BAY AREA WATER SUPPLY AND CONSERVATION AGENCY
BOARD OF DIRECTORS MEETING

December 4, 2020

Correspondence and media coverage of interest between November 18, 2020 and December 2, 2020

Media Coverage

Water Supply Conditions:

Date: December 2, 2020
Source: Associated Press
Article: Winter's dry start prompts low California water allocation

Date: November 28, 2020
Source: San Francisco Chronicle
Article: Sunny and dry, with an emphasis on dry

Water Supply Management:

Date: December 2, 2020
Source: Bay Nature
Article: California Commits to Conserving 30 Percent of its Land and Water by 2030. What Does That Mean?

Date: December 2, 2020
Source: Maven
Article: Delta Adapts: Preliminary Findings From the First Comprehensive Climate Change Vulnerability Assessment for the Delta

Date: December 1, 2020
Source: Maven
Article: DWR Releases Initial State Water Project Allocation of 10%

Date: November 30, 2020
Source: CalMatters
Article: We can find common ground to solve challenging water issues

Date: November 24, 2020
Source: Ca. Department of Water Resources
Article: DWR Calls for Increased Collaboration in Climate Change Fight With "Moving to Action" Plan

Date: November 23, 2020
Source: PPIC
Article: Building a Water-Resilient California

Date: November 19, 2020
Source: EOS
Article: Different Models, Different Answers in Water Resource Planning

Water Infrastructure:

Date: November 26, 2020
Source: The Independent
Article: Zone 7 to Spend $2.8M on Delta Conveyance Project

Date: November 19, 2020
Source: Bureau of Reclamation
Article: Press Release: Trump Administration finalizes Shasta Dam raise plan to increase water storage for Californians and the environment

Water Finance:

Date: November 18, 2020
Source: California State Treasurer, Fiona Ma
Article: Press Release: State Treasurer Announces Sale of $100 million of Variable Rate General Obligation Bonds and Use of Innovative Electronic Trading Platform

Winter's dry start prompts low California water allocation
Associated Press | December 2, 2020

SACRAMENTO, Calif. (AP) — California's water managers on Tuesday preliminarily allocated just 10% of requested water supplies to agencies that together serve more than 27 million Californians and 750,000 acres of farmland.

The state Department of Water Resources cited the dry start to the winter rainy season in California's Mediterranean climate, along with low reservoir levels remaining from last year's relatively dry winter. Winter snow typically supplies about 30% of the state's water as it melts.

Last year's initial allocation also was 10% and climbed only to 20% when the final allocation was made in May. Most areas that depend on the state-supplied water also have other sources including groundwater, streams and their own reservoirs.

The department's eight precipitation measuring stations scattered across Northern California collected a record-low 0% of average rainfall in October and 53% in November.

Meanwhile, the state's major reservoirs are lower than they were at this time a year ago.

Lake Shasta, the federal Central Valley Project's largest reservoir, is at 75% of its historical average, down from 119% a year ago. Lake Oroville, the State Water Project's largest reservoir, is at 61% compared to 90% last year.

"While we still have several months ahead of us, dry conditions persist," department Director Karla Nemeth said in a statement urging the state's nearly 40 million residents to conserve water. "As communities throughout California prepare to support their environment and economies through times of extended dry periods, state agencies plan together to support those communities."

The initial allocation uses conservative assumptions and is updated monthly as conditions change based on snowfall and water runoff. The department will conduct this winter's first snow survey south of Lake Tahoe on Dec. 30.

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Sunny and dry, with an emphasis on dry
San Francisco Chronicle | November 28, 2020 | Steve Rubenstein

Sunny, cool and very dry weather is taking hold in the Bay Area this weekend and during the week, with not a drop of precipitation in the offing.

The high-pressure system over California is putting the Bay Area, and most of California, under what the National Weather Service called a “very dry air mass regime.”

Bay Area high temperatures will be in the 60s, with lows in the 30s and 40s.

On Friday night, the temperature dipped below freezing in many Bay Area spots. Novato was 27 degrees, Petaluma hit 28 degrees and Livermore and San Martin were 30 degrees.

The dry spell that is expected to remain for perhaps two weeks or more is “starting to become something of a concern,” said Drew Peterson, a weather wervice meteorologist.

“We’re starting to move into an area where the D-word might become a possibility,” Peterson said, apparently not wishing to say “drought” as early in the rainy season as November, with the start of winter still three weeks off.

“With the weather, things can change on a dime,” he added. “But right now it’s bone dry and we’re already 1 to 4 inches below normal for rainfall for this time of year.”

Weak offshore winds are expected this weekend, and no wind or boating advisories were in effect. Air quality was generally good except in areas around Vallejo and San Jose, where it was moderate, according to the AirNow air monitoring agency.

In the Sierra, early-season skiers and boarders were sliding largely on artificial snow over limited terrain. Squaw Valley was operating 7 of its 30 lifts and Northstar was running 6 of its 13 lifts. Heavenly ski resort at South Lake Tahoe reported a snow depth of 18 inches, meaning a good poke with a ski pole could hit solid rock.

Meteorologist Daniel Swain of UCLA said it was “pretty amazing to see ... precipitation near zero in Northern California for two weeks, heading into mid-December.”

“Unfortunately there is still no indication of any meaningful precipitation on the horison for California and, indeed, much of the American West,” he added.

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California Commits to Conserving 30 Percent of its Land and Water by 2030. What Does That Mean?

Bay Nature | December 2, 2020 | Eric Simons

On October 7 California Governor Gavin Newsom ordered the state to create a new California Biodiversity Collaborative and conserve 30 percent of its land and coastal waters by 2030.

Conservationists have celebrated the enshrinement of biodiversity preservation among the state's priorities, as well as the state aligning with an international "30 by 30" goal shared by the United Nations Convention on Biological Diversity, the International Union for Conservation of Nature, and many of the world's most prominent conservation scientists.

Now comes the hard part: figuring out which 30 percent of California, and making it clear what it means to truly "conserve" it.

After a summer and fall of record-breaking wildfires and arguments between the state and the Trump Administration about who was to blame for them, many Californians now know that 45 percent of the total land area of the state is owned and managed by the federal government. That includes 15 million acres of Bureau of Land Management land, much of which is held in vast swathes of the eastern deserts and inner coast range; 7.6 million acres of National Park Service land; and 20.8 million acres of US Forest Service land.

If you consider California's federal land more or less protected — it's publicly owned and rarely ever sold, though it can be developed for solar energy or used for mining, drilling, grazing, and logging — it shouldn't be hard to rope off 30 percent of the state by 2030. And that's not all. California State Parks already manages 1.4 million acres. The executive order also mentions the importance of agricultural and working lands, with the first point under the 30 percent line calling for guaranteeing "economic sustainability and food security" — adding the potential for California's 43 million acres of agricultural land to count toward the goal, too. The order also highlights the importance of marine protected areas, which currently protect one half-million acres in state waters offshore, and tribal lands, which add up to another half-million acres.

All in all, then, it's defining the nature of "conserve" that will be much more challenging than drawing lines on a map around one third of the state's land. How much use is too much use? What kinds of use make land count as "not conserved"? How do fishing, hunting, hiking, birding, logging, or ranching factor in? Does a flooded rice field that's habitat for endangered birds and fish count? Can the state protect 30 percent of its land in a way that reflects its full redwoods-to-desert and coast-to-mountains biodiversity?

A bill in the state Legislature introduced by San Jose Assemblyman Ash Kalra, which would have made the 30 percent by 2030 goal state law, stalled in the Senate over just such a debate, two months before Newsom's executive order. What counts as "conserved" is now a task for the Biodiversity Collaborative, the group Newsom's order created to sort out what to protect. "I think about questions like: Is Tilden Park in there or not?" said Jennifer Norris, the deputy secretary of

biodiversity and habitat at the California Natural Resources Agency. “Probably, but there’s a lot of recreation in Tilden. So how are we defining that, and what’s the scale? All those questions we need to unpack.”

Norris said that a 2016 US Geological Survey analysis of statewide land put the acreage that’s truly “protected” in California at 22 percent of the state’s 100 million acres. One first step for the new collaborative is simply to figure out what counts and what doesn’t in that assessment.

“Every map makes a series of decisions,” she said. “They’re not including pocket parks, but I’ve got hummingbirds in my front yard. So somewhere between Yosemite and my front yard, there’s a place where we can think about conservation.”

The first part of the executive order calls on the collaborative to bring together several state government agencies plus tribal groups, agricultural groups, and “business and community leaders” to take an inventory of California biodiversity. State leaders seem to be following the order’s intent and not just trying to check off an arbitrary percentage goal, said UC Berkeley biologist David Ackerly, one of the signers of a 2018 California Biodiversity Initiative scientific roadmap. That means scientists will start by going back and looking closely at every acre of land in the state, analyzing it based on criteria from the IUCN to try to prioritize 30 percent that will make a real difference in biodiversity conservation.

“The first step is of course the baseline,” Ackerly said. “It hasn’t actually been done. Most of the data is there but no one’s sat down and said, ‘Here we are, this is our analysis.’ We know wilderness areas will be in there. Motor vehicle parks probably won’t. Somewhere in between. I think the Newsom administration wants to look closely at multiple-use, Forest Service, BLM … and not just sweep things in that really honestly don’t have the highest level of protection.”

Ackerly said the state and scientists will follow four principles for the inventory and subsequent decisions about protection. One is biodiversity, and where the opportunities are to preserve the highest species diversity based on what’s threatened and what land is available. One is climate resilience, which means looking for large land areas and corridors that connect different habitat types. One is what Ackerly labeled “microclimatic heterogeneity” — preserving small but diverse pockets of land for species to move and survive as the climate changes. One is equity in access, and finding parks and preserves that allow everyone to visit.

“California has led the world more than once in tackling the grand challenges of climate change, clean air and water, and stewardship of nature,” said Erika Zavaleta, a biologist at UC Santa Cruz and author of the textbook Ecosystems of California, in a statement of support posted to the new collaborative’s website. “Solving these grand challenges and successfully walking a path of thriving people and nature together calls for all of us to contribute our best ideas and perspectives, and for all of us to be reflected in this movement’s leadership.”

The inventory also offers an opportunity for community involvement. The California Native Plant Society is leveraging its massive network of amateur botanists to find and identify plant species

statewide. The California Academy of Sciences will coordinate citizen science projects that help map biodiversity. iNaturalist, the platform operated by the Academy of Sciences, already holds more than 5.8 million observations of California wildlife.

The Academy has also partnered with the Natural History Museum of Los Angeles County and the San Diego Natural History Museum to look for places statewide where there are gaps in biodiversity data. The institutions hope to digitize their vast natural history collections, allowing researchers to study past species from the state, and compare them to present-day observations. The groups also hope to use past and new collections to create a complete library of DNA sequences from every organism in the state, said Rebecca Johnson, the Academy's co-director of citizen science.

"I think they're thinking about it in a really cool way that isn't just 'Let's buy this other 8 percent and be done'," Johnson said. "I like that this order has explicit mention of biodiversity and climate and resilience and ties in lack of data and that we need to protect land, and recognizes people."

After four years spent fighting the Trump Administration in court over environmental policies, the state could get a boost from its greater philosophical alignment with the incoming Biden Administration. Biden's campaign platform called for conserving 30 percent of America's lands and waters by 2030. Newsom said on November 9 that the change in the federal government means "it goes from headwinds to tailwinds."

"I think California is going to be at the leading edge of those tailwinds," CNRA's Norris said. "I hope the federal government would say, 'Hey, let's partner and do this together.' We're excited to be at the front, at the start, and if we join forces we can put together a national strategy as well. There's a lot of opportunity to bring federal resources to bear."

Funding, of course, will still be an issue in the state's pandemic-ravaged budget.

"We're not focused on getting new money for new acquisitions or easements," Norris said. "But there's so much underway, if we just do it strategically, and the state has a lot of money from bonds. It's just a matter of spending it in a way that keeps biodiversity front of mind."

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Delta Adapts: Preliminary Findings From the First Comprehensive Climate Change Vulnerability Assessment for the Delta
Maven | December 2, 2020

Study assesses climate change risks to the Delta's vulnerable communities, ecosystems, water supply, and flood management

Delta Adapts: Creating a Climate Resilient Future, simply called Delta Adapts, is the Delta Stewardship Council's climate change study consisting of a first-ever climate change vulnerability assessment and adaptation strategy for the Sacramento-San Joaquin Delta and Suisun the Marsh. The study will help the Council assess specific climate risks and vulnerabilities in the Delta and, in coordination with a diverse group of stakeholders, develop adaptation strategies to address those vulnerabilities.

The Delta Adapts study consists of two phases:

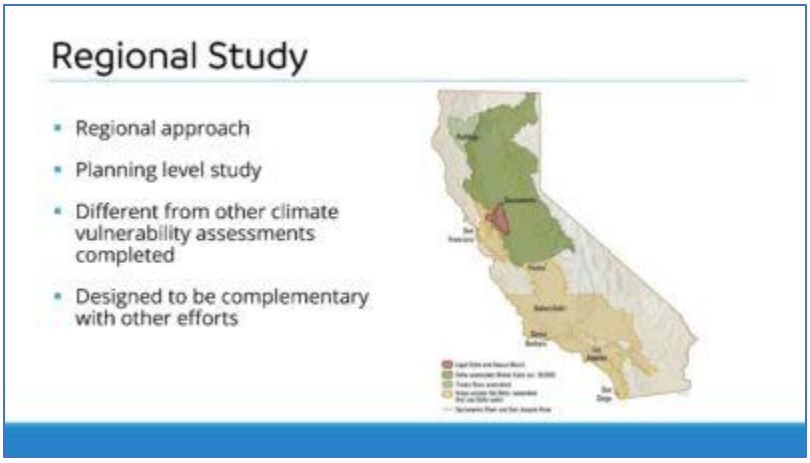
- Phase 1: A vulnerability assessment to improve understanding of regional vulnerabilities due to climate change in order to protect the vital resources the Delta provides to California focusing on State interests and investments.

- Phase 2: Develop an adaptation strategy that details strategies and tools that State, regional, and local governments can use to help communities, infrastructure, and ecosystems thrive in the face of climate change.

The Council staff is in the final stages of completion of Phase 1 and is preparing a draft report that will be available for public comment in early 2021. At the November meeting of the Delta Stewardship Council, they shared some of the key findings of the analysis.

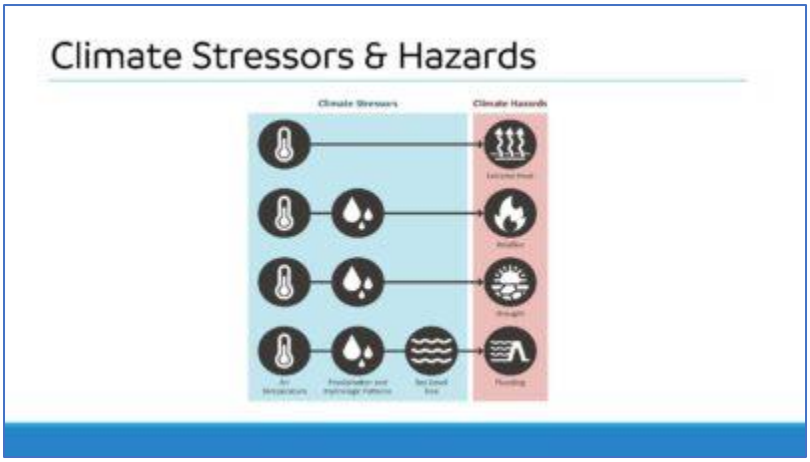
Harriet Ross, Assistant Planning Director with the Planning Division of the Council began by noting that the climate change is already altering the physical environment of the Delta and that the Delta will continue to experience climate change through hotter temperatures, more severe wildfires, and prolonged droughts. The Delta Stewardship Council authorized the climate study in 2018, and in early 2019, the Council endorsed a set of resilience goals that built upon the coequal goals.

She also noted that over the long term, climate change in the Delta is expected to adversely affect human health and safety, lead to economic disruptions, diminish water supply, degrade water quality, shift ecosystem function and habitat qualities, and increase the challenge of providing basic services. Many of these impacts will disproportionately affect disadvantaged communities.



"Although the extent of those impacts in the future is not exactly known, Delta Adapts will help the Council to assess specific climate risks and vulnerabilities in the region, and our next phase of the study in preparing the adaptation strategy will represent a big step in identifying ways to address them," she said, noting that the study was conducted in coordination with a diverse group of stakeholders over the last two years. "The specific goals of the climate study are to inform future Council work, help the state prioritize future actions and investments, provide a tool kit of information for local governments to use in their regulatory documents, and serve as a framework to be built upon for the Council and others in the future," Ms. Ross said.

Delta Adapts is a regional planning level study that covers the entire Delta and Suisun Marsh, consistent with the Council's regulatory authority, and is designed to inform policy. Ms. Ross acknowledged that a lot of other climate assessments of the Delta have been done by state agencies and individual cities and counties, but these typically focus on assets those agencies own or analyze vulnerabilities based on certain climate conditions. The Delta Adapts study covers a much broader range of asset categories and climate change conditions and is designed to be complementary with all of the other existing efforts.



The study looks at a broad range of climate stressors, including changes in air temperature, precipitation, hydrologic patterns, and sea level rise, and the corresponding climate hazards of extreme heat, wildfire, drought, and flooding. During the development of the vulnerability assessment, staff had an ongoing collaboration with agency partners, and built off of existing models and data, working hard to ensure the studies are complementary, especially across state agencies.

They held stakeholder briefings to ground-truth the data and verify the results, and reached out to community-based organizations for assistance in structuring engagement to reach vulnerable communities in the Delta. There was a technical advisory committee consisting of experts on

the system and in climate change who really provided invaluable input into the technical approach and analyses and have reviewed all of the work. A stakeholder workgroup consisting of local agencies, cities, counties, environmental groups, water districts, and others provided data and input early into the process.

“Overall, through all the engagement, the feedback we’ve received has been largely positive,” said Ms. Ross. “Most were impressed with the scale and comprehensiveness of our analysis, especially with our flood approach where we were able to explore different aspects of climate change in a way that has really never been done before. We heard feedback that our probabilistic flood maps, which shows the likelihood of flooding, are easier to understand when compared to more traditional flood maps. It was also noted that we made a concerted effort to address stakeholder concerns and ran to grab many of the issues that were brought up.”

Staff is still working on the draft vulnerability assessment right, but today they will review some initial key findings.

PRELIMINARY RESULTS: EQUITY ANALYSIS

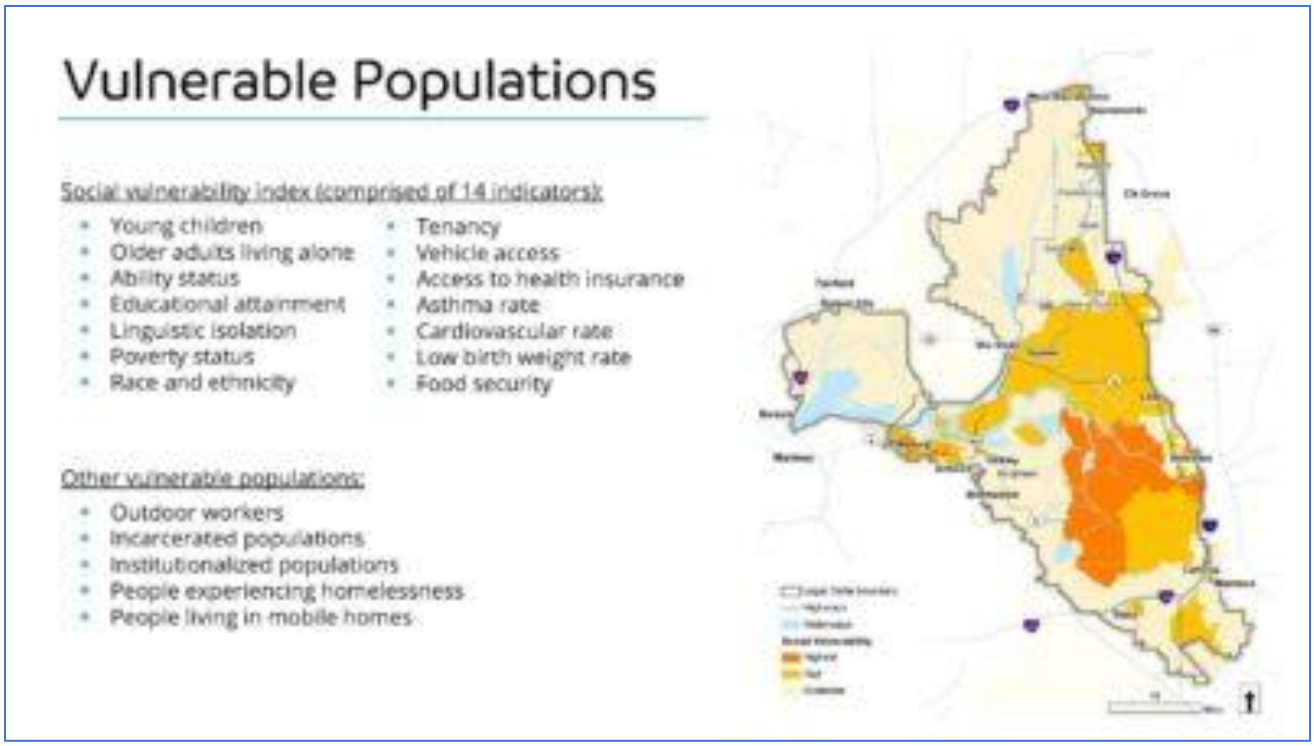
Next, Avery Livengood, Senior Environmental Planner, gave the results of the equity assessment. She noted that a key part of the equity approach was to evaluate social vulnerability to climate change, so the first step was to review studies done by other state and regional agencies to see what data and indicators that they have used to identify social vulnerability in general. Next, they conducted a literature review to identify factors that increase vulnerability to the specific climate hazards that the Delta Adapts study is focusing on.

The results are listed on the slide. “What we found is that many of the factors cut across all three of the hazards that we looked at,” said Ms. Livengood. “For example, preexisting health conditions such as asthma tend to make people more sensitive to the effects of flooding, heat,

Factors that Increase Vulnerability

	Flooding	Extreme Heat Events	Wildfire
Exposure	▪ People experiencing homelessness ▪ Emergency response workers ▪ Mobile home residents	▪ People experiencing homelessness ▪ Outdoor workers ▪ Young children ▪ Residents of dense, urban areas	▪ People experiencing homelessness ▪ Outdoor workers ▪ Residents of wildland-urban interface
Sensitivity	▪ Preexisting health conditions	▪ Preexisting health conditions ▪ Age ▪ Ability status ▪ Pregnancy	▪ Preexisting health conditions ▪ Age ▪ Pregnancy ▪ Smokers
Adaptive Capacity	▪ Access to information ▪ Ability to evacuate ▪ Access to healthcare ▪ Income or other resources to repair damage, procure shelter	▪ Access to information ▪ Access to air conditioning ▪ Access to healthcare ▪ Income or other resources to adapt living space	▪ Access to information ▪ Ability to evacuate ▪ Access to healthcare ▪ Income or other resources to adapt living space

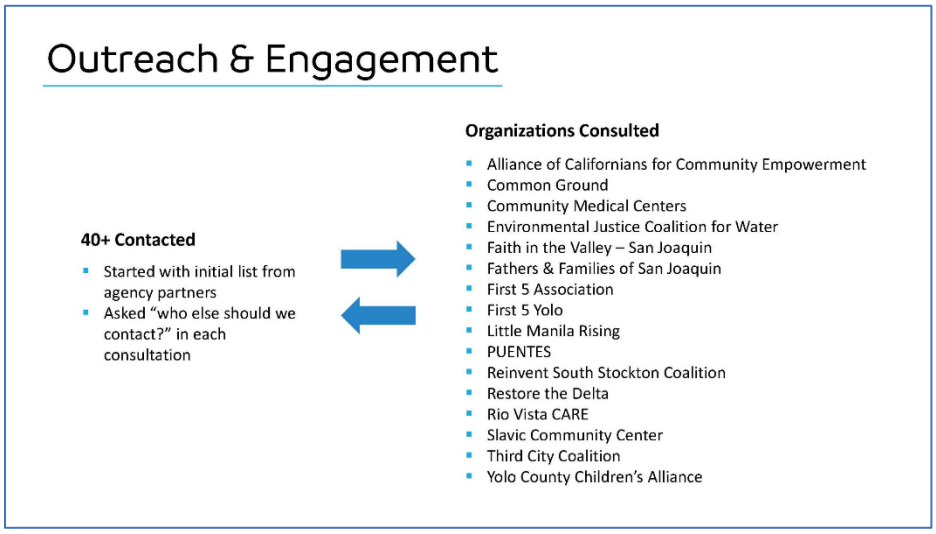
and wildfire. Income level is another example because it affects the household's capacity to recover from extreme events."



The list was then used to develop a custom social vulnerability index for the Delta. The index overlay has 14 factors, which made it possible to identify communities that have multiple intersecting characteristics that increase their vulnerability. Those communities with the highest vulnerability in the Delta are shown on the map in dark orange; these communities scored in the 70th percentile for more than half of the 14 indicators. During phase 2 of Delta Adapts, the map and the index will be used to identify and prioritize equitable adaptation strategies.

"Because this work is new, we're still working to determine how exactly we are going to use it," said Ms. Livengood. "That's why we're really excited that the index already has one real-world application with the 2021 Delta Science Proposal Solicitation. Staff published the social vulnerability index on the web map so it's now publicly accessible, and it allows users to view the data and to explore individual indicators on the map. Funding applicants are directed to use this map to evaluate how their project will address one or more of the factors that contribute to vulnerability within a specific community. The map tool also makes the information accessible to anyone in the general public."

Ms. Livengood acknowledged that what she just presented was focused on social vulnerability, but the equity and technical memorandum will be much broader and will lay out how the principles of equity can be addressed throughout the Delta Adapts initiative. Their approach has been to engage early and often with local stakeholders.



"For more than a year now, we've been contacting community-based organizations and service providers in the Delta for their feedback and ideas, and we've made a lot of additions to their work based on their recommendations," she said. "A few examples, we added a food security indicator to the index. We also added evacuation routes to our asset database so that we can report on whether any of those routes are at risk of flooding in the future, and we're currently working to produce an educational video about Delta Adapts so that people that don't have time or wherewithal to read a long report will still be able to learn about our key findings."

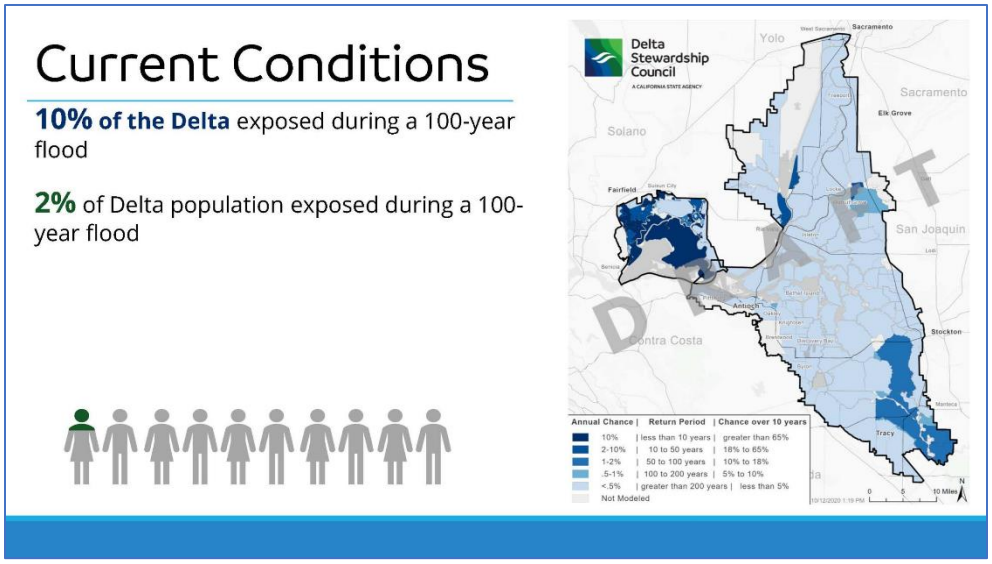
She concluded by acknowledging and appreciating the contributions of the organizations listed on the slide, and they will continue building on the collaboration going forward.

PRELIMINARY RESULTS: FLOOD HAZARDS

Andrew Schwarz, Supervising Engineer, then discussed flood hazards and the flood hazard maps. He began by explaining the approach and analysis that was taken to analyze flooding. Because flooding in the Delta is a very complex system to understand and to model, the flood model was built on existing tools that were adapted and improved in order to take advantage of the work that has already been done in the Delta.

"We built a model that can consider a very wide range of future climate change conditions, including changes in tide and storm surge, sea level rise, and Delta inflows," said Mr. Schwarz. "We really wanted a model that would help us improve our understanding of this system and not just test one scenario or another scenario. Finally, we really wanted a model and some tools that were very flexible. We know that climate change information is constantly changing and being updated; in a few years the IPCC will release new scenarios and projections of climate change and we want to be able to ingest those quickly and update our analysis. So the tool that we built is very flexible and can be updated without having to issue another contract to a contractor to do this all over again in just a few years."

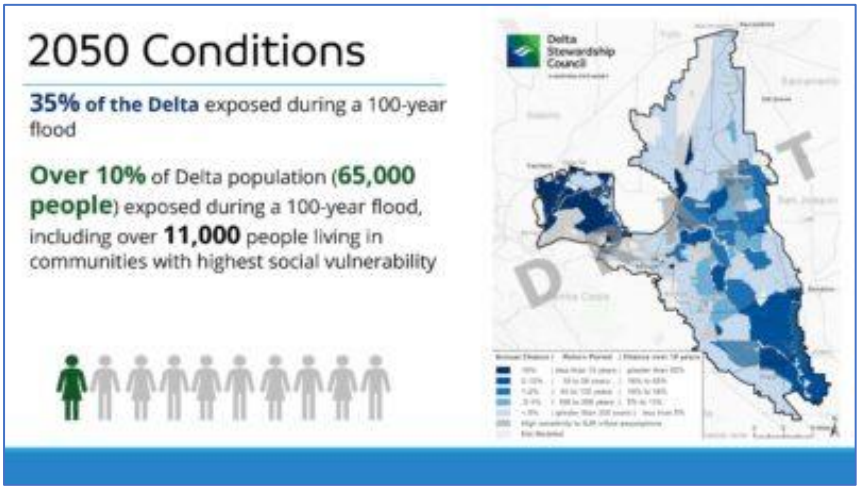
Mr. Schwarz then presented the first map of flood hazards in the Delta under current conditions, noting that there are a few caveats: All of the maps assume no additional building or reconstruction of levees, so levee improvements stop at where they are at today. Similarly, up in the watershed, no additional improvements are assumed to those levees for flood control



measures, because how much of that work would be done and where and when it will occur is unknown, so the easiest assumption is just to use today's conditions and then look at those possible trajectories into the future with further adaptation as adaptation strategies.

The first flood map looks at current conditions; the darker the blue, the higher the flood risk. Under current conditions, much of Suisun Marsh is exposed to flooding, with the levees being overtopped during a ten-year event or an event that would have a 10% chance of occurrence in any year which is a fairly low level of flood protection. Conversely, throughout most of the rest of the Delta, there is a fairly low risk of flooding – it would take a 200-year event or an event that would have a less than half a percent chance of occurring in any one year. The blue colors in the southern Delta are generally restoration areas that we want to see flooded more frequently or areas with known flood deficiencies.

"Under a 100-year event, at current conditions, an event that would have a 1% chance of occurrence in any one year about 2% of the Delta's 625,000 people would be exposed to flooding," said Mr. Schwartz.

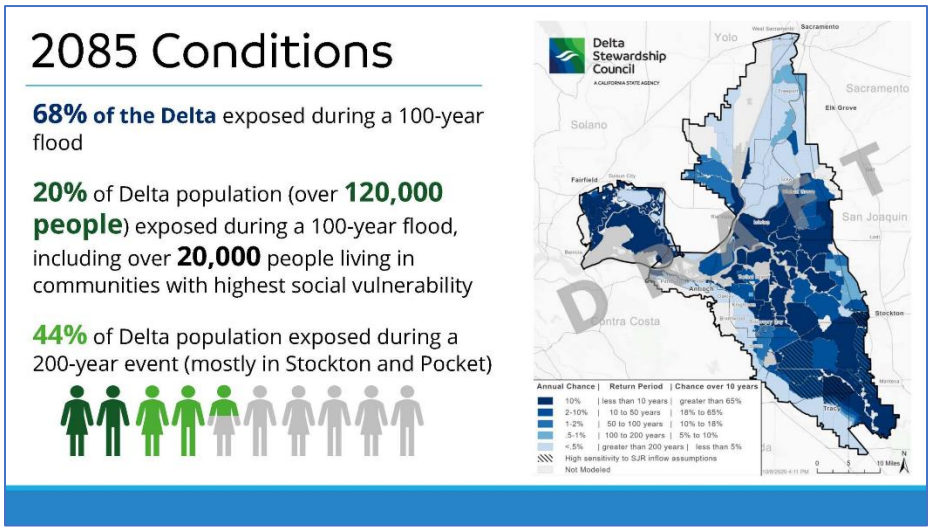


At 2050 conditions, there is substantial additional flooding throughout the Central and South Delta, including the Stockton area; levees are overtopped with much smaller storm events. The darker colored areas on the map represent flooding under an event that would have something between a 10-50 or 50-100 year recurrence of flooding. During a 100 year event at mid-century conditions, nearly 65,000 people

will be exposed to flooding, including 11,000 people living in communities with the highest social vulnerability.

“That level of flood risk might make it challenging to make continued agriculture investments, especially in permanent crops and high-value crops,” he said. “In addition, several urbanized and urbanizing areas are exposed to flooding, increasing the potential for significant economic disruption and loss, and impacts to socially vulnerable populations.”

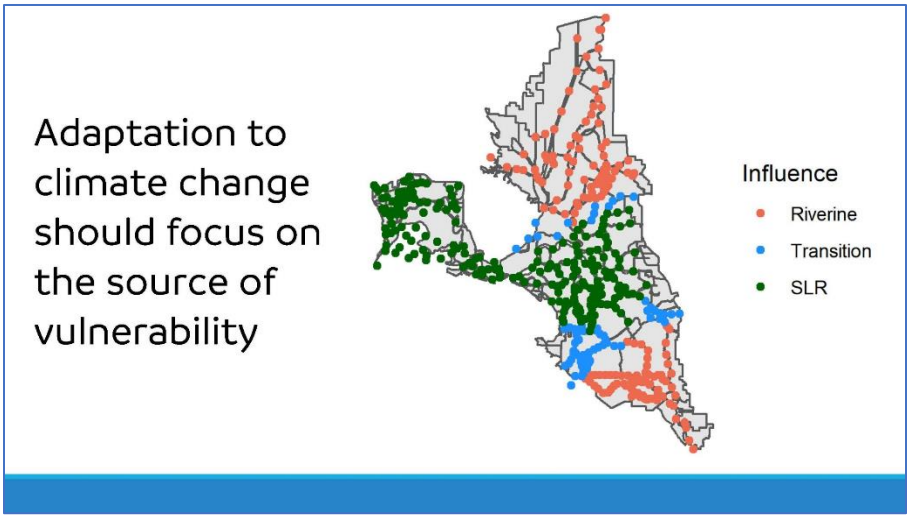
Moving out to 2085 conditions, most of the south and central Delta are exposed to flooding on less than a ten-year recurrence, so it doesn’t take much of a storm to start seeing massive flooding throughout the Delta.



“Another way to think about this is over a ten-year period toward the end of the century, these islands would have a 65% chance of occurring because that ten-year storm has a 10% chance of occurring in any individual year,” said Mr. Schwarz. “At 100-year storm event, 20% of the Delta’s population, over 120,000 people, would be exposed to flooding and of those, over 20,000 people would be living in areas with the highest social vulnerability. We move up to a 200-year storm event, 44% of the Delta’s population would be exposed to flooding, so nearly a doubling of the population that would be exposed to flooding, going from a 100-year to a 200-year event.”

He noted that most of the additional people that get added that would be more exposed are actually in the north Stockton area and the Pocket area of Sacramento, so this highlights where targeting investments in additional flood protection areas can protect tens of thousands of people from flooding.

“It’s also interesting to note on this map that even under these significant substantial changes in climate change conditions, the North Delta remains relatively secure and not prone to high flood risk,” said Mr. Schwarz. “That highlights the value of past flood management investments that have been made, particularly along the Sacramento and American Rivers, and most importantly, the Yolo Bypass, which allows us to accommodate huge additional inflows.”



It has always been known that there are parts of the Delta that are driven by the river system and other parts that are driven by the ocean processes, and the slide shows where that line of transition happens in the Delta. The red dots show areas driven primarily by flood risk from the river system; the green dots are the areas that are most vulnerable to sea level rise, and the blue dots are the transition zones where they are vulnerable to both of those processes.

“This is important because as we move to adaptation in our next stage, we’re really going to need to focus on the source of vulnerability and look at adaptation strategies that are going to address that vulnerability,” said Mr. Schwarz. “You can think about things like improving the bypass or upstream storage to manage those inflows into the Delta that will help those red dotted areas, but it’s not going to do much for green areas. For those areas, even if you reduce inflow from the rivers, the sea level rise is what’s going to challenge them, so we’re going to need to focus our adaptation on understanding what is driving vulnerability.”

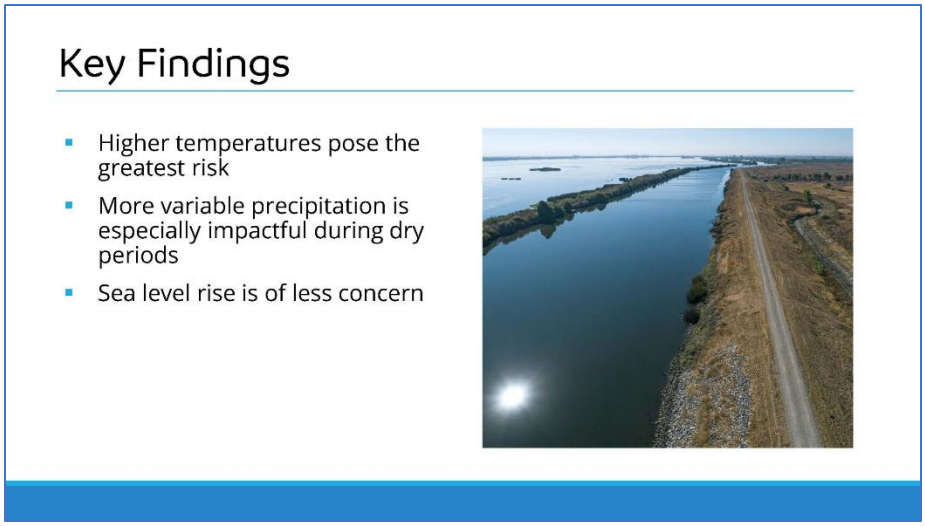
“What does all of this mean?” he continued. “We already knew a lot of the Delta would flood with the expected change in climate change conditions, and we knew that flooded areas would disproportionately affect vulnerable communities. But now we have a very good idea of where the greatest flood impacts will occur in terms of people affected and approximate economic losses, so we can target future levee investments to protect those communities. We also know where the most socially vulnerable communities are so we can ensure that investments are equitable and focused on these communities. We know what drives flooding in different areas of the Delta, we can now structure adaptation strategies to address the cause, and design different adaptation strategies that are needed for flooding caused by increasing river flows or in sea level rise increase. This also allows us to task adaptation strategies to see how effective they would be at addressing these concerns.”

PRELIMINARY ANALYSIS: WATER SUPPLY

The analysis considered how the water supply system is sensitive to changes in temperature, sea level rise, and precipitation and how that can affect water supply reliability.

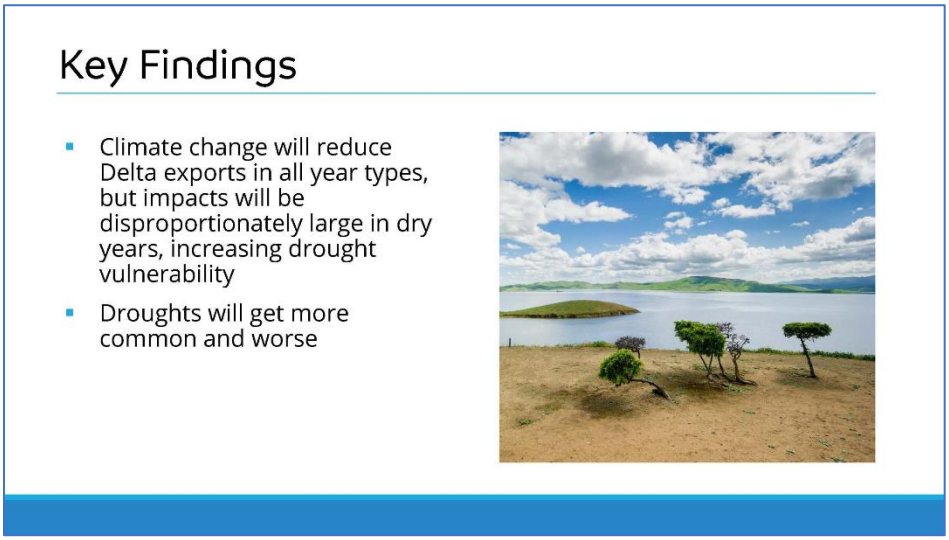
“Just like the sea level rise, the riverine process, and the flood risk, it’s really important for us to understand which of these climate processes are really driving vulnerability in the water supply system as well because our adaptation strategies will be targeted to address those

vulnerabilities," said Mr. Schwarz. "We have a lot of different levels of certainty about climate projections. We understand that temperatures are going to go up, that's relatively certain, but how precipitation will change is a bit less certain, and so that should factor into how we do adaptation as well."



Higher temperatures are the most certain and pose the greatest risk to the water supply system. More variable precipitation, while fairly certain but not as certain as temperature, was especially impactful during dry periods, and that sea level rise, which is fairly certain as well, is of less concern to the water supply system relative to the other factors.

"It doesn't drive reductions in water supply reliability in the same way that the other two factors do," he said.



Higher temperatures mean more rain, less snow, and more runoff in the core winter months when it can't be captured in reservoirs because of the need to provide flood protection; in March, April, and May when reservoirs are no longer managed for flood protection and now managed for water supply, the snow is really mostly gone and there isn't enough spring snowmelt to refill those reservoirs.

More variable precipitation means there will be more years that will be wet, more years that will be dry, and fewer that will be closer to average. In addition, wet years just don't provide much benefit to the system actually because the system that we have today really can't capture that

additional runoff. And in those additional dry years, they really intensify and expand the drought conditions.

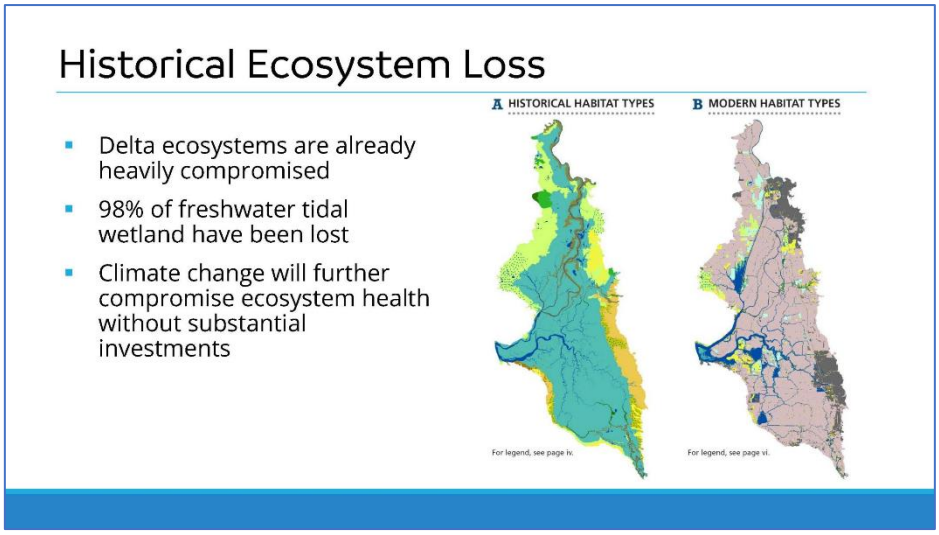
“Overall we found that climate change will reduce Delta exports in all year types, from wet to dry, but the impacts will be disproportionately greater in dry years,” said Mr. Schwarz. “So the dry year ability to deliver water falls much, much more significantly than our wet year ability to deliver water from the Delta. Climate change will also chronically reduce reservoir storage in all years, meaning that less water can be carried over from one year to the next, increasing vulnerability of droughts, and the impacts of those droughts when they do occur. All this means greater water shortages, especially in dry years, and generally lower reliability of Delta water.”

The analysis also considered how drought conditions may change in the future, and estimated that droughts similar to the drought experienced in 2012 to 2016 will be five to seven times more likely to occur under 2050 conditions.

“That was a really rare event we just lived through – about a 500-year event historically, so very rare,” he said. “And that’s going to be something like a 100-year to a 70-year reoccurrence in the future. It’s not surprising that it will become more common, but the degree to which an extremely severe drought would occur in the future should really be cause for concern and additional planning.”

PRELIMINARY ANALYSIS: ECOSYSTEM

Dylan Chapple, Senior Environmental Scientist then reviewed the preliminary results for the Delta Adapts ecosystem analysis. He noted that the past ecosystem loss in the Delta has big implications for climate change impacts; the Delta ecosystem has already been heavily compromised compared to the historical state with 98% of historical freshwater tidal wetlands have been lost since the 1800s. Climate change will further compromise ecosystem health without substantial investments in the Delta’s ecosystems.



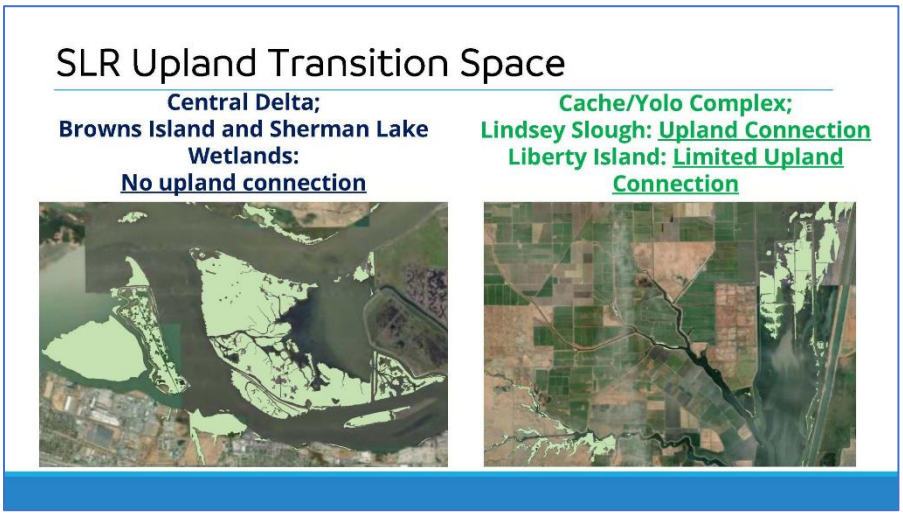
The analysis considered over 170,000 acres of natural ecosystems which were grouped into unleveed ecosystems with tidal, riverine, and floodplain connections, and ecosystems protected by levees. They analyzed the impact of 6 inches through 6 feet of sea level rise on these particular ecosystems across the Delta landscape.

Unleveed tidal wetlands are critical habitat for a number of species and the target of thousands of acres of restoration investment. For the analysis, they partnered with the USGS to model wetland accretion which describes the ability of these wetlands to change elevation and persist in response to sea level rise. Wetland elevation is a key determinant in ecosystem function, so the risk is defined as either the transition of a higher elevation marsh to a lower elevation marsh or as the complete drowning of wetlands when it becomes a mudflat or open water.

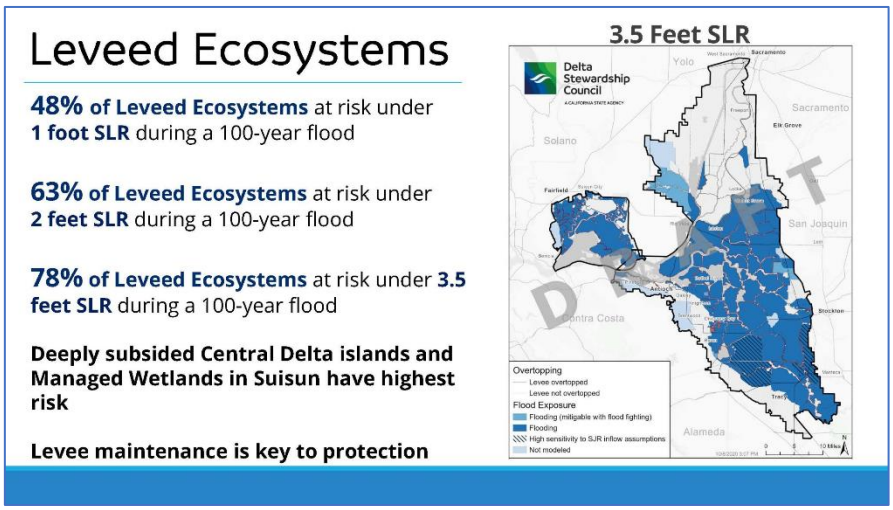
Under up to 2 feet of sea level rise, tidal wetlands are able to maintain their elevations and risk is low. However, under 3.5 feet of sea level rise by 2085, 53% of freshwater wetlands in the Delta and 100% of brackish tidal wetlands in Suisun Marsh are at risk. Under 6 feet of sea level rise, 100% of tidal fresh water wetlands in the Delta are at risk.

“Restoring tidal wetlands as soon as possible will allow them to maintain their elevation and reduce their risk of being lost,” said Mr. Chapple.

Tidal wetland connections to upland areas can allow these ecosystems to migrate and persist in response to sea level rise; however, upland transition space is extremely rare in the Delta. The Browns Island and Sherman Lake wetlands, shown on the left, account for the majority of tidal wetland acreage in the Central Delta region, but they are islands and have no connections to surrounding upland areas. In the Cache Slough – Yolo Bypass region shown on the right, wetlands in the Lindsay Slough area which is at the bottom left corner of the image, does have adequate connections to upland space, but the Liberty Island wetlands have only limited upland connections.



“Future investments in tidal wetlands that are better connected to upland transition space will substantially reduce the risk of wetland loss in the Delta,” he said.



For leveed ecosystems, flood maps were used to identify where ecosystems are at risk due to levee overtopping resulting from a combination of different sea level rise scenarios and a 100-year storm event, which has a 1% chance of occurring in any given year. For 1, 2, and 3.5 feet of sea level rise, 48%, 63%, and 78% of leveed ecosystems are at risk of flooding, respectively. Deeply subsided islands in the Central Delta and managed wetlands in Suisun Marsh are at the highest risk.

“This analysis looks at current conditions, and it doesn’t take into account future investments to update levee systems,” Mr. Chapple said. “So for the leveed ecosystems we have in the Delta, levee maintenance and the pursual of ecosystem restoration efforts like subsidence reversal wetlands that reduce flood risk will help protect leveed ecosystems in the Delta and Suisun Marsh.”

SIGNFICANCE AND NEXT STEPS

The Delta Adapts study is the first comprehensive climate change study in the Delta. As a result of the first phase, new comprehensive flood and water supply models have been developed that are flexible to new information. These are all open source models so others can use them and include their own information.

Also, Delta Adapts developed a socially vulnerable index that allows people to see geographically where these communities are located and they are defined; this allows a focus on where adaptation should occur and equitably in the future. They have also done extensive community outreach to establish those relationships with various organizations and service providers who are helping to structure outreach efforts to the vulnerable communities. Lastly, they have worked collaboratively with agency partners in developing the methodology, sharing data, and verifying the results.

For the next steps, the project team will present the remaining results at the December meeting of the Delta Stewardship Council. A public draft of the vulnerability assessment is expected to be released in early January with a 30-day public review period. Following that, they will be

revising and finalizing the vulnerability assessment, and beginning the adaptation strategy shortly after that point.

DISCUSSION HIGHLIGHTS

Councilmember Frank Damrell asked about saltwater intrusion. To what extent does that impact this study and to what extent can we draw any conclusions?

"We looked at sea level rise as a component, particularly of the water supply system, so the time of the year we worry about saltwater intrusion is during the drier, warmer period where we're managing for water supply," said Andrew Schwarz. "That was where we really looked at whether salinity was going to penetrate further into the Delta. And the way the system operates and what's programmed into the model is that the highest priority for the system to manage is to meet the salinity requirements and the other water quality regulations in the Delta first, so the first available water in the system goes to meet those requirements, and then water supply deliveries are made after that, basically."

"What our modeling showed is, for the most part, the system is able to even with 2 feet of sea level rise manage those regulations most of the time, so in most year types, we don't see salinity penetrating further into the Delta at all because we don't allow it to, basically, because the system is managed to keep pushing that salinity out," Mr. Schwarz continued. "But in the future, and even now, we see occasionally in rare years where there's just not enough water in the system to keep that salinity out to manage all the regulations. That will happen in the future too and it will become more severe and more common in the future where we will have years where we have acute penetration of salinity deeper into the Delta, that will really affect in Delta water users because the water can become too saline for them to use. We did look at that, but we don't see it happening on a regular basis. It's not really a chronic problem; it's more of an acute problem during droughts."

Councilmember Oscar Villegas commented, "We should be sounding the alarm loud and clear for everybody to hear that the system that we have currently is not designed to withstand the multiple pronged challenges that we're going to face going forward under many of these scenarios that you've laid out. The real takeaway for me is that the way we manage our system right now is going to have to change. We are currently in a space where the entire water system that we have coming through the Delta is driven in large part by a series of seasons where we have snowpack and we manage the water accordingly. And if in fact much of what we're saying is that that pathway for how we manage our water is no longer going to be what we are receiving, we're going to need to increase storage capacity because we're going to need to have the flows to manage saltwater intrusion and we're going to need the water flows to manage the water temperature for fish, we're going to need all these things in a very different way, so I'm just astounded about how complex this process is … "

"This is designed to drive policy, and if folks are not recognizing the magnitude of what we're dealing with, by the time it's front and center for most of us and throughout the state that doesn't deal with Delta issues on a daily basis, it will be too late to address systemic challenges,"

continued Councilman Villegas. “I would offer that this report and the way it was presented I think is so succinctly, it should be required viewing as part of allowing folks to make public policy going into the future statewide … “

During the public comment period, Osha Meserve with Local Areas of the North Delta pointed out the multiple benefits of levees: “It protects the communities, industry, and agriculture in the Delta, the cities within and next to the Delta, and also habitat projects. As important and not understood as well is how much the levees protect statewide infrastructure, things like highways, pipelines, communications, and of course the state’s water supply through SWP and CVP rely on water being able to get through the Delta safely. Even with the tunnel, the proposal, the way it’s presented now is that the south Delta facilities would continue to be used, so the need for water to be able to flow safely through the Delta is a continuing need … Levees are critical to resiliency and it’s not an option to defund the levees in the future for a variety of reasons. Maybe we need to get more creative about how to put that funding together in a fair way … “

# # #

FOR MORE INFORMATION ...
Click here to learn more about Delta Adapts.

DWR Releases Initial State Water Project Allocation of 10%
Maven | December 1, 2020 | Department of Water Resources:

With California off to a dry start for the water year, the California Department of Water Resources (DWR) today announced an initial State Water Project (SWP) allocation of 10 percent of requested supplies for the 2021 water year.

Initial allocations are based on conservative assumptions regarding hydrology and factors such as reservoir storage. Allocations are reviewed monthly and may change based on snowpack and runoff information. They are typically finalized by May.

“While we still have several months ahead of us, dry conditions persist,” said DWR Director Karla Nemeth. “As communities throughout California prepare to support their environment and economies through times of extended dry periods, state agencies plan together to support those communities. Californians can help by always using water carefully, inside and outside their homes and businesses.”

DWR’s eight precipitation stations in Northern California recorded a record-low zero percent of average rainfall in October and 53 percent in November.

Most of the state’s major reservoirs are lower than historical average to date compared to a year ago. Lake Shasta, the federal Central Valley Project’s (CVP) largest reservoir, is at 75 percent compared to 119 percent its historical average to date in 2019. Lake Oroville, the SWP’s largest reservoir, holds 61 percent compared to 90 percent of its historical average to date in 2019. San Luis Reservoir, a joint-use facility for the SWP and CVP, now holds 76 percent compared to 72 percent of its historical average to date in 2019.

The-- 10 ----percent initial allocation amounts to 422,848 acre-feet of water, distributed among the 29 long-term SWP contractors who serve more than 27 million Californians and 750,000 acres of farmland.

Last year’s initial allocation was 10 percent, with a final allocation of 20 percent set in May.

Nearly all areas served by the SWP have sources of water other than the SWP allocation, such as streams, groundwater, and local reservoirs.

DWR will conduct the season’s first snow survey at Phillips Station in the Sierra Nevada on December 30, 2020. On average, the snowpack supplies about 30 percent of California’s water needs as it melts in the spring and early summer.

For information on current water conditions at the state’s largest reservoirs and weather stations, visit the California Data Exchange Center website.

# # #

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We can find common ground to solve challenging water issues
CalMatters | November 30, 2020 | Cannon Michael and Ann Hayden

Despite a seemingly endless era of upheaval – a surging pandemic, contentious election cycle and racial strife – we still have the responsibility to address pressing issues that cannot wait for calmer times. The future of California's water is one of those issues.

While collaboration and relationship building have been made even more challenging due to distancing required by COVID-19, we believe that water is an issue where we can rise above party lines and entrenched perspectives.

Water is the backbone of California's agricultural economy, supports our iconic rivers, and of course, is essential to our survival. Simply put, water is a lifeline that binds us together, and without it, we jeopardize our future and that of coming generations.

Could now be the time to collectively start down a better path for managing this precious resource and roll up our sleeves to make it happen? We think so.

For decades, fighting over water has stalled progress and sown deep mistrust across different water users.

We have forgotten that we are all stewards of California – a special place like no other, a rich connected tapestry of environmental beauty, diverse communities and productive agriculture.

We need to come together as Californians – not just farmers, environmentalists, rural community organizers and urbanites. We need to come together as Californians working for our children and future generations who are depending on us to leave them with a better California than we have today.

We need to come together to solve some admittedly difficult water challenges that affect the future of rural communities, cities, wildlife, farming in the Central Valley and consequently our country's food supply. Drought and water scarcity are high on the list of these challenges.

During our last major drought, the Sustainable Groundwater Management Act was enacted as one major piece of the solution to ensure we have enough water for future generations.

Looking forward, 2021 will be an important year for moving ahead on implementation of this sweeping change to water law. The state will be rolling out its first assessments of sustainability plans developed by regions with the most critically overdrafted groundwater supplies.

Balancing groundwater supply and demand, as required by the law, will no doubt be challenging: Some models say San Joaquin Valley landowners may need to take equivalent acreage to Yosemite National Park out of production to balance groundwater supply and demand.

To reach durable, fair solutions to such large challenges, we need to drop the baggage we've amassed over time. We need to come together as Californians to start collaboratively tackling problems – not just talking and arguing them. We need to come together and break the cycle of mistrust and take the time to truly understand how each side views the challenges and potential solutions.

It's unlikely we will agree on everything – if we did California wouldn't be the dynamic, diverse state it is today. But there is significant common ground we can build from. For instance, we all agree every single person in California should have clean and affordable drinking water when they turn on their kitchen faucet.

We also agree that replenishing groundwater is one of many solutions we will need to comply with the Sustainable Groundwater Management Act. But it's not the only solution; it's inevitable that we still will need to scale back some agriculture.

The question we need to address is, how can we make sure that agriculture can still thrive while some farmland becomes productive in new ways, whether it's with less water-intensive ranching, low-impact solar projects, wildlife habitat or recreational areas for our families to enjoy on picnics and hikes?

Taking action to address these challenges may mean parts of our state and the very communities we live in will look different from how they look today. But if we can come together as Californians to get it right, California will evolve and endure as the special place it is today for generations to come.

We have decades of experience coming at water challenges from our silos. Let's break down those silos, come together as Californians and see what happens. Isn't it worth a shot?

# # #

Cannon Michael is a sixth-generation farmer and president and CEO of Bowles Farming Co., headquartered in Los Banos, cannon@bfarm.com.

Ann Hayden is senior director of western water and resilient landscapes at Environmental Defense Fund, ahayden@edf.org.

DWR Calls for Increased Collaboration in Climate Change Fight With "Moving to Action" Plan

Ca. Department of Water Resources | November 24, 2020

California's Mediterranean climate is highly variable – veering from drought conditions one year to flooding the next. These variable conditions are nothing new or unexpected.

What is new, is that science tells us climate change has increased the intensity and frequency of these extreme events in recent decades, which in turn can amplify risks for wildfires, our power grid, and public health and safety.

To adapt to intensifying extremes, federal, state, and local governments must be proactive in analyzing how climate change may impact California's natural resources – as well as people and property.

In a step to toward that goal, the Department of Water Resources (DWR) released "Moving to Action", a call for essential partnerships, planning, and collaboration with state, federal, and local agencies.

"Working with climate researchers, DWR will provide actionable information to local water managers so they can respond to climate change," said John Andrew, DWR's assistant deputy director for climate change. "And by creating a community of practice related to climate analysis, we can learn from each other on how to better respond to climate risk."

This endeavor is one of DWR's responses to Governor Gavin Newsom's Water Resilience Portfolio, which calls on State agencies to "inventory and assess anticipated impacts of climate change to our water systems, including growing drought and flood risks, and other challenges to water supply reliability."

"Moving to Action" focuses on two key points that DWR identified as tangible and critical next steps toward helping fulfill the goals of the Portfolio:

1. Develop data, tools, and guidance for watershed-based climate vulnerability and adaptation analyses.

   Ways DWR will implement this could include:

   - Developing a consistent framework to evaluate climate vulnerability and risk, and to track progress towards climate change adaptation and resilience.
   - Performing watershed-based technical evaluations in major river basins to generate actionable climate data and forecast changes in water availability, demand, and quality.

2. Explore the formation of a California-based network of climate scientists and water management practitioners.

   Ways DWR will implement this could include:

   - Collaborating on pilot projects to inform and refine methods to incorporate climate change in decision-making.

- Seeking funding and other resources for studies to generate better climate change information for decision-making.

As the impacts of climate change intensify, local water managers will need better tools to identify the adaptation strategies for their watersheds and diverse hydrology to make more-informed infrastructure investment decisions.

“As a reservoir operator for flood control, agriculture, environmental, and other issues, we have already had to adapt to changing hydrologic conditions involving extremes – not contemplated when the projects were built – by using the latest technology and resources from some of the smartest minds in their fields,” said Wes Monier, chief hydrologist, Turlock Irrigation District. “Continuing this success can only be accomplished through the continued development of tools and relationships with the various agencies, organizations, and institutions who are working towards a common goal.”

The two “Moving to Action” key points were identified during DWR’s 2019 three-day summit with numerous partners –Planning for Change –which led to multiple recommendations included in the Water Resilience Portfolio for water managers and policymakers.

DWR is committed to working with partners to develop, share, and support innovative, watershed-scale approaches for evaluating climate vulnerability and the implementation of adaptation strategies for California’s water systems.

# # #

Email DWR’s Climate Change team for more information on Moving to Action.

Building a Water-Resilient California
PPIC | November 23, 2020 | Lori Pottinger

photo - Sunset over the Tuolumne River

What are key California water priorities for the coming year, in light of ongoing disruptions from the pandemic, the recession, lingering drought, and a record-breaking fire season? The PPIC Water Policy Center brought together three panels of experts to discuss possibilities at our annual water priorities conference.

The panels covered urgent challenges: providing safe, affordable drinking water for all while maintaining water suppliers' fiscal health; managing groundwater sustainably to support water users, the economy, and the environment; and supporting these priorities with policies and funding adequate to the tasks at hand.

The events of 2020 gave added weight to ongoing efforts to ensure all Californians have access to safe and affordable drinking water. Panelists discussed a growing water affordability crisis—water prices have risen about 45% above inflation over the past decade, said Greg Pierce of UCLA's Luskin Center for Innovation—and the need to plan for what happens when the current moratorium on water shutoffs ends.

"Many people are struggling with job losses or family illness. They need a safety net," said Gloria Gray, board chair of the Metropolitan Water District in Southern California. Solutions will require state and federal support, she noted.

The panel on managing groundwater had a heavy focus on prioritizing multiple benefit projects involving a range of stakeholders. Eric Averett of the Rosedale-Rio Bravo Water District called for water investments "where all of the stakeholders have an interest in seeing the project succeed"—for example, supply projects that include environmental water allocations and safe drinking water components, or groundwater recharge projects that build habitat. "Projects that are multi-beneficial can help break down barriers" between parties, he said. And Paul Gosselin from Butte County noted how groundwater planning is already sparking new kinds of collaboration in his region.

One essential gap in the groundwater sustainability planning process thus far is how to address the harm that groundwater overdraft causes rural communities using shallow wells for drinking water supply. “We need a proactive drought resiliency plan” for at-risk communities—and a quick response plan to mitigate dry wells, said Angela Islas of Self-Help Enterprises.

Ecosystems that depend on groundwater are also at risk. Sandi Matsumoto of The Nature Conservancy noted that up to half of the state’s freshwater species could go extinct in coming decades without “radical changes to how water in managed.” Matsumoto called for the establishment of a federal Office of Groundwater Sustainability “to harness the power of the federal government—not only for the science but also on land management.”

For the final panel, government experts focused on policy priorities to resolve these challenges—from addressing water inequities by putting more resources into securing safe and affordable supplies, to forming balanced projects with broad buy-in from diverse groups of stakeholders, to improving cooperation between state and federal agencies managing supplies, floods, and wildfires in key watersheds.

Updating management approaches to reflect a changing climate will be key, said Karla Nemeth, director of the state’s Department of Water Resources. Her top priority for the incoming Biden-Harris administration would be to use the first 100 days to lay a course for how we prepare for extreme hydrology—“because that’s going to drive investment in the second 100 days in new and aging infrastructure” needed to adapt to a changing climate.

How to secure state and federal financial support for such work? Joaquin Esquivel, chair of the State Water Board, described an ongoing survey of water utilities that will assess the extent of their funding gap due to nonpayment, which will help inform the state and federal response. Matt Muirragui of the US House Committee on Natural Resources said, “There is absolutely bipartisan interest, both in the House and the Senate, in making sure water infrastructure development in particular is part of any stimulus that comes together.” He noted that California can best position itself for federal funding by documenting benefits of potential projects, and bringing together diverse stakeholders around project ideas.

One thing is clear from these panelists’ varied perspectives: water is something we can never take for granted, and must all work together to safeguard and share. Kathryn Sorensen, former director of the City of Phoenix’s water department, captured this essential truth: “One silver lining of the pandemic is that it really has brought into focus the fact that community water systems are the foundation of public health,” she said. “I hope that people keep in their minds the importance of these systems, and keep supporting them.”

# # #

We invite you to watch the videos from this event:

Session 1: Funding water systems while ensuring affordability and equity
Session 2: Collaborative approaches to foster groundwater sustainability
Session 3: Priorities for a water-resilient California

Different Models, Different Answers in Water Resource Planning

The experimental design used in climate vulnerability assessments can strongly influence the assessments' findings and skew decisions about which factors are most important for informing adaptation.

EOS | November 19, 2020 | Terri Cook

Aerial view of the Green Mountain Reservoir and Heeney, Colo., in 2017
Researchers modeled vulnerabilities in the Upper Colorado River Basin, including the Green Mountain Reservoir and Heeney, Colo., on the Blue River, seen here in June 2017. Credit Pi.1415926535, CC BY-SA 3.0

Effective management of water resources depends on accurately predicting future water supplies and demands that regularly fluctuate because of population growth, climate change, and many other factors. To deal with large uncertainties in these considerations, water resource planners often use what is known as a scenario-neutral approach in their projections.

In contrast to scenario-driven methods, which assess the potential effects of specific, model-derived conditions, a scenario-neutral approach uses sensitivity analysis to determine which input factors, such as seasonal precipitation and population growth, most affect performance. The sensitivity analysis is performed assuming these factors are independent, with no

combination of factors more likely than any other. The results of sensitivity analyses have been used widely to design monitoring programs to detect changes in critical climatic and socioeconomic factors so that water management policies can be adapted as these critical conditions change.

Now Quinn et al. question whether this approach is truly scenario neutral. The authors argue that sensitivity analyses incorporate implicit assumptions about the ranges of and correlations among factors that have large uncertainties and that these assumptions could, in turn, influence conclusions regarding which factors are most important and which policies will therefore be the most robust, essentially negating the approach's neutrality.

To evaluate this effect, the researchers conducted exploratory modeling to evaluate the vulnerability of hundreds of Upper Colorado River Basin water rights holders to potential drought conditions. The team based their analysis on four different experimental designs, including scenarios informed by future climate projections, scenarios informed by multiple paleohydrologic reconstructions, and scenario-neutral cases centered around the past century's historical conditions.

The results indicated that the choice of experimental design used for vulnerability assessments can strongly affect an assessment's outcome and that both the distribution of shortages among water users and the choice of which factors to monitor can vary starkly depending upon the experimental design. The results highlight challenges of designing scenarios to evaluate water resource vulnerability under deep uncertainty, the authors say. And because there is no way of knowing which scenarios are most plausible, they recommend that planners consider numerous, competing hypotheses in future climate vulnerability assessments. (Earth's Future, https://doi.org/10.1029/2020EF001650, 2020)

—Terri Cook, Science Writer

# # #

Zone 7 to Spend $2.8M on Delta Conveyance Project
The Independent | November 26, 2020 | Ron McNicoll

REGIONAL — In a 5-2 vote, the Zone 7 Water Agency Board approved the expenditure of $2.8 million as the agency's share for the next phase of planning on the Delta Conveyance.

The conveyance, a Gov. Gavin Newsom proposal, would reduce his predecessor Gov. Jerry Brown's Twin Tunnels project to one tunnel under the Delta. On Brown's Twin Tunnels project, Zone 7 paid $280,000 as a placeholder to be sure the agency reserved a spot if the agency wanted to take part. It was a very preliminary head count to see which State Water Contractors might be interested in Brown's plan.

Many environmental groups have opposed both the Twin Tunnels and the single tunnel.

When Newsom announced the single tunnel, Kathryn Phillips, Director of Sierra Club California, said that since Newsom publicly supported a single tunnel, her group knew the "expensive and outdated idea wasn't off the table."

"However, we anticipated that there might be an effort to employ a list of efficiency, conservation and other measures to reduce dependence on a tunnel before moving forward on such a massive and environmentally harmful project," Phillips said. "In other words, we thought the horse would come before the cart. So, now we'll have to focus a lot of time and energy on battling the tunnel again. And we now know with certainty that Governor Newsom's policy on water is not a whole lot different from Gov. Brown's."

Conservationists, tribal leaders, recreational anglers, commercial fishermen, environmental justice advocates, boaters, Delta business owners and elected leaders oppose the single tunnel, just as they did Brown's Twin Tunnels, because scientists report the project would drive already imperiled Delta smelt, long fin smelt, winter-run and spring-run Chinook salmon and other species to extinction.

The project would divert massive quantities of water from the Sacramento River, rather than let the water flow naturally into the San Francisco Bay-Delta Estuary, depriving the estuary of the water that it needs to function as an ecosystem, according to project opponents.

Zone 7 supporters state that some advantages of a single tunnel include keeping intrusive farm chemicals from entering the Delta water, a more reliable pumping schedule when endangered plants and fish species are at risk, and adjustments for climate changes to snowpack water storage.

Board President Olivia Sanwong and Vice President Angela Ramirez-Holmes voted against the proposal. Both raised issues about transparency.

Ramirez-Holmes stated that two previous meetings in pre-COVID-19 times generated a large turnout in the Zone 7 meeting room. Although that's not possible now because of the coronavirus, Ramirez-Holmes noted that she'd expected more emails on the topic and stressed the importance of publicizing agenda items. She did say that a legal notice was disseminated regarding the issue.

Ramirez-Holmes further stated there could be a possibility that Tri-Valley residents who opposed the Twin Tunnels might support the single tunnel.

"There is no way of knowing that unless Zone 7 invites more comment on the update," she said.

Sanwong announced that the board has a special meeting set for Dec. 2 for a study session about flood control; it could, however, set aside time to hear public input on the Delta conveyance.

Directors Dennis Gambs and Laurene Green said that they, like Ramirez Holmes and Sanwong, thought that a better registration of public opinion should be compiled. But they voted with other directors, who said that Zone 7 already has the money set aside in two regular funding categories devoted to the agency's reliability of water supply. Participating over the next two years will also bring more knowledge about whether it will be worthwhile to continue beyond 2022 and spend more money, up to about a grand total of $7.5 million over the four years.

The item was on the Nov. 18 agenda, because Metropolitan Water District of Southern California wanted to learn by Dec. 8 how much support there is around the state before committing to the single tunnel plan.

Zone 7 was the last State Water Contractor to respond before Dec. 8 — a distinct contrast to several years ago, when Zone 7 was the first endorsee of the Twin Tunnels. The board membership then was accustomed to depending on the Delta to carry the water to a great extent, as it always had. Since then, a newer board has listened to water retailers' interest in seeing how many alternatives to the tunnel can help develop more water capacity closer to home. Examples include potable reuse, desalination of brackish water and the use of Arroyo water when gravel quarries turn their lakes over to Zone 7.

It has been slow going. Currently, Zone 7 and retailers' staffs are continuing the work at their level.

Without the Delta Conveyance, the estimated future reliability would be about 36% to 55%. This would translate to a range of 29,000 acre feet (AF) to 44,000 AF. A study in 2019 showed that by buildout in 2040, the Valley would need approximately 55,500 AF.

Zone 7 also has been looking into other project proposals, such as the potential Sites Reservoir in an area northwest of the Delta, which would bring in new rainfall. The agency is also working

out a deal for storage space in Contra Costa Water District's Los Vaqueros Reservoir north of Livermore.

Zone 7 will share a seat with Fremont's Alameda County Water District on the board of directors for the Delta Conveyance Authority. Each will take a turn every other year.

Water 101 for New Mayors, Councilmembers

With newly elected mayors and councilmembers in the Valley, Director Michelle Smith McDonald suggested that Zone 7 prepare a "Water 101" event. Sanwong supported the idea, and Pryor committed to making arrangements.

Sanwong also said that some people in downtown Pleasanton near her home are dropping their COVID-19 masks on the ground and not picking them up. The masks can wash down curbside water grates to the Bay and cause problems there for wildlife. She urged vigilance.

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Trump Administration finalizes Shasta Dam raise plan to increase water storage for Californians and the environment

Shasta Dam releasing 50,000 cubic feet per second

REDDING, Calif. - The Trump Administration today released the Shasta Lake Water Resources Investigation Final Supplemental Environmental Impact Statement to increase water storage capacity in the Shasta Lake reservoir by 634,000 acre-feet, or more than 200 billion gallons. This is enough water to support more than 6 million Californians annually.

"President Trump has made investing in our existing infrastructure a top priority. Raising Shasta Dam is one of the smartest and most cost-effective opportunities we have before us," said Commissioner Brenda Burman. "Shasta Dam sits at the head of California's largest water system—the Central Valley Project. Not only will the project benefit farms, communities and the environment, it will provide ample opportunities for smarter water management."

For decades, many federal western water infrastructure investments have been undermined by federal inaction and the State of California. In fact, there has not been any major federal water storage infrastructure built since 1979 even as the state's population has nearly doubled. Today's actions are yet another example of how the Trump Administration is working to enhance water storage capacity and appropriately protecting species and habitats. This comes after an already long list of water actions from the Trump Administration benefiting Californians, namely including:

- President Trump issuing a Presidential Memorandum on Promoting the Reliable Supply and Delivery of Water in the West on Oct. 19, 2018;
- the completed review of the long-term coordinated operation for the Central Valley Project and California State Water Project and subsequently issuing an updated operation plan and Record of Decision;

- President Trump issuing a Presidential Memorandum on Developing and Delivering More Water Supplies in California while visiting Bakersfield, California on Feb. 19, 2020;
- the completion of repairs to a 33-mile stretch of the Friant-Kern Canal in California's eastern San Joaquin Valley; and
- the establishment of an interagency Water Subcabinet that is coordinating and streamlining the federal government's actions on water-related issues.

"Raising Shasta Dam is critical to helping improve drought resiliency in the State of California, as it will provide more water for people, fish, and the environment," said House Republican Leader Kevin McCarthy (CA-23). "This project is a win all around. I want to commend Secretary Bernhardt and Commissioner Burman for continuing to prioritize this project, despite ongoing and misguided opposition from Sacramento bureaucrats and some elected officials from California. The Trump Administration has taken many actions to improve the lives of Californians by pursuing policies to help our communities get the water that we contract and pay for, and we are grateful."

"President Trump has again delivered on his promise to secure more water for Central Valley families and farmers," said Congressman Devin Nunes (CA-22). "Increasing water storage is vital to making our communities drought resistant. By cutting red tape and raising the Shasta Dam, the Trump administration has taken crucial steps toward undoing the government-made drought conditions plaguing Valley communities. I want to thank President Trump and Secretary Bernhardt for their unwavering commitment to solving the California water crisis."

"Northern California is one of the most water-rich regions of the country, and yet is plagued by water shortages because of a chronic lack of water storage," said Congressman Tom McClintock (CA-04). "After decades of bureaucratic dithering and obstruction, the Shasta Dam raise is finally within sight of actual construction—an important step toward restoring water abundance to our communities."

"Additional water storage is critical for people, the environment, and agriculture. Raising Shasta Dam provides 634,000 acre-feet of new water," said Congressman Doug LaMalfa (CA-01). "This project is a cost-effective solution to a long-term problem plaguing California, and will also create new good paying jobs in Shasta County. I thank the Trump Administration for bringing this long-sought project closer to fruition."

Shasta Dam is a keystone of Reclamation's Central Valley Project, which extends over 400 miles through California's Central Valley providing water for more than three million acres of farmland, nearly six million people, and critical fish and wildlife species. Reliable water is critical to the economic progress of the region – and our nation – as more than 40 % of the country's fruits, nuts and vegetables are grown in the Central Valley, largely using water from the CVP and its largest reservoir—Shasta Lake.

"We are pleased to achieve this significant milestone for such an important project for the state, said Regional Director Ernest Conant. "California needs a more reliable water supply for

agriculture and communities, and modernizing our existing infrastructure is one of the most efficient means to make that happen."

Background
Congress first directed Reclamation to look at the feasibility of raising Shasta Dam in the 1980s, and then again in 2004. More recently, recognizing the need for increased surface water storage and the need to find funding mechanisms that work in today's vastly over-stretched federal budget, Congress passed the Water Infrastructure Improvements for the Nation Act in 2016 with broad bipartisan support.

Reclamation and other federal agencies have spent decades carefully evaluating data to ensure an environmentally sound approach to raising Shasta Dam. The dedicated environmental storage from the dam raise would improve water quality in the Sacramento River below the dam by lowering water temperatures for anadromous fish survival, such as Chinook salmon and other fish that migrate from the ocean to rivers to spawn. This includes ensuring that the McCloud River and the important wild trout fishery it supports are protected.

The finalized SEIS comes after considering more than 6,500 public comments on a proposal to raise the 600-foot-tall Shasta Dam by 3%, or an additional 18.5 feet.

A Supplemental EIS is used when new or updated information becomes available after the publication of the Final EIS. Since 2015, Reclamation identified several key areas that required updating and initiated a Draft Supplemental EIS in accordance with the National Environmental Policy Act. The original 45-day comment period for the DSEIS was extended by two weeks and closed October 5. The Final SEIS is available for review at: https://www.usbr.gov/mp/nepa/nepa_project_details.php?Project_ID=1915.

The supplemental document provides information relevant to Reclamation's application of Clean Water Act Section 404(r), updates modeling to be reflective of the 2019 Biological Opinions and provides an updated analysis on effects to the McCloud River, and considers public input.

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The Bureau of Reclamation is a federal agency under the U.S. Department of the Interior and is the nation's largest wholesale water supplier and second largest producer of hydroelectric power. Our facilities also provide substantial flood control, recreation opportunities, and environmental benefits. Visit our website at https://www.usbr.gov and follow us on Twitter @USBR; Facebook @bureau.of.reclamation; LinkedIn @Bureau of Reclamation; Instagram @bureau_of_reclamation; and YouTube @reclamation.

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California State Treasurer Fiona Ma, CPA

News Release

FOR IMMEDIATE RELEASE

PR 20:65
November 18, 2020

Contact: Mark DeSio
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State Treasurer Announces Sale of $100 million of Variable Rate General Obligation Bonds and Use of Innovative Electronic Trading Platform

SACRAMENTO – California State Treasurer Fiona Ma today announced the sale of $100 million of variable rate General Obligation bonds to fund projects authorized by the Water Quality, Supply, and Infrastructure Improvement Act, which was approved by voters in 2014.

The bonds will bear interest at a variable interest rate which will be determined weekly. The initial interest rate was set on the pricing date by the Underwriter, Siebert Williams Shank & Co. Following the initial weekly interest rate period, the weekly interest rate for the bonds will be determined by the Clarity BidRate Alternative Trading System (Clarity).

Clarity is an innovative electronic trading platform that enables a centralized marketplace for bidding, pricing, trading, and analyzing data for municipal variable rate securities. Investors in the bonds participate in a competitive bid process where they are able to directly bid each week for the bonds. Bonds are then allocated to investors based on their bid level and the final clearing rate.

"I strongly support Clarity's goals to democratize the variable rate market by creating an investor controlled marketplace that maximizes transparency, leverages technology, and helps to promote a broader and deeper distribution of bonds which could lead to improving overall risk for issuers and investors alike," said Treasurer Ma.

The bonds are secured by an irrevocable direct-pay letter of credit from State Street Bank and Trust Company and rated are rated AAA/A-1+ by S&P Global Ratings, AA/F1+ by Fitch Ratings and Aa1/VMIG 1 by Moody's Investors Service.

The calendar of all upcoming state bond sales is available at BuyCaliforniaBonds.com

Fiona Ma is California's 34th State Treasurer. She was elected on November 6, 2018 with more votes (7,825,587) than any other candidate for treasurer in the state's history. She is the first woman of color and the first woman Certified Public Accountant (CPA) elected to the position. The State Treasurer's Office was created in the California Constitution in 1849. It provides financing for schools, roads,

housing, recycling and waste management, hospitals, public facilities, and other crucial infrastructure projects that better the lives of residents. California is the world's fifth-largest economy and Treasurer Ma is the state's primary banker. Her office processes more than $2 trillion in transactions within a typical year. She provides transparency and oversight for the government's investment portfolio and accounts, as well as for the state's surplus funds. Treasurer Ma oversees an investment portfolio of about $109.2 billion, $32.4 billion of which are local government funds. She serves as agent of sale for all State bonds, and is trustee on outstanding debt of $94 billion.

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