BAY AREA WATER SUPPLY AND CONSERVATION AGENCY

BOARD POLICY COMMITTEE MEETING

May 10, 2019

Correspondence and media coverage of interest between April 15 and May 9, 2019

Correspondence

Date: May 3, 2019
From: San Francisco Public Utilities Commission
Subject: **Press Release**: SFPUC Celebrates Completion of Calaveras Dam Replacement Project

Date: April 29, 2019
From: Office of Governor Gavin Newsom
Subject Press Advisory: Governor Newsom Directs State Agencies to Prepare Water Resilience Portfolio for California

Media Coverage

Water Supply:

Date: May 6, 2019
Source: Sacramento Bee
Article: To prevent water shortages, California must embrace desalination

Date: May 2, 2019
Source: Mercury News
Article: Sierra snowpack is 188 percent of normal

Date: May 2, 2019
Source: Maven's Notebook
Article: Final Phillips Survey of 2019 Finds Healthy Late-Spring Snowpack

Water Infrastructure:

Date: May 5, 2019
Source: Mercury News
Article: Editorial: Governor sets welcome new course on Delta water issues

Date: May 4, 2019
Source: Grist
Article: The town that extended 'smart growth' to its water

Date: May 2, 2019
Source: SF Gate
Article: California governor makes big change to giant water project

Date: May 2, 2019
Source: Mercury News
Article: Newsom officially kills Jerry Brown's Delta Twin Tunnels project

Date: May 2, 2019
Source: Maven's Notebook
Article: State Withdraws WaterFix Approvals, Initiates Planning and Permitting for a Smaller Single Tunnel

Water Infrastructure, cont'd.:

Date: May 2, 2019
Source: Stanford Water in the West
Article: Using Nature to Tackle Water Infrastructure Challenges: Frontiers of Green Infrastructure Research at Stanford

Date: April 26, 2019
Source: Visalia Times Delta
Article: Opinion: Newsom offers a new approach to California's water issues

Date: April 26, 2019
Source: ACWA
Article: Keeping Congress focused on Water Infrastructure

Water Policy:

Date: April 29, 2019
Source: Maven's Notebook
Article: Governor Newsom directs state agencies to prepare water resilience portfolio for California

Date: April 29, 2019
Source: San Francisco Chronicle
Article: Gov. Newsom issues executive order demanding drought-climate plan

Date: April 22, 2019
Source: Sacramento Bee
Article: Gov. Gavin Newsom hits back at Trump in new fight over who controls California water

Date: April 15, 2019
Source: Examiner
Article: Sophie Maxwell, Tim Paulson appointed to city's public utilities commission

Date: April 11, 2019
Source: Water Education Foundation
Article: Bruce Babbitt Urges Creation of Bay-Delta Compact as Way to End 'Culture of conflict' in California's Key Water Hub

From:	SFPUC Communications
To:	Nicole Sandkulla
Subject:	PRESS RELEASE: SFPUC Celebrates Completion of Calaveras Dam Replacement Project
Date:	Friday, May 3, 2019 11:00:29 AM

525 Golden Gate Avenue, 12th Floor
San Francisco, CA 94102
T 415.554.3289
communications@sfwater.org

NEWS RELEASE
Contact:
Will Reisman
415-551-4346
wreisman@sfwater.org

FOR IMMEDIATE RELEASE
May 3, 2019

SFPUC Celebrates Completion of Calaveras Dam Replacement Project

Milestone project to address seismic issues at Bay Area's largest local reservoir will ensure water reliability for SFPUC's 2.7 million customers

San Francisco, CA— The San Francisco Public Utilities Commission (SFPUC), the California Department of Water Resources Division of Safety of Dams and the Bay Area Water Supply and Conservation Agency today celebrated the final completion of Calaveras Dam Replacement Project, reaching a critical milestone for maintaining the region's local water reliability.

"The completion of the Calaveras Dam Replacement Project makes our region more resilient, safer and prepared for the future," said Mayor London N. Breed. "The seismic improvements made to this dam ensure that our local water supply will be protected when the next big one strikes. This is a major accomplishment that the SFPUC, the City and County of San Francisco and the entire Bay Area can be proud of."

The 31-billion-gallon Calaveras reservoir has been kept well below capacity since 2001, due to concerns of seismic reliability of its original dam, which was built in 1925. In September, the SFPUC announced the completion of construction of the replacement dam, which allowed for the agency to begin filling the reservoir with water to levels not seen at the reservoir in almost 20 years.

Approximately 85 percent of the SFPUC's drinking water comes from Hetch Hetchy Reservoir in the Sierra Nevada Mountains. The remaining 15 percent originates from five Bay Area reservoirs. The Calaveras Reservoir, when full, is the largest Bay Area Reservoir, accounting for 40 percent of the local supply. Having the Calaveras Reservoir at full capacity is a vital component of maintaining water reliability for the 2.7 million customers who rely on the SFPUC for drinking water.

"It is incredibly important for the agency to have a diverse water supply in order to maintain reliability for our customers," said SFPUC General Manager Harlan L. Kelly, Jr. "With the final completion of this monumental project, our largest local reservoir will be capable of reaching full capacity, helping us stay prepared and resilient in the face of climate change uncertainty. This achievement has been a long time in the making and it took the dedication of so many individuals. There is much to celebrate today."

In September, the earth and rock fill dam was rebuilt completely to its full height of 220 feet, marking the finish of the dam construction portion of the project. For the past several months, crews have constructed access roads, automated instrumentation and controls, restored the site, and placed rock slope protections, to fully restore the site and complete the project.
The Calaveras Dam Replacement Project is the largest project of the $4.8 billion Water System Improvement Program (WSIP) to repair, replace, and seismically upgrade key components of the

Hetch Hetchy Regional Water System.

The SFPUC, together with its 26 wholesale customers, launched the WSIP in 2002. One of the largest water infrastructure projects in the country, the WSIP is now more than 97 percent complete.

The new Calaveras dam is composed of seven zones of different materials, with the majority of the earth, rock, sand and clay used for the structure being sourced from onsite. Constructed like a seven-layer cake turned on its side, the dam took two years to construct. The new dam is located directly adjacent to the old dam, and has been built to withstand a 7.25 magnitude earthquake on the nearby Calaveras Fault.

Under the State of California Department of Water Resources, the Division of Safety of Dams (DSOD) provides oversight to the design, construction, and maintenance to nearly 1,250 dams in California, including the Calaveras Dam.

“Given California’s complex geology and tectonic regime, dam safety is of paramount importance in protecting the public,” said DSOD’s Division Chief Sharon K. Tapia. “In cases like the original Calaveras Dam where construction methods from over 90 years ago do not meet today’s standards, the complete replacement of the dam and its system becomes the most viable alternative. We have a lot at risk in California if our dams do not perform well, but projects like the Calaveras Dam Replacement Project, which is one of California’s largest seismic retrofit projects, contribute directly to enhanced public safety and improved reliability of regional water supplies.”

Crews working on the Calaveras Dam Replacement Project moved about 12 million cubic yards of earth and rock to construct the new dam. Of that total, roughly four million cubic yards of material was used for the new dam, while the remainder was placed in other areas on site. The project has moved enough rock and soil to fill Levi’s Stadium from top to bottom four times.

Construction on the Calaveras Dam Replacement Project began in 2011. More than 1,600 workers performed over 1.5 million hours of work on the project. Apprentices (or entry-level workers) on the Calaveras Dam project worked more than 180,000 hours.

The total cost of the project was $823 million. Funding came from a bond measure that was approved by San Francisco voters in November 2002 and paid for by both retail customers in San Francisco and 26 wholesale customers that serve Alameda, San Mateo and Santa Clara counties.

“Today’s celebration is a tribute to those who made this engineering marvel a reality,” said Barbara Pierce, Chair of the Bay Area Water Supply and Conservation Agency. “BAWSCA extends its special thanks to these talented and dedicated experts including the union-represented workers and many others, who moved huge volumes of earth and coped with unexpected engineering and construction challenges, and the San Francisco management, design, engineering, and construction teams.

To view a time lapse video of the Calaveras Dam Replacement Project from 2012 to present, visit: https://youtu.be/6Icv_BDKHNM

***Additional graphics, photos and b-roll can be found here:* https://sfpuc.sharefile.com/d-sc620726d4c84d93b**

About the San Francisco Public Utilities Commission

The San Francisco Public Utilities Commission (SFPUC) is a department of the City and County of San Francisco. It delivers drinking water to 2.7 million people in the San Francisco Bay Area, collects and treats wastewater for the City and County of San Francisco, and generates clean power for municipal buildings, residents, and businesses. The SFPUC’s mission is to provide customers with high quality, efficient and reliable water, power, and sewer services in a manner that values environmental and community interests and sustains the resources entrusted to our care. Learn more at www.sfwater.org.

Office of Governor
GAVIN NEWSOM

Governor Newsom Directs State Agencies to Prepare Water Resilience Portfolio for California
April 29, 2019

Governor orders new portfolio approach on water to protect the future health of communities and the environment

SACRAMENTO – As climate change continues to threaten the state's water infrastructure and reliability, Governor Gavin Newsom today signed an executive order directing his administration to think differently and act boldly by developing a comprehensive strategy to build a climate-resilient water system.

The order seeks to broaden California's approach on water as the state faces a range of existing challenges, including unsafe drinking water, major flood risks that threaten public safety, severely depleted groundwater aquifers, agricultural communities coping with uncertain water supplies and native fish populations threatened with extinction.

"California's water challenges are daunting, from severely depleted groundwater basins to vulnerable infrastructure to unsafe drinking water in far too many communities. Climate change magnifies the risks," said Governor Newsom. "To meet these challenges, we need to harness the best in science, engineering and innovation to prepare for what's ahead and ensure long-term water resilience and ecosystem health. We'll need an all-of-above approach to get there."

The order directs the secretaries of the California Natural Resources Agency, California Environmental Protection Agency and the California Department of Food and Agriculture to identify and assess a suite of complementary actions to ensure safe and resilient water supplies, flood protection and healthy waterways for the state's communities, economy and environment.

The order directs the state to think bigger and more strategically on water by directing the agencies to inventory and assess current water supplies and the health of waterways, future demands and challenges. The agencies will seek input over the coming weeks and months through listening sessions, information workshops and other public meetings to help inform the water resilience portfolio that will be recommended to the Governor.

A copy of the order issued by Governor Newsom today can be found here.

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To prevent water shortages, California must embrace desalination
Sacramento Bee | May 6, 2019 | Paul Kelley, Special to The Sacramento Bee

California has long been at the forefront of worldwide environmental leadership. Under our landmark law, Assembly Bill 32, we are slashing greenhouse gas emissions to 1990 levels by 2020.

We lead the way in recycling, with some of the strictest requirements on earth. Our solar industry is thriving. Silicon Valley is creating the most innovative zero-emissions vehicles ever imagined. And Gov. Gavin Newsom is committed to taking our environmental leadership to the next level.

However, in one key respect, California is lagging behind many other parts of the world. Climate change is causing drought and water shortages everywhere, but California has been slow to adopt a solution that over 120 countries are using: desalination.

Around the world, filtered seawater is emerging as an important source of freshwater. The Middle East – Saudi Arabia, Kuwait, the United Arab Emirates, Qatar, and Bahrain – is leading the way, with over 50 percent of the world's current desalination capacity. Israel generates over 55 percent of its drinking water through desalination.

How does desalination work best? When it's done right, it meets three criteria.

Opinion: First, many state-of-the-art desalination projects use "slant wells." Slant wells are drilled at an angle to capture seawater flowing through the sandy floor of the ocean. Regulators prefer slant wells where feasible over "open ocean" intake systems because they eliminate potential damage to sea life.

Second, the best desalination projects include water recycling, conservation, and storage. This way, wastewater from agricultural runoff and storm water can be filtered, stored and reused.

Third, the best desalination projects are public-private partnerships. Why? Because the private sector usually has more experience handling some parts of these projects – for example, financing and building desalination apparatus – but the public sector has more long-term experience handling the water recycling and storage elements. Also, a blend of public and private financing keeps construction costs lower. It also keeps water rates down.

A California project that meets all three criteria that was unanimously approved by the California Public Utilities Commission last September. This project, on the Monterey Peninsula, was analyzed and reviewed for seven years at every step by federal, state and local agencies.

In approving this project, the CPUC acknowledged what desalination experts have said for years: Monterey Peninsula is the perfect place for California's newest, most cutting-edge desalination project. The area is suffering from all of the state's main water-related problems: depleted groundwater, infrequent rainfall or periods of drought and reduced supply of surface water.

The Monterey desalination project will address these chronic issues and solve Monterey's water shortage.

There's one last hurdle. The local government in the City of Marina is trying to block the project with a last-minute legal challenge. CalDesal is opposed to this challenge because, in a state

where water shortages will likely become a much bigger problem in the future, desalination is a key part of the solution. It's time for this project to move forward.

When it comes to the environment, California has never been satisfied with business as usual. We lead the world in technology, adapting to climate change, protecting the environment and providing safe, clean drinking water. Desalination should be no exception.

The Golden State should be the undisputed leader in progressive, climate-friendly water supply solutions. The completion of the Monterey project will serve as an example to the rest of the world – with California leading the way once again.

# # #

Paul Kelley is the executive director of CalDesal, the state's leading advocacy group in support of water desalination.

Sierra snowpack is 188 percent of normal
Mercury News | May 2, 2019 | Lisa Krieger

Surveyors testing snow in the Sierra Nevada for the state's final snow survey of the year delivered welcomed news: The snowpack is nearly double the average for this time of year, assuring summer water for the thirsty state.

On Thursday morning, Department of Water Resources surveyors weighed a tube of snow and found it held 27.7 inches of water, about 188 percent of the historical annual average for the site.

"California's cities and farms can expect ample water supplies this summer," said DWR Director Karla Nemeth, in a prepared statement.

The 2019 snowpack reached its peak on March 31 and is the fifth largest on record, according to the California Cooperative Snow Survey Program.

The May manual measurement at the 6,800-feet granite ridge called Phillips Station near Lake Tahoe, one of dozens that will be measured, supports the findings of a much larger array of electronic sensors fixed across the Sierra, which report an average snowpack of 31 inches, 144 percent of average.

The state's largest six reservoirs are full, holding between 96 percent of their historical average capacity at San Luis Reservoir to 128 percent at Melones Reservoir. Lake Shasta, California's largest reservoir, is 93 percent full, which is 108 percent of its historical average.

“2019 has been an extremely good year in terms of snowpack,” said Jon Ericson, DWR Chief of the Division of Flood Management. “Based on our surveys, we are seeing a very dense, cold snowpack that will continue to produce run-off into late summer.”

The Sierra snowpack, dubbed California’s “frozen reservoir,” is what gets much of the Golden State through long, dry summers and autumns as melting snow fills lakes for gradual release during the dry months. It contributes about a third of California’s water when it melts.

State water leaders continue to urge efficiency, saying that water needs to percolate into the soil to restore depleted groundwater levels, rather than flushed down toilets and drains.

# # #

Final Phillips Survey of 2019 Finds Healthy Late-Spring Snowpack
California's snowpack is cold and dense
Maven's Notebook | May 2, 2019 | Maven Breaking News

The Department of Water Resources (DWR) today conducted the fifth and final Phillips Station snow survey of 2019. The manual survey recorded 47 inches of snow depth and a snow water equivalent (SWE) of 27.5 inches, which is 188 percent of average for this location.

Statewide, California's snowpack sits at 31 inches of SWE, which is 144 percent of average for this time of year. Snow water equivalent is the depth of water that theoretically would result if the entire snowpack melted instantaneously.

Today's readings will help hydrologists forecast spring and summer snowmelt runoff into rivers and reservoirs. The melting snow supplies approximately one-third of the water used by Californians.

"California's cities and farms can expect ample water supplies this summer," said DWR Director Karla Nemeth. "But it's critical that it's put to use replenishing groundwater basins and storage reservoirs for the next inevitable drought. Every resident and business can also help California by using water as efficiently as possible."

The snowpack's water content is the most important factor for water managers and hydrologists to measure because it is tied directly to water supply. Water content, however, varies from year to year depending on the air temperature and intensity and amount of precipitation. After a storm, the snow settles, compacts, and gets increasingly dense. As more snow falls, the snow beneath it will further compact. April 1 is typically the height of the year's snow water content. However, it is not until late spring and early summer when the intense sunshine becomes the key factor in snow melt and run-off.

"2019 has been an extremely good year in terms of snowpack," said Jon Ericson, DWR Chief of the Division of Flood Management. "Based on our surveys, we are seeing a very dense, cold snowpack that will continue to produce run-off into late summer."

The 2019 snowpack reached its peak on March 31 and is the fifth largest on record, based on more than 250 manual snow surveys conducted each month by the California Cooperative Snow Survey Program.

Both rain and snowpack runoff feed California's reservoirs. The state's largest six reservoirs currently hold between 96 percent (San Luis) and 128 percent (Melones) of their historical averages for this date. Lake Shasta, California's largest surface reservoir, is 108 percent of its historical average and sits at 93 percent of capacity.

DWR conducts up to five snow surveys each winter – near the first of January, February, March, April and, if necessary, May – at Phillips Station in the Sierra Nevada just off Highway 50 near Sierra-at-Tahoe. The Phillips snow course is one of hundreds that is surveyed manually throughout the winter. Manual measurements augment the electronic readings from about 100 snow pillows in the Sierra Nevada that provide a current snapshot of the water content in the snowpack.

# # #

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Editorial: Governor sets welcome new course on Delta water issues

Killing $19 billion twin-tunnels project will allow investments in storage, recycling and conservation

Mercury News | May 5, 2019 | Mercury News and East Bay Times Editorial Boards

The Sacramento-San Joaquin River Delta is the largest estuary west of the Mississippi and provides water for nearly 30 million Californians. (Karl Mondon/Bay Area News Group)

Gov. Gavin Newsom set a welcome new course on California water issues Thursday when he officially killed the $19 billion Delta twin tunnels project.

What a relief.

One of the state's biggest long-term challenge is securing a reliable source of water for residents, businesses and farmers without destroying the environment. The problem is further exacerbated by the anticipated impacts of climate change.

We never understood former Gov. Jerry Brown's stubborn support of the twin-tunnels effort, which involved digging the equivalent of a 10-lane freeway, 150 feet underground. Nor could we fathom why the Santa Clara Valley Water District board voted to support the project, knowing that the governor had essentially turned the boondoggle over to Southern California's Metropolitan Water District to run.

It threatened to be the biggest water grab in state history. It didn't pencil out financially. It didn't pass muster with scientists studying the Delta's health. And, worst of all, it wouldn't add a drop of new water to the state's supply.

Instead, the Newsom administration said Thursday that the governor will embrace a more-sustainable water policy that emphasizes conservation and creation of new supplies of renewable water. He also wants to fix the fragile Delta levees and explore the merits of a cheaper, single Delta tunnel.

“A smaller project, coordinated with a wide variety of actions to strengthen existing levee protections, protect Delta water quality, recharge depleted groundwater reserves and strengthen local water supplies across the state will build California’s water supply resilience,” California Natural Resources Secretary Wade Crowfoot said in a statement released Thursday.

It’s a welcome, major policy shift that presents its own set of political challenges.

The Newsom administration’s statement didn’t spell out the specifics of how big the single tunnel might be or how it would be operated. Nor has he detailed how much water should flow through the Delta. Newsom is asking the secretaries of the California Natural Resources Agency, California Environmental Protection Agency and the California Department of Food and Agriculture to prepare a “water resilience portfolio that meets the needs of California’s communities, economy and environment through the 21st century.”

The agencies should heed scientific studies of the Delta that point toward the need for a greater emphasis on maintaining the health of the Delta and the rivers and streams that feed into what is the largest estuary west of the Mississippi.

The goal of a single Delta tunnel should focus on the “big gulp, little sip” approach that allows the state to capture greater water exports during wet years while reducing diversions during dry years in order to better protect fish and wildlife. The state can take the savings from not building two tunnels and instead invest in innovative storage, recycling and conservation projects throughout the state.

California’s population is expected to grow to 60 million by 2050, a 50 percent increase from the current population of 40 million. The state can best meet its future needs by heeding the governor’s call to for a coordinated, broad-based plan that embraces efficiency, water recycling and other local water supply projects that reduce reliance on the Delta.

# # #

The town that extended 'smart growth' to its water
Grist | May 4, 2019 | Jason Plautz

As with so many towns in the West, the history of Westminster, Colorado, can be told through its water supply.

The turning point in that history was the hot, dry summer of 1962. Westminster was already embroiled in a debate over where to source its water when a drought choked the small city, forcing officials to impose a sprinkler ban. Soon enough, residents noticed that the water trickling from their taps was slightly discolored and didn't smell right. The desperate city had started drawing water from the Kershaw Ditch, a pool it had recently abandoned over treatment issues.

Although the city said the water was "safe, but stinky," fed-up local mothers were convinced it would make their children sick and raised hell. In what became known as the "Mothers' March," more than 100 women gathered at city hall to protest the city's water management. City-council meetings were disrupted by protesters who would shout questions through open windows, and the mothers flogged petitions on street corners. They attracted enough attention that Dan Rather did a segment on the protests for CBS News.

The events of that summer ensured that water would become Westminster's defining issue for years to come, until the city struck a deal with local farmers to share water from the artificial Standley Lake. But even with its supply settled, Westminster continued to focus on taming demand, most recently with a conservation and planning approach that's become a regional model for managing growth without straining resources.

"Starting from such an uncomfortable place, we've kept our eyes on the prize," said Stu Feinglas, who retired last year as Westminster's senior water-resources analyst. "Sustainable development and sustainable water."

Feinglas, who started with the city in 2001 (as another drought gripped northeast Colorado), approached the problem holistically, with a data-driven approach that has become influential for other cities in the West. By merging the city's land-use plans with water data, Feinglas and colleagues ensured that Westminster wouldn't run dry, even as its population boomed from less than 10,000 at the time of the water protests to 113,000 today. The surrounding county was even water-healthy enough to support Colorado's first two water slides as part of the Water World theme park.

The state's population is expected to keep growing — as much as 70 percent by 2040. At the same time, climate change is fueling persistent droughts. In 2018, parts of nine Western states, including Colorado, were in severe or extreme drought, according to the National Oceanic and Atmospheric Administration.

Conservation measures have helped many Western cities decouple population growth from water use, but that approach often puts the burden on businesses and residents to be more efficient. Taking a demand-focused approach to water from the earliest stages of planning is still rare, said Erin Rugland, a junior fellow at the Babbitt Center for Land and Water Policy in Phoenix.

"There's always been a way to engineer around it," Rugland said. "It's been feasible to find a new supply. But I think we're starting to reach a turning point."

The recent sustained drought — which has left the critical storage facilities Lake Powell and Lake Mead at their lowest levels since they were being filled — has cemented the idea that Western states are going to have to try to do more with less water. On April 8, Congress approved a seven-state Drought Contingency Plan, which lays out shared cuts if supplies continue to stay low.

The plan builds on 2007 guidelines that helped manage the early years of the drought; now states, tribes, agriculture groups, and cities are negotiating a new set of guidelines set to take effect in 2026. Previous agreements have hit agriculture hard, since the industry is by far the biggest water user in the West, but most everyone agrees that the 2026 guidelines will require some sacrifices from cities, even as they grow as economic engines.

That's where Feinglas thinks his approach — which current Westminster officials are sticking with — needs to become the norm.

Using Westminster's comprehensive plan, which zones parcels for general use like multifamily housing or retail, Feinglas made a rough estimate of how much water each type of building would use. Then the city built GIS software that overlays water resources and infrastructure over the comprehensive plan — making it easy to see, for example, how much water a proposed strip mall might use.

It's a step up from the typical water-per-capita measure that most cities rely on, which doesn't reflect the fact that denser developments are typically more water-efficient than a single-family house with a green lawn. It also, Feinglas said, helps planners guide developers to smarter construction, even previewing what their water rates and tap fees might be.

"We didn't want public works to determine how the city developed. We wouldn't be the ones to say no," Feinglas said. "What we could do is show how much water we have and ask them to be creative and make their development work with that."

That meant city planners could identify where it might make more sense to zone for multifamily housing, or see where new pipes might be necessary. Developers could amend their permits to include more low-flow toilets or water recycling. On rare occasions, proposals have been scrapped because they'd need more water than the city could supply. Essentially, Westminster is planning for the worst, making sure that another drought won't force anyone to turn off the taps.

It seems straightforward, and more or less mirrors what cities have been doing for years to align transportation and transit demand with new construction. But only a handful of other cities — notably Flagstaff, Arizona — have made it work.

"It requires operating between the silos of water management and planning, two disciplines that don't have a lot of common language," Rugland said. "Efforts for collaboration would have to be on top of day-to-day duties."

Also, water data isn't always easy to come by, especially on a lot-by-lot basis that breaks it down by business type. It's even tougher for cities that draw their water from multiple sources, who may keep data in different forms (California, for instance, had to pass a law in 2016 requiring that the various state and local agencies be able to share their water data).

More states and cities are trying to make the water-land link. Colorado's Water Plan calls for 75 percent of citizens to live in communities that have integrated water conservation into land use by 2025, and the state's water conservation board has guidance to help local governments (the Keystone Policy Center has also held a dialogue with state and local partners). Arizona has a law that requires local jurisdictions to include available water supply and demand as part of a comprehensive plan, but not necessarily to make the link to planning (government cuts reduced state oversight for those comprehensive plans, as well). New software tools, like Razix Solutions, offer off-the-shelf guidance for local officials.

Ultimately, Feinglas said, the model requires city departments to talk to each other and plan for the worst, even if it means some short-term pain. "We know water is valuable, especially now," Feinglas said. "The last thing you want is to lose your economy because you can't supply your citizens."

# # #

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California governor makes big change to giant water project
SF Gate | May 2, 2019 | Kathleen Ronayne, Associated Press

In this Feb. 23, 2016, file photo, a sign opposing a proposed plan by Gov. Jerry Brown to build two giant tunnels to ship water through the Sacramento-San Joaquin Delta to Southern California is displayed near Freeport, Calif. Gov. Gavin Newsom officially abandoned his predecessor's plan, Thursday, May 2, 2019, opting instead for just one, smaller tunnel.

SACRAMENTO, Calif. (AP) — California Gov. Gavin Newsom scrapped a $16 billion plan Thursday to build two giant water tunnels to reroute the state's water system and instead directed state agencies to restart planning for a single tunnel.

The move came after $240 million has already been spent on the project championed by former Gov. Jerry Brown to divert water from the north to the state's drier south.

Newsom had signaled the move in his February State of the State address. He made the change official when he asked state agencies to withdraw existing permit applications and start over.

"I do not support the twin tunnels. But we can build on the important work that's already been done," he has said.

Brown wanted to build two, 35-mile-long (55-kilometer-long) tunnels to divert water from the Sacramento River, the state's largest river, to the San Francisco Bay Area, San Joaquin Valley and Southern California. Local water agencies were expected to foot the roughly $16 billion bill.

A single tunnel is expected to cost less, but officials haven't yet set a price tag, said Erin Mellon, spokeswoman for the state Department of Water Resources. Nor has the state determined how much water would flow through a single tunnel.

California delivers water through a complex system of reservoirs, aqueducts and pumps known as the State Water Project, first started by Jerry Brown's father, former Gov. Pat Brown.

Most of the state's water comes from the Sacramento-San Joaquin River Delta, and the current system has become outdated as the state's population has boomed to nearly 40 million people, with most living in the drier south.

Supporters of the tunnel project argue the pumping system, which is strong enough to change the direction of water flow, needs to be phased out. The Metropolitan Water District in Los Angeles has been the biggest supporter of the tunnels project. Many farmers back it, too.

But environmental groups argue the tunnels could suck too much water from the delta, harming species such as the delta smelt and chinook salmon. Some delta farmers also worry the project would harm their own water supply.

A smaller tunnel is likely to be just as long and take water from the same places, but it could be designed differently, said Karla Nemeth, director of the state Department of Water Resources.

State officials considered modifying the existing project but decided it was better to start fresh. That includes environmental reviews and doing more engineering and design work on the front end, which Nemeth said hadn't been done in past versions of the project. It could take up to three years to develop all the new environmental documents.

Restore the Delta, a group opposed to the twin tunnels plan, praised Newsom's decision to halt it. But Barbara Barrigan-Parrilla, the group's executive director, said questions remain about whether one tunnel is necessary and how Newsom's plan would affect water quality in Central Valley communities.

Kathryn Phillips of Sierra Club California said her organization does not support any tunnels. But she applauded an executive order Newsom signed Monday taking a big-picture approach to thinking about the state's water needs and challenges from climate change. He directed several state agencies to assess how to best meet future water demands.

"I think all of that will add up to a place where we'll find it doesn't make sense to invest into the single tunnel," Phillips said. "We've not been responsible in this state with how we use water."

The Brown administration had previously considered downsizing the project to one tunnel as local water agencies balked at picking up the tab.

# # #

Newsom officially kills Jerry Brown's Delta twin tunnels project

In victory for environmental groups, state will fix Delta levees and focus on smaller, one-tunnel plan

Mercury News | May 2, 2019 | Paul Rogers

Sherman Island at the western edge of the Sacramento-San Joaquin River Delta. (Karl Mondon/Bay Area News Group)

Gov. Gavin Newsom on Thursday drove the final nail into the coffin of the most controversial water project in California in more than 30 years: Gov. Jerry Brown's $19 billion plan to build two massive tunnels under the Sacramento-San Joaquin River Delta to make it easier to move water from the north to the south.

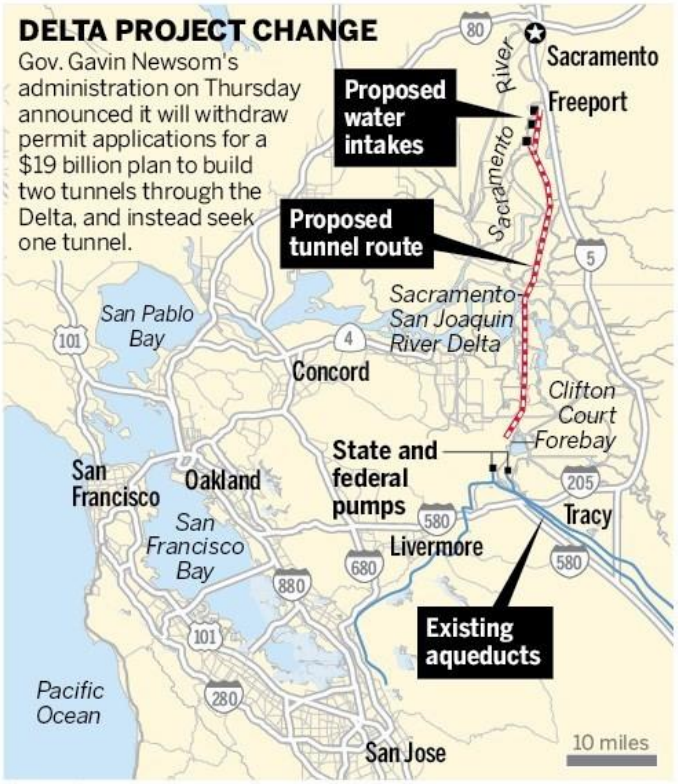
The Newsom administration announced it is withdrawing permit applications that the Brown administration had submitted to the State Water Resources Control Board, California Department of Fish and Wildlife, and several federal agencies.

Instead, the administration said it will begin environmental studies on a one-tunnel project.

"A smaller project, coordinated with a wide variety of actions to strengthen existing levee protections, protect Delta water quality, recharge depleted groundwater reserves and strengthen local water supplies across the state will build California's water supply resilience," said Natural Resources Secretary Wade Crowfoot in a statement.

Newsom first announced the change in policy in February, during his first state-of-the-state speech.

Such a scaled-back project could cost roughly $10 billion, according to estimates done by the state and water agencies last year. The decision was largely a victory for environmental groups and Delta political leaders, and a setback for Los Angeles water officials who had supported the plan and promised to pay for most of it.



Source: California Natural Resources Agency BAY AREA NEWS GROUP

“It’s great to hear the destructive Delta twin tunnels project has been abandoned,” said Jeff Miller, a senior conservation advocate with the Center for Biological Diversity. “California should focus on restoring the vital Delta ecosystem and its native fish instead of diverting more water.”

Los Angeles water officials, who were unhappy with Newsom’s move, were stoic Thursday.

“The status quo in the Delta is simply not an option,” said Jeff Kightlinger, general manager of the Metropolitan Water District of Southern California, which has 19 million customers. “New conveyance is essential. The current system is already outdated and vulnerable; climate change will further stress it with a future of sea level rise and increasingly intense floods and droughts.”

The original Delta tunnels plan called for building two tunnels, each 35 miles long and 40 feet high, under the Delta, the vast system of channels and sloughs between the Bay Area and Sacramento where the state’s two largest rivers, the Sacramento and the San Joaquin, meet before flowing into San Francisco Bay.

The original idea was that the tunnels would take water from the Sacramento River, south of Sacramento, and move it to the huge pumps near Tracy that are part of the State Water Project and Central Valley Project. That, supporters said, would reduce reliance on the pumps and make water deliveries more reliable by protecting endangered salmon, smelt and other fish, which can be killed by the pumps. Court rulings limit water pumping when the fish are migrating near the pumps.

But critics called the tunnels plan a huge boondoggle that would eventually allow large agribusiness interests in the San Joaquin Valley, and urban users in Los Angeles, to take more water out of the Delta. They called instead for more local water solutions, including conservation, water recycling, increased groundwater storage and storm water capture.

# # #

State Withdraws WaterFix Approvals, Initiates Planning and Permitting for a Smaller Single Tunnel

Maven's Notebook | May 2, 2019 | Maven Breaking News

The Department of Water Resources (DWR) today is taking formal steps to withdraw proposed permits for the WaterFix project and begin a renewed environmental review and planning process for a smaller, single tunnel project that will protect a critical source of water supplies for California.

Today's actions implement Governor Gavin Newsom's direction earlier this year to modernize the state's water delivery infrastructure by pursuing a smaller, single tunnel project through the Sacramento-San Joaquin Delta. The project is needed to protect water supplies from sea-level rise and saltwater intrusion into the Delta, as well as earthquake risk. It will be designed to protect water supply reliability while limiting impacts on local Delta communities and fish.

This action follows the Governor's recent executive order directing state agencies to develop a comprehensive statewide strategy to build a climate-resilient water system.

"A smaller project, coordinated with a wide variety of actions to strengthen existing levee protections, protect Delta water quality, recharge depleted groundwater reserves, and strengthen local water supplies across the state, will build California's water supply resilience," said Natural Resources Secretary Wade Crowfoot.

DWR Director Karla Nemeth took action today to rescind various permitting applications for the WaterFix project, including those in front of the State Water Resources Control Board, California Department of Fish and Wildlife, and federal agencies responsible for compliance with the Endangered Species Act. Documents related to these actions are available here.

DWR will work with local public water agencies that are partners in the conveyance project to incorporate the latest science and innovation to design the new conveyance project, and work with Delta communities and other stakeholders to limit local impacts of the project.

# # #

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Using Nature to Tackle Water Infrastructure Challenges: Frontiers of Green Infrastructure Research at Stanford

Stanford Water in the West | May 2, 2019 | Bea Gordon, Kim Quesnel, Perrine Hamel, Jordy Wolfand

Walking across the Stanford campus, it's not unusual to see flocks of active undergraduates playing soccer, serving volleyballs or just generally enjoying one of the many inviting lawns. At first glance, the scene seems like a poster for the benefits of college in California come to life. What the casual observer—and even most students—might not realize is that many of these spaces are serving multiple purposes. The soccer field, for instance, is also a detention pond, storing stormwater and preventing flooding, while also recharging our precious groundwater. The volleyball court, is a stormwater sand filter, slowly treating polluted runoff. The popular Meyer Green includes permeable pavement and landscaping to capture stormwater and provide a sunny recreation spot for students. Elsewhere, important changes are also underway. Some campus irrigation is now supplied by harvested rainwater, parking lots throughout campus have been installed using porous pavement and biofilters have been installed to improve aesthetics and infiltrate stormwater runoff.

Figure 1: Meyer Green at Stanford University illustrates an example of how many spaces on campus can serve dual purposes. Photo credit: Stanford News Service.

All of these natural systems are powerful examples of the way that green infrastructure—in contrast to more traditional grey infrastructure (e.g., pipes, engineered detention ponds and treatment plants)—can reduce the flood risk by mimicking the hydrology of undeveloped "natural" systems. In this way, green infrastructure mitigates the risk posed by stormwater runoff to urban centers by harnessing natural processes, including soaking up excess water and slowly releasing it, while enhancing the livability of our communities. As the Stanford examples

illustrate, green infrastructure is often designed to provide a diverse set of environmental, social and even economic benefits.

Because of this versatility, green infrastructure has become a particularly attractive way to cope with the difficulty and cost of modernizing water infrastructure and management. At Stanford, a diverse group of researchers are studying how to integrate green infrastructure into our current systems, whether in the form of advancing technical knowledge about how green infrastructure operates or developing tools to measure the variety of benefits provided by these projects. In this piece, we dig in to how these research efforts on the frontiers of green infrastructure fit together to tackle bigger issues of climate change, urbanization and aging infrastructure.

Understanding the Benefits of Green Infrastructure

Natural systems are the best way to capture and sustainably manage stormwater. As a result, green infrastructure is often first considered as a way to improve stormwater management. However, there are a multitude of other benefits that green infrastructure can provide. A team of researchers from the Stanford-based Natural Capital Project (NatCap) is currently investigating how to quantify these additional benefits, including noise and heat reduction, increased recreational opportunities and urban habitat creation, that are linked to green infrastructure (Figure 1). From NGOs to multilateral institutions or local governments, there is an increased interest in measuring these benefits to design more livable cities. The NatCap team is addressing this need by researching the impact of green infrastructure on air temperature, coastal protection and mental and physical health. In addition to these primarily local co-benefits, some types of green infrastructure also help mitigate broader environmental issues, namely climate change and biodiversity loss, by storing carbon and providing habitat for diverse species.

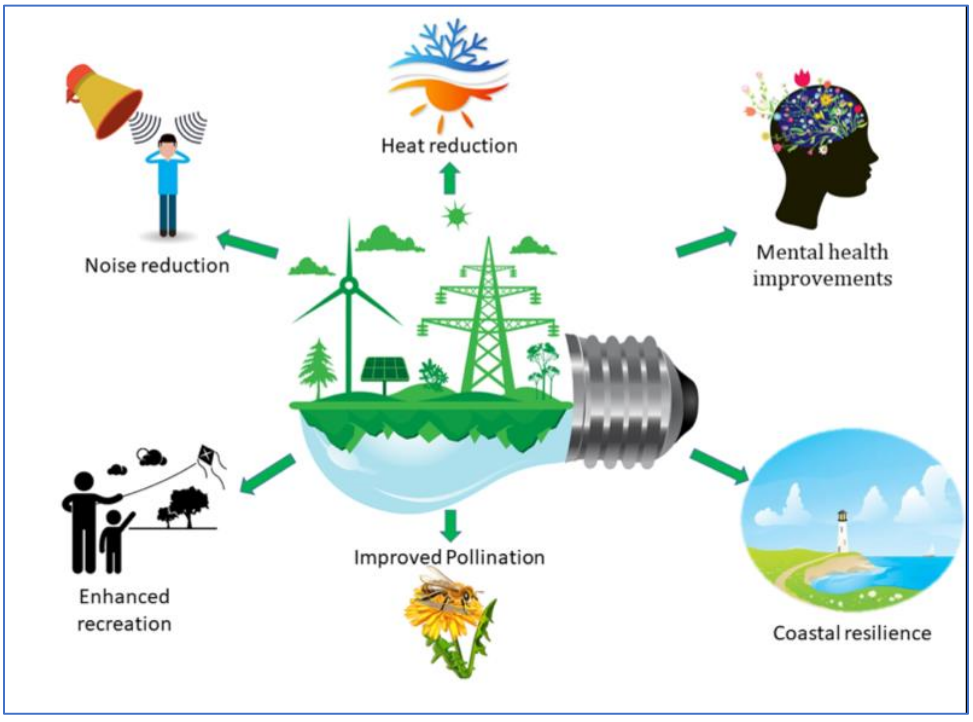

Figure 2: Benefits of green infrastructure can include: a) reducing air temperature, which alleviates public health risks during heat waves; b) supporting nearby crop pollination or providing forage for honey bees; c) protecting coastal properties and communities by buffering against coastal hazards; d) providing recreation opportunities; e) improving mental health, i.e., improving cognitive functions or reducing stress levels simply by seeing or being in nature; and f) reducing air and noise pollution, although the magnitude of these effects is debated.

To factor these benefits into infrastructure decisions, the team also develops modeling tools aimed at urban practitioners. For example, NatCap is now expanding its software suite InVEST (Integrated Valuation of Ecosystem Services and Tradeoffs) to include the multi-sector benefits of green infrastructure. The software tool translates maps of urban environments, with various implementations of green infrastructure, into maps of benefits to communities. The goal is for this tool to enable communities to better identify and quantify the diversity of benefits related to green infrastructure when making stormwater management decisions.

One of these benefits of particular interest to researchers at Stanford is the ability of green infrastructure to improve water quality. Green infrastructure provides immediate infiltration capacity for rainwater, which can prevent stormwater from flowing over impervious areas and gathering various urban pollutants. Modeling and empirical studies of green infrastructure performance have documented positive changes in water quantity: reduced peak flow, runoff volumes and increased groundwater recharge. However, managing stormwater quality remains an important area of research. Many pollutants are present in stormwater including nutrients, suspended sediment, metals and trace organic contaminants (e.g., detergents, pesticides and pharmaceuticals).

Recognizing this need, researchers at Stanford's Engineering Research Center for Re-inventing the Nation's Urban Water Infrastructure (ReNUWIt) are developing green infrastructure systems that are optimized to remove these pollutants. Improvements to current green infrastructure include modifying the hydraulic properties of the systems, optimizing plant and fungal processes and replacing the typical geomedia (generally a mix of compost and sand) with alternatives that provide better pollutant removal.

This research has been piloted in Sonoma County and Los Angeles. Stanford researchers worked with Sonoma County Water Agency and partners in the City and County of Los Angeles to install innovative treatment filters to see how different types of geomedia (e.g., woodchips, sand, biochar and compost) can remove pollutants. This research is of particular interest to arid cities like Los Angeles, where the filters can act as a pre-treatment for stormwater before it's reused for water supply. Stanford researchers have found that biochar, a type of charcoal, removes more than 99% of certain pollutants like pharmaceuticals and pesticides. They have confirmed biochar can also be used to reduce concentrations of fecal indicator bacteria, which are a proxy for fecal contamination.

Figure 3: Photo of field-set up of filter experiments in Sonoma County. Each column includes a different type of geomedia such as woodchips, biochar, straw or a combination. Stormwater runoff flows upward through each filter to be treated. Photo credit: Marc Teixido (UC Berkeley).

In addition, plant and fungal processes may play a role in breaking down chemical pollutants. ReNUWIt researchers have found that plants and fungi can degrade urban-use pesticides and roadway pollutants such as deicing fluids. Design improvements like these to green infrastructure may help cities comply with water quality standards at the watershed scale. One finding of this research is that small improvements to performance (at the

individual best management practices level) may result in large improvements in water quality at the watershed scale, resulting in potential for significant cost savings.

Working to Implement Green Infrastructure

With the promise of providing a suite of benefits, green infrastructure can be a great asset for urban environments by achieving multiple goals at the same time. Successful implementation, however, is still a major challenge.

One issue is that some benefits remain difficult to measure quantitatively across projects. Should we invest in a project that makes this community healthier over a project that makes another community less vulnerable to heat waves? How can we weigh improvements to quality of life in comparison to project costs? How should we measure and compare these benefits in a methodical way?

One way to deal with these types of questions is to use multi-objective assessment or try to translate all benefits into the same metric (e.g., economic value), but determining how much communities value each type of benefit is complicated. Additionally, planners need to consider other factors that will make the project a success: the history of the site, multiple (and sometimes conflicting) priorities by stakeholders, community engagement and preferences for one type of project over another.

For a test case, NatCap has been working in the San Francisco Bay Area with multiple planning and conservation organizations to understand the value of local natural assets in hopes of protecting them in the future. Arguably the most challenging part of this endeavor has been navigating the priorities and relationships between various stakeholders to define the most meaningful questions and a clear path forward.

The project team decided to focus on a network of open spaces of special importance for the region. The research delivered quantitative measures of a range of ecosystem services— coastal protection, recreation and stormwater retention— provided by the open spaces, which can be used in regional urban planning. Some of this work is being implemented in the Bay Area Greenprint website, which is an online tool that planners in the Bay Area can use to incorporate built natural resource conservation in policy and action. The effort is led by multiple conservation organizations and hopes to mainstream green infrastructure information in regional and urban planning.

Despite clear potential benefits, communities around the world face a series of barriers in practically implementing and scaling green infrastructure systems. Finding funding is most often identified as one of the primary barriers by utilities, municipalities and regions wanting to implement new green infrastructure projects or expand the scale of existing green infrastructure projects. It is no secret that the water sector is cash-strapped, but funding challenges can be particularly pronounced when it comes to financing innovative water solutions.

Financing can be difficult for many reasons: green infrastructure systems are distributed instead of centralized, the technology is new and uncertain and the solutions are site-specific. One way to cross this funding barrier is by engaging with other sectors that can benefit from green infrastructure through better communication and tracking of multi-sector performance metrics. Water in the West has investigated mechanisms to help cities overcome this challenge by developing a case-study based framework for implementing green infrastructure that could be used to attract a diverse set of funders.

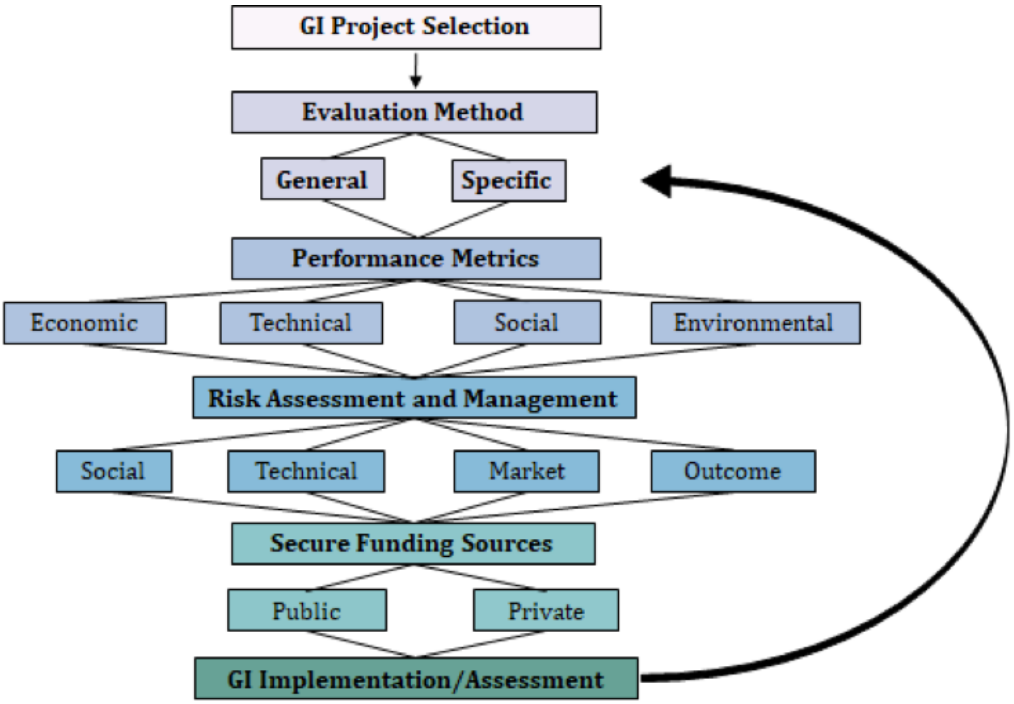

Figure 4: Conceptual framework organized around a circular process that includes six steps.

Through this high-level and global investigation, researchers at Stanford are seeking to identify how successful projects implement multi-sector performance metrics in the hopes that this can be replicated elsewhere. For example, better tracking of social benefits related to green infrastructure may incentivize investment in projects from organizations or funds interested in social justice. Perhaps one of the biggest questions this research is seeking to address is how different types of risk (e.g., social versus technical) impact financing opportunities. Looking at where and how risk has been mitigated around the globe may provide helpful guidance for other projects to attract investors who may be concerned about the risks associated with undertaking the development of green infrastructure. While there is no single recipe for success, especially given the context-specific nature of green infrastructure, there are universal elements, such as measuring and clearly communicating social benefits like increased property values that can help any project access broader funding sources and achieve success.

Looking ahead

Despite these challenges, many cities around the world have achieved success in installing green infrastructure systems. These implementers have used different strategies to make these projects a reality. In an effort to compile these examples, researchers at Water in the West and ReNUWIt have identified innovative financing approaches being used in the U.S. By documenting these efforts through a peer-to-peer learning tool (Figure 5), the hope is to help project implementers connect and explore the possibilities of doing things differently.

Figure 5: The Living Map, created by Newsha Ajami, who directs the Urban Water Program at Water in the West, and her team highlights successful innovative water financing efforts around the country designed to be implemented at various scales. The case studies feature a wide variety of mechanisms; for example, some are market-based systems like credit and permit trading used to implement green infrastructure projects built to manage stormwater runoff.

Bringing green infrastructure into the mainstream is challenging, however collaborative and interdisciplinary research efforts like those being conducted here at Stanford are one promising path around the barriers that exist, including scalability and funding. Our hope is that as the number of examples showing how green infrastructure can be used to generate multi-sector benefits increases, more cities will see these natural systems as a viable alternative and in some cases complementary to traditional gray-infrastructure approaches. In turn, this leverages greater opportunities for collaborative funding to implement win-win solutions for people, the environment and the economy.

# # #

Opinion: Newsom offers a new approach to California's water issues
Visalia Times Delta | April 26, 2019 | Don Nottoli and Bill Dodd

By rejecting the twin tunnels proposal, Gov. Gavin Newsom has sent an important message that new thinking is required to address California's complex water issues.

The Delta Counties Coalition is committed to supporting a more thoughtful process. The Delta Counties Coalition represents more than 4 million residents whose livelihoods and way of life are grounded in a healthy Delta economy.

The coalition serves to protect the largest estuary on the west coast of the Americas from unwarranted intrusion that could destroy the precious Delta ecosystem and hurt our region's economy.

During his State of the State address, Gov. Newsom said: "We have a big state with diverse water needs. Cities that need clean water to drink, farms that need irrigation to keep feeding the world, fragile ecosystems that must be protected. We need a portfolio approach to building water infrastructure and meeting long-term demand."

He is right and his approach represents a refreshing vision for California's water future. Gov. Newsom appears genuinely interested in listening to all sides and governing with an open mind and heart.

He has signaled his opposition to the twin tunnels project, and is open to a more holistic approach that could include alternatives like water use efficiency measures, levee restoration, additional storage and other local projects supported by the Delta Counties Coalition.

While the governor indicated a one-tunnel approach may be better than two, he said he'll make a final determination on a Delta solution based on science.

The impacts of a single tunnel are unknown absent further study. No details exist about the size, location, cost, construction timetable or how at single tunnel might operate. What is clear is that a conveyance-only plan is not a viable, sustainable solution for Northern and Southern California.

The funds allocated for tunnels would be better spent on regional portfolio-based measures, including strengthening levees, restoring ecosystem habitat, increasing water use efficiency, developing local and regional water supplies, and providing additional surface and groundwater storage and recharge.

This winter's storms underscore how much excess runoff we could have captured for future droughts and retained if we had more reservoir and groundwater recharge projects completed.

It's encouraging that the conveyance alternatives the Delta Counties Coalition and others have suggested for more than a decade are part of the discussion with the new administration. These alternatives, largely local projects, will provide regional self-sufficiency through local control, jobs, and benefits.

Advocates of Sacramento-San Joaquin Delta have opposed the twin tunnels and advocated for a more diverse approach to California's water challenges and needs. We are confident that with Gov. Newsom's leadership, the process moving forward will be open, transparent, and with the entire state's interests in mind.

# # #

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Keeping Congress Focused on Water Infrastructure
ACWA | April 26, 2019 | Dave Eggerton

Few things remain unchanged or unsaid in the water industry from a century ago, but there is at least one exception.

“Water problems are perhaps the most vital internal questions of the United States,” said President Theodore Roosevelt, in his first address to Congress 118 years ago.

This statement makes as much sense in 2019 as it did 1901. I included the quote in written testimony that I recently delivered to the House Subcommittee on Water, Oceans and Wildlife. Today, over 100 years later, the need to build on the legacy of President Roosevelt and invest in water resources remains paramount. And in many ways, we face a bigger challenge in upgrading our water infrastructure than we did in building its foundations.

According to combined estimates from the U.S. Environmental Protection Agency, Bureau of Reclamation, Army Corps of Engineers, Department of Agriculture, and Indian Health Service, the needed investments in water infrastructure nationwide in the coming decades for drinking water, wastewater, and irrigation systems total more than $780 billion dollars. Adding urgency to this need is the sobering fact of what happens without that investment – the loss of nearly 500,000 U.S. jobs by 2025 and $508 billion in gross domestic product, according to the American Society of Civil Engineers.

That is not a lot of time to find that amount of money. But during my visit to Washington D.C., I was again encouraged by how investment in water enjoys bipartisan support. Time will tell, but I believe the subcommittee was a receptive audience and our message is getting through. And some of the work we’re asking of our elected representatives comes with no price tag.

In my testimony, I pointed out that our members recognize that warranted regulations provide important protections. However, our current regulatory structure is exceptionally complex with numerous areas of overlap that are at best duplicative and in some cases contradictory. I encouraged subcommittee members to find opportunities to streamline regulations and reduce unnecessary duplication. Proof that we’re being listened to came last month when Congressman John Garamendi (D-3) introduced a bill extending National Pollutant Discharge Elimination System (NPDES) permits that was co-sponsored by Congressmen Ken Calvert (R-42) and Rob Woodall (R-GA).

I spoke to the subcommittee on behalf of ACWA members and the National Water Resources Association (NWRA), where I serve on the State Executives Council. Our working relationship with the NWRA is among a number of collaborative efforts between ACWA and likeminded organizations. For ACWA members, national advocacy puts us in the room every day when funding and policy decisions are made. While I was only in Washington D.C. for one day, our ACWA East office collectively gives our members a permanent presence in the nation’s capital every day. My testimony, ACWA East staff and their interaction with members of ACWA’s Federal Affairs Committee supplement each other to produce positive results for the ACWA community.

Addressing our nation’s water infrastructure needs is a monumental challenge. But our nation has faced and overcome similar challenges in its past, and we are capable of doing so again.

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Governor Newsom directs state agencies to prepare water resilience portfolio for California

Maven's Notebook | April 29, 2019 | Breaking News, News and Features

The plan will assess conditions, identify priorities, and emphasize regional approaches

This afternoon, Governor Newsom issued an Executive Order directing state agencies to collaborate on developing a water plan that identifies priorities for building a water resilient portfolio and creating a water system that will meet the water needs of California's communities, economy, and the environment into the future.

"California's water challenges are daunting, from severely depleted groundwater basins to vulnerable infrastructure to unsafe drinking water in far too many communities. Climate change magnifies the risks," said Governor Newsom in the press release. "To meet these challenges, we need to harness the best in science, engineering and innovation to prepare for what's ahead and ensure long-term water resilience and ecosystem health. We'll need an all-of-above approach to get there."

The new plan will build off of the Brown Administration's California Water Action Plan, which was first issued in January 2014 and updated in 2016, as well as other plans and reports that have been subsequently prepared, such as the California Water Plan, the Central Valley Flood Protection Plan, and others. The new plan is intended to identify and prioritize a broad portfolio of actions, which does mention modernizing Delta conveyance with a smaller capacity tunnel, although no additional specific details on the tunnel were included in the executive order.

"The plan should be cohesive and comprehensive and benefit people and nature," said Wade Crowfoot, Secretary of Natural Resources. "We want to deepen partnerships worth local government, other state agencies and tribes."

The Executive Order directs the secretaries of the Natural Resources Agency, the California Department of Food and Agriculture, and the California Environmental Protection Agency to assess existing demands and supplies, current water quality conditions of groundwater and surface waters, projected future water needs, climate change impacts, contaminated drinking water, and existing water programs and policies. The Order also directs the agencies to assess

progress on voluntary agreement negotiations as well as the current planning to modernize Delta conveyance with a 'new single tunnel project'.

The agencies will then identify key priorities for the Newsom Administration's water portfolio moving forward, and identify how to improve integration across agencies to implement these priorities.

Modernizing the state's water system has become increasingly urgent as the impacts of climate change intensify. "We have 19th century water rules and 20th century infrastructure and we're dealing with 21st century problems," said Joaquin Esquivel, Chair of the State Water Resources Control Board.

"As water managers face ever increasing extreme weather future, this water portfolio approach presents a wonderful opportunity to take a proactive approach and to build on successful efforts already implemented throughout the state to move toward securing our water future," said Grant Davis, General Manager of Sonoma Water.

The approach is to be based on a set of principles that includes strengthening partnerships with state, federal, and local agencies as well as tribal entities, water agencies, irrigation districts and other stakeholders. The plan will emphasize regional approaches, leverage the best data and technology; and integrate natural and green infrastructure. Multi-benefit projects will be encouraged, such as floodplains that provide flood protection, create habitat and allow for groundwater recharge, noted Mr. Crowfoot.

Development of the plan will include robust outreach to stakeholders, including other state, local, and federal agencies; tribal entities; water agencies; irrigation districts; agricultural interests; environmental justice; environmental conservation organizations; business leaders; academic experts; and other stakeholders. A website has been launched at http://resources.ca.gov/initiatives/water-resilience/ to track progress and collect public input.

The approach was hailed by environmental groups as a positive step that is badly needed. "The Newsom administration's focus on a portfolio approach presents a tremendous opportunity to promote climate resilient water solutions that meet our needs while restoring rivers and groundwater resources," said Eric Wesselman, Executive Director of Friends of the River. "I'm more optimistic than I've been in years, and Friends of the River is eager to work with the administration on this needed approach."

Jay Ziegler, Director of External Affairs for The Nature Conservancy, said Governor Newsom's Executive Order builds upon the Brown Administration's Water Action Plan which considered how we manage water for all uses and challenged the state's residents to 'make conservation a California way of life.'

"We see Governor Newsom's action as a way to see if the strategy integrates all facets of water management," said Mr. Ziegler. "How are we doing on water conservation goals? How are we doing in applying science to water management objectives – especially meeting environmental flow needs? How are we doing in integrating combined groundwater and surface water management in meeting SGMA objectives? How does both groundwater and surface storage fit into the strategy? How are we doing in providing clean, affordable drinking water to all? How does the tunnel strategy fit in this equation? How does the pending Voluntary Agreement/Bay-Delta Water Quality Plan Update fit in all of this? How are we doing in authorizing real "multi-

benefit' projects? What kind of collaboration do we need from federal agencies – especially Reclamation and the Army Corps to achieve CA goals?"

"The Governor's action will help pull together all these metrics to better understand and evaluate the State's water management to achieve water management goals for people and the environment," continued Mr. Ziegler. "It is an important step forward and we look forward to evaluating the analysis, recommendations and actions called for by Gov. Newsom."

Here is the press release and the Executive Order from the Office of the Governor:

As climate change continues to threaten the state's water infrastructure and reliability, Governor Gavin Newsom today signed an executive order directing his administration to think differently and act boldly by developing a comprehensive strategy to build a climate-resilient water system.

The order seeks to broaden California's approach on water as the state faces a range of existing challenges, including unsafe drinking water, major flood risks that threaten public safety, severely depleted groundwater aquifers, agricultural communities coping with uncertain water supplies and native fish populations threatened with extinction.

"California's water challenges are daunting, from severely depleted groundwater basins to vulnerable infrastructure to unsafe drinking water in far too many communities. Climate change magnifies the risks," said Governor Newsom. "To meet these challenges, we need to harness the best in science, engineering and innovation to prepare for what's ahead and ensure long-term water resilience and ecosystem health. We'll need an all-of-above approach to get there."

The order directs the secretaries of the California Natural Resources Agency, California Environmental Protection Agency and the California Department of Food and Agriculture to identify and assess a suite of complementary actions to ensure safe and resilient water supplies, flood protection and healthy waterways for the state's communities, economy and environment.

The order directs the state to think bigger and more strategically on water by directing the agencies to inventory and assess current water supplies and the health of waterways, future demands and challenges. The agencies will seek input over the coming weeks and months through listening sessions, information workshops and other public meetings to help inform the water resilience portfolio that will be recommended to the Governor.

# # #

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Gov. Newsom issues executive order demanding drought-climate plan
San Francisco Chronicle | April 29, 2019 | Kurtis Alexander

Like many governors before him, Gov. Gavin Newsom is seeking to get his arms around California's myriad water problems, issuing an executive order Monday that calls for his administration to do nothing less than ensure safe and sufficient water for the next century.

The order directs state agencies to review and come up with plans to improve policies addressing such issues as California's chronic water shortages, contaminated drinking water, unaffordable water rates, and the declining health of rivers and lakes.

Newsom has already said he intends to downsize but continue his predecessor's effort to tunnel water beneath the Sacramento-San Joaquin River Delta, a closely watched project that aims to deliver more water to thirsty Southern California while protecting the state's largest estuary. Finalizing the plan is listed as a priority in the executive order.

Another priority is getting some of the state's biggest water agencies, including the San Francisco Public Utilities Commission, to voluntarily give up river water to protect endangered salmon runs. The city is among several suppliers that are suing the state over environmental restrictions.

The order also underscores the impact that climate change will have. It stresses the need to make sure flood-control systems and waterfront towns are prepared for rising seas and that the state's water supplies don't run short.

"Each year we're going to have less and less water, more and more variability on how the water comes, and more people in this state," said Jared Blumenfeld, secretary for Environmental Protection. "We need to be resilient to a fairly uncertain water future."

Blumenfeld is among a handful of new appointments to executive posts in the Newsom administration who will carry out the governor's executive order. At his side will be fellow newcomers Wade Crowfoot, secretary for Natural Resources, and Karen Ross, Food and Agriculture secretary.

Blumenfeld said part of any new portfolio of water strategies will be conservation. Capturing storm water and boosting water recycling are musts. While this past winter was one of California's wettest, memories of water supplies drying up and mandatory rationing during the state's recent five-year drought remain fresh.

Crowfoot said he expects that state agencies will develop many new and innovative ways to protect water supplies as they fulfill Newsom's call for a coordinated approach to tackling water problems.

"We can't say now what specific priorities will be recommended as part of the portfolio. That's the purpose of the next several months," he said.

The exercise piggybacks on Gov. Jerry Brown's water action plan, which similarly sought to tackle California's never-ending water woes.

“To meet these challenges, we need to harness the best in science, engineering and innovation to prepare for what’s ahead and ensure long-term water resilience and ecosystem health,” Newsom said in a statement. “We’ll need an all-of-above approach to get there.”

# # #

Kurtis Alexander is a San Francisco Chronicle staff writer. Email: kalexander@sfchronicle.com
Twitter: @kurtisalexander

Gov. Gavin Newsom hits back at Trump in new fight over who controls California water
Sacramento Bee | April 22, 2019 | Ryan Sabalow and Dale Kasler

At a rally at downtown Fresno's Selland Arena, the Republican presidential candidate covered a wide range of topics Friday, May 27, 2016. By McClatchy

Gov. Gavin Newsom's administration is taking unprecedented steps to combat President Donald Trump's efforts to ship more water to his agricultural allies in the San Joaquin Valley.

Saying Trump's water plans are scientifically indefensible and would violate the state's Endangered Species Act, the state Department of Water Resources on Friday began drawing up new regulations governing how water is pumped from the Sacramento-San Joaquin Delta to the southern half of the state.

The move sets the stage for another confrontation between Trump and Newsom over the future of California's water supply and the fish that live in it. Already, the state has sued the Trump administration more than 45 times over issues ranging from immigration to climate change.

State officials believe the Trump administration's plans will hurt the Delta's fragile fish populations — and could lead to water supply cuts to the 25 million Californians who receive drinking water from the state's pumps in the estuary. The Trump administration has argued that the pumps can be opened wider without harming the endangered fish.

The issue revolves around the delicate arrangement between the State Water Project and the federal government's Central Valley Project, both of which pump water south from the Delta.

The state traditionally defers to the federal government on environmental rules in the Delta. For the first time, with its announcement Friday, the state is drawing up its own rules — throwing down a legal gauntlet that could force the federal government to comply with state laws.

The move is a response to the Trump administration's decision in February to fulfill the president's 2016 campaign promise that he'd be "opening up the water" for Central Valley farmers who'd been victimized by why what he called "insane" environmental rules protecting fish.

On Feb. 5, the federal Bureau of Reclamation began the process of reinterpreting the scientific "biological assessments" that are used to set pumping restrictions to keep endangered fish species from being harmed by the pumps.

The Trump administration didn't hide its intent to effectively change the outcome of those scientific assessments: "Maximize water supply and delivery" for irrigation districts that belong to the Central Valley Project.

On Friday the state made its own move. It began the process of drawing up new rules for the State Water Project, and how it draws water out of the Delta.

Because the state and federal Central Valley Project pumps work in tandem, the state could trigger a legal showdown if the state's move ends up formulating stricter rules, as many experts believe. The key issue would be whether the U.S. government would have to comply with state law.

“It has not been legally tested,” said Barry Nelson, a Bay Area consultant and policy advocate for environmental groups.

That question is also being debated in the Legislature. Senate Bill 1, the “California Environmental Defense Act, introduced in December, would require the federal government’s water operation to comply with the state Endangered Species Act.

Lauren Meredith, spokeswoman for the U.S. Bureau of Reclamation, said “we have successfully worked with the state to jointly operate the Central Valley Project and State Water Project for many decades. We will continue to coordinate with the state on how to meet and share our various regulatory obligations and initiatives for species recovery.”

The state’s response isn’t just about protecting fish. It’s also about protecting the State Water Project’s share of Delta water supplies. State officials are worried that increased pumping by the federal government could force the State Water Project to reduce its deliveries out of the Delta to compensate for the federal government’s ramped-up pumping. The state project’s biggest customer is the Metropolitan Water District of Southern California, which serves 19 million residents.

In announcing the state’s response Friday, Karla Nemeth, director of the Department of Water Resources, said: “California’s commitment to environmental values is unsurpassed and we will continue to operate our water infrastructure in accordance with state law, policies and those values.”

Environmentalists said Trump’s efforts to change the rules would relax a number of standards for the federal Central Valley Project, which includes dams such as Shasta, the state’s largest in the northern Sacramento Valley, as well as the massive pumping stations at the south end of the Sacramento-San Joaquin Delta.

“Governor Newsom deserves credit for drawing a line in the sand to protect California’s salmon from federal rollbacks,” said John McManus, president of the Golden Gate Salmon Association, which represents fishermen. “The federal government is rapidly moving away from protection for the Delta and the salmon stocks.”

In releasing their proposal in February, federal officials said they’re simply trying to build more flexibility into a system that they say is overly rigid. Because of state and federal endangered species protections, the two projects often have to throttle back their deliveries in order to protect the salmon, smelt and other imperiled Delta fish species, allowing water to follow its natural course to the Pacific Ocean.

At the same time, though, federal officials based in Sacramento have expressed frustrations that the Trump administration has been trying to rush the changes through without allowing enough time for scientific analysis, according to a report by KQED.

“We do not have resources to undertake this consultation,” Maria Rea, assistant regional administrator at the National Marine Fisheries Service, said in an email to her staff last July.

# # #

Sophie Maxwell, Tim Paulson appointed to city's public utilities commission
Former supervisor vows to do 'whatever is necessary' to help create a public utility
Examiner | April 15, 2019 | Joshua Sabatini

Former Supervisor Sophie Maxwell didn't mince words when asked Monday during her nomination hearing to serve on the San Francisco Public Utilities Commission if she supported The City taking over the power business from PG&E.

"I will try to suppress my glee. I will try to behave myself. Power should be publicly held," Maxwell told the Board of Supervisors Rules Committee. "It should be a public utility. It should not be for profit."

Mayor London Breed has appointed both Maxwell and labor leader Tim Paulson to serve on the San Francisco Public Utilities Commission. Both Maxwell and Paulson said Breed reached out to them for the posts.

The full board is expected to confirm both nominations next week.

Maxwell will serve out the term of the seat formerly held by Ike Kwon until Aug. 1, 2022. Kwon was appointed to serve on the Treasure Island Development Authority board of directors, filling a vacancy there created when Sam Moss, executive director at Mission Housing Development Corporation, became a member of the Building Inspection Commission.

Paulson will serve out the term of another labor leader, Vince Courtney, until August 1, 2020. Courtney resigned from the post earlier this year.

Maxwell served as the District 10 supervisor from January 2001 to January 2011.

The SFPUC is currently studying, at Breed's request, how much it would cost to acquire PG&E's assets to help policy makers decide whether The City should transition to a public power system and move to take the business away from PG&E, which filed for bankruptcy in January.

Preliminary analysis is expected later this month.

"This is a prime opportunity and employees will be better off with San Francisco, because it is not driven by money and by profits," Maxwell said.

"The power should be held with the people," she added. "I will do whatever is necessary. It is a legacy for our mayor. It is also a legacy for all of you."

Paulson was more measured in his position. "We want to make sure that the residents and businesses are going to get the best bang for their buck," Paulson said.

He said that that the labor union that represents PG&E workers, IBEW Local 1245, hasn't reached out to him on the issue. "No one is advocating for me one way or another on this particular issue," Paulson said.

SFPUC general manager Harlan Kelly praised both appointments. Earlier this month, the agency issued a poll showing nearly 70 percent of residents support public power.

"If our City leaders and our residents want us to move in the direction of acquiring electric infrastructure, we have confidence in our ability to deliver public power to San Francisco," Kelly said in a statement at the time.

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Bruce Babbitt Urges Creation of Bay-Delta Compact as Way to End 'Culture of Conflict' in California's Key Water Hub

WESTERN WATER NOTEBOOK: Former Interior secretary says Colorado River Compact is a model for achieving peace and addressing environmental and water needs in the Delta

Water Education Foundation | April 11, 2019 | Gary Pitzer

Former Interior Secretary Bruce Babbitt gives the Anne J. Schneider Lecture April 3 at Sacramento's Crocker Art Museum. (Image: Water Education Foundation)

Bruce Babbitt, the former Arizona governor and secretary of the Interior, has been a thoughtful, provocative and sometimes forceful voice in some of the most high-profile water conflicts over the last 40 years, including groundwater management in Arizona and the reduction of California's take of the Colorado River. In 2016, former California Gov. Jerry Brown named Babbitt as a special adviser to work on matters relating to the Sacramento-San Joaquin Delta and the Delta tunnels plan.

When Babbitt, 80, speaks, people take notice, and he didn't disappoint before a packed house at the annual Anne J. Schneider Lecture April 3 in Sacramento. For more than an hour, he touched upon some of California's thorniest water issues, such as the voluntary settlement process for flows into the Delta from the San Joaquin and Sacramento rivers (which he's helped negotiate) and the emerging tension between the Trump administration and California on water.

But the man who helped negotiate the 1994 Bay-Delta Accord — which never quite achieved its lofty goals for Delta water management — suggested that a new course of action is needed,

one that emulates the long-standing pact among Colorado River water users that has endured since 1922.

“We should now talk seriously about a California Bay-Delta Compact,” he said.

Analogous to the interstate agreement that exists among the seven Colorado River Basin states and Mexico, Babbitt said a conceptual Bay-Delta Compact would be a comprehensive effort highlighted by a stakeholder-drafted framework for how the Delta should be governed in the future.

The Sacramento-San Joaquin River Delta is a signature geographical feature in California, the hub of a water supply system that provides a portion of the drinking water supply for more than 27 million people. The largest estuary on the West Coast, the Delta relies on sufficient water flows to ensure a healthy ecosystem while also providing water to irrigate more than 3 million acres of agriculture.

A Culture of Perpetual Conflict

Babbitt, who enforced the federal Endangered Species Act for eight years at Interior during the Clinton administration, chided the Trump administration for failing to work with California on a balanced plan for water supply and ecosystem health in the Delta.

“A multispecies analysis of the ecological needs of the Delta can be put together, but the federal government has chosen to take an adversarial position,” he said.

The Delta suffers because multiple agencies and interest groups have created a culture of perpetual conflict that has resulted in a dysfunctional process, Babbitt said. A significant source of the problem is the dominant sway of single-issue management that often gets tangled in controversy.

“The underlying problem is that we deal with the Bay-Delta piecemeal, one issue at a time,” he said. “We work in stovepipes and promote endless conflicts.”

A Bay-Delta Compact would begin through legislative authorization that would segue to an appointed commission of experts that primarily considers where the public interest lies in making the big decisions about water management. Its findings would be sent to the Legislature for an up or down vote.

Whether a compact could be negotiated between long-adversarial Delta water interests is an open question, given the legacy of conflict in the region. Indeed, it took legislative action to enact such significant laws as the Delta Reform Act of 2009 and the Sustainable Groundwater Management Act of 2014.

“Secretary Babbitt’s idea for an intrastate compact among warring water districts is audacious in its ambition, but given the history, I’m not sure it works,” said Alf Brandt, senior counsel to Assembly Speaker Anthony Rendon and a veteran of California water law and policy, who attended Babbitt’s talk.

Lester Snow, former director of the California Department of Water Resources who also attended the talk, said Babbitt was attempting to lay out a different way of looking at the system in a manner that gets all the issues on the table for the development of a “grand plan.”

“In nearly 40 years, we haven’t been able to address the Delta issues and the habitat and the balancing, so why not [a compact]?” he said.

Babbitt acknowledged that a compact would not take anybody’s water away, but perhaps be more in sync with the concept of an environmental water right that has been broached by the Public Policy Institute of California and others. There is also the benefit of flexibility that comes with contracted water deliveries that vary annually.

“The premise is not to rewrite the law of water rights in the way they are vested in different users. I’m not that radical,” he said. But “there is a huge chunk of water allocated through contracts that has a lot of flexibility.”

Furthermore, the basis of a compact must emerge from the ground up. “I’d be really careful about geographic allocation, instead reach for a kind of broad notion about a relative balance,” he said.

Beyond any possible strides toward achieving greater balance in the system, Babbitt suggested that a compact could be a bulwark against the Trump administration’s bid to increase Delta exports to users in the San Joaquin Valley and the raising of Shasta Dam.

“If California could come up with a compact, I guarantee you that federal regulation would back off,” he said. “It wouldn’t disappear, but it would have to take account of a framework statement by the sovereign state of California that this is the lens through which we view the resource.”

A unified vision for a compact framework is needed because of things such as the reconsultation between the U.S. Bureau of Reclamation and the U.S. Fish and Wildlife Service on the operation of the federal Central Valley Project. Designed to ensure the protection of endangered species, reconsultation has morphed into “a political process that lacks integrity,” with scientists under pressure to produce findings that justify increased water deliveries, Babbitt said.

Noting that the Delta smelt are on the verge of becoming “functionally extinct,” Babbitt said the Fish and Wildlife Service has been “nowhere to be found in this process.”

Meanwhile, the drive to add storage through a raised Shasta Dam and the construction of Sites Reservoir, an off-stream storage facility about 70 miles northwest of Sacramento, has been conducted through a singular analysis without enough consideration of when and how water is delivered to farms, urban areas and the environment.

“Shasta is particularly troubling because the federal government is taking on a fight with the state of California,” Babbitt said. “There may be a very good case for raising Shasta Dam, but the federal government, at the instigation of the political direction of the administration, is saying, ‘We are going to do Shasta and we are going to run over California.’”

Likewise, while there may be a compelling case for Sites Reservoir, its water allocation impacts on all sectors haven’t been clearly stated. “We are basically saying ‘we will worry about [that] after the fact,’” Babbitt said.

Emerging Ideas From the Ground Up

The State Water Resources Control Board's decision in December to set a 40 percent flow standard for three tributaries that flow into the lower San Joaquin River sparked an outcry among agricultural and municipal users that has reached the halls of Congress.

Bruce Babbitt and Ellen Hanak with the Public Policy Institute of California share a laugh during the question and answer session at the April 3 Anne J. Schneider Lecture. (Image: Water Education Foundation)

Babbitt, who was called upon to help hammer out the voluntary settlement process designed to provide water users with a soft landing, said while progress has been made in fleshing out the details of those settlements, much more work is needed to get across the finish line.

The voluntary settlements center on the idea of functional flow and the implications of matching water flow to habitat in a way that benefits salmon and other fish. Advocates of functional flows say they are superior to what they view as arbitrary unimpaired flows. Functional flows, they say, put every drop to work, including being spread across fields to promote food production for fish and bird habitat.

"We are all struggling with what the meaning of that is for the Delta … but you can reconceptualize the Endangered Species Act," Babbitt said. "There is space to do these things if people have the creativity and if we quit this state-federal fight and sit down and work at it."

Even so, Babbitt said, it's going to take a little more water to make the Endangered Species Act work.

"Maybe not a vast amount, but that's the point, understandably, where it gets difficult and we are not there," he said, adding that "some reduction" in use has to occur on the Sacramento River side. To alleviate that, he suggested that a water diversion fee could be spread among users that could also help fund needed science and compensate those who give up water.

Babbitt said the greatest result of the voluntary settlements discussion is the promotion of talking, listening and understanding.

It was not free of turbulence, however.

"There were a lot of weeks out here when I walked away from those meetings thinking 'we are getting nowhere' and that I'm sick and tired of this process and going to hand in my resignation to the governor and never come here again," he said.

Despite the headaches, Babbitt said he sees value in consensus-driven solutions such as what's emerging with the voluntary settlement agreements for the State Water Board's Delta flows plan.

"Keep after the voluntary settlement process," he urged. "It ain't perfect, but it's going to make a real difference on the tributaries."

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