdated and fragmented governance models which need to be disrupted and changed.

Whitby: Collaboration and innovation. Collaboration because our water systems are inherently very fragmented with jurisdictions that don't always overlap with municipalities, counties or other agencies such as regulators and land-use planners. Working together can open up doors to identify opportunities that are both locally minded and regionally relevant. Innovation needs to happen not only on the technology side but also in the form of creative governance and financing mechanisms to make the necessary changes possible.

# # #

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Meeting Water Demands During Drought Years
Edhat Santa Barbara | August 29, 2019 | Harrson Tasoff

The Foster reservoir is one of several that serve the Willamette River Basin (Photo: US Army Corps of Engineers)

Water. It's perhaps the biggest issue in the American West. It has inflamed passions and driven ambitious projects for the past century. Now an economist at UC Santa Barbara has investigated how we might be able to mitigate the stress of droughts by changing the incentives for water storage and use. The results appear in the journal Nature Sustainability.

Humans use water for a variety of different ends, but rivers also need water flowing through them to ensure the survival of fish and other wildlife. In fact, the Endangered Species Act (ESA) requires a minimum stream flow in certain rivers to protect threatened fish. In Oregon's Willamette River this is also tied to the fishing industry. No water means no salmon, and no salmon means no fishing.

Andrew Plantinga, an environmental economist at UC Santa Barbara's Bren School of Environmental Science & Management, teamed up with colleagues at institutions in the Pacific Northwest to investigate water use dynamics in the Willamette River Basin. The goal was to figure out how to meet human demands on water while fulfilling the minimum flow requirements during severe droughts.

The team set up a spatial model to simulate human and natural factors. The model comprises 160,000 individual cells spanning the basin with rules that governed how the system changed over time. They selected a particular year in the simulation where the basin suffered a severe drought, and homed in on short-term interventions that might allow the region to meet both human demand and ESA requirements.

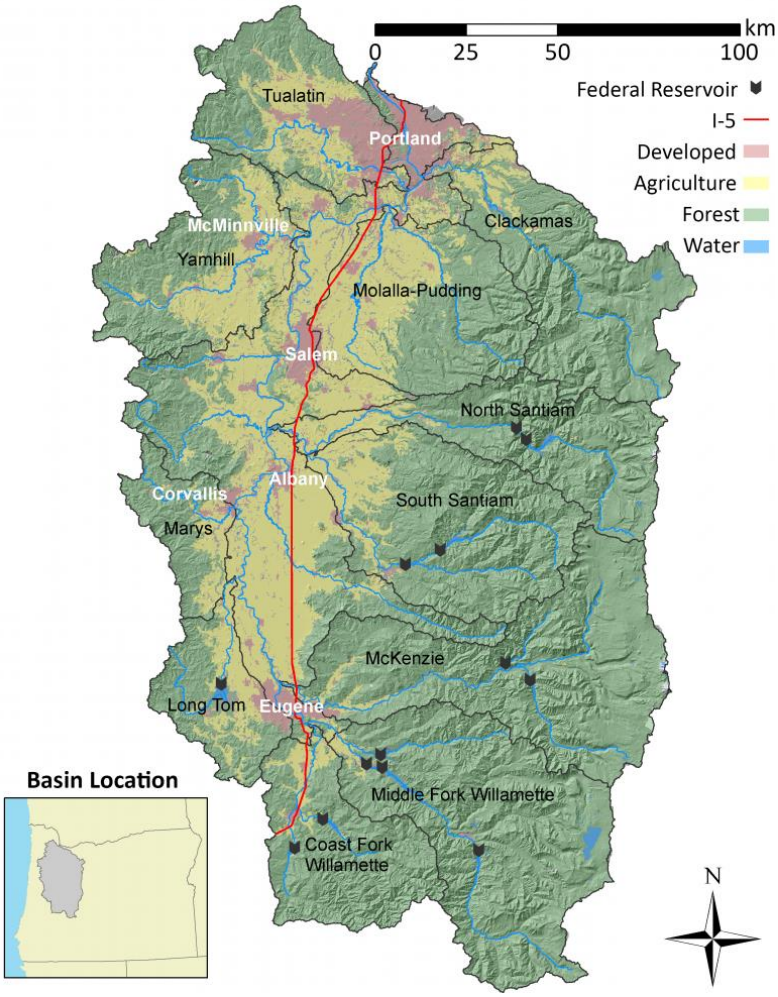
Changing Demand

The team targeted three major aspects of the basin's water economy: urban use, agricultural use and reservoir supply. By raising the price of water in cities, they could drive down urban use. Agriculture uses more water than cities do in this region, but this is not simply penny wise, pound foolish, according to Plantinga. Changing urban pricing regimes is a legitimate strategy. It was part of the response California took to the drought after 2014, he said. In the Willamette Basin simulation, these interventions saved between 32 billion and 84 billion liters of water depending on the magnitude of the change.

Because the agricultural sector accounts for more water use than urban areas, it afforded a larger potential for conservation. Unlike in cities, agriculture in the Willamette River Basin falls under the prior appropriations doctrine, which establishes volumetric limits and a seniority system for farmers. So the team simulated how a per-acre irrigation fee would influence agricultural water use.

"Western Oregon is not like California's Central Valley, where you can't grow crops if you don't irrigate," Plantinga explained. "In the Willamette Basin you can grow crops without irrigation. So it was really the change in incentive as to whether you'd be an irrigator or not."

Changing fees reduced the amount of water diverted for irrigation by 18 billion to 309 billion liters. The large spread stems from the scale of the intervention.



The Willamette River Basin covers around 12% of Oregon's land area and is home to over 70% of the state's population. (Photo Credit: ANDREW PLANTINGA/ USGS)

Affecting Supply

Changing the rule governing reservoirs provided a way to affect the supply side of this issue. Reservoirs serve two functions in the Pacific Northwest. They store water for later use, but also prevent floods by absorbing flows from heavy late-season storms. Unfortunately, these roles are at odds with each other because a full reservoir can't accept excess rain. Officials need to balance these two missions, meaning they don't completely fill reservoirs during the wet winters.

“So now think about the problem,” Plantinga said. “You’ve got a warm winter, but you don’t know what March is going to be like. You can’t just capture all that water in your reservoir because you might suddenly get a huge storm that requires that you have capacity to mitigate against flooding.” However, if a spring storm never arrives, you missed out on water you could have saved.

Plantinga and his colleagues decided to test what would happen if they changed the rules reservoirs operate under. The team allowed them to begin filling earlier in drought years, and allowed them to continue discharging water into rivers even when water levels dropped into the buffer zone, when reservoirs typically save their remaining stores for human use. They found that these changes in protocol could increase stored water availability by between 34 billion and 87 billion liters in their simulation.

Ultimately, policies that took more risks had greater potential, Plantinga acknowledged. If you begin filling reservoirs early, you risk not having the capacity to absorb the flows from large spring storms, but you’re able to store much more water in a dry winter. If you continue letting out water when the reservoirs are low you run the risk of not having enough for human demand, but you’re better able to meet ESA flow requirements.

So Close

Unfortunately, even the most progressive interventions were only partially successful in meeting ESA regulations. The efforts were able to conserve enough water to close 81% of the gap between the minimum flow requirements and the status quo, however there were still periods when flows fell short.

So why did these efforts fail?

Stated simply, not all the conserved water could go toward meeting the ESA requirements. Meeting water demands during a drought is all about timing and location. “For instance, you can’t meet a minimum flow requirement at Salem by conserving water downstream in Portland,” Plantinga said. “Similarly, if you’re not meeting the flow requirement in May, it doesn’t really do you a lot of good to conserve a bunch of water in August.”

“Water conservation can be very effective, but it also has to get water to the right place at the right time,” he added. So, while these initiatives can greatly impact water conservation, they also illustrate the challenge of meeting ecological requirements and human demand during severe drought years.

A Mismatched Climate

Although the Pacific Northwest is more temperate than California, it shares the same Mediterranean rainfall pattern: Most precipitation arrives in winter, and the region relies on a robust snowpack to store water and release it slowly throughout the spring and summer.

“However, in these kinds of Mediterranean systems, we have this misalignment between when you get the precipitation and when you need the water,” Plantinga explained. Although the rain arrives in winter, most demand comes in summer. For instance, farmers require large volumes of water to irrigate crops during the dry summer growing season.

Climate change exacerbates this challenge in two ways: Precipitation becomes more variable both in time and amount, and more arrives as rain rather than snow, according to Plantinga.

Drought will likely become an increasing issue across the world, especially in the American West. In fact, the Willamette River Basin actually experienced a severe drought in 2015 not unlike the one the team simulated in this study.

In this vein, Plantinga plans to shift his focus toward groundwater management, especially in California. In 2014, the Golden State passed the Sustainable Groundwater Management Act, which sets sustainable yield goals for groundwater extraction. However, the law does not dictate how to reach these targets, so Plantinga plans to look at different approaches to meeting these goals.

# # #

California State Senate Confirms Two Appointees to State Water Resources Control Board

California Water News Daily | September 8, 2019

The California State Senate voted on Thursday, Sept. 5 to confirm to appointees to the State Water Resources Control Board. Sean Maguire was appointed late last year by former Governor Edmund G. Brown Jr. prior to Gov. Brown's departure from office. Laurel Firestone was appointed by Gov. Gavin Newsom earlier this year.

Maguire is filling the position on the State Water Board designated for a civil engineer. Maguire has a Bachelor of Science in Civil Engineering from California State University, Sacramento. He has a diverse career both in public service and as an engineering consultant.

In his early career he worked for an engineering consulting firm serving a variety of municipalities and water agencies throughout the state. This work focused on water resource planning, drinking water, and wastewater infrastructure projects. His work focused on integrated water management and developing long-term water supply solutions to meet the needs of both water users and the environment. From 2015 to 2018 Maguire was employed by the State Water Board as a manager of the Storm Water Grant Program in the Division of Financial Assistance. He later served as a manager in the Division of Water Rights, overseeing administration of water right change petitions, licensing, and cannabis cultivation permitting.

"It is an honor to be confirmed by the Senate to continue serving the State of California," Maguire said. "In my mind there is no greater responsibility than stewardship of our water, and I am wholly committed to overcoming the many challenges we face, such as adapting to the impacts of climate change and ensuring safe drinking water for all Californians."

Firestone graduated with a B.A., magna cum laude, in Environmental Studies from Brown University, Rhode Island and completed her J.D. with honors from Harvard Law School. Firestone will now fill the position on the State Water Board designated for an attorney.

Firestone has received a variety of awards and recognitions, including the James Irvine Foundation's Leadership Award in 2018 and the Gary Bellow Public Service Award by the Harvard Law School in 2013. She was a recipient of an Equal Justice Works fellowship to start the Rural Poverty Water Project in the Central Valley from 2004-06 as part of the Center for Race, Poverty and the Environment.

From 2006-2019, Firestone co-founded and co-directed the Community Water Center (CWC), a statewide nonprofit environmental justice organization based in California's Central Valley and on the Central Coast. CWC helps disadvantaged communities gain access to safe, clean, and affordable drinking water.

Firestone served on the Tulare County Water Commission from 2007-2012 and co-chaired the Governor's Drinking Water Stakeholder Group from 2012-2014. Additionally, she has served on a variety of state policy advisory committees and partnered with universities to develop research and clinical programs for the human right to water. In 2009, Firestone authored the comprehensive Guide to Community Drinking Water Advocacy and has written a variety of articles relating to safe drinking water and the environment.

“It is an honor to be appointed by Gov. Newsom and confirmed by the Senate to serve the people of California in this capacity.” Firestone said. “I look forward to working with partners throughout the state to ensure we live up to the promise of the human right to water, build resiliency for all throughout our water systems, and protect and enhance our natural watersheds and ecosystems in every region of the state.”

Maguire’s term with the State Water Board expires in January 2020. Firestone’s term is set to expire in January 2023.

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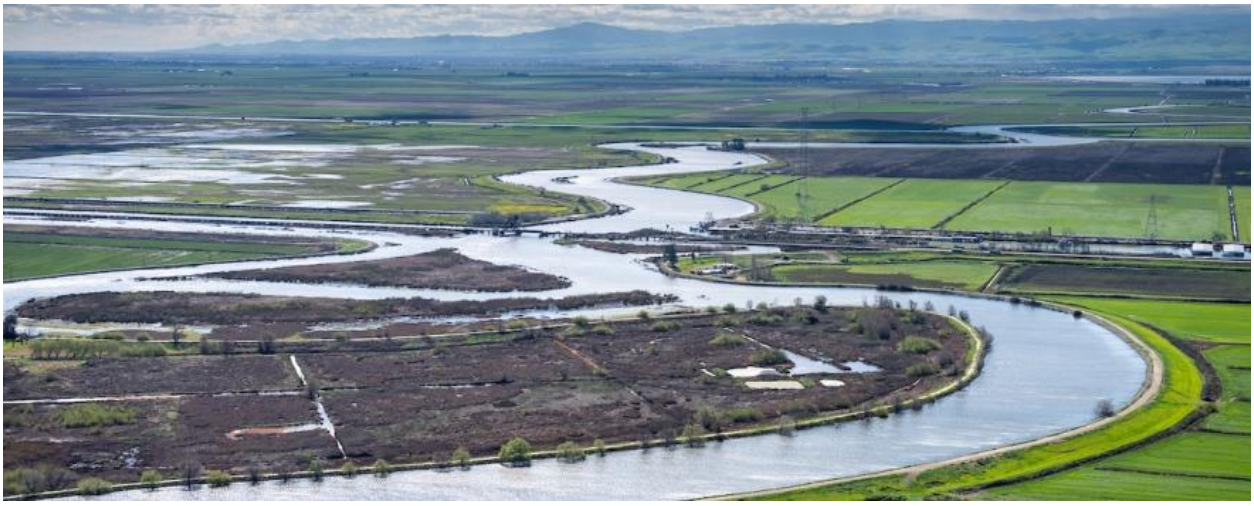
Droughts, Tunnels & Clean Water: A Conversation on California Water Policy
Maven's Notebook | September 5, 2019



Aerial view looking South along Old River, in the center is Fay Island, part of the Sacramento-San Joaquin River Delta in San Joaquin County, California. Photo taken March 08, 2019. Ken James / California Department of Water Resources

Secretary Wade Crowfoot, Jeff Kightlinger, and Jennifer Pierre discuss the Delta tunnel project, the long-awaited biological opinions, SB 1, voluntary agreements, and the relationship between the Newsom and Trump administrations

Recently, the Sacramento Press Club hosted a panel discussion on the future of California water featuring Secretary Wade Crowfoot, Metropolitan General Manager Jeff Kightlinger, and State Water Contractors General Manager Jennifer Pierre. The panel was moderated by Stuart Leavenworth.

Secretary Crowfoot began the discussion by stating the Governor Newsom has been pretty clear about his priorities since February's State of the State address, from which there were three takeaways:

"First, the Governor is prioritizing water as something we need to continue to work on," said Secretary Crowfoot. "There was a question of whether he would lean in on water, which can be considered a complicated and politicized issue, but he made it clear, water is a priority. Number two, he was clear and direct that he didn't support the twin tunnel project, the so-called Water Fix project, but that he does support a smaller capacity single tunnel. The third major takeaway was that if our discussions on California water are reduced to a tunnel or no-tunnels, we're totaling missing the boat. There's so much that we need to do across the state to prepare our communities and our natural places for the impacts of climate change. That's really what he talked about in terms of breaking down these binaries, so-called fish versus farms, north versus south, cities versus rural, and really adopting more of a portfolio approach."

THE DELTA TUNNEL

Moderator Stuart Leavenworth asked, "The tunnel project started out being two tunnels, it started out with both state and federal contractors willing to put money into this project, and it's now much different. Governor Newsom got elected and his first position

on this was to go to one tunnel. I was never entirely clear why he made that decision, what were the factors that drove him to go from two tunnels to one tunnel?"

Secretary Crowfoot said he would answer that question, but first he would give some context.

"The way I describe water in California is in a given year, about two-thirds of the water that we use in California is surface water that comes to us via rain and snow; the other third being groundwater," said Secretary Crowfoot. "The majority of that surface water falls in the Sierra Nevada from south of Fresno to north of Shasta. All of that snow and rain drains into two remarkably large and powerful river systems, the San Joaquin in the south and the Sacramento in the north. Before European settlement, those river systems drained through the largest estuary in the Americas, the Sacramento-San Joaquin Bay Delta. What enabled the development of California into the state that it now is the use of all of that surface water and distributing it across the state. And that is really what we talk about when we talk about conveyance through the Delta."

"The rain and snow that falls in a large portion of the state drains through the Delta, and portions of it are exported from the Delta now through the world's largest pumps of their kind," continued Secretary Crowfoot. "It obviously goes to Southern California but it's important to note that a lot of that water goes to the Bay Area and the Central Valley. Water that supports and supplies about 27 million Californians. One of the big challenges we face is protecting that conveyance because if we lose that conveyance, that ability to convey water from that broad geographical area to 27 million people, California would look a lot different than it currently does. A lot of people ask, why are the tunnels so important? And it's because that conveyance system is the lifeline to providing water to a majority of the state's population."

"So to your question, first I can say with confidence that the Governor and our administration feels that protecting conveyance through the Delta in the age of climate change is essential," said Secretary Crowfoot. "Here's what we know. We face two major risks with the water that moves through the Delta; currently it moves through surface canals or systems protected by levees. One is earthquake risk. The US Geological Survey suggests that there's a 2/3rds chance that there will be a major earthquake in Northern California that could compromise levees and create essentially a break in the system. If that happens, we're talking about the loss of freshwater for upwards of tens of millions of Californians for months. No catastrophe has even been experienced like that in the US, I can say with confidence, not even Hurricane Katrina. So I don't think I'm being hyperbolic when I say, we're on borrowed time as it relates to earthquake risks."

"The other risk is climate change," said Secretary Crowfoot. "If you believe in climate change, you know the sea levels are rising, you know that the projections of sea level rise are increasing over time, and our most recent state guidance suggests that if you're building infrastructure that you want to exist in 2100, you should anticipate between five and ten feet of sea level rise. An underground tunnel effectively developed and positioned would take water from the north Delta higher up and run it underground to the south Delta to those export facilities in a manner that would protect against sea level rise."

"Fundamentally this is about protecting that water source; this is not about expanding exports to other parts of California and in fact, it's the stated intent of ours to reduce reliance on the Delta," said Secretary Crowfoot. "The reason why we think one is more appropriate than two is the ability to deliver project. While there was a plan to fund the larger project, it involved financing,

and a one-tunnel project, which as I understand it, it's about one-third less expensive than the twin tunnel project. It is deliverable because its affordable. Secondly, we're concerned about impacts and limiting impacts. If you live in the Delta, this project is in your backyard for a decade, and that is real and that is of concern. We need to address impacts, so we also think a smaller capacity gives us more flexibility to address impacts."

Moderator Stuart Leavenworth asked what size or capacity should the tunnel be to make it cost-effective for water contractors?

Jeff Kightlinger said that the two sets of pumps for the Central Valley Project and the State Water Project in the south Delta can move 15,000 cfs per second, so from the water contractors' perspective, the tunnels should also be able to carry 15,000 cfs per second. "The idea of building a two or three land road to connect with a five land freeway didn't make a lot of sense; they should be matched in capacity. That changed, though, as we went through the environmental review process, the project was downsized to 12,000 and eventually, we started discussing 9,000."

"Our analysis is once you start getting below 6,000 cfs, you have not really changed the equation in the Delta," said Mr. Kightlinger. "You still have all your reverse flow issues, you still have all your environmental issues, and you aren't getting enough freshwater to mix with the more brackish water in the south. It starts to become not cost-effective once you get below 6000 cfs, so 6000 cfs to us seems about the floor."

Jennifer Pierre pointed out that we're going to have flashier storms in the Delta as we did earlier in May when it rained quite a bit; those will be followed by periods of dry. "We know that, we've modeled it, and now we're seeing it. So you may not always be using that tunnel capacity, but when you need it, you're going to need as much as you can to take that grab and put it into storage. That's one of the concepts behind the original 15,000 cfs facility was that you do have these opportunities to take it."

"I think there is a trust issue that we have in terms of how we would operate it," continued Ms. Pierre. "But it's really being able to take advantage of those high flow scenarios, move the water when we can, and then back off when we need to be protective of the environment."

Secretary Crowfoot pointed out that the new proposed project will undergo an entirely new environmental review that will identify different alternatives which include different capacities and assess impacts. They are anticipating issuing a Notice of Preparation for those environmental documents by the end of the year or early 2020.

Stuart Leavenworth asked Secretary Crowfoot about the concerns he is hearing from Delta stakeholders. "Is there any way to mitigate this project, from their perspective?"

"I have spent a lot of time with Delta county supervisors and we're standing up a regular meeting with Delta leaders for a couple reasons," said Secretary Crowfoot. "One is, I want to be as direct and transparent as we can and should be, as it relates to this project. Secondly, there are a lot of challenges and opportunities facing the Delta that have nothing to do with the tunnel. For example, the invasive nutria which can wreak havoc on the Delta. Invasive weeds, levee strengthening, water quality issues, subsidence, so there are a whole lot of concerns and priorities in the Delta that don't revolve around this tunnel."

Secretary Crowfoot said he has heard three primary concerns from Delta stakeholders. "First, what are the actual impacts of a project of this size in their communities? What does it mean to their roads, what does it mean to their businesses or if you're a farmer trying to get crops off the land? So the localized construction impacts. Second is the concern that if a tunnel gets built, there will be a divestment of investment in levee strengthening in the Delta because the perspective is that the state is investing in the Delta in part because the water supply moves through it. Will this be essentially a mechanism in which the state reduces investment in the Delta? The third is the process; Delta leaders feel that their voice wasn't heard in the last process and that they didn't have access to decision makers early on and so from their perspective, they were railroaded. So I'm trying to address those three issues head on."

Moderator Stuart Leavenworth notes that with sea level rise, the Delta could potentially lose freshwater at some point in the future. "Is there a potential deal to make sure that the Delta farmers have fresh water from the source further upstream?"

"Water quality and protecting water quality has to be part of the conversation," said Secretary Crowfoot. "Take the city of Stockton, for example. It's a large city that is reliant on Delta supplies, and to the extent that those Delta supplies are threatened in the future, that's a real problem. If the perception is that the tunnel threatens the water quality supply for 200-250,000 people, that is a problem. We are trying to address what does water quality look like in the Delta with the tunnel? and frankly if the tunnel never happens, what does water quality look like? Because sea level rise is coming, whether we like it or not and whether this project gets built or not, and there will be impacts totally separated from whether or not there's modernized conveyance."

Audience question: I had a question about the Delta tunnel and sea level rise. The last analysis that the North Delta intakes would stay fresh was done in 2010, which accounted for 55 inches of sea level rise and assumed no failure of the Delta levees. My question for Mr. Kightlinger and Ms. Pierre is, are you going to do a new analysis for 10 feet of sea level rise?

"We've been looking at a range throughout, and we will look at a range," said Mr. Kightlinger. "You have to balance everything. One of the advantages of moving the intakes north and up is that it did push about 6 feet above sea level whereas right now, they are at about sea level, so that is a distinct advantage. If you want to do for 10 feet, then you have to go further up north, and there are tradeoffs to how much time you're buying. Is it another 50 years versus 75 years and at what cost? How many billions of dollars more is it to go another 20 or 30 miles upstream, so that's the kind of analysis that will be probably looked at as a full range of alternatives that are looked at and you have to make cost benefit decisions on them. That was the decision we reached in the last go around; that doesn't mean it will be the decision this time around."

"I would add that's the benefit of the new environmental review is to bring in updated science," said Secretary Crowfoot. "I think its scary for anybody who watches how these projections about sea level rise are changing, the acceleration of ice melt in the arctic so this new CEQA analysis will build in, as I understand, with the updated science as it relates to sea level rise."

BIOLOGICAL OPINIONS

Moderator Stuart Leavenworth then turned to Jeff Kightlinger. "The Trump Administration has made it clear they want to weaken the Endangered Species Act. They

also seem to be suppressing biological opinions from their own staff and writing new ones that perhaps a little bit more favorable to water exporters. How do you view that? Arguably, you've been asking for more flexibility in how to operate in the Delta, is what the Trump Administration doing, is that a good thing from your group's perspective?"

Jeff Kightlinger said there's a bit of a false narrative here. "The biological opinions go through reconsultation under the Endangered Species Act, and they get updated every ten years based on new science," he said. "The reconsultation process we're involved in right now was begun by the Obama Administration and it's being picked up and finished by this administration. We have been involved in the process as we're allowed to be, we've seen drafts. They aren't weakening or gutting the Endangered Species Act. They are different; they are being updated."

"In some aspects they are more rigorous than the current requirements and actually in some circumstances would be taking water away from us that otherwise would be available to us," continued Mr. Kightlinger. "And in some aspects they are more .. 'lenient' might be the word, but all put together, it really depends on hydrological conditions. Under certain scenarios we end up with less water than we receive today by these draft biological opinions."

"It's a science-based process, and they go through peer review," Mr. Kightlinger said. "But when you actually get into these documents and really get into the science behind it, they aren't clearly weakening or strengthening. They are changing them. In some aspects, we'd probably lose water from where we are today, so it gets summed up quickly but it's not necessarily accurate that they are one way or the other."

Secretary Crowfoot then added that the biological opinions are the rules for export pumping in the Delta. "They are the rules imposed through the court because of the endangered species that are impacted by pumping. So really what's at play are what rules are protective of the endangered species, and they matter greatly, because the more protective they are, the more restrictive they are to export pumping. So the biological opinions … get updated over time with modernized science and they've run into the complicated politics of the transition of the Obama Administration to President Trump."

"In 2008-2009, the Fish and Wildlife Service and the National Marine Fisheries Service issued biological opinions that fundamentally changed how we operate the projects," said Jennifer Pierre. "They had criteria we'd never seen before. They also included requirements for the State Water Project and the Central Valley Project each to invest about $50 million annually, so they have each been spending on average together $100 million annually to test these criteria and understand how are they protecting, how are they working, do they make sense, and what's the outcome. What is happening now is that we are trying to insert that information and that knowledge into that update."

"All of those rules that were in 2008 and 2009 biological opinions are not being scrapped; they are being modified and we think that they should be modified because we've actually learned a lot," continued Ms. Pierre. "For example, we've learned that in the Delta when there's turbidity forming, if we voluntarily shut down the pumping while Delta smelt pass, we can avoid entrainment of Delta smelt. That's something that we learned because of the biological opinion criteria from 2008 combined with the science program, so it is important that we are able to make these transitions over time."

“It doesn’t mean that if there’s more water supply, than there’s less protection of fish,” said Ms. Pierre. “I think that’s a really unfortunate headline that constantly is coming around. It also doesn’t mean that less protection of fish is creating more water supply … because they aren’t a one for one, and that’s what we’re trying to explore, but I think the politics of it are making it difficult to have that conversation.”

Moderator Stuart Leavenworth asked if they see the Trump Administration’s actions as adding welcome flexibility to how the system could be operated?

Secretary Wade Crowfoot said that managing water in California requires a lot of coordination of federal agencies because a lot of Californians get their water through federal infrastructure. “The Bureau of Reclamation and Department of Water Resources over decades are essentially like ‘sister agencies’ in terms of water supply,” he said. “Our Department of Fish and Wildlife works closely with the two biological agencies of the federal government, so what I’ve always said is we need to work with the federal agencies wherever we can and defend the state’s interests wherever we have to.”

“The most challenging dynamic right now is that President Trump went to Arizona in October and issued a presidential memorandum that directed that the biological opinions have a certain outcome,” continued Secretary Crowfoot. “There are a lot of career scientists that are working to update the biological opinions, but the reality of President Trump’s direction is out there and it’s sort of pollutes what would otherwise be a pretty straightforward scientific process.”

Jeff Kightlinger said that in Metropolitan’s review of the opinions, there isn’t that much added flexibility. “They are adjusting the existing criteria, which already had some flexibility on it,” he said. “To my mind, what they are doing is really modifying that. Some of that we think is helpful, but others we think are far more restrictive and we don’t believe are following the correct science, so we provided comments on that. We’re not seeing it as a black or white, it’s a pretty mixed, as far as we can tell.”

Jennifer Pierre noted that the criteria for the 2008-2009 biological opinions were hydrology based, so if it was April, the biological opinions specified operations regardless of what the actual conditions were or if there were fish in the system. “One of the adjustments being made is, what are the observed conditions around the actual fish risk and then what is the range that you operate within in order to adjust to that? If there’s fish migrating in the system, then you’re basically being protective. If they are not there, then you have some extra flexibility. I think that’s really a shift, because right now we say January through June, here’s your export capacity and we’ll talk to you in ten years at the next biological opinion and that’s just not an efficient way to manage the resource we have. It doesn’t help the fish always, and it’s certainly not helping for water supply. … I think this is the right direction overall, even though as Jeff said we still have some concerns and as Wade said, we have a difficult political climate.”

Jeff Kightlinger added that the shift towards real-time operations as opposed to rigid calendar-based operations has become possible because of the science and investments that have been made in monitoring conditions. “These adjustments and this flexibility didn’t start with the Trump Administration,” he said. “It’s been starting over the last four years or so in the previous administration carrying over to today that we’re starting to use these tools, to use real-time operations, and that’s been a welcome change.”

Moderator Stuart Leavenworth noted that some have said that the biological opinion being developed would result in harm to winter-run salmon. "I'm wondering, when the process is done, will that still be the case, or will that be as you call an adjustment?"

Jeff Kightlinger said that the biological opinion found 'no jeopardy' at the end, so it was a very mixed document. "They said certain things were going to harm certain types of salmon runs, but they also found no jeopardy in that same document, so it's not that black or white or that this was all about to get more water. It actually dramatically reduced the incidental take limit on how we would operate, which had potential far-reaching ramifications for us and the ability to move water, so we provided on comments on that. We didn't think the science was based on that, but it did reach a no-jeopardy conclusion in that document. But it's a draft, and these things go through iterations. It's going to go through peer review."

"One of the questions that's come up is the fact that the federal government is going in one direction and California is going in another direction in terms of endangered species protections," said Moderator Stuart Leavenworth. "If the Trump Administration succeeds in rolling back the federal ESA, and California increasingly uses its state ESA, could you end up in a situation where the federal contractors operate under one set of rules and the state water contractors operate under a much tougher set of rules?"

"This has yet to play out, but the state water contractors have to comply with the federal ESA and the state ESA, so I don't know how the Department could possibly react to that because they would have to be looking and choosing which law they were complying with," said Jennifer Pierre. "They are two different laws, they have different criteria, they address some different species, but they should all be based on the same body of knowledge. It should all be based on the same science, and I think that's something that from the contractor's perspective, we're working really hard on."

Jeff Kightlinger pointed out that the export pumps for the State Water Project and the Central Valley Project are literally hundreds of yard from each other, so the two projects operating under very different scenarios is not operationally feasible. "It would cause havoc," he said. "Right now, the two operations are synched and they have to work together physically to make it work, and so the idea that we'd have two sets of criteria, two sets of laws operating simultaneously would be pretty chaotic, and so we would have to find a way to resolve that."

Audience question: When the biological opinions do come out, the state has already said they are going to own ESA permit for operation of the State Water Project because they've signaled that they might not like the science or the process of the current biological opinion work. So when that does come out, do you have anything to say about what the state's going to do?

"We've been clear that our Department of Fish and Wildlife has been undertaking a science-based assessment of what those, essentially those pumping rules should be in the Delta for the purposes of covering or allowing the state project to comply with state law and that's going to continue," said Secretary Crowfoot. "Our understanding is that the biological opinions will be released in a matter or days, don't know, weeks – but in any event, that work with the state process will continue."

STATE-FEDERAL RELATIONSHIP

Moderator Stuart Leavenworth asked about the relationships between the state and federal water contractors with the dynamic of having Trump in office. "Here's my take on it, you guys tell me if I have it wrong. When Obama was in office, the federal contractors kinda knew they had to play ball in terms of working with other contractors on Delta issues and financing the tunnels … When Trump came to office, they all of a sudden had a very good friend in Washington, and were now saying they are no longer partners in financing the Delta tunnel. Has the dynamic changed just because there is a change in administration in Washington, in terms of federal contractors' interest in collaborating?"

Jeff Kightlinger said not much has really changed. He noted he's been through a number of changes in administrations, and it's been fairly consistent. He also noted that the decision by the Central Valley Project contractors not to finance the Delta water fix occurred in the Obama administration. "They finally decided they couldn't afford it," he said. "That hasn't changed today, which is unfortunate because they need it; they need that extra flexibility and the extra reliability of that if they are going to be able to continue to farm, particularly with the impacts of SGMA that is going to have pretty dramatic impacts on Central Valley agriculture."

"The decision was made on affordability, and not based on who was in Washington DC," said Mr. Kightlinger. "Naturally they are hopeful that they will get more relaxation of endangered species requirements, but none of the Act has been changed. There hasn't been a single amendment to the ESA put through, even when the Republicans controlled the House, the Senate, and the presidency in the first two years under Trump. Not a single amendment was made to the Endangered Species Act, so it's really hard to make those changes on the federal level. Most CVP contractors get that. But they are hopeful there will be some nibbling around the edges with this administration, but I haven't seen a dramatic change in their approach."

Jennifer Pierre pointed out that they are actually doing a lot more together; for example, the voluntary agreements. "This idea about finding that common ground – there's actually a huge space for that. I think Water Fix and BDCP kind of sucked up all the air in the room for the last ten years, and that's all we talked about in water, so having time right now to recalibrate has opened up opportunities to talk about other things in water, and expand the tent around those topics."

"We have a huge positive change in leadership from the Bureau of Reclamation Commissioner Brenda Burman who is really engaging on California issues and has been really helpful for the CVP as a group," Ms. Pierre said. "That then has played out in helping us to collaborate more with them, so I guess I'm not seeing there's a Trump effect really because a lot of what is happening is at the local and regional level. I think there's a maybe just a little more space provided to actually collaborate with us and I think we're taking good advantage of that, and hopefully it will result in some sustainable successful ways of moving forward in water."

Secretary Crowfoot noted that the implementation of the Sustainable Groundwater Management Act requires groundwater basins to achieve sustainable yield in the next 20 years. "That's going to have real impacts on parts of the state that rely almost entirely on groundwater, and it will have real impacts on agricultural portions of the state, particularly south San Joaquin Valley. Something to watch is how we at the state can support those areas. I think it's absolutely essential that SGMA be implemented because we're essentially securitizing that water along

with local leaders, but it's going to have real economic impact, and we at the state need to be creative about how to support that transition and minimize that impact."

"One way to do that is to be more effective at how we manage surface water, and I think that those two things are going to get more and more integrated as we think about the state's water supply overall," said Jennifer Pierre. "That's one of the reasons we really need to figure out how to effectively use our existing infrastructure and potentially add more with the tunnel, etc. to actually help address the SGMA issues in the San Joaquin Valley."

SB 1

Moderator Stuart Leavenworth noted that one of the big issues in Sacramento right now is SB 1, which effectively would lock in some of the environmental protections at the end of the Obama Administration. "Contentious bill, to say the least. Jeff, I know that Metropolitan opposes it. Can you talk a little bit about why?"

"One of the challenges we see with SB 1 is that in many areas, it basically locks in state law to match federal law, except when it comes to water, it says it has to then go to the permit level, so we're going to lock in state law at federal permits," Mr. Kightlinger said. "The biological opinions are being updated based on new best available science, so the idea that we would lock in legally outdated science, we think is problematic and it just doesn't make a lot of sense."

There are some real implementation challenges, Mr. Kightlinger pointed out. "In some areas, we'd be locked in and in other areas we wouldn't be, and there would obviously be a ton of litigation. No one really knows how that would play out over a period of time so it sort of freezes everything we've been working on. We've been working with the state on the voluntary agreements, which is how all the CVP contractors and the state contractors can chip in money, build habitat, do science – all that is sort of predicated on an assumption on how we're going to operate the projects and what our water yield is likely to be under certain hydrological conditions. If we really don't know, if all this is going to be litigated out and we don't really know which permits are frozen and which aren't … this work we've been doing for the last six years basically gets put on hold for three, four, five years of litigation that doesn't achieve anything and no habitat gets built."

"Our board debated it and was very sympathetic to the views of the Pro Tem and the concerns about the Trump Administration, but we just said, we don't think this is a smart basis or the right policy approach, so we oppose that because we think it's going to lead to a lot of chaos and litigation and not much progress in a lot of areas."

Jennifer Pierre added, "The voluntary agreements are premised on this idea that we're going to make these investments in science that actually help us figure out where to put habitat and how to use the water that's being put on the table most effectively throughout the system. SB 1 is signaling that there's a federal snapshot and that's the protective baseline. It's inconsistent with the same concept that we're trying to promote in the federal biops and the state permit and the voluntary agreement, and that's how we should be operating, and this concept that we're going to freeze this in time and that's going to be how it is … Then I have to ask all of our 27 contractors, why are we investing $50 million annually in science to understand this when at the end of the day, we're just going to get legislation that says, none of that matters, we're going to keep this ten year old biological opinion as the protective baseline."

Moderator Stuart Leavenworth said if there were an environmental representative on the panel, they would argue that California has always been a leader in environmental protection and needs to be a leader now and stand up to what the administration is doing in Washington. "They want the Governor to deliver on this legislation and on this larger agenda, so what is the Governor going to do about this contentious piece of legislation?"

"I've been in politics far too long to answer that question directly," said Secretary Wade Crowfoot (audience chuckles). "I think the Governor has made it clear in specifically calling out the proposed erosion of the ESA last week or the week before that California will stand up and continue to be an environmental leader. Where the Trump Administration attacks bedrock environmental protections, we will stand up. He's made that pretty clear, generally speaking."

Secretary Crowfoot notes that the panel so far has discussed three flashpoint issues: the tunnel, the biological opinions, and SB 1. "In my observation of California water, there's this destructive gravitational pull towards the zero-sum game. The notion that if the south gets the water, the north doesn't get it. If the cities get the water, then ag doesn't get it. If we're helping fish, we're hurting farmers. If we're helping farmers, we're hurting fish. And there's obviously some truth to the fact that there's scarcity, but I can tell you that if we just continue down this management by conflict and litigation, we are not going to position California effectively for the coming decades."

"We're trying to break that paradigm," continued Secretary Crowfoot. "We're investing a ton of time in these so-called voluntary agreements essentially trying to find a way forward to ensure enough water flows on the Sacramento and San Joaquin river systems and through the Delta to meet the environmental mandates that the water board has to impose under state and federal law, but in a way that's actually workable for water agencies. The idea is moving from conflict to collaboration, from static laws that get litigated to adaptive management."

Secretary Crowfoot said they have a framework that may ultimately be successful. It doesn't mean the lawsuits and the conflicts go away, but they are identifying where both people and nature are protected while moving forward on water. "Let me give you one example: multi-benefit floodplain habitat," he said. "In the Sacramento Valley region, there's been a remarkable relationship that's developed between the rice farmers, environmental groups, and water agencies. And the notion is that you can actually protect communities downriver from flood, not necessarily by strengthening levees which is the traditional approach, but getting more water to seasonally flood on floodplains. The Central Valley was a historic floodplain, and we've removed the natural function of the rivers, but we can actually bring back portions of those natural functions in ways that benefit the environment and that are good for farming, particularly rice farming. Not every issue on California water is reduceable to those multi-benefit win-wins, but there are a lot of them out there. And I think far too often, we in Sacramento focus on the conflict, and not enough on a broad diversified portfolio to find these win-wins."

Audience question: Supporters of SB 1 say the proposed legislation does allow flexibility for the voluntary agreements and does allow for flexibility for updating some of the regulations with the most modern science, and then the water suppliers are using their objections as a ruse to relax endangered species law. That's their opinion. Do you agree that the proposed legislation is flexible enough currently to allow those agreements and to update some of the regs?

“I pride myself on answering questions directly but this was is not going to be as direct as you want,” said Secretary Crowfoot. “As I understand, conversations are happening in real time at the capital in recent weeks and days. I have not tracked those conversations with the level of detail that would let me answer your question. The way it works at agencies is we’re really following the Governor’s office lead and they themselves are in discussions on this.”

“As written, the bill talks about best available science and not impacting the voluntary agreement process, but it fundamentally says that the protective baseline is what are the current biological opinions,” said Jennifer Pierre. “That’s what it says and that’s what it would do and by the nature of doing that, it doesn’t aloe for best available science and it disrupts the ability for water users to participate in voluntary agreements and that’s been the crux of our discussion for the last several months on the bill.”

“I would point out that if it really were flexible and achieved all those things, then it wouldn’t really be necessary,” said Jeff Kightlinger. “That’s what the normal process is today. Reconsult, adjust opinions. If people think they’ve been adjusted incorrectly, they get to litigate. And that’s the current process. Then there would be no need for SB 1.”

VOLUNTARY AGREEMENTS

Moderator Stuart Leavenworth said one of the wild cards is the Bay Delta Water Quality Control Plan update and the commitments that the San Joaquin Valley and the Sacramento Valley will have to make for flows to the Delta. Although part of the plan was adopted, they still left open the possibility for voluntary agreements. Where does that process stands now, both for the San Joaquin and the Sacramento Valley?

Secretary Crowfoot noted that the State Water Board, under both state and federal laws have to update the water quality control plans, so they adopted a plan for the San Joaquin based on unimpaired flows, which was quite controversial, but the space was opened up for voluntary agreements that would address both the needs of the environment and water suppliers.

“We’ve been hard at work for about eight months, and we’re focused on understanding of if we have a viable voluntary agreement proposal to collectively recommend to the State Water Board,” said Secretary Crowfoot. “That proposal has to be peer reviewed and has to undergo CEQA analysis and ultimately the Water Board has to agree with it. Yes, there’s going to be some water that water agencies need to leave in these rivers, but there’s also going to be expanded floodplain habitat with money, and then real magic, the secret sauce is being able to adaptively manage it in a way that you wouldn’t be able to if it was a regulation. Can this all come together? It’s an intense process and we’re working on it. We’re spending a lot of time on this because again, if we can do this, it’s a 15-year agreement, so it really represents a paradigm shift where water agencies and conservation groups and state and federal agencies are working together versus seeing each other in the courtroom.”

Jennifer Pierre said that it’s allowing the dialog between all the parties about water, habitat, funding, and how they can all work together. “It’s building that dialog and that trust and the ability to have conversation across different interested stakeholders to me is where I hope I’ll be at the end of my career, instead of the fighting that I’ve walked in on.”

WATER EFFICIENCY

Stuart Leavenworth noted that he's lived in Southern California for about 6 months now, and there is still water flowing down the gutters of streets because of sprinklers that are overflowing. Can we do anything to improve water conservation at the end of the pipe in California?

"Obviously we can do a lot more, but it's pretty remarkable what we have done," said Jeff Kightlinger. "This is one of the true remarkable success stories. In 1977, there was a huge drought and we lent water to help Northern California because we had our Colorado River and our Owens Valley supplies and we were pretty comfortable. Not true in the drought of 1990 – we had to ration water. It was a big wakeup call. In 1990, there were 14 million people and Metropolitan sold 2.5 MAF. This year, 19 million people and Metropolitan sold 1.4 MAF. We've cut our water usage by 40% and added 5 million people, and all of that is through conservation. Indoors, outdoors, so a lot has been done. Can we do more? Absolutely. We're ticking off methodically those ornamental turf throughout Southern California. Outdoor use is still over what it should be, but that's good because it does show we have shown the ability to do that and I think that's been one of the remarkable success stories."

"If you asked Metropolitan in 1990, what's our growth? We would have said that as Southern California goes to 25 million people, our water usage would go to 6 MAF. We now predict once we go from 19 to 25 million people, our water usage is going to remain flat, and all of that is going to be done by conservation so we have decoupled water, population growth, economic growth, and water growth. We're going to work through it. It just takes time and investment."

Secretary Crowfoot agreed with Jeff Kightlinger. "Portions of the state have come a long way but there's a lot more to come," he said. "There's a lot of outdoor water use in cities and towns that is water wasted, so there's a state framework in place so you're going to see some progress on that. Ultimately, I think every urban water agency in every city has to take this portfolio approach. In Los Angeles, Mayor Garcetti has really stepped up and established some really bold goals and it centers on efficiency and conservation, water recycling, stormwater capture. Yeah, we're going to need to continue to use surface water from far away rivers, but we can actually reduce our reliance on those rivers."

WATER RESILIENCE PORTFOLIO

Audience question: The administration has been up and down California, holding a bunch of listening sessions for the water resilience portfolio. What can we expect from that?

Secretary Wade Crowfoot said there would be a draft in October for public review. "The Governor issued an Executive Order to my agency and others to develop essentially a road map for the Newsom Administration on water that was focused on building a portfolio for water resilience, looking forward to 2050. What do we need to do now over the next three and a half years to protect our water supplies for people and improve conditions for the environment? To answer your question, there has been a bunch of external outreach and a lot of input. Our goal is to have a public draft for review in October, and certainly a final version of the portfolio by the end of the year, if not Thanksgiving."

AGRICULTURE

Question: I'm from Butte County, and we haven't really talked about farmers. We know that farmers use the bulk of the water in this state. How do you address agriculture?

"I try to remind people when folks bring up the fact that 80%, 90% of California's water goes to agriculture or 80% of western water goes to agriculture, that growing food and making fiber takes a lot of water," said Secretary Crowfoot. "Making stuff, particularly what we eat every day, takes a lot of water. Some people say 'ag is only 1.5% of California's GDP,' but I think that misses the point. The fact is it's the breadbasket of the state if not the nation, and also four and a half million people live in the Central Valley and a large portion of the economy is agriculture based. So we're not going to have a water resilient future if ag doesn't have a resilient future."

"What does that mean?" continued Secretary Crowfoot. "One is, securing water supplies for ag that are durable over time, so it is about implementing SGMA in a full way. It's also about trying to find some peace for surface water because ag as I've been educated, is really debilitated by this uncertainty around litigation, etc, which is why we're working so hard on these voluntary agreements. If we can build in 15 years of certainty in a way that's protective of the environment, for ag users, for water users, that's a huge deal, so we're hoping that a water resilience portfolio has a lot to say about how we maintain resilient agriculture."

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