California
WATER COMMISSION

A State Role in Financing Conveyance to Meet Climate Change Needs: Findings and Conclusions

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California WATER COMMISSION

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Executive Summary

The California Water Commission (Commission) has assessed a potential state role in financing conveyance projects that could help meet needs in a changing climate and, with this document, offers its findings and conclusions for state policymakers. These findings and conclusions are based on input received through stakeholder interviews, expert panels, and public workshops. The Commission's work is precipitated by a convergence of factors that make considering how to finance conveyance both timely and important. California is currently experiencing the impacts of a warming world, including sea level rise, temperature extremes, and more variable and extreme precipitation patterns. At the same time, many water conveyance structures within the state are aging, damaged by subsidence, and in need of repair. By investing in climate-resilient conveyance projects, the state can address these factors and support economic stimulus by generating jobs and by stabilizing water supply for businesses.

The Commission's guidance urges the state to define conveyance broadly – considering investments in natural (green) and built (gray) infrastructure – and to invest strategically in projects designed to maintain function in the face of climate change. Evaluating a project's ability to adapt and respond to a changing climate prior to awarding state funds will ensure that the state is helping to advance resilient water infrastructure. The Commission finds that conveyance projects that will help meet needs in a changing climate are those that:

- restore ecosystem function;
- upgrade existing systems, including projects that improve State Water Project or Central Valley Project infrastructure, to accommodate climate change;
- support the human right to water;
- promote local and regional reliance;
- advance an integrated approach to water management; and
- support sustainable groundwater management.

Much of California's water infrastructure is managed at the local level, where local water districts use a system of rivers, streams, canals, aqueducts, and pipelines to move water to meet demand. Many local water districts also depend to some degree upon large federal and state facilities that capture and store rain and snowmelt and convey it up to hundreds of miles. Conveyance systems benefit private individuals who depend upon water delivery for their well-being and livelihoods and, appropriately, these water users fund the majority of water infrastructure.

The Commission finds that conveyance systems can also provide benefits to society at large. These public benefits include ecosystem enhancement, greenhouse gas reductions, more equitable water supply provisioning for underserved communities, water quality improvement of public trust resources, large-scale flood management, and maintaining healthy aquifers and groundwater basins, among others. In addition to providing public benefits, the Commission finds that conveyance projects will support economic activity that has both public and private benefits. The Commission concludes that state policymakers should invest in the public benefits

of climate-resilient conveyance projects. The Commission encourages investments in the state's green conveyance infrastructure, in conveyance projects that benefit California's underserved communities, in collaborative partnerships, and in water management governance structures that address the need for cross-sectoral climate resilience.

The Commission finds that, in addition to playing an important role in financing water infrastructure projects by investing directly in projects that provide public benefits, the state also serves as a financing partner whose funds are leveraged to secure financing from federal and private sources; as a lender, offering low-interest loans to infrastructure projects; as a risk supporter, issuing bonds on behalf of project proponents; and as a policy catalyst by funding pilot projects, innovation, capacity building, data collection and analysis, and planning. By playing multiple roles in financing, the state can advance statewide objectives and be responsive to varying preferences and differing circumstances. The Commission's guidance urges the state to embrace the reality that "one size does not fit all" by offering different financing mechanisms and approaches for conveyance projects.

The Commission concludes that the state could consider a phased funding approach for financing conveyance projects. In the first phase, the state could use available funding immediately for urgent projects and for the development of capacity and data needed to successfully advance climate-resilient conveyance projects in the near future. Urgent projects include the need to address damage to backbone infrastructure – the State Water Project and Central Valley Project - caused by subsidence, and to modernize this infrastructure by making it more climate resilient. In the second phase, the state could use funding sources still under development, such as federal stimulus dollars or bond funds, to provide funding for important local and regional projects and near-term priorities, which include ensuring the human right to water, implementing the Sustainable Groundwater Management Act, and protecting and enhancing ecosystems.

Adapting to climate change will require improved and new conveyance designed for different purposes than historic infrastructure: Climate-resilient conveyance will be designed to weather the changes California is already experiencing while supporting the long-term viability of California's communities, ecosystems, and economy.

Introduction

The Water Resilience Portfolio (portfolio), released in July of 2020 by the California Natural Resources Agency, California Environmental Protection Agency, and the California Department of Food and Agriculture, outlines a broad suite of actions designed to move the state toward water resilience. The document captures four approaches to achieving resilience:

- Maintain and diversify water supplies;
- Protect and enhance natural ecosystems;
- Build connections; and
- Be prepared.

Action 19.4 of the Water Resilience Portfolio tasks the California Water Commission (Commission) with assessing a state role in financing conveyance projects that could help meet needs in a changing climate. Although this action is embedded in the section dedicated to building connections, water conveyance can support all four approaches to water resilience. Conveyance infrastructure – which can be natural or built – moves water supply over both short and long distances – up to hundreds of miles – around the state, providing water supply for humans and for natural ecosystems. As a changing climate necessitates diversifying water supplies, conveyance will be a critical component of connecting those supplies to end users. The state's system of aqueducts, canals, and pipes serve wildlife areas, and its rivers and streams – critical components of water conveyance – provide habitat and ecosystem connectivity, supporting rich biodiversity. Water conveyance connects water supply and water demand, water sources to water users, and moves rain and snowmelt down mountains, across valleys, and to the sea. Conveyance connects surface water and groundwater and facilitates short- and long-term water transfers, allowing the state to be prepared for the changes that an increasingly warm climate brings. Conveyance can help reduce flood damage and convey flood flows to water storage sites, and conveyance moves water during droughts from places that need it less to places that need it more.

The physical system of conveyance is underpinned by substantial legal, regulatory, and policy frameworks that must govern how the state will move forward with climate-resilient conveyance projects. The fulcrum on which all conveyance-related laws, regulations, and policies pivot is California's water rights system. Water is governed by a century-old system which is designed to ensure that diversions from streams into conveyance structures do not harm other beneficial uses of water, including the environment and downstream water users. Under the Sustainable Groundwater Management Act (SGMA), which is less than a decade old, the state requires local agencies to bring groundwater aquifers into sustainable conditions no later than 2040 or 2042, depending on the current condition of the basin. Conveyance intersects with both surface and groundwater regulatory frameworks. These two systems are still being reconciled as SGMA moves into implementation and the resulting water rights discussions play out. The findings and conclusions in this paper all assume compliance with the state's water right system as a first and foundational step for any conveyance development.

Any investment to repair, improve, or construct new conveyance must, from the outset, take into account whether water is legally available to be conveyed.

California is in a period of transition. Over the course of the past 20 years, water use across the state has decreased and local entities have worked hard to increase self-sufficiency and diversification. At the same time, climate change has emerged as a critical threat, pressing the state to do more and go further with its resilience strategies, and necessitating increased collaboration, action, and investment. Since October 2020, the Commission has considered the topic of a state role in financing climate-resilient conveyance projects with the objective of developing conclusions to inform and guide state policymakers. In that time, the state has seen catastrophic wildfires that knocked out water delivery systems and polluted water supply for fire-ravaged communities. The state has seen mounting consumer water bill debt, as the COVID-19 pandemic continues to make it difficult for some households to pay their water bills. The state has seen below-average rainfall, marking a second consecutive dry year. Climate change is underway and California's water needs are in flux; conveyance will need to be responsive to emerging issues in the state.

At the same time that California confronts climate realities, it must deal with the legacy of a water system that was largely developed in the middle of the last century – some of it even longer ago, during the Gold Rush era. Many built water conveyance structures within the state were designed for a single purpose, are aging, damaged by subsidence, and in need of repair. The state's natural infrastructure – rivers, streams, headwater regions, and groundwater basins – are critical components of the state's water grid, and they, too, must be stewarded to be resilient to a changing climate.

Implementing Action 19.4

In developing its findings and conclusions, the Commission considered:

- The characteristics of resilient conveyance and how a conveyance project demonstrably contributes to climate resilience.
- The public benefits associated with conveyance projects, which ones the state may want to fund, and how the state might value those benefits.
- The financing mechanisms that project proponents can use to help advance conveyance projects that help meet needs in a changing climate.

The Commission generated input to their deliberations via two mechanisms:

1. A series of regional workshops designed to elicit stakeholder input. The Commission hosted the following workshops:
    - Southeastern California – December 8, 2020
    - Southern California – December 10, 2020
    - Northern California – January 12, 2021
    - Central California – January 26, 2021

All workshops were hosted online, via Zoom. The Commission's goal with these workshops was to learn from diverse voices across the state. The Commission encouraged participants to share their perspective on conveyance infrastructure needs and priorities, effective partnerships, public benefits of conveyance, possible criteria to assess resilience, efforts in preparing for changing hydrology, and effective financing mechanisms. The workbook used for the workshops is included as Appendix 1: Workshop Materials. Recordings for all workshops are posted to the Commission's website: http://www.water-ca.com/regional-workshops.html.

2. A series of expert panels designed to present targeted information. The Commission hosted the following expert panels:
    - Water Conveyance and Resilience – October 21, 2020
    - Conveyance Projects and the Human Right to Water – November 18, 2020
    - Public Benefits of Conveyance Projects – December 16, 2020
    - Conveyance Financing Mechanisms and Challenges – February 17, 2021
    - Cross-cutting Conveyance Considerations and Issues – April 21, 2021

    Each panel featured multiple expert speakers who addressed the Commission and engaged in discussion with Commissioners at regularly scheduled Commission meetings. The Commission invited public comment on all expert panels. All meeting materials and recordings are posted to the Commission's website: https://cwc.ca.gov/Programs-and-Topics.

The Commission has considered the information gathered through the venues noted above to develop its findings and conclusions. The Commission did not consider new conveyance through the Delta as part of this effort.

Definitions and Guiding Principles

To consider a state role in financing conveyance projects that could help meet needs in a changing climate, the Commission first considered how to define and describe two key terms: conveyance and resilience.

The Commission's discussion of investment in conveyance includes consideration of green (natural) infrastructure, gray (constructed or built) infrastructure, and conveyance policies and governance. Conveyance involves moving water from one place to another, and usually involves some form of conveyance infrastructure, typically pipes and canals, as well as streams and rivers. Conveyance policies and governance include the rules, decisions, and agreements that institutions or project proponents make about the way water moves around the state: when it moves, where it goes, and what benefits are provided.

The Commission defined resilience as the ability of a system to respond to and accommodate change, transforming to ensure its functionality and longevity for an extended time horizon. Important to the discussion of a resilient water system is the concept of transformation, and the need to promote the ability of the system to accommodate a "new normal" instead of

returning to a previous state. Resilience to climate change could require a series of adaptations to accommodate unforeseen changes.

The Commission embraced these principles in its work:

- **Functioning natural systems contribute to resilience.** Natural systems provide invaluable services to people. High-mountain meadows capture and store snowmelt. Rivers that meander within floodplains attenuate and filter flood flows. Watersheds connect streams to rivers to the sea. Aquifers that are replenished sustainably support the earth and surface waters above them. In California, these natural systems form a critical part of our identity, underpin our economy, and nourish our communities. Californians need healthy natural systems to thrive, and California's water grid is built on the back of these natural systems. Improving the resilience of the state's water conveyance system will include augmenting the resilience of its natural systems. This includes keeping species healthy by protecting and restoring habitat and determining and abiding by instream flow requirements.
- **Resilience draws on past lessons and considers the future.** The Commission acknowledges the need to move forward quickly to address the twin challenges of poorly functioning water infrastructure and climate change. Resilient projects will consider the implications of past decisions by understanding and attempting to address the limitations of past conveyance projects, such as those that did not take into account the needs of disadvantaged communities or habitat areas and those that failed to anticipate the impacts of groundwater pumping on conveyance infrastructure. Resilient projects will also look to the future by assessing the project's usefulness under future conditions rather than attempting simply to restore past functionality.
- **Data can help shape better resilience strategies.** A science-based approach to water management uses data to help systems anticipate, mitigate, and adapt to a changing climate. A common, trusted, accessible set of facts about how water is being used across the state can help ensure that water is available to meet the demands of communities, industry, and the environment. Current, accurate data can illuminate climate and water use trends, helping to situate conveyance investments in the context of what is happening on the ground now and what is likely to happen in the future.
- **Silos are not resilient.** The water sector has already made great strides in breaking down barriers between functions – such as water supply, stormwater, and wastewater – and, in some places, across geographies, as interconnections and water trading promote water reliability and resilience. Continued integration across functions – for instance, connecting water supply reliability to flood protection and flood flows – and across geographies – such as protecting the water supply of lower watersheds by considering the meadows and forests of upper watersheds – will be integral to a secure water future for California. This requires breaking down institutional silos, building shared regional culture and relationships, and connecting across the public and private sector and across state and local agencies that oversee land and water management and regulation.

What is a Public Benefit?

Resilient conveyance projects will advance the Administration's goal of meeting California's water needs through the 21st century and will benefit local water users by helping to ensure that they have access to reliable water supplies now and into the future, as the climate continues to change. Part of the process of assessing a state role in financing conveyance is to ask: Do these projects also benefit all residents of California?

Public benefits are those that benefit people broadly and for which it is difficult to find a specific user/beneficiary group to pay. When the state invests in the public benefits of a project, the public at large is the beneficiary that pays through tax dollars. It is incumbent upon the state to steward taxpayer dollars carefully by considering how to invest in conveyance projects that promote real public benefits.

The "beneficiary pays" principle is at the core of the Commission's discussion of a state investment in resilient conveyance. This principle states that those who benefit from a project should pay for the benefits they receive. Private benefits accrue to specific entities or individuals and are frequently transactional in nature, making them easy to value. Private benefits of conveyance include city residents or farmers who directly depend upon a canal that delivers water. Subsidies occur when public funds are used to pay for private benefits. In general, subsidizing private benefits contradicts the beneficiary pays principle. In some instances, subsidies can be useful for advancing policy priorities if private beneficiaries lack resources.

How are Conveyance Projects Funded?

Generally, water users pay the majority of costs for water infrastructure with some state and/or federal match. Local contributions usually come in the form of property taxes, general revenue such as monthly water bills, and special assessments and taxes levied by local districts for water services. State and federal contributions may come in the form of grants or loans. State grants are usually funded by general obligation bonds, although the state can also use general funds, or cap and trade funds (the Greenhouse Gas Reduction Fund). State loans may be funded by bond sales, the State Revolving Fund, which is capitalized by federal grants, or investment portfolios, such as the one managed by the California Infrastructure Economic Development Bank (IBank). It is possible that the state may receive unrestricted federal stimulus funds, which could be used for water infrastructure. If federal stimulus funds mimic those provided during the 2008 recession, the funds may need to be utilized quickly on shovel-ready projects. Emerging financing mechanisms include Enhanced Infrastructure Finance Districts, public private partnerships, and green bonds. These mechanisms – and others – could play an increasingly important role for regional or local entities in financing water infrastructure projects.

What We Learned: Context for the Commission's Findings and Conclusions

Conveyance across space and time. The concept of conveyance may bring to mind a series of manmade canals and aqueducts connected to ditches and pipes that serve the agricultural fields and towns and cities of the state. This is only part of the picture. Water conveyance – moving water around the state – happens in built infrastructure, as well as in natural infrastructure – the streams and rivers that both convey water for people and habitat and recreation; the forests and meadows that capture and release water and are subject to mounting pressures from wildfire; the groundwater aquifers that exchange water with surface water systems and hold vast capacity for storing water supply. Both green and gray conveyance are integral to the state's water system and are overlaid by laws and regulations that govern how water moves within the state. To consider a state role in financing conveyance requires thinking about the various spaces that conveyance occupies – from watersheds to in-home plumbing – because all parts are interconnected. And conveyance cannot stand alone: conveyance presumes that water is being taken from someplace – from a source, such as a stream, reservoir, or aquifer – and delivered elsewhere – such as to a water district that will store and manage the water on behalf of its ratepayers, or to an end user or beneficiary, such as a farm field, household, or wetland. The temporal aspect of conveyance is another consideration: conveyance projects move water from one place to another based on when water is available from the source and when it is needed by the beneficiary. Within this situational context, conveyance projects become a proxy for considering broader water management issues; absent this context, conveyance cannot be robustly evaluated based on its impacts on and benefits to a larger system.

One size does not fit all. In a state as large and diverse as California, it is not surprising that there are marked regional – and intra-regional – differences with respect to water. The portfolio acknowledges this, noting that "water resilience will be achieved region by region based on the unique challenges and opportunities in each area." Regional differences surrounding conveyance needs, challenges, and priorities are summarized in the following section. These differences stem from a variety of factors. A region's or subregion's climate and hydrology may drive its conveyance priorities: natural water availability determines the way in which regions are able to diversify water supplies and their reliance on state and federal water systems. Similarly, the proximity of a region or subregion to backbone water infrastructure – most notably, the State Water Project (SWP) or Central Valley Project (CVP) – accounts for differences in opinion regarding the importance of these systems, as well as the ability to access and benefit from them. Areas that are more agricultural in nature differ from urban areas with respect to when and how much water they require, and smaller, more rural municipalities have different needs and challenges than populous urban cores. Importantly, resource constraints drive many regional and subregional differences: areas with small populations and/or a high percentage of low-income households suffer from the inability to fund needed repairs and develop new infrastructure.

The Commission acknowledges these differences and has embedded flexibility in its recommendations to encourage the use of different tools to solve the differing water conveyance challenges within the state.

Social and environmental justice. A resilient water system accounts for the needs of all humans, including those who do not currently have safe and reliable water. The state's responsibility to address the human right to water, as codified in section 106.3 of the California Water Code, specifies that "every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes." Incorporating social and environmental justice into conversations regarding water resources is a continuous process without a singular product, such as a water conveyance project. Community and environmental organizations must be brought into conversation as partners, helping to design solutions and make decisions about what projects move forward, and to ensure that projects benefit their interests. This is only possible if relationships are continually developed and managed – and if the historical context of water projects is understood. In many places, communities and the environment have been purposely shut out of discussions, and – instead of benefitting from projects – they have suffered losses that have created a legacy of skepticism and mistrust. Inclusion will require a sustained process of trust-building.

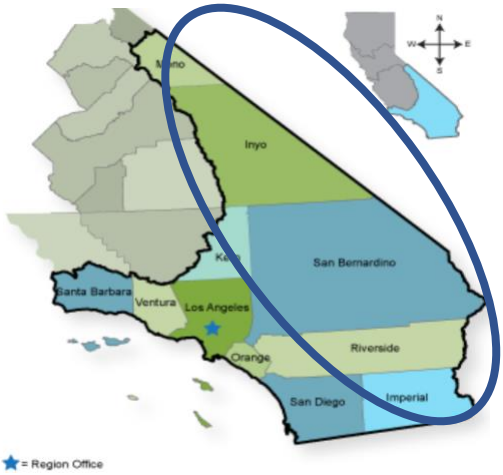
Table 1. Regional Evaluation of Conveyance Priorities

	Multi-benefit/purpose projects	Ecosystem enhancement/ preservation	Human right to water	SGMA	Local/regional self sufficiency	Interties, consolidations	Water trading & banking	State Water Project/ Central Valley Project
Southeast	2	3	5	4	1	8	7	6
South	2	5	4	6	1	7	8	3
Northern	2	4	5	3	1	8	7	6
Central	4	8	5	1	3	7	6	2

Regional Variations and Priorities

The Commission hosted four, well-attended public workshops, each targeted at a different part of the state. The regional summaries offered below capture the qualitative feedback generated during the workshops, as well as the results of a survey that the Commission conducted in conjunction with the workshops. Prior to attending, workshop participants were encouraged to evaluate what types of climate-resilient conveyance projects should be resourced first. The results of that survey are distilled in the table below. These results are not statistically robust.

Southeastern California



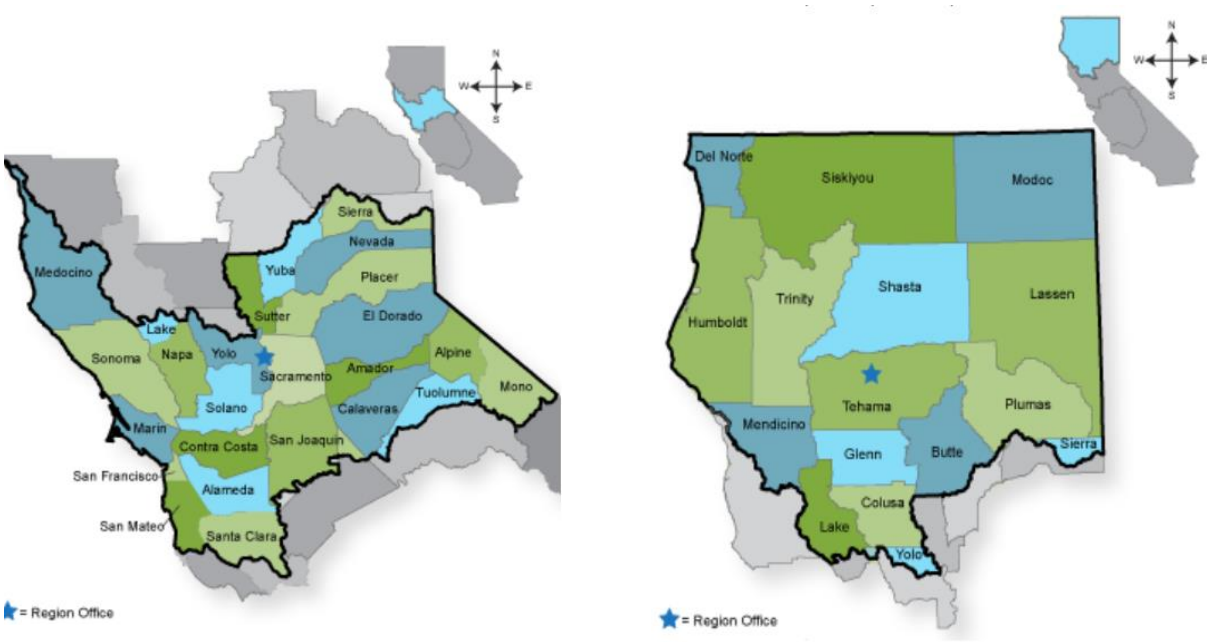
The Commission's workshop in Southeastern California targeted stakeholders in the South Lahontan region as well as the southernmost part of the state, which is served by Colorado River water. Outside of San Diego's major urban hub, much of this region's population is remote and scattered, which presents some barriers to connecting water-related entities and systems. In the eastern, mountainous portion of this region, conveyance is viewed with suspicion due to the historical experience with the city of Los Angeles's construction of an aqueduct that conveys water from the mountains to urban, coastal areas. The region is concerned about environmental and public health problems surrounding the Salton Sea, which include loss of habitat and air quality impacts from dust emissions. Addressing cross-boundary Colorado River issues necessitates that some water managers in this part of the state work with other states and with Mexico. Workshop participants in this region considered local and regional self-sufficiency and multi-benefit or multi-purpose projects to be conveyance priorities.

Southern California

The Commission's Southern California workshop attracted participants from the state's most populous urban areas: Los Angeles and San Diego. This region overlaps with the Southeastern region, and the cross-boundary Colorado River nexus is also present in Southern California. In this region, partnerships are common and can be with immediate neighbors or different regions or the other Colorado River basin states. Here, water wholesalers help water retailers with interties and water treatment projects, and many entities are working toward regional self-sufficiency by integrating recycled water and desalination into their water portfolios. Southern California workshop

participants expressed the same preferences as Southeastern California workshop participants: they consider local and regional self-sufficiency and multi-benefit or multi-purpose projects to be conveyance priorities.

Northern California



The Northern California region covers the largest swath of California, stretching from the Oregon border on the north to the Sacramento area on the south, and from the Nevada border to the ocean. Incorporated in all of this land are distinct subregions: the Klamath-Modoc area, the north coast area, the Delta, the Sacramento Valley, and the foothills and mountains of the northern Sierra Nevada. As the water source for most of the state, this region includes major water supply reservoirs and rivers that serve as conveyance. Throughout the region, the connection between the upper and lower watershed is important. Natural water infrastructure includes rivers that stretch from mountains to the valley, as well as the forests and meadows that capture and release snowmelt and rainwater. These areas and the communities within them are at risk of wildfire, particularly because many mountainous areas have old water conveyance infrastructure, including wooden flumes that date to the Gold Rush. With a limited rate-payer base, repairs and upgrades are difficult to fund. Some areas are seeking interties to promote resilience. Environmental water uses are actively considered and pursued, as water is essential to the keystone aquatic species – such as salmon – that populate Northern California's rivers. As they did in the southern part of the state, workshop participants in this region consider local and regional self-sufficiency and multi-benefit or multi-purpose projects to be conveyance priorities.

Central California

The Central California region covers diverse terrain, stretching from the western side of the southern Sierra Nevada to the central coast, and covering the highly complex San Joaquin Valley in between. The implications of the implementation of SGMA in the San Joaquin Valley loom large in this region, which is focused on developing groundwater recharge and banking opportunities. The subsidence that has resulted from groundwater basin overdraft has damaged major SWP and CVP infrastructure and local canals, reducing the capacity of these structures to convey water. In this region, some under-resourced, rural communities that are dependent upon groundwater wells have limited access to clean, safe, and affordable water: during drought times, their wells may run dry, and some groundwater may be contaminated by nitrates. The central coast is focused on local reliance. Throughout the region, flood management – capturing flood flows and using them during dry periods – is part of the water equation. The Central California region's workshop participants expressed different preferences than all three other regions: here, participants prioritized SGMA- and SWP/CVP-related conveyance.

Findings

1. **A state role in financing conveyance.** The Commission finds the state has multiple roles in financing water conveyance projects. The state serves as an equitable distributor of funds, investing directly in projects from which the state will benefit; the state serves as a financing partner, whose funds are leveraged to secure financing from federal and private sources; the state serves as a lender, offering low-interest loans to infrastructure projects; the state serves as risk support, issuing bonds on behalf of project proponents; and the state serves as a policy catalyst by funding pilot projects, innovation, capacity-building, data collection and analysis, and planning efforts. By playing multiple roles, the state can be responsive to the varying preferences and needs of project proponents. The Commission finds that, based on variables such as the size of the water district or project, a project proponent's ability to access low-interest loans or to issue bonds, and the benefits of the project, some potential applicants may prefer to receive grants from the state while others prefer to receive loans or to have access to both. Many project proponents rely on the state for climate change and water-related data.

   1.1. The Commission finds that, in addition to supporting the movement of water, state financing of conveyance projects can also support economic stimulus by improving and stabilizing water supply, which is a direct economic input, and by generating construction jobs, engineering and design activities, and ongoing operations that require labor.

2. **Partnerships, governance, and collaboration to address climate change.** The Commission finds that addressing the challenges of climate change as they impact water conveyance will require cross-sector collaboration, integrated partnerships, and governance designed to promote multiple benefits so that under-represented beneficiaries, such as the environment and underserved communities, are considered during the continual decision-making that adapting to climate change will require. The Commission finds that tribal governments, community members and leaders, community-based organizations, environmental non-governmental organizations, and natural resource managers are critical stakeholders to engage when developing, implementing, and managing climate-resilient conveyance projects.

3. **Characteristics of climate-resilient water conveyance projects.** The Commission finds that green conveyance infrastructure – such as rivers and streams – can be made more climate-resilient through:

   - the reconnection of floodplains to river systems;
   - the restoration of channel meander; and
   - the reestablishment of surface water-groundwater connection where it has been lost.

   The Commission finds that built infrastructure conveyance projects that can help meet the needs of a changing climate are:

   - responsive to and reliable during crisis, with a robust emergency response capacity;

- adaptable and able to accommodate change;
- flexible and interconnected;
- guided by science-based, long-term planning and thinking; and
- balanced, accounting for the needs of the environment and all humans.

4. **Conveyance projects can mitigate climate change.** The Commission finds that, in addition to adapting to climate change, becoming more resilient to the extremes in temperature and rainfall that are projected, water conveyance can be a critical component in mitigating the impacts of climate change. The energy used to move water around the state, which is considerable, contributes to greenhouse gas emissions. By localizing water supply – moving water shorter distances – and thoughtfully designing conveyance projects, conveyance can help reduce harmful emissions.
5. **Conveyance projects that can help meet the needs of a changing climate.** The Commission finds that conveyance projects that will help meet needs in a changing climate are those that restore ecosystem function; upgrade existing systems, including projects that improve State Water Project or Central Valley Project infrastructure, to accommodate climate change; support the human right to water; promote local and regional reliance instead of reliance on statewide systems; advance an integrated approach to water management; and support the implementation of SGMA.
   5.1. Specifically, the Commission finds that conveyance that provides safe drinking water to underserved communities is an important aspect of climate resilience.
   5.2. Specifically, the Commission finds that conveyance that facilitates water transfers will be a critical component of a climate resilient water system, allowing for the movement of water to storage in wet years and to drought-impacted areas in dry years.
   5.3. Specifically, the Commission finds that there is a need to deliver water to designated wildlife refuges and wildlife areas.
6. **Climate-resilient design.** The Commission finds that climate-resilient design is the most important criteria for assessing the resilience of a project. This comports with feedback received across all of the Commission's regional workshops. Resilient design refers to conveyance projects that are designed to accommodate climate change-driven changes in precipitation patterns, land use, and water demand. Some water suppliers and districts are already engaged in the type of climate change planning that underpins the development of climate-resilient water projects. Many small and under-resourced areas, however, lack the funding and/or capacity to engage in this kind of planning.
   6.1. In particular, the Commission finds that project design must account for the continued subsidence in areas subject to groundwater overdraft to ensure that state investments will continue to offer benefits as groundwater basins are brought into sustainability. Further, the Commission finds that, to prevent continued damages from subsidence, the state can promote and enforce the implementation of SGMA to correct groundwater overdraft.

6.2. The Commission finds that the state can leverage its work on climate change and resilience to inform its investments in conveyance. For example, *Planning and Investing for a Resilient California: A Guidebook for State Agencies*[1], prepared by the Governor's Office of Planning and Research, offers a process for how the state considers climate resilience in its investment decisions and can help apply a unified approach to consider climate resilience across funding agencies and the work of the Department of Water Resources' Sustainable Groundwater Management Office and Office of Multi-benefit Initiatives is identifying critical groundwater recharge areas which helps define needed conveyance. The state can increase internal integration so that state funding entities utilize state-produced resources to deliver consistent, equitable, aligned programs.

7. Public benefits of conveyance. The Commission finds that the public benefits of conveyance can be categorized as follows:

Benefits to the people of California that do not readily accrue to private users. These benefits are clearly and completely public benefits. Ecosystem enhancement is the most identifiable public benefit of water conveyance projects. Green infrastructure projects – such as floodplain restoration – deliver ecosystem benefits for all Californians. Greenhouse gas reduction also fits into this category.

Benefits from improved equity for underserved communities. The state's responsibility to address the human right to water falls within this category. State funding may be justified to support water supplies to consumers who are unable to afford paying for conveyance due to low income and economic opportunities. Due to restrictions imposed in the state's constitution on local charges, local agencies may not be able to raise sufficient funds in total from its customers to pay for a project that shows total positive net aggregate benefits.

Benefits of statewide scale and importance that address challenges beyond the scope of any region, that exceed the responsibility of a single region, that are not feasible for a region to accomplish alone, or that pose significant risk to the people and resources of California. These benefits have a nexus with state responsibilities and policy priorities but may also accrue to private entities. If funding these benefits, the state should consider metrics to articulate what type or portion of the benefit is public and accruing statewide. This category includes water quality improvement of public trust resources, large-scale flood management, maintaining healthy aquifers and groundwater basins, emergency response and resilience to substantial supply disruptions, and development of publicly accessible recreational benefits.

Benefits to catalyze progress and systemic change. State funding may be justified to encourage innovative projects or foster cooperation among different jurisdictions to achieve resilience.

[1] https://opr.ca.gov/docs/20180313-Building_a_Resilient_CA.pdf

7.1. The Commission finds that economic stimulus is a near-universal benefit of water infrastructure projects; that this benefit is both measurable and diffuse; and that it is best assessed as part of a project's resilience evaluation. "Economic stimulus" includes activities that create jobs or bring additional wealth to a community or region.

8. **Valuing public benefits.** The Commission finds that the amount of funding provided for public benefits can be determined using one of two approaches:

   The "assigned costs" approach, which is methodical, defines the public benefit that warrants state investment, quantifies it, then allocates money based on that quantification. This is the approach used by the Commission's Water Storage Investment Program (WSIP). The precision of this approach helps to align a state investment with the value of a benefit; however, it can be costly and onerous and presents a high bar to entry for small and/or under-resourced project proponents.

   The "cost share" approach is to ascertain whether a project provides a desired public benefit and, if it does, the project receives funding for some percentage of the project cost. This approach is simpler but is less analytically rigorous and transparent.

9. **Regional variations necessitate regional approaches.** The Commission finds that the varying hydrology, topography, industry, demographics, history, preferences, and priorities between and within the regions of the state lead to unique, place-based circumstances that the state can consider when weighing how a project may help meet needs in a changing climate and when defining and valuing public benefits.

10. **Investing in public benefits.** The Commission finds that public and private entities that manage water infrastructure have certain legal obligations to provide water, to sustainably manage groundwater, to maintain ecosystems, to protect water quality, and to otherwise serve the public good, and that the state is not responsible for funding these obligations.

11. **Use of emerging finance mechanisms.** The Commission finds that conveyance project proponents may need to use multiple funding sources and financing mechanisms to implement a project, and that alternative funding mechanisms may help advance necessary conveyance projects. For instance, public-private partnerships, used in conjunction with state grants, can help alleviate long grant fund reimbursement timeframes by providing capital up front; green bonds can tap demand for projects by environmental, social, and governance investors, bringing "new" funds to bear on water projects; and Enhanced Infrastructure Financing Districts[2] (EIFD) can be structured to use local funds and receive state or federal financing to advance projects in non-contiguous jurisdictions. However, EIFD financing is repaid through property taxes, not water rates, so the cost of the water is disconnected from the price of water thus diminishing the incentive to conserve.

12. **Feasibility studies.** The Commission finds that Action 19.3 of the portfolio – which tasks the Department of Water Resources (DWR) with conducting a feasibility analysis for improved and expanded capacity of federal, state, and local conveyance facilities to enhance water

[2] Government Code Section 53398.50.

transfers and water markets, taking into consideration climate change projections of hydrologic conditions – would help the state invest its limited funding in meaningful projects. DWR proposes to conduct a feasibility analysis for the San Joaquin Valley.

13. **Flood-Managed Aquifer Recharge.** The Commission finds that new or modified conveyance will be necessary to implement Flood-Managed Aquifer Recharge (Flood-MAR) projects that facilitate the use of flood water resulting from, or in anticipation of, rainfall or snowmelt for groundwater recharge on agricultural lands, working landscapes, and managed natural lands, including but not limited to refuges, floodplains, and flood bypasses. Flood-MAR projects can be implemented at multiple scales, from individual landowners diverting flood water to their properties to using extensive detention/recharge areas and modernizing flood protection infrastructure/operations on a watershed-scale. Flood-MAR's potential is achieved by integrating regional recharge efforts; changing management of California's water system to better integrate surface water and groundwater; upgrading conveyance, storage, and operations; and considering Flood-MAR's opportunities as related to water transport and transfers at multiple scales.

14. **Reduced Delta reliance.** The Commission finds that it is the policy of the state to reduce reliance on the Delta in meeting California's future water supply needs through a statewide strategy of investing in improved regional supplies, conservation, and water use efficiency. The Delta Plan specifies that "in allocating funding for new water conveyance and conveyance improvement projects outside the Delta that support regional self-reliance, the State should give preference to projects that…reduce reliance on the Delta for water supply during dry and critically dry years."[3] Each region that depends on water from the Delta watershed shall improve its regional self-reliance for water through investment in water use efficiency, water recycling, advanced water technologies, local and regional water supply projects, and improved regional coordination of local and regional water supply efforts.

15. **State funding challenges.** The Commission finds that state funding can cause barriers to meeting project proponent needs. General obligation bonds are a main source of state funds for conveyance or other infrastructure needs. Bond funding is episodic and must be designed to garner sufficient statewide votes for a measure to pass, which can lead to ambiguous or confusing bond language and rigid programs that lack the flexibility to respond to emerging issues. Further, general obligation bonds can only be used to finance capital projects, which limits the ability of the state to fund planning, facilitation, and operations and maintenance. Finally, accessing state funds is not easy, especially for small and under-resourced applicants: programs may have limited applicability or they may require a matching requirement that necessitates triangulating multiple funding sources; grantees may not be reimbursed for actual expenses for months, sometimes necessitating bridge loans to close the gap; and the requirements of applying for and managing state funds may outstrip the technical expertise or capacity of some entities.

[3] See Recommendation WR R12j. Operate New or Improved Conveyance and Diversion Facilities Outside of the Delta, https://deltacouncil.ca.gov/pdf/delta-plan/2018-04-26-amended-chapter-3.pdf

Conclusions

Overarching Guidance

The Commission concludes that, when considering a state role in financing conveyance projects to help meet the needs of a changing climate, state policymakers should consider the following guidance:

1. **The state should invest in the public benefits of conveyance that will broadly benefit the people of California.**

2. **Rivers and streams provide crucial conveyance services, and investments in the ecological health of natural waterways will improve the state's green conveyance infrastructure.**

3. **To advance a human right to water, state investments in conveyance should emphasize benefits to and correct impacts on California's underserved communities wherever possible.**

4. **Because water conveyance is linked to all other aspects of the state's water system, and the water system is inextricably linked to land use within the state – including forest management and the state's energy system – the state should promote collaborative partnerships and governance to address the need for cross-sectoral climate resilience.**

Guidance for Structuring Funding Programs

Policy makers and state funding agencies should consider the following guidance:

5. **Climate-resilient projects.** The Commission urges the state to prioritize investments for projects that:

   5.1. Repair and improve aging or damaged infrastructure to prevent supply losses and promote energy efficiency, to safely convey flood flow, to protect against wildfire, and to ensure safe and reliable drinking water for communities that lack it.

   5.2. Provide water for underserved beneficiaries, such as under-represented communities and habitat areas.

   5.3. Restore rivers and streams by reconnecting floodplains, allowing for natural meander, and/or providing more natural, functional instream flows.

   5.4. Promote local and regional flexibility and supply reliability during drought or catastrophic disruption through interties, redundancies, consolidations, and water trading or banking projects.

   5.5. Meet the need for water supply strategies such as conjunctive use, flood-managed aquifer recharge, and water transfers that help address the state's changing hydrology and support the implementation of SGMA.

5.6. Contribute to a comprehensive, integrated water management approach that considers multiple water supply sources including, but not limited to, stream flow, groundwater, imported water, stormwater, desalinated water, water saved through increased efficiency, and recycled water, as applicable.

5.7. Improve flexibility to accommodate water market transfer and exchange opportunities that benefit communities, the environment, and farms.

6. Assessing resilience. The following questions could be used to weigh a project's effectiveness in improving resilience:

Climate-Resilient Design. How will the project bolster climate resilience? How well is climate change embedded into the project's design? Did project proponents use current, accurate climate and water data? Is the project designed to be robust and reliable within a range of climate outcomes and future scenarios? What are the risks to this project? What is the risk if this project is not completed?

Multiple Benefits. Does the project provide multiple benefits? Does the project serve disadvantaged communities, advance flood protection, enhance ecosystems, and/or provide other benefits to the people and state of California? Were multiple benefits considered and integrated as part of the design and planning process for this project?

Long-term Management. Is the project's governance and decision-making structured to be able to manage the project for multiple benefits over the lifetime of the project? Is there a funding plan for long-term monitoring, management, and maintenance of the project? Is there a governance plan for serving multiple benefits for the lifetime of the project?

Community Integration. Were community residents and community-based organizations engaged during the development of the project? Were their needs reasonably accommodated to allow for meaningful engagement? Did community members have meaningful decision-making power in the decisions made?

System Context. Explain the project in the context of its water source and end water use. Is the project part of a larger watershed- or basin-scale strategy? What are the environmental benefits and impacts of this project, both at the project site and to the larger system? What are the community benefits and impacts of this project? How will this project impact upstream, downstream, groundwater, and adjacent land and water resources and communities, now and into the future? How will impacts to communities and the environment be mitigated? Does the project consider and mitigate the potential impacts of subsidence?

State-level Resilience. Does the project promote water supply diversification and self-reliance at the local or regional level? Will the project itself diminish reliance on the Sacramento-San Joaquin Delta, or is the project part of a portfolio of projects that will diminish Delta reliance? Will the project restore ecological function? Does the project consider the impacts of the implementation of the Sustainable Groundwater Management Act?

Climate Governance and Planning. How do the institutions supporting the project incorporate climate change into their work? Do these institutions have a codified climate change policy? Do they have staff dedicated to climate change analysis and response?

Economic Benefits and Impacts. How will this project benefit or impact the economy at the local and/or regional level? Does the project improve the economic situation for underserved communities?

Partnerships. How is the project engaging partners and collaborating with stakeholders? Does the project promote partnerships across land and water management? Across water management functions? Across jurisdictions and geographies? Is the project a priority for an existing regional partnership or network? Would the project's implementation strengthen and broaden existing regional partnerships?

Project Context. Do the project proponents have a history of supporting local or regional resilience? How is this project integrated with past projects that promote resilience?

6.1. The process outlined in the document *Planning and Investing for a Resilient California: A Guidebook for State Agencies* (and any future updates) could help state agencies evaluate climate resilient design. Further, work currently underway at the Governor's Office of Planning and Research to recommend climate risk disclosure practices for state investments and to identify climate resilience metrics could inform, respectively, how the state considers climate impacts in its investments and how it measures the outputs and outcomes of the climate-resilient conveyance projects in which it invests.

7. **Flexible funding approach.** Because the detailed methodology of valuing public benefits creates access hurdles to funding, funding agencies could utilize different approaches to accommodate in different circumstances. For example, an "assigned costs" approach for large projects or projects that serve wealthy areas could ensure that large state investments are being made precisely, while the "cost share" approach may be better suited for smaller projects or for projects that serve resource-constrained areas by reducing the labor intensive process of inventorying the public benefit values of a project.

   7.1. When employing the assigned costs approach, funding agencies could utilize established methodologies, such as that outlined in the Water Storage Investment Program's Technical Reference, found under the Applicant Resources dropdown menu here: https://cwc.ca.gov/Water-Storage, or the Army Corps of Engineers' Planning Guidance Notebook, found here: https://www.publications.usace.army.mil/Portals/76/Publications/EngineerRegulations/er_1105-2-100.pdf.

Guidance for a Phased Funding Approach

The state should consider a phased funding approach for financing conveyance projects.

8. **Phase 1: Urgent climate-resilient conveyance needs.** Available funds could be deployed to high-priority projects. If funds are available, investments in planning, data gathering, and network building would help shape a next tranche of conveyance investments.

8.1. The state could consider funding a share of the cost of repairs to major state and federal backbone infrastructure immediately because its decline has ramifications for the 27 million users of these projects and the state's larger economy. Investments in these projects should be contingent upon federal and local agencies sharing the overall costs, and the projects themselves should improve safe drinking water access if at all possible. To improve safe drinking water access, project proponents should engage tribal governments, community members and leaders, and community-based organizations to determine communities' needs and design solutions to meet those needs. Prior to investing, the state should explicitly weigh the effectiveness of the projects in which it is investing in improving resilience, identify the public benefits that it will support through its investments, and ensure that subsidence damage to infrastructure does not reoccur.

8.2. In conjunction with infrastructure improvements, the state could consider funding for ecosystem enhancement projects that will support the overall resilience of the state's water system, including the green infrastructure of rivers and streams.

8.3. The state could advance other measures to spur climate-resilient conveyance:

8.3.1. To explicitly advance the human right to water, effective implementation of the Safe and Affordable Funding for Equity and Resilience program is crucial.

8.3.2. Leveraging and maximizing existing state coordination and collaboration programs will activate the collaborative partnerships and governance needed to develop regionally led, cross-sectoral, climate-resilient solutions deployed at scale.

8.3.3. Investing in a watershed-scale, data-based approach to climate vulnerability and adaptation planning will foster development of climate-resilient conveyance project proposals. In particular, investing in robust, climate-driven feasibility and planning activities for Flood-MAR projects will expedite implementation of these projects.

8.3.4. Funding action 19.3 of the Water Resilience Portfolio and applying its analysis statewide will advance our understanding of the conveyance needs for intra-regional transfers to support remote mountain areas, isolated northern and central coastal areas, and inter-regional transfers between the Central Valley and Southern California.

9. Phase 2: Near-term financing solutions to advance climate-resilient conveyance projects and planning. General fund monies, federal stimulus dollars, and/or a general obligation bond could provide resources to fund the public benefits of climate-resilient conveyance projects and enhance low-cost lending options for conveyance projects that support local and regional self-sufficiency and other priorities.

9.1. Ensuring the human right to water, implementing SGMA, and protecting and enhancing ecosystems are public priorities that should be prioritized within any funding program. Funding programs should encourage a collaborative approach by ensuring that tribal

governments, community members and leaders, community-based organizations, environmental non-governmental organizations, and natural resource managers are meaningfully engaged in the development, implementation, and long-term governance of projects that advance these priorities.

9.2. Specifically, the state could fund the implementation of conveyance projects that facilitate Flood-MAR projects that promote multiple benefits for human and natural communities. It will be important to ensure that new or improved facilities will not be damaged by future subsidence tied to groundwater over-pumping.

9.3. As a broad principle, the state could consider paying for the full cost of benefits to the people of California that do not readily accrue to private users, which includes environmental benefits and greenhouse gas reduction benefits, and benefits from improved equity for underserved communities. The state could consider paying for a portion of benefits of statewide scale and importance that address challenges beyond the scope of any region, that exceed the responsibility of a single region, that are not feasible for a region to accomplish alone, or that pose significant risk to the people and resources of California. Statewide benefits include water quality improvement of public trust resources, large-scale flood management, maintenance of sustainable aquifers and groundwater basins, emergency response and resilience to substantial supply disruptions, and development of publicly accessible recreational benefits. The state could also consider paying for a portion of benefits that catalyze progress and systemic change by financing cooperation and collaboration between different interests and jurisdictions to achieve resilience.

9.4. The state could explore opportunities for innovative approaches to state financing to meet emerging needs, such as providing funding for monitoring public benefits or for technical assistance that helps applicants who do not have sufficient capacity and resources to develop projects and apply for funding. To accommodate regional variations, the state could consider distributing non-competitive funding within regions for projects of watershed-scale benefit.

9.5. The state could use and expand existing mechanisms, such as the State Water Resources Control Board's State Revolving Fund and the California Infrastructure Economic Development Bank, to provide low-cost loans to eligible entities that cannot easily secure inexpensive financing on the open market for projects that provide climate resilience. To the extent feasible, the funds should be easy to access with flexible repayment and low issuance costs

9.6. The state should consider expanding the pool of available funds by advocating to secure more federal funding for California water infrastructure. Where possible, the state should leverage federal, local, and private dollars for suitable conveyance projects.

9.7. The state should participate in building the necessary coalitions to advance novel and sustainable funding streams to provide long-term financing solutions.

California WATER COMMISSION

Appendix 1: Workshop Materials

Regional Water Conveyance Workshop Workbook

California
WATER COMMISSION

The California Water Commission (Commission) is assessing a potential state role in financing conveyance projects that could help meet needs in a changing climate, as described in Action 19.4 of the Water Resilience Portfolio (Portfolio). The Portfolio is guided by Governor Newsom's Executive Order N-10-19, which calls for a "set of actions to meet California water needs through the 21st century."

Action 19.4 is a subset of Portfolio Action 19 to modernize inter-regional conveyance to help regions capture, store, and move water. This work is embedded in a section of the Portfolio focused on building connections by connecting physical infrastructure, data, people, and state agencies.

The Commission will develop recommendations regarding financing for conveyance projects that accommodate a changing climate by building connections across and between regions to advance statewide water resiliency. In a series of four regional workshops, the Commission is seeking input from diverse stakeholders throughout the state to learn more about their climate-driven conveyance needs and priorities.

Regional Water Conveyance Workshop
WORKBOOK

December 2020 and January 2021

California
WATER COMMISSION

AGENDA
Water Conveyance Workshops

Southeastern California (Colorado River, South Lahontan) – Tuesday, December 8, 2020

Southern California – Thursday, December 10, 2020

Northern California – Tuesday, January 12, 2021

Central California – Tuesday, January 26, 2021

Session Goals:

1. Hear from diverse participants about what is important to them
2. Create opportunities for Commissioners to hear directly from stakeholders
3. Identify broad regional conveyance priorities
4. Identify regional perspectives on public benefits of and financing for conveyance
5. Develop an understanding of how the region is preparing for climate change

Time	Item
--	Prework - Session participants are invited to provide input on what criteria the state should consider when assessing the effectiveness of conveyance in improving resilience at the local, regional, and state level. Add your thoughts at https://www.surveymonkey.com/r/CWC_criteria1.
2:30 PM	1. Login, Handouts, and Meeting Logistics • Where are you from?
2:40	2. Welcome and Greetings • Session Goals, Definitions, Where We've Been, and Where We're Going • Agenda Review
2:50	3. Panel Discussion - The Role of Conveyance in Water Resiliency for our Region • Q&A
3:15	4. Large Group Discussion • Issues, Preparation, Priorities • (As time Permits) Criteria
3:45	5. Introduction to Discussion: Public Benefits and Financing Mechanisms and Challenges
3:50	6. Breakout Session 1 – PARTNERSHIPS & PUBLIC BENEFITS
4:10	7. Breakout Session 2 – FINANCING CHALLENGES & MECHANISMS
4:30	8. Report outs
4:55	9. Next Steps
5:00	10. Adjourn

Session Pre-Work

While you are waiting for the session to start, if you haven't already, please complete the pre-work survey at https://www.surveymonkey.com/r/CWC_criteria1.

Workshop Questions and Discussions

Agenda Item 1 – Where are you from?

During the live Zoom meeting, reply here: https://pollev.com/lisabeutler208

Agenda Item 2 – Background and Definitions

Introduction

The Commission is assessing a potential state role in financing conveyance projects that could help meet needs in a changing climate. This work is precipitated by a convergence of factors that make considering how to finance conveyance both timely and important. Climate change is no longer an impending threat: California is experiencing the impacts of a warming world, including sea level rise, temperature extremes, and a more variable and extreme precipitation patterns. At the same time, water conveyance structures within the state are aging, damaged by subsidence, and in need of repair.

Adapting to climate change will require improved and new conveyance designed for different purposes than historic infrastructure. Limited funding, a growing population, and the need to recover both damaged aquatic habitats and over-drafted groundwater aquifers necessitate a smart, careful analysis of conveyance investments.

The Commission's Approach

To advance its work, the Commission is convening expert panels and conducting regional workshops. The output of this effort will be a white paper with recommendations for state policymakers, describing key issues and mechanisms to consider as they weigh how to finance water conveyance infrastructure. The paper will describe characteristics of resilient water conveyance projects that meet the needs of a changing climate, the potential public benefits of such projects, and the implications of various financing options. The paper will focus on conveyance other than the pending proposal to improve State Water Project conveyance through the Sacramento-San Joaquin Delta.

The Commission is also requesting input through surveys. The first survey seeks input on what criteria the state should consider in assessing the effectiveness of conveyance in improving resiliency at the local, regional, and state level. You are welcome to add your thoughts at https://www.surveymonkey.com/r/CWC_criteria1.

Definitions

Conveyance

The Commission discussion of investment in conveyance includes consideration of grey (constructed) and green (natural) infrastructure, and conveyance policies and governance. Conveyance involves moving water from one place to another, and usually involves some form of conveyance infrastructure, typically pipes and canals, as well as streams and rivers. These physical attributes are underpinned by legal, regulatory, and policy frameworks that can promote the movement of water (e.g., water transfers).

Resilience

Resilience is the ability of a system to respond to and accommodate change, transforming to ensure its functionality and longevity for an extended time horizon. A resilient water system accounts for environmental water needs as well as the needs of all humans, including those who do not currently have safe and reliable water.

Agenda Item 3 – Panel Discussion on the Role of Conveyance in Water Resilience for this Region

Panelists will discuss historic use/reliance on conveyance, the role of conveyance in creating water resilience, particularly under climate change, and the top three issues they would like the workshop participants to focus on during the deliberations.

Agenda Item 4 - Large Group Discussion

You are encouraged to share your ideas. Please raise your hand to speak or write your thoughts in the "chat" box.

Discussion Questions	Notes
1. What are the major water-related issues that your region is facing? Will climate change have an impact on those issues?	
2. How are you and others in the region preparing for changing hydrology (less snow, more rain, more extreme drought/flood)?	
3. What types of climate-resilient conveyance projects are a priority in your region?	
4. (As time permits) Prework survey responses to resilience criteria will be reviewed. What are your reactions? Is there anything else to add?	

Agenda Item 5 – Introduction to Public Benefits and Financing Discussion

Public Benefits

Determining the public benefits that warrant state financing requires selecting public priorities that the state wishes to advance The Commission may choose to focus on:

- Benefits that are important to the people of California but do not readily accrue to private users, such as greenhouse gas emissions reduction or habitat and ecosystem enhancement.
- Benefits of statewide scale and importance that address challenges beyond the scope of any region, such as subsidence, sea level rise/saltwater intrusion, water quality, or flood protection at a scale that exceeds the responsibility of a single region, that is not feasible for a region to accomplish alone, or that poses significant risk to the people and resources of California.
- Benefits to catalyze progress and systemic change. State funding may be justified to encourage innovative projects or foster cooperation among different jurisdictions to achieve resilience.

In light of the current, COVID-related recession, the state may also consider economic stimulus as a public benefit, using funding to spur economic growth.

The benefits of each project will vary: a careful evaluation of the project will determine who benefits, how to assign costs accordingly, and which projects provide significant aggregate benefits to warrant state financing.

State Responsibilities

- The state of California has codified a human right to water in section 106.3 of the California Water Code, which specifies that "every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes." This human right to water extends to all Californians; the state has a responsibility for ensuring water is provided for human consumption.
- Enhancing public trust resources, such as fisheries, wildlife, aesthetics, and navigation, beyond what is required under existing regulatory requirement;
- Ensuring public health and safety by providing a backstop to the cities, counties, and special districts tasked with the daily oversight of these matters;
- Establishing state resource goals by enacting statutes and creating new programs and facilitating the achievement of these goals through planning or by removing impediments, such as lack of experience in working towards that goal, institutional conflicts, or fear of liability; and
- Establishing and enforcing rules of behavior, which may include funding research or the completion of products necessary to support the establishment or enforcement of rules of behavior.

Ultimately, the Commission will consider how the State can be explicit about what it is getting out of a project by asking: What public priorities is a project meeting? Do the public benefits outweigh the impacts (e.g., to the environment)? Is there a way to meet public priorities in a more cost effective, sustainable way?

Assessing Financing Mechanisms and Challenges

Because there is no immediate source of state funding for conveyance projects on the horizon, the Commission will broadly assess possible financing mechanisms for conveyance infrastructure, including local, federal, and private financing. The Commission's work will examine how conveyance needs, opportunities, and priorities at the local and regional level might contribute to broader resiliency, and how, when state funds are available, the state could use its funding to advance the statewide benefits of these projects.

Understanding how to advance conveyance projects that spur resilience to climate change necessitates a review of current financing mechanisms and the funding challenges with which future investments must contend. Looking at existing financing for conveyance infrastructure will help to build the Commission's understanding of the financing options available going forward. Generally, water users pay for water infrastructure with some state and/or federal match. Local contributions generally come in the form of property taxes, general revenue – such as sales and other taxes, water fees for water services – such as monthly water bills, and special assessments and taxes levied by local districts for water services. State and federal contributions may come in the form of grants or loans. Emerging financing mechanisms may include Enhanced Infrastructure Finance Districts, public private partnerships, a public goods charge, and green bonds.

It is possible that the state may receive unrestricted federal stimulus funds, which could be used for water infrastructure. If federal stimulus funds mimic those provided during the 2008 recession, the funds may need to be utilized quickly on shovel-ready projects. The ability to efficiently navigate cumbersome regulatory frameworks will make it easier to ensure that projects that provide important public benefits are poised to receive federal stimulus funds.

Other financing challenges include Proposition 218, which limits water districts' ability to raise funds for programs and projects that benefit the greater good, such as "lifeline" discounts to low-income households.

The Commission will consider the advantages and disadvantages (including political challenges) associated with using various funding sources and mechanisms, and how these mechanisms can be applied to promote resilient conveyance projects.

Agenda Item 6 - Breakout Session 1

Working in a small group setting, participants will interact with one another to consider two questions on **Public Benefits.**

1. How important are partnerships in the projects you are considering? What are the partnerships that are needed to work at a watershed or basin scale?
2. What are the public benefits of conveyance projects that the state should prioritize for financing?

Staff or a facilitator will be assigned to your group to watch time and encourage discussion. About 15 minutes have been allotted to discussion. The small group should select a spokesperson to share their findings with all the participants.

Agenda Item 7 - Breakout Session 2

Working in a small group setting, participants will interact with one another to consider two questions on **Financing.**

1. What are the biggest challenges to financing conveyance projects? What role can the state play in overcoming these challenges?
2. What funding mechanisms will best advance resilient water conveyance that could help meet needs in a changing climate?

Staff or a facilitator will be assigned to your group to watch time and encourage discussion. About 15 minutes have been allotted to discussion. The small group should select a spokesperson to share their findings with all the participants.

Agenda Item 8 – Report Outs

The moderator will provide instructions on reporting out.

Notes:

Agenda Items - 9 & 10

The team will describe next steps and the session will be adjourned.

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