

September 9, 2019

comment letter submitted via: input@waterresilience.ca.gov

Ms. Nancy Vogel
Director of the Governor's Water Portfolio Program
California Natural Resources Agency
1416 Ninth Street, Suite 1311
Sacramento, CA 95814

RE: Association of California Water Agencies' Recommendations for the Water Resilience Portfolio

Dear Ms. Vogel,

The Association of California Water Agencies (ACWA) appreciates the opportunity to provide recommendations for Governor Newsom's Water Resilience Portfolio Initiative. ACWA represents more than 450 public water agencies that collectively deliver approximately 90 percent of the water in California for domestic, agricultural, and industrial uses. ACWA supports Governor Newsom's call for a water resilience portfolio to meet the needs of California's communities, economy and the environment through the 21st Century, as well as the State's emphasis that achieving this goal requires partnership with diverse stakeholders, including water agencies.

With this letter are two attachments with ACWA's recommendations for implementing a water resilience portfolio. The first is an overview of the recommendations. The second attachment presents the recommendations in detail with context and emphasis. These recommendations take into account the varied nature of local water supplies and the wide range of water challenges that California faces, such as rapidly changing patterns in hydrology, water demands, and sea level, and provides actions to meet the broad needs through the 21st Century.

We appreciate the Newsom Administration's considerations of these recommendations for the Water Resilience Portfolio. We stand ready to work with the Newsom Administration to pursue a collaborative and comprehensive approach to water resilience. Please do not hesitate to contact me at davee@acwa.com or (916) 441-4545 if you have any questions regarding ACWA's recommendations.

Sincerely,



Dave Eggerton
Executive Director

Attachments

cc: The Honorable Wade Crowfoot, Secretary, California Natural Resources Agency
 The Honorable Jared Blumenfeld, Secretary, California Environmental Protection Agency
 The Honorable Karen Ross, Secretary, California Department of Food and Agriculture
 Ms. Jenny Moffit, Undersecretary, California Department of Food and Agriculture
 The Honorable Joaquin Esquivel, Chair, State Water Resources Control Board
 The Honorable Karla Nemeth, Director, California Department of Water Resources
 Ms. Eileen Sobeck, Executive Director, State Water Resources Control Board
 Ms. Cindy Messer, Chief Deputy Director, California Department of Water Resources
 Mr. Jonathan Bishop, Chief Deputy Director, State Water Resources Control Board
 Mr. Eric Oppenheimer, Chief Deputy Director, State Water Resources Control Board
 Mr. Erik Ekdahl, Deputy Director of the Division of Water Rights, State Water Resources
 Control Board
 Mr. Darrin Polhemus, Deputy Director of the Division of Drinking Water, State Water
 Resources Control Board
 Ms. Cindy Tuck, Deputy Executive Director for Government Relations, Association of
 California Water Agencies



OVERVIEW OF THE ASSOCIATION OF CALIFORNIA WATER AGENCIES'

Recommendations to the Newsom Administration for the Water Resilience Portfolio

The Association of California Water Agencies (ACWA) supports Governor Newsom's call for a water resilience portfolio that meets the needs of California's communities, economy and the environment through the 21st Century.

Local water agencies serve as a key partner to the State in managing the wide range of water challenges California faces. Local water agencies are a driving force behind countless new and innovative projects that are helping communities be drought resilient and better prepare for and respond to the effects of climate change, such as flood and fires. As extreme conditions continue to threaten California's headwaters and watersheds, ACWA and its partners are providing leadership on policies that increase the pace and scale of headwater and forest management and improve ecosystem functions.

ACWA is proposing a comprehensive set of recommendations for inclusion in the Water Resilience Portfolio. These recommendations take into account the rapidly changing patterns in hydrology, water demands, and sea level to meet broad needs through the 21st Century.

GUIDING PRINCIPLES

ACWA Proposes four Guiding Principles for the Water Resilience Portfolio.

LOCAL AND REGIONAL WATER MANAGEMENT

The actions necessary for 21st Century water resiliency will vary throughout California depending on local and regional supplies and conditions. That is why local and regional management is key to a water resilience future. Local water managers need the State's assistance to prepare for resilience.

"ALL OF THE ABOVE" APPROACH

A water resilience portfolio overcomes uncertainty by recognizing that conveyance, above and below ground storage, water reuse, desalination, water use efficiency, flood risk management, stormwater capture, levee improvement, headwaters management, regional coordination, ecosystem restoration and safe drinking water **all** need to be part of the comprehensive approaches that California pursues.

PARTNERSHIP/ COLLABORATION

The Administration should partner with local water agencies in State water policy discussions to ensure the best opportunity for success on the ground. Where the State proposes new requirements related to water management, processes should be collaborative and provide reasonable time for early and constructive input.

IMPLEMENTATION OF RECENTLY ENACTED LAWS

In some policy areas that are important to water resilience, the State has recently enacted landmark new laws. In those areas – safe drinking water, SGMA and water use efficiency – the focus should be on implementation, rather than new policy development. For other areas – groundwater replenishment and mitigation of the socioeconomic impacts of SGMA – additional policy work is needed.

SPECIFIC RECOMMENDATIONS

The following are ACWA's specific recommendations for the Water Resilience Portfolio, organized into five groupings:

ACTIONS FOR WATER SUPPLY RESILIENCE

- ACWA recommends a comprehensive set of actions that are intended to advance existing supplies and tap into underutilized supplies, including:
 1. **Delta Conveyance Solution**
 2. **Integrated Above-Ground and Below-Ground Storage and Conveyance**
 3. **Groundwater Replenishment**
 4. **Groundwater Management**
 5. **Water Reuse**
 6. **Desalination**
 7. **Water Use Efficiency**
 8. **Flood Risk Management**
 9. **Headwater Management**
 10. **Regional Water Resilience**

ACTIONS FOR ECOSYSTEM RESILIENCE

- Invest in **ecosystems** to improve functionality through strong leadership and a clear vision, creative and flexible solutions, and support for multi-benefit projects.
- Continue to support the **Voluntary Agreements** as the preferred alternative for implementing an update to the State's Bay-Delta Water Quality Control Plan.
- Develop a definitive, long-term plan for the **Salton Sea** and identify funding sources.

ACTIONS FOR COMMUNITY (SAFE DRINKING WATER) RESILIENCE

- Ensure the effective and efficient implementation of **The Safe and Affordable Drinking Water Fund**.
- Continue stakeholder process for the **Low-Income Water Rate Assistance Plan** development.
- Develop **safe drinking water decisions** based on sound science and in a transparent manner, so as to not work against affordability.
- Call for inclusion of **compliance schedules** in the adoption of maximum contaminant level regulations.
- Provide more flexibility for the use of **point-of-use and point-of-entry** drinking water treatment systems.

ACTIONS FOR SCIENTIFIC METHODS TO SUPPORT RESILIENCE

- Invest in the following modern tools that support resilience: atmospheric rivers research, runoff forecast estimates, new stream gage networks and climate change planning assistance.

STATE INVESTMENT IN WATER RESILIENCE INFRASTRUCTURE

- Local water agencies already fund about 85 percent of water-related investments in California. The Water Resilience Portfolio should call for **state investments** in projects and programs that have broad benefit through funding mechanism such as General Obligation bonds, low-cost financing and lease revenue bonds.
- The State should partner with local water agencies in pursuing **federal funds** for water resilience.

TABLE OF CONTENTS

1. INTRODUCTION	3
2. WATER RESILIENCE	3
3. GUIDING PRINCIPLES	4
A. LOCAL AND REGIONAL WATER MANAGEMENT	5
B. “ALL OF THE ABOVE” APPROACH.....	5
C. PARTNERSHIP/COLLABORATION.....	5
D. IMPLEMENTATION OF RECENTLY ENACTED LAWS.....	6
4. SPECIFIC RECOMMENDATIONS	6
A. ACTIONS FOR WATER SUPPLY RESILIENCE	6
1. Delta Conveyance Solutions.....	6
2. Integrate Above-ground and Below-ground Storage, Conveyance and Groundwater Replenishment	7
a. Additional Above-ground and Below-ground Storage.....	7
1. Conjunctive Use	7
b. Integration	7
c. Funding Priority.....	8
d. Coordination in Operations and Investments in Infrastructure	8
e. Water Storage Investment Program (Proposition 1) Implementation	9
3. Groundwater Replenishment Expedited Approval Processes	9
4. Groundwater Management	10
a. Planning & Implementation (Sustainable Groundwater Management Act (SGMA) Implementation)	10
b. Mitigation of Impacts of SGMA on Regional Economies	10
1. Innovative Solutions through Collaborative Partnerships.....	10
5. Water Reuse.....	11
a. Recycled Water Supply Quantification and Development.....	11
b. Non-potable Recycled Water Use Regulatory Actions	12
c. Potable Reuse.....	12
1. Raw Water Augmentation Regulations	13
2. Timeline for Treated Drinking Water Augmentation Regulations	13
3. Development of Regulations for Alternative Treatment Trains for Potable Reuse	13
d. Regional Brine Disposal Solutions to Promote Reuse.....	14
e. Incentives for Innovation in Water and Wastewater Treatment and Recycled Water Infrastructure and Supply Exchanges.....	14
6. Desalination.....	15
7. Water Use Efficiency	16
a. Implementation of Recently Enacted Water Use Efficiency Laws	16
b. Opportunities for Collaborative Partnerships.....	16
c. Agricultural Water Use Efficiency.....	16
d. Urban Water Use Efficiency	17
8. Flood Risk Management.....	17
a. Balanced Approach	18
b. Streamline and Consolidate Permitting.....	18
c. Proper Staffing of Permitting Agencies	19
d. Financing of Long-Term Mitigation.....	19

e. Multi-Benefit Projects	20
f. Central Valley State Plan of Flood Protection Implementation.....	20
g. State Flood Subventions Program.....	21
9. Headwaters Management.....	21
a. Management	22
b. Board of Forestry – Water Resources Expertise	22
10. Regional Water Resilience.....	23
a. Support for Regional Efforts	23
b. IRWM Successes and DAC/Small System Support	24
B. ACTIONS FOR ECOSYSTEM RESILIENCE.....	24
1. Ecosystems – General	24
2. Voluntary Agreements	25
3. Salton Sea	25
C. ACTIONS FOR COMMUNITY (SAFE DRINKING WATER) RESILIENCE.....	26
1. Human Right to Water	26
2. Water Affordability	26
3. Consistent Action and Communication relative to What Water is “Safe”	27
4. Inclusion of Compliance Schedules in MCL Regulations	27
5. Need for Flexibility in the Use of Point of Use/Point of Entry Water Treatment Timeframes	27
D. ACTIONS FOR SCIENTIFIC METHODS TO SUPPORT RESILIENCE.....	28
1. Atmospheric Rivers Research.....	28
2. Runoff Forecast Estimate Improvements	28
3. Stream Gage Network Improvements	29
4. Climate Change Planning Assistance.....	29
E. INVESTMENT IN WATER RESILIENCE INFRASTRUCTURE.....	30
1. Other Factors Driving the Need for State Investment	30
2. State Funding	30
3. Infrastructure Categories Needing State Investment	31
4. A New General Obligation (G.O.) Water Bond.....	31
5. Federal Funding.....	32
6. Low-Cost Financing for Water Infrastructure Projects	32
7. Additional Funding for the Clean Water State Revolving Fund (CWSRF) through the Sale of Lease Revenue Bonds	32
8. Financing for Headwaters	32
5. OTHER CONSIDERATIONS	33
6. CLOSING	34

ASSOCIATION OF CALIFORNIA WATER AGENCIES

RECOMMENDATIONS TO THE NEWSOM ADMINISTRATION FOR THE WATER RESILIENCE PORTFOLIO

September 9, 2019

1. INTRODUCTION

The Association of California Water Agencies (ACWA) appreciates the Newsom Administration's consideration of these recommendations for the Water Resilience Portfolio (Executive Order N-10-19). We look forward to collaboration in these areas.

2. WATER RESILIENCE

A water resilience portfolio for California is best defined as complementary projects, programs, and strategies that effectively align water management, infrastructure and the environment to ensure that all users of water in the State – the public, agriculture, business and the natural environment – are provided secure sources of water that are able to adapt to the short- and long-term effects of a changing climate. Such a portfolio must recognize the vast differences across the State in water resource and watershed attributes and incorporate regionally tailored and locally managed strategies that enhance effective water use in California. Anticipated climate change impacts, including rapidly changing patterns in hydrology and sea level, and changing water demands, require a water resilience portfolio to follow an “all of the above” approach.

To be successful, a foundational element of the Portfolio must include watershed-scale management of natural headwaters, meadows, wetlands, tributaries and rivers to improve the ecological health of California forests and waterways and provide adequate water for listed species, the public and agricultural and business uses. The Portfolio must also include improved and integrated management of water storage, conveyance and flood risk management infrastructure, informed by leading-edge scientific research and modeling of hydrologic events and environmental conditions. The State continues to implement the human right to water, which is an important part of water resilience. ACWA will continue to work with the Administration on these efforts.

Achieving climate-driven resilience will also necessitate a portfolio of major storage and conveyance infrastructure investments, including improved Delta conveyance capacity with sea level intrusion protection to ensure the ability to move and increase the ability to capture water throughout the State during short hydrologic windows. Enhancement of the State's water infrastructure ensures the ability to implement complementary resilience strategies such as groundwater replenishment, and ultimately better wet- and dry-period conjunctive use of the State's groundwater basins and surface water reservoirs.

Water resilience overcomes uncertainties by using a diverse array of water supply categories and strategies. This includes the creation of new water supplies from currently underutilized sources combined with urban and agricultural water use efficiency that is backstopped by emergency conservation strategies. On the supply side, storm water capture, distributed groundwater banks, desalination and impaired groundwater treatment provide important supply resilience and improved water quality. Similarly, advancing water recycling for agricultural and municipal irrigation, industrial, on-site reuse and potable reuse for groundwater replenishment, reservoir augmentation and drinking water augmentation creates new, climate-independent supplies that reduce reliance on traditional surface or groundwater sources.

Full water resilience for California will only be achieved by State agencies working in partnership with local water agencies. The needed partnership must include collaboration on flexible regulatory approaches that break down institutional barriers, use the best science to manage water, protect public health and the environment while facilitating supply development, innovation and responsiveness to changing climate conditions. These approaches will allow prudent investment of limited State and local financial resources to address current and anticipated water-related challenges and achieve long-term water resilience.

Finally, State and local agencies should also partner in interactions with Congress and the relevant federal agencies with regard to water resilience, needed federal financial assistance and 21st century operational flexibility.

3. GUIDING PRINCIPLES

ACWA recommends four Guiding Principles for implementation of the Water Resilience Portfolio. ACWA is also providing Specific Recommendations in the next section as to how the State can assist local and regional water managers.

A. LOCAL AND REGIONAL WATER MANAGEMENT

The actions that are needed for 21st Century water resilience will vary throughout California depending on local and regional supplies and conditions. This is why local and regional water management, which is built on local knowledge of water supplies and conditions, is key to a water resilient future. Local water managers need the State's assistance to prepare for water resilience through the remainder of the 21st Century.

B. "ALL OF THE ABOVE" APPROACH

As noted above, rapidly changing patterns in hydrology, water demands, and sea level in California dictate that a water resilience portfolio, by definition, embody an **"all of the above" approach**. Conveyance, above- and below-ground storage, water reuse, desalination, water use efficiency, flood risk management, stormwater capture, levee improvement, headwaters, regional coordination, ecosystem restoration and safe drinking water all need to be a part of the comprehensive approaches that California pursues. ACWA suggests actions in these and other areas in the Specific Recommendations section which follows the Guiding Principles.

C. PARTNERSHIP/COLLABORATION

Building on the positive and forward-looking tone set in Executive Order N-10-19, one of the most effective approaches that the Newsom Administration can take immediately is to **partner with local water agencies** in State water policy discussions. This type of collaboration can help ensure that policies have the best opportunity for success on the ground and will reduce the risk of unintended consequences.

Where the State proposes new requirements related to water management, the process should be collaborative and include a reasonable time for stakeholders to provide early input on concepts and provide constructive input during rulemakings. One lesson learned from policy work during the recent drought was that the development of requirements through Executive Orders and emergency regulations, while sometimes necessary, can result in unintended consequences that are counterproductive.

The State should assign a leader or team in the California Natural Resources Agency to lead State agencies in this effort. This position could work to eliminate inefficiencies and achieve regulatory alignment across agencies. The position could also act as a resource to resolve recurring issues. This effort should target improvement to both State intra/inter agency

interactions as well as regional partnerships with the goal of improving efficiency and effectiveness of the State as a whole.

In addition to collaborative discussion on State water policy, the State and local water agencies should look for opportunities for staff exchanges and tours to inform policy work.

Finally, ACWA suggests that the State and public water agencies partner in seeking federal funding to support and leverage State and local water resilience efforts.

D. IMPLEMENTATION OF RECENTLY ENACTED LAWS

In some areas that are important to water resilience, the State has recently enacted landmark new laws. In these areas, the focus should be on **implementation of the recently enacted laws as opposed to on additional policy development**. Topics where the focus should be on implementation include: 1) safe drinking water (SB 200, Monning, 2019), 2) sustainable ground water management (Sustainable Groundwater Management Act (SGMA), 2014), and 3) water use efficiency and drought preparedness (AB 1668, Friedman, 2018 and SB 606, Hertzberg, 2018). For groundwater management, additional policy work is needed to encourage groundwater replenishment. Additional policy work is also needed to mitigate the socio economic impacts of SGMA implementation. Please see the Specific Recommendations.

4. SPECIFIC RECOMMENDATIONS

The following are ACWA's Specific Recommendations for the Water Resilience Portfolio, organized in five groupings:

- A) Actions for Water Supply Resilience;
- B) Actions for Ecosystem Resilience;
- C) Actions for Community (Safe Drinking Water) Resilience;
- D) Actions for Scientific Methods to Support Resilience; and
- E) Investment in Water Resilience Infrastructure.

A. ACTIONS FOR WATER SUPPLY RESILIENCE

1. Delta Conveyance Solutions

ACWA supports the implementation of a long-term Delta conveyance solution that improves habitat and reduces impacts to endangered, threatened or other native fish species, while ensuring adequate water supplies and water supply reliability. A solution should reduce

vulnerability to floods and seismic events and should mitigate sea-level rise. A solution should be economically viable and provide sufficient conveyance capacity for the delivery of water supplies to contractors who choose to participate, the voluntary transfer and exchange of supplies across the Delta, and the capture of excess flows to help replenish declining groundwater basins and maintain storage reserves for use in dry periods. Finally, a Delta conveyance solution should be funded appropriately by its beneficiaries.

2. Integrate Above-ground and Below-ground Storage, Conveyance and Groundwater Replenishment

a. Additional Above-ground and Below-ground Storage

To achieve climate-driven resilience, additional above-ground and below-ground water storage is needed (in addition to projects that are in the Water Storage Investment Program process at the California Water Commission). Climate change is expected to reduce snowpack, which is California's largest reservoir. The foreseen reduction in snowpack (i.e., natural water storage) and other changes in precipitation (resulting in both wet and dry years) increases the need for storage north and south of the Delta to improve the Delta ecosystem (temperature and flow), improve flood control (more capacity to capture increased storm flows), and improve water supply reliability.

1. Conjunctive Use

Water resilience in the future will require increased conjunctive use of surface water and groundwater. Additional surface storage will also enable water to be made available for groundwater replenishment and to reduce reliance on groundwater. Additional above-ground storage provides for slower releases of water, which can then percolate into groundwater basins. Without this integrated storage approach, the ability to increase groundwater replenishment is limited, because water managers cannot physically get water into groundwater basins fast enough to secure supplies from storm events.

b. Integration

Conveyance of water in California is integrally linked to water storage in California. With the foreseen changes in precipitation because of climate change, moving large amounts of water during a storm event will require expansions and upgrades to existing conveyance facilities; Moving water that may be available from new locations will require new conveyance facilities of different sizes.

Further, groundwater replenishment requires adequate conveyance facilities and infrastructure to convey large volumes of water over short periods. Several critical facilities, including the California Aqueduct, the Delta-Mendota Canal and the Friant-Kern Canal, have lost substantial conveyance capacity, which limits groundwater replenishment opportunities.

One example of an infrastructure project that would help achieve State policies or goals is the repair of one section of the 152-mile Friant-Kern Canal on the eastside of the San Joaquin Valley. The canal, which has developed a severe conveyance pinch point due to regional land subsidence, is a critical facility for delivering hundreds of thousands of acres of water for groundwater recharge each year to California's most overdrafted groundwater basins. The pinch point has reduced its capacity to deliver recharge water to the south San Joaquin Valley by as much as 60 percent, resulting in a loss of supply between 100,000 and 300,000 acre-feet per year overall. The long-term effects of this problem will limit the region's ability to help achieve two major State priorities: achieving a clean and reliable drinking water supply for the dozens of small rural communities that rely on groundwater supported by the canal, and complying with SGMA in some of California's highest-priority basins.

Integrated storage, conveyance and groundwater replenishment can also have flood risk management benefits. For more information on this topic, please see ACWA's 2017 study entitled *Storage Integration Study*, which is available at: <https://www.acwa.com/wp-content/uploads/2017/06/2017-06-05-ACWA-Integrated-Storage-Final-Report.pdf>.

c. Funding Priority

The State should prioritize funding of storage and conveyance facilities and infrastructure that will improve and enhance groundwater replenishment activities for multiple users and regions. Prioritization of funding for additional and improved storage and conveyance would provide the needed investment to plan and more flexibly adapt to conjunctively managing water in anticipation of climate change impacts such as reduced snowpack. This funding is also critical for successful implementation of SGMA.

d. Coordination in Operations and Investments in Infrastructure

ACWA supports improved coordination among local, State, and federal partners to invest in, operate, and manage above-ground and below-ground water storage and conveyance facilities. ACWA recognizes the important role of the State in creating an integrated system that can meet the water needs for the public, agriculture, business and the environment.

e. Water Storage Investment Program (Proposition 1) Implementation

With California voters' approval of Proposition 1 in 2014 and the corresponding funding for above-ground and below-ground storage through the Water Storage Investment Program, State agency resources need to be prioritized in alignment to show meaningful progress toward the early development of additional water storage in California. Such action will implement the vote of the public in 2014. This is necessary so that future funding requests may be favorably received by the voters. ACWA supports efforts to coordinate among various State agencies to advance the project approval processes.

3. Groundwater Replenishment Expedited Approval Processes

Groundwater replenishment is dependent on the ability to capture and store high-flow water supplies when available. This effort is often hindered by a regulatory approval process that prevents nimble management of this critical supply. We recommend the development and implementation of an expedited approval process that allows for exchanges and transfers during certain hydrologic conditions to be approved under an expedited approval process.

This expedited process could expand on current efforts by the State Water Resources Control Board (State Water Board) to streamline the permitting process for diversions of surface water to recharge groundwater. This expedited process would only be available for diversions during high flow events and only when the diversions do not cause an impact to the environment or downstream water users.

The implementation and expansion of this streamlined permitting process and the development of other streamlined processes are integral to the Portfolio's success. For example, there could be a programmatic permit/approval for the movement/transfer of water between contractors in high flow years. A programmatic permit would allow the State to more readily react and take advantage of storm events. ACWA recommends that the Administration, ACWA and other stakeholders work collaboratively on such a programmatic permit/approval.

Finally, the State, in partnership with public water agencies, should advocate that the Bureau of Reclamation accelerate its acknowledgment of groundwater banks.

4. Groundwater Management

a. Planning & Implementation (Sustainable Groundwater Management Act (SGMA) Implementation)

ACWA supports the implementation of SGMA by local groundwater sustainability agencies (GSAs) through the development and implementation of groundwater sustainability plans (GSPs) and implementation of approved alternative plans. SGMA is a workable pathway forward that is appropriately based on local management of groundwater. There are high stakes here, and many of ACWA's recommendations for water resilience would help implementation be successful.

b. Mitigation of Impacts of SGMA on Regional Economies

While the goals of SGMA are consistent with building a resilient water future, the law's implementation will be a difficult transition for many communities in the State. The economic impacts to California of SGMA implementation will be substantial. This is true not only for the San Joaquin Valley but also for adjudicated areas. Many communities, households, and businesses rely on groundwater resources as a primary source of supply or as critical secondary source during dry years. If SGMA implementation results in significant reductions in the available water for agricultural use, particularly during dry years, there will inevitably be a loss to California's agricultural footprint, which will negatively affect local communities. For example, Kern County has estimated the potential economic loss to be \$4.2 billion per year if restrictions to agricultural groundwater pumping occur. Regional efforts to understand and mitigate the socioeconomic impacts, such as the Water Blueprint for the San Joaquin Valley, are important. The State should prioritize water infrastructure investments (e.g., the Delta conveyance solution) and regulatory process improvements (see below regarding groundwater replenishment) that will help mitigate such economic impacts by increasing the movement of available surface water through the State.

1. Innovative Solutions through Collaborative Partnerships

Where there are opportunities, collaborative partnerships should be formed to help facilitate the development of innovative solutions. For example, The Nature Conservancy is working with GSAs to develop algorithms to facilitate water market trading within basins among willing users. The State should incentivize these types of collaborative partnerships with funding at the State level and with policy and regulatory strategies that promote investment from other sources.

5. Water Reuse

Recycled water is a unique multi-benefit source of supply that is particularly resilient under changing hydrologic conditions. This resiliency is due in large part to its hydrologically independent nature. Moreover, recycled water projects are among the highest forms of water use efficiency because the same supply of water can be reused in some cases, multiple times. By safely and effectively reusing water for potable and non-potable purposes, many areas of the State are able to reduce existing and future reliance on increasingly variable imported water sources.

The diversity of reuse opportunities accommodates flexibility to determine the right source for the right use. Many agencies have developed innovative solutions to capture this locally controlled, reliable, drought-proof water supply including Orange County's potable reuse project, the Groundwater Replenishment System (GWRS), and the Eastern Municipal Water District's and City of San Francisco's non-potable water reuse programs.

Innovation in reuse projects is continuing with the first significant potable reuse reservoir augmentation project through the City of San Diego's implementation of the Pure Water San Diego Program. The first phase of the program, the North City Pure Water Project, has been designed to augment the Miramar Reservoir, which is a source of domestic drinking water supply. Purified water will be produced at the future North City Pure Water Facility and will be conveyed to the Miramar Reservoir where it will blend with local runoff and imported water.

ACWA's specific recommendations for water reuse take into account the successes of these and other reuse projects and are consistent with the California Water Reuse Action Plan (2019). The intent behind that plan is to advance water reuse in California over the next 30 years to help address the State's significant supply challenges as part of a comprehensive water resilience portfolio.

a. Recycled Water Supply Quantification and Development

The State should accurately update recycled water use attainability levels based upon the best available data and use this information to specifically quantify recycled water development potential in the State and establish appropriate Statewide recycled water use goals. The revised goals should incorporate estimates for Raw Water Augmentation and Treated Drinking Water Augmentation projects (once regulations are developed), which are critical for the State to meet its full water recycling potential.

b. Non-potable Recycled Water Use Regulatory Actions

Non-potable recycled water use or “purple pipe” projects have effectively and safely served municipal and agricultural irrigation, industrial and environmental uses for decades. Such projects have conserved billions of gallons of potable water, are broadly accepted by the public and have a track record of protecting public health and the environment. In many communities, these projects are ubiquitous and provide the right water for the right use. Using a stakeholder process, the State should update the existing non-potable recycled water regulations (California Code of Regulations, Title 22, Division 4, Chapter 3) to eliminate outdated and overly prescriptive requirements that are not needed for public health or environmental health protection.

Similarly, clear regulations for on-site non-potable reuse is another important area where the State needs to place effort to provide regulatory certainty to project proponents. Consistent with the requirements of SB 966 (Wiener 2018), State Water Board should continue efforts and complete by 2022 the development and adoption of regulations for risk-based water quality standards for the on-site treatment and reuse of water sources in multifamily residential, commercial and mixed-use buildings.

For many agencies, State approval of a wastewater change petition is necessary to redirect treated effluent currently being discharged into waterways for use in a potable or non-potable reuse project. Over the last five years, the process for obtaining a wastewater change petition from the State Water Board has increasingly stalled or halted the permit process for many of these important recycled water projects. The State should work to establish clear interagency standards between the State Water Board and the California Department of Fish and Wildlife (CDFW) to expeditiously process project applications and promote inland recycled water projects — consistent with Statewide recycling goals — while protecting the environment, groundwater aquifers and downstream water users.

c. Potable Reuse

Both Orange County’s Groundwater Replenishment System (GWRS) and the City of San Diego’s Pure Water programs are examples of leading-edge projects that preceded established potable reuse regulations for groundwater recharge and reservoir augmentation, respectively. Without established State regulations, the next frontier in advancing water reuse — namely raw water and treated drinking water augmentation — will not be viable for agencies to pursue due to uncertainties associated with project costs, public acceptance and political implementation risk.

As such, the State should pursue several regulatory actions to help advance these critically important water recycling opportunities.

1. Raw Water Augmentation Regulations

The State Water Board should initiate the development of Raw Water Augmentation regulations now to meet the legislative deadline established in AB 574 (Quirk 2017). Raw Water Augmentation is the introduction of advance treated highly purified recycled water into a system of pipelines or aqueducts that delivers raw water to a drinking water treatment plant. This next level of permitted recycled water use is considered essential to maximizing recycled water use potential and meeting the State's water recycling goal.

2. Timeline for Treated Drinking Water Augmentation Regulations

Treated Drinking Water Augmentation would provide for the planned placement of advanced treated, highly purified recycled water directly into a public water distribution system. Potable reuse research is underway that should clarify what treatment trains, monitoring requirements and additional safety procedures may be necessary to support the State Water Board's development of Treated Drinking Water Augmentation regulations. The State Water Board should assess this research and create a timeline and needs assessment for the development of regulations, and confirm alignment with the Safe Drinking Water Act.

3. Development of Regulations for Alternative Treatment Trains for Potable Reuse

Current California regulations are technology-based, requiring reverse osmosis (RO) as part of the treatment train for most types of potable reuse and lacking validation protocol for other alternatives and their potential applications for potable reuse. Because of the high cost of management and disposal of the RO concentrate waste stream (e.g. brine), potable reuse has been largely limited to coastal communities with access to ocean discharge facilities for RO concentrate disposal. Other technologies and treatment trains may provide similar levels of public health protection and should be considered to allow communities, which lack ocean discharge facilities, to leverage potable reuse as an option in water supply portfolios. The State Water Board should: 1) update its 2014 Alternative Technology Report; 2) permit pilot projects with alternative treatment trains; and 3) update the potable reuse regulations to explicitly authorize these processes.

d. Regional Brine Disposal Solutions to Promote Reuse

Reuse projects that rely on the RO process must have a means to dispose of the brine concentrate waste stream. The lack of availability of an ocean outfall, or a regional brine conveyance facility connected to an ocean outfall, can result in an otherwise beneficial water project being infeasible. Eastern Municipal Water District and other Inland Empire and Orange County water agencies' leadership in recycling has been facilitated by their historic investment over four decades in a regional brine line, built and operated through a joint powers agency, the Santa Ana Watershed Project Authority. The State should offer incentives and regulatory support for regional efforts to develop and implement cross-jurisdictional brine conveyance and disposal facilities. The State should similarly support the research and development of cost-effective and commercially viable brine treatment and management technologies that maximize the recovery of recycled water from the brine stream and minimize liquid brine discharges.

e. Incentives for Innovation in Water and Wastewater Treatment and Recycled Water Infrastructure and Supply Exchanges

The cost of construction of new recycled water infrastructure and treatment facilities on an agency-by-agency basis can inhibit the full utilization of recycled water supplies. Orange County's Groundwater Replenishment System, being a joint project between the Orange County Sanitation District and the Orange County Water District, exemplifies how communities and the region can benefit from successful partnerships between public agencies. The State should provide funding and incentives for multi-agency coordination and infrastructure planning studies to optimize the development and use of recycled water infrastructure at a regional level, and integrate infrastructure where beneficial.

Similarly, the opportunity for shared or exchanged supplies between wastewater and water agencies represents a significant potential to cost-effectively ensure the full and effective utilization of available recycled water and other water supplies. Water supply constraints are both a regional and Statewide issue that typically extends beyond the boundaries of individual water and wastewater agencies. The State should encourage wastewater and water agencies to collaborate on innovative water exchanges – including recycled water – to help alleviate regional water supply shortages due to hydrologic variations or other conditions. These exchanges envision creative arrangements between multiple agencies in order to achieve multiple benefits, leverage existing infrastructure and optimally treat and transport water to end users.

6. Desalination

Ocean and brackish groundwater and surface water desalination currently could play an important role in a local community's water supply planning process to enhance California's drought resilience. Many communities in California have drinking water supply challenges and have gone through extensive planning processes that include conservation, recycled water use and other supply research with desalination identified as a key element to their future water supply portfolios. In some cases, such as in implementation of SGMA, desalination can be a useful tool in implementing State policies and providing local communities a much-needed drought-resilient water supply. The Portfolio should recognize and support these key water supply tools as part of an all-of-the-above strategy for water resilience.

The Claude "Bud" Lewis Carlsbad Desalination Plant is the largest, most-advanced seawater desalination plant in the nation, and a valuable piece of the State and local long-term water supply strategy. Water from the plant is locally controlled and drought-resilient – meeting nearly 10 percent of total water demands in San Diego County. The Carlsbad Desalination Plant is a key piece of the region's strategy to develop a "water resilience portfolio."

In many areas, brackish groundwater desalination and impaired groundwater treatment play an important multi-beneficial role of water supply and groundwater basin sustainability. This includes providing locally controlled, sustainable water supplies from sources impaired with salts and both natural and manmade contaminants while simultaneously using containment, extraction and treatment strategies to protect high-quality groundwater basins from intrusion of brackish groundwater water or contaminants.

An example of an effective brackish groundwater desalination is Eastern Municipal Water District's South Perris Basin desalination program. This project consists of a network of strategically placed wells in the Perris South Basin connected through a pipeline network to two reverse osmosis treatment plants that produce over eight million gallons of drinking water per day. The project also manages 25,000 tons of salt per year through a 70-mile brine line to the Pacific Ocean that was collaboratively constructed by a consortium of five agencies in the Santa Ana River watershed. The desalters prevent migration of brackish groundwater into adjacent high-quality groundwater basins while helping mitigate regional salinity accumulation in groundwater from the application of imported water. A third desalter in the Perris South Basin is currently under construction.

As highlighted above, including desalination in the Water Resilience Portfolio is consistent with existing State policy. California Water Code Section 12946 includes this legislative declaration:

“It is hereby declared that the people of the State have a primary interest in the development of economical saline water conversion processes which could eliminate the necessity for additional facilities to transport water over long distances, or supplement the services to be provided by such facilities, and provide a direct and easily managed water supply to assist in meeting the future water requirements of the State.”

7. Water Use Efficiency

a. Implementation of Recently Enacted Water Use Efficiency Laws

Water use efficiency is a key component to water resiliency and should be included in a balanced Water Resilience Portfolio. California enacted two comprehensive laws in 2018, SB 606 and AB 1668, addressing water use efficiency and drought planning. These recently enacted laws provide the statutory requirements for making water conservation a California way of life and for defining water use efficiency. It is important to note that water supply development is still needed if California is going to be water resilient.

b. Opportunities for Collaborative Partnerships

As agencies across the State move forward in improving water use efficiency, there may be multiple opportunities to foster collaboration. Public outreach campaigns and messaging across regions are potential areas of collaboration. The benefits of collaboration should be explored including benefitting from economies of scale, and the value of providing collective messaging.

c. Agricultural Water Use Efficiency

Meaningful implementation of the new water use efficiency laws for agriculture should consider the SGMA requirements that focus on a local water budget approach to sustainable groundwater management. It should also recognize that increased water use efficiency in production agriculture can also result in decreased groundwater replenishment, with little net benefit.

Additionally, data needs for water use in agriculture should be developed in partnership with local agencies. Resources from the State should be leveraged with local resources to increase the quantity, quality, and accessibility of data.

d. Urban Water Use Efficiency

Moving forward, State agencies are required to work with urban water agencies and other stakeholders to develop targets for water use efficiency for residential and landscape applications, and define best practices for commercial, industrial, and institutional (CII) customers. A key nuance in this area that relates to demand hardening is the fact water use efficiency programs, while robust, should reserve capacity for conservation when severe events occur.

To assist with implementation, emphasis should be placed over the next several years on creating reasonable efficiency targets using sound data and developing tools to assist with implementation. Technical assistance should be developed and made available, especially to suppliers with limited resources.

New urban water use efficiency tools have the potential to offer new opportunities but can also provide better insight into actions and programs completed in the past. New tools that need evaluation implementation include:

- AMI meters
- The use of drones and other innovative methods of completing large scale irrigation audits
- Emerging water loss control technology evaluations, cost-effectiveness studies

The State should provide flexible support to evaluate new technology to meet conservation goals. The State also needs to complete careful analysis as regulations and standards are set. This is especially important with new water loss standards and when developing performance measures for commercial, industrial and institutional water use.

The State should also evaluate the unintended consequences of water use reduction. Some actions can result in stranded assets, changes to wastewater treatment requirements, water-recycling impacts, limits on the ability to respond to emergency conditions, and rate impacts.

8. Flood Risk Management

Flood risk management is a key example of the need for integrated management strategies to achieve resiliency. As a driving force, climate change is exacerbating existing vulnerabilities to life and property in the State while also expanding opportunities, particularly for water supply. Traditional flood risk management infrastructure can be operated for multiple benefits by using

better science and technology. Multiple-benefit design, including the use of natural infrastructure where feasible, will increase resilience by reducing flood risk, optimizing water capture and storage, and allowing appropriate balancing between habitat and land use needs. Public funds will be used as efficiently as possible and are less likely to be lost in the friction of conflicts and disputes.

a. Balanced Approach

The State should seek a balanced approach to flood protection funding that prioritizes human life and safety and protects the economic centers of the State. While the State's liabilities should be taken into consideration, decisions on where to direct funding should be based on a broader consideration of the protection of life, property, and jobs. While the flood management needs of the Central Valley are well documented, significant, and should continue to be supported, other areas of the State, such as coastal watersheds, also have a large unmet need for investment. A 2017 Legislative Analyst's Office report, titled *Managing Floods in California*, indicated a flood exposure of over 4.5 million residents and \$404 billion in structural damage in coastal regions of the State. Additionally, the 2015 Bay Area Council Economic Institute report, *Surviving the Storm*, identified over 1 million Bay Area residents and nearly \$134 billion in structures and contents at risk of flooding. There is an expansive need for urban coastal watershed flood protection projects to help protect Bay Area, Southern California, and other coastal urban communities from the increased intensity of storms and rising sea levels brought on by climate change. The State should ensure an appropriate level of investment throughout California to address the flood risk in all communities.

b. Streamline and Consolidate Permitting

The 2016 California Water Action Plan called for the streamlining and consolidation of permitting for flood management projects. This area needs significant State action. The Newsom Administration should provide a complete top-down review of State, federal, and local permitting requirements for flood management projects and the ongoing operations and maintenance permits required to ensure these projects continue to provide the protection intended when first built. The State should consider opportunities to streamline permits between regulatory agencies. In some cases, flood management projects require permitting from seven different State and federal resources agencies that often have conflicting permit and mitigation requirements. This can result in separate mitigation measures from each agency.

The State should promote the use of general permits to address routine flood management infrastructure maintenance. Operations and maintenance permits should have a sufficient

term, up to 10 years, for an efficient process to protect the environment and the public from the devastating impacts of floods.

The State also should consider whether it is appropriate to require mitigation for maintenance of projects already mitigated when built. Permitting agencies are requiring mitigation for vegetation removal that was included as a permitted activity when the project was originally approved. Public funds spent to re-mitigate temporary impacts could otherwise be used for additional flood protection and stormwater management, including water quality measures such as keeping trash out of our waterways.

c. Proper Staffing of Permitting Agencies

Flood management agencies throughout the State work tirelessly to build projects that protect communities from the devastating danger of floods. A recurring problem in the delivery of projects is the failure to secure State permits in a timely fashion. A primary cause of delay is the inability of understaffed permitting agencies, often paying uncompetitive salaries, to provide timely review and processing of permit applications. Agencies commonly miss statutory deadlines, particularly for large projects where a one-year delay will cost millions, if not tens of millions, in scarce project funding. Delayed engagement by permitting agencies through the California Environmental Quality Act process fosters a less transparent negotiation between the project applicant and the permitting agency about significant impacts, mitigation, and changes to the project, all without the larger community of stakeholders. The Administration should ensure State permitting fees are established at a level to properly fund State permitting agencies to deliver projects in a timely manner.

d. Financing of Long-Term Mitigation

The State should promulgate policy that recognizes the unique role of local public agencies as stewards of public funding. The State should take into account the creditworthiness of local agencies. Financing long-term mitigation for flood management projects should reflect local conditions – both on the ground and in the pocketbook. A suite of financing options, such as contracts or endowments, can more appropriately address environmental considerations while also better allocating public funding based on public need. Set-aside endowments should be reserved for public agencies that fail to honor financial commitments for mitigations or for agencies with a history of not honoring their financial commitments. Greater flexibility in financing long-term mitigation will enhance local flood protection efforts.

e. Multi-Benefit Projects

The State should financially support multiple-benefit, cost-shared flood protection and climatic resiliency projects, such as Yuba Water Agency's planned Secondary Spillway and the Santa Clara Valley Water District's South San Francisco Bay Shoreline Project. The State should work with local flood management agencies on State cost-share options for projects that will improve public safety and provide for a more holistic management of water supplies. The multi-benefit approach must be balanced to not exclude State funding for single purpose flood projects, improvements, or critical repairs that provide significant flood protection benefits.

f. Central Valley State Plan of Flood Protection Implementation

The State should continue to implement the Central Valley State Plan of Flood Protection (the Plan), last updated in 2017. The Plan proposes a broad portfolio of measures to reduce flood risk to lives and property and focuses investments in urban areas and small communities where flood risk is higher. The emphasis on flood risk reduction is an effective approach for building resiliency against climate change because it focuses on reducing the consequences of inevitable flood events rather than focusing only on flood control. The Plan describes a broad array of flood risk reduction measures including levee reinforcement, floodway expansion, reservoir reoperation, flood insurance, building codes, emergency response, and land use planning to limit new development in floodplains. Specific actions should include:

- 1) Implementation should continue to support and leverage local partnerships and local project delivery.
- 2) The small community 100-year flood protection goal that the Plan references (often applying to disadvantaged communities) is currently only funded for feasibility and will soon require significant implementation dollars.
- 3) Flood system deferred maintenance should continue to be a priority and the State should coordinate local, State and federal funding sources to ensure that long-term funding is available and sustainable for operation, maintenance, repair, replacement, and rehabilitation.
- 4) There is a need for improved leadership coordination among partner agencies and improved partnerships with ecosystem partners. The State should work to strengthen relationships and build trust between federal, local, tribal, public-private and ecosystem partners and enable partnership-building forums.

g. State Flood Subventions Program

Historically, the State would fund flood subventions with an annual budget appropriation. In recent decades, that funding has become sporadic, usually only available through voter approved bonds. Projected needs will exceed currently available funding in approximately 3 years, with several high-cost flood management projects likely to receive federal approval soon. The State should have a more predictable process of appropriation for flood management.

9. Headwaters Management

Headwaters — from the Cascades to the Sierra Nevada to the coastal ranges and mountain foothills — significantly contribute to California’s water quality and water supply reliability. However, variables such as climate change, increasing frequency and severity of wildfires, changes in land use, groundwater overdraft and reduced snowpack are now upon us. Immediate action is needed to adapt to these changes to reduce the existential threats to California’s headwaters and the communities within them that depend on them, and create healthy, resilient forests. By improving traditional management concepts and implementing a more integrated systems and multi-benefit approach, coupled with increasing the pace and scale of on-the-ground projects, California’s headwaters can provide greater and longer-lasting security and benefits to the State’s water system. Examples of successful projects that can be replicated or built upon include the Yuba and French Meadows forest restoration projects, both in the Sierra Nevada Mountains with water agency influence.

The Yuba Project consists of a variety of forest treatments including mechanical and hand thinning, pile and prescribed fire, meadow enhancement and road rehabilitation on 15,000 acres, with a goal of restoring the forest to a more natural pre-fire-exclusion condition. The project is expected to provide additional runoff through a return to natural rates of evapotranspiration and infiltration. Success of the project relies upon the financing mechanism and broad collaboration. The project is the first of its kind to use the Forest Resilience Bond (FRB) developed by Blue Forest Conservation. The FRB uses private capital to increase the pace and scale of forestry work on National Forest lands, with beneficiaries paying off the initial investment over a period of time. Collaborators include the U.S. Forest Service, Yuba Water Agency, Sierra Nevada Conservancy, National Forest Foundation, Gordon and Betty Moore Foundation, World Resources Institute, The Rockefeller Foundation, Sierra Nevada Research Institute, Natural Capital and Water in the West at Stanford, and others. The project’s initial success has already led to planning for expansion to a much larger area.

The French Meadows Project is a 28,000 acre, all-lands approach to restore forest health and reduce the risk of high-severity fire in the headwaters of the Middle Fork American River, a critical municipal watershed located on the Tahoe National Forest. Forest treatments include mechanical and hand thinning, mastication, reforestation, aspen and meadow restoration, and removal of biomass to be used for renewable energy. The project is a collaboration between diverse partners including, the U.S. Forest Service, Placer County Water Agency, The Nature Conservancy, Sierra Nevada Research Institute and UC Merced. The project relies on a wide variety of funding including federal, State, local, and private sources, including significant investment from downstream water beneficiaries like the water utility and private beverage companies. Unique aspects of this project include use of a Master Stewardship Agreement with the Forest Service and research to better understand and quantify the Project's potential forest health and water supply benefits.

To help achieve the desired outcomes, ACWA makes the following policy and management recommendations.

a. Management

The State should continue to utilize the Governor's Forest Management Task Force to effectively organize actions across State agencies and maintain close working relationships with local and federal governments and non-governmental stakeholders. The Task Force should assess the State of current research on headwaters and headwaters management to determine and fill-in gaps; review agency policies and procedures for opportunities to streamline regulations; continue to develop and implement a set of clearly defined multi-benefit actions to improve headwaters resiliency; eliminate regulatory obstacles that hold back activities to reduce greenhouse gas (GHG) emissions and enhance forest carbon storage. The Task Force should annually report to the Governor and to the Secretary of Natural Resources.

b. Board of Forestry – Water Resources Expertise

The California State Legislature should amend section 731 of the Public Resources Code to include the requirement that one public member of the State Board of Forestry and Fire Protection have water resources management expertise when they are appointed. The revised structure would include five members from the general public (two of which have water resources expertise), three from the forest products industry, and one member from the range-livestock industry. These revisions would go into effect upon the departure of the first two public members of the board.

10. Regional Water Resilience

Water resources are best managed by local jurisdictions to effectively and efficiently manage water quality and supplies. ACWA supports Integrated Regional Water Management (IRWM) as a voluntary tool to assist local water agencies in solving short- and long-term water management challenges through an integrated planning approach. Integration is the framework that brings diverse stakeholders together.

a. Support for Regional Efforts

ACWA recommends that the State support integrated regional water planning and local management. The IRWM program has been a valuable part of local water management since initiated in 2002, although its potential has not been fully realized throughout the State. While a focus of the Department of Water Resources (DWR), the principles of integrated planning and a transparent and inclusive “systems approach” to resource management transcend any one State agency. The Portfolio should emphasize the importance of integrated planning across water management sectors, including water supply, waste water, water quality, flood management, storm water management, and habitat restoration, which can result in multi-benefit projects while avoiding inefficient and expensive conflicts.

The State has incentivized IRWM with grants from State General Obligation bonds, and by making participation mandatory for receiving some kinds of grants. While this has resulted in interjurisdictional collaboration in many regions, the State should now consider other ways of supporting and promoting integration. This should include coordinating grant and loan programs ***across funding entities*** to develop “funding portfolio” opportunities that result in better multi-benefit projects that can be developed with a degree of support and business certainty at the local level.

State support for regional integration should also include training and direct technical support to regions that may lack relevant capacity, provision of data and data management services that support regional efforts and help the State to recognize regional benefits that roll up to being Statewide benefits, and alignment among resources agencies so that regulatory requirements can be functional but not stifling to integration and innovation. The Portfolio should call for the State to support the development of a renewed paradigm for IRWM which builds upon the best successful elements of the program over the last seventeen years and is consistent with ACWA’s recently adopted *Policy Principles for IRWM*:

<https://www.acwa.com/resources/integrated-regional-water-management-policy-principles/>.

While the State should emphasize the IRWM concept and articulate integration goals, it should not dictate the form that regional collaboration should take, as the regions of the State are diverse and each is unique.

b. IRWM Successes and DAC/Small System Support

The IRWM Program is a well-established mechanism for outreach and involvement of diverse stakeholders, including NGOs, since that is an essential aspect of IRWM. A specific example where this process has been particularly successful relates to disadvantaged communities (DACs) and Native American Tribes. Through the Proposition 1 IRWM DAC Involvement (DACI) program (administered through regional IRWM groups), IRWM regions have demonstrated clear success in administering funding and managing programs for communities in need that have been traditionally hard to reach and have limited capacity to access or implement available support. The State should build upon the proven successes of the IRWM DACI program and use it as an ongoing vehicle to provide support to communities in need across the State. Where existing IRWM programs have been less successful with regard to disadvantaged or underserved communities, integrated, regional strategies for outreach and involvement should continue to be incentivized in ways that are suited to each region.

B. ACTIONS FOR ECOSYSTEM RESILIENCE

1. Ecosystems – General

Improving ecosystem health is an important element of a water resilient portfolio. ACWA supports investments in our ecosystems to improve functionality. From maintaining biodiversity, to sequestering carbon, and supporting clean and dependable water supplies to our communities, high functioning ecosystems benefit all water uses in the State. To achieve this, a clear vision of the State's priorities and leadership to implement those priorities is necessary. This vision should promote a culture that enables creative and flexible solutions to solve species and ecosystem challenges.

The State should prioritize multi-benefit projects, such as ecosystem improvements with broad species benefits looking to mimic natural processes within our highly modified landscape and green infrastructure improvements that offer both ecosystem functions as well as other potential benefits. Additionally, the State should authorize funding for multi-benefit projects and programs that provide a broad set of benefits rather than a piecemealed approach to State funding and improve and refine the permitting process.

2. Voluntary Agreements

ACWA recommends that the Administration continue to support the Voluntary Agreements as the preferred alternative for implementing an update of the State's Water Quality Control Plan for the Bay-Delta. These agreements, covering watersheds in the Sacramento and San Joaquin River basins, will provide multiple habitat benefits for fish, wildlife and other public trust resources while enabling water users to continue to provide stable and reliable water supplies for agricultural, urban and continuing environmental uses. This approach taken by the water users, conservation groups, local, State and federal agencies and other stakeholders is consistent with and represents the embodiment of the principles outlined in the Administration's Executive Order.

The Voluntary Agreements would form the basis of a collaborative conservation strategy to improve fish and wildlife habitat throughout the Bay-Delta watershed. Individually, each of the tributary-specific agreements include significant commitments of water, funding, and habitat enhancement measures for salmon, steelhead, and other fish and wildlife in the watershed. Collectively, the Voluntary Agreements represent a significant commitment to a new science program, and an unprecedented level of collaboration by public water agencies, State agencies and conservation groups. Ultimately, the Voluntary Agreements offer the promise of a new, more expansive path to improving ecological conditions in the Bay-Delta watershed compared to the traditional, and limited, regulatory approaches.

To ensure successful implementation of the Voluntary Agreements and reasonable protection of fish, wildlife and other beneficial uses, the Portfolio should call for the State to expedite permitting for projects identified as part of the voluntary agreements. The State should also dedicate resources to bring these projects to completion, including the allocation of the remaining \$130 million of Proposition 68 funding set aside for voluntary agreements. Additional State funding would be necessary to fulfill the terms and conditions of the proposed Voluntary Agreements, and the State should work with Congress and federal agencies to secure a federal cost-share for this initiative.

3. Salton Sea

The Salton Sea has long played a pivotal role in California's water resilience. As a part of the Quantification Settlement Agreement (QSA), the largest agriculture to urban water transfer ever implemented, over 300,000 acre feet of water, which historically flowed to the Sea to preserve its elevation, was conserved through agricultural conservation measures and diverted for utilization in urban areas throughout Southern California.

The transfer was expected to produce significant impacts from the Sea's decline and reduction of agricultural development. As a result, and in order to ensure the success of the transfer, the State of California committed to (a) undertake the restoration of the Salton Sea ecosystem, and (b) determine the expected nature and extent of any economic impacts related to creating the QSA transfer water, and provide a financial backstop to the extent funds set aside as a part of the transfer did not fully mitigate these impacts.

In order to ensure the integrity of this agreement, which provides water resiliency for much of Southern California, and indeed the entire State, the State must redouble its efforts to fulfill its obligation under the QSA. Moreover, the State, in consultation and coordination with the Salton Sea Authority, should develop a definitive, long-term plan for the Sea, an operating framework for the implementation of the plan, identify funding sources of the plan (including State, federal, NGO, and private sector sources), and a plan for maintaining the fully implemented plan once the region has been redeveloped.

C. ACTIONS FOR COMMUNITY (SAFE DRINKING WATER) RESILIENCE

In the Executive Order, the Governor recognized water as a human right and "central to California's strength and vitality." ACWA recognizes there are actions that can continue to contribute to community resilience. The technical, managerial, and financial capacity of a system is critical to ensuring strong and vital water systems. However, each system is unique, and there is not a 'one size fits all' solution. ACWA remains committed to working on this important topic, offering the expertise of its water industry members.

1. Human Right to Water

ACWA appreciates the Governor's leadership on the creation of and funding for the Safe and Affordable Drinking Water Fund. With the enactment of SB 200 (Monning), the Newsom Administration can ensure that all Californians have access to safe drinking water. The State Water Board is focused on effective and efficient implementation of this landmark new law. The Board is already conducting the needs assessment which is an important input into this program. Implementation of this law is critical to water resilience in California.

2. Water Affordability

The development of a Low Income Water Rate Assistance (LIWRA) Plan by the State Water Board pursuant to AB 401 (2015) is an important effort. ACWA has provided specific suggestions via comment letters to the State Water Board, including the recommendation that the State use an existing benefit distribution program such as CalFresh (the State's food

assistance program) to efficiently distribute LIWRA benefit. ACWA also recommends that the State continue to conduct a stakeholder process on the LIWRA development.

3. Consistent Action and Communication relative to What Water is “Safe”

Relative to safe drinking water, it is important to water resilience (and water affordability) that the State act in a transparent manner, base decisions on sound science, and communicate in a manner that does not undermine consumer confidence. Protection of public health is paramount. The vast majority of Californians have safe drinking water – water that complies with primary maximum contaminant levels (MCLs) that are developed to protect public health. (Secondary MCLs relate to the odor and appearance of water and are developed to protect public welfare.) Consumers often receive mixed messages about their drinking water involving State or federal requirements, including the use of primary and secondary MCLs, public health goals, health advisories, notification levels, and response levels. Misleading or unclear communications can result in a loss of consumer confidence, lead to the misapplication of available resources (e.g., as a result of political pressure as opposed to reliance on a credible, peer-reviewed scientific basis) and work against water affordability – which is part of the Human Right to Water.

4. Inclusion of Compliance Schedules in MCL Regulations

As provided for in the Federal Safe Drinking Water Act, the Water Resilience Portfolio should call for inclusion of compliance schedules in the adoption of MCL regulations. Compliance with a new primary MCL can involve significant planning, capital investment and construction that makes it impossible to meet the MCL immediately. This approach would allow public water systems to maintain compliance while taking reasonable and timely actions to meet any new primary MCL.

5. Need for Flexibility in the Use of Point of Use/Point of Entry Water Treatment Timeframes

The U.S. Environmental Protection Agency (USEPA) and many other states allow the use of point-of-use and point-of-entry (POU/POE) water treatment systems for a permanent or long-term option for compliance with drinking water standards. For some small community water systems, POU/POE water treatment systems provide the **only** technically and economically feasible and practical option to provide safe and affordable drinking water to consumers. The consolidation of public water systems and centralized treatment are simply not technically and economically feasible for all locations. Existing California law limits POU/POE permits to no

more than three years. This restriction makes it unlikely for small water systems to invest in POU/POE water treatment systems when these systems could no longer be permitted three years after being installed. The State should work with stakeholders to resolve related maintenance issues and then pursue a change to State law that provides more flexibility for the use of POU/POE water treatment systems.

D. ACTIONS FOR SCIENTIFIC METHODS TO SUPPORT RESILIENCE

The Portfolio should call for the State to invest in the following modern tools that support resilience.

1. Atmospheric Rivers Research

The Portfolio should call for the State to continue funding atmospheric rivers research. According to DWR, the National Oceanic and Atmospheric Administration, academia and other agencies, atmospheric rivers are the primary meteorological cause of extreme precipitation and flooding in California. The above agencies predict that the volatility, intensity and duration of atmospheric rivers will continue to increase due to climate change. A better understanding of atmospheric river patterns can inform water managers and regulators throughout the State of new reservoir operations opportunities to improve water capture and flood protection within regions.

Local, State, and federal partners should be able to operate water storage facilities in a coordinated manner that maximizes operational flexibility and resource dexterity in a changing climate. With more accurate atmospheric rivers information, data, and modelling, local, State, and federal agencies will be in a position to operate and manage reservoirs and facilities across the State in a 21st Century manner.

For more detailed comments on this topic, please see the written comments of the Forecast-Informed Reservoir Operations/Atmospheric Rivers Water Coalition of which ACWA is a participant.

2. Runoff Forecast Estimate Improvements

The State should fund collection of more detailed data about on-the-ground upper watershed conditions for the Sierra Nevada and Trinity mountains and other major snow-covered regions in the State. This data would inform highly accurate runoff estimates for use in flood management, ecosystem flow allocations, and the optimization of the delivery and use of

floodwaters for groundwater recharge. Since 2013, a consortium of local agencies and DWR have been funding and operating a pilot program to conduct aerial snow surveys through the Airborne Snow Observatory (ASO) and produce runoff forecasts for a select number of watersheds in the central Sierra Nevada mountains.

Snowpack is California's largest water reservoir. The current method of tracking snowpack was developed in the 1920s. The current methods of estimating snow availability and runoff rely on assumptions and data that are decades old and will "break" under climate change. The conventional snow survey and forecast methods rely heavily on professional judgment and extrapolation with a large margin for error (up to 60 percent) because they use a few point locations to estimate water held in tens of thousands of square miles of snow cover. Working with inaccurate data may result in unnecessary water releases, and increased flood risk. With climate change, the pattern of snow accumulation and melt is changing, challenging the usefulness of the traditional methods for forecasting runoff. The data provided by the ASO program is a critical advancement in water management and must be part of the foundation for the water portfolios for the 21st century.

Finally, flood management and urban runoff also need improved forecasting data.

3. Stream Gage Network Improvements

The Department of Water Resources should evaluate existing stream gages for accuracy and develop a plan to deploy a network of new stream gages for better informing water management of reservoirs and rivers. See also SB 19 (Dodd). The current stream gage program in California is in desperate need for updating to provide real-time river flow levels to better manage environmental flows, water supply, and flood control. Stream gages provide essential, real-time, information about California's in-river water landscape. Currently, approximately 50 percent of stream gages are not providing active information. Gaps in the stream gage network make it difficult to understand stream flow conditions and to help ensure that both people and nature are getting water when and where they need it.

4. Climate Change Planning Assistance

The State needs to offer climate change planning technical assistance to small water suppliers and regional planning groups, where needed, to help estimate the impacts of changed snowpack conditions, and related changes to hydrology and sea level with regard to water supply reliability, flood management, and ecosystem challenges. This planning assistance

should also include tools to help identify appropriate State, federal and local investments in water supply reliability to adopt to these impacts at appropriate timescales.

E. INVESTMENT IN WATER RESILIENCE INFRASTRUCTURE

Local water agencies already fund about 85 percent of water-related investments in California.¹ The State must invest in water infrastructure to achieve a resilient water future.

1. Other Factors Driving the Need for State Investment

While past Administrations and the Legislature have recognized the need for State funding, the need is brought into focus through the 21st century resilience lens because of multiple factors, including:

- a. Population Growth** - According to recent estimates, California will have a population of 50 million people by the year 2050².
- b. Aging Systems** – Much of California’s major infrastructure is approaching, at, or well past its original design life. The useful life of these investments continues to be extended through responsible investments in operations and maintenance. That said, planning for the long-term replacement of this critical infrastructure will be essential in ensuring resilience in California water.
- c. Climate Change** - Much of California’s current water infrastructure was designed and built absent climate change considerations. Modern science informs us that our existing system resiliency is at risk to both sudden and persistent environmental variability including but not limited to temperature, sea level, earthquakes and fires. Informed by science and in compliance with current regulatory standards, future Improvements should be designed and implemented in a manner that responsibly addresses the impacts.

2. State Funding

The Water Resilience Portfolio should call for State investment in projects and programs that have broad public benefits. These areas include improved water supply reliability, water quality, and ecosystem health. The State should also incentivize local projects that advance

¹ Public Policy Institute of California March 2014 study entitled *Paying for Water in California*.

² <https://www.ppic.org/publication/californias-population/>

Statewide priorities and require public assistance to be cost effective. For all of these purposes, ACWA supports the use of General Obligation bonds. ACWA would like to collaborate with the Administration on a comprehensive bond for water resilience.

Infrastructure investments are needed across the State. As described on page 6, one example of an infrastructure project that would help achieve State policies or goals is the repair of the Friant-Kern Canal on the eastside of the San Joaquin Valley. Restoring conveyance capacity of this and other subsidence-damaged facilities, such as the Delta-Mendota Canal, in the San Joaquin Valley is a key element of resilience and sustainability for this region in the State.

3. Infrastructure Categories Needing State Investment

Addressing the wide-ranging factors noted above will require a full portfolio of State investments in water and ecosystem infrastructure. Below is a list of known project types required to ensure 21st century water resilience. The categories are discussed in the preceding sections of the document:

- **Conveyance** (page 6) – The State Water Project needs maintenance. Cross-valley conveyance in the San Joaquin Valley needs repair. In addition, new State, regional and local conveyance of different sizes is needed to move water intra- and inter-regionally in dry years.
- **Storage** (page 8) – Both above-ground and below-ground.
- **Groundwater** (page 10) – Implementation of GSPs and assistance for local distributed water banks.
- **Water Reuse** (page 11) - Potable Reuse, Non-Potable Water Recycling and Desalination (page 15).
- **Water Use Efficiency** (page 16)
- **Flood Risk Protection / Stormwater Management** (page 17)
- **Headwaters Management** (page 21)
- **Regional Resilience/Integrated Regional Water Management** (page 23)
- **Ecosystem Restoration** (page 24)

4. A New General Obligation (G.O.) Water Bond

The Newsom Administration should support and collaborate on the development of a new water G.O. Bond that is focused on needed comprehensive State investments in water resilience. ACWA would like to work together with the Newsom Administration in the development of such a bond as we did with the Brown Administration in 2014.

5. Federal Funding

As noted in the Guiding Principles, the State should partner with local water agencies in seeking federal funding to leverage State and local investment.

6. Low-Cost Financing for Water Infrastructure Projects

State Revolving Funds are generally limited to financing safe drinking water and clean water projects. However, in recognition that much of California's water infrastructure is now generations old and increasingly used to meet multiple functions not initially envisioned, the State of California should develop a low-cost financing program, similar to the federal Water Infrastructure and Innovation Act (WIFIA) program, that is eligible to local public agencies for extraordinary O&M, system repairs, and upgrades of existing facilities.

7. Additional Funding for the Clean Water State Revolving Fund (CWSRF) through the Sale of Lease Revenue Bonds

Under the status quo, the \$7 billion backlog of reuse and wastewater projects on the Clean Water State Revolving Fund (CWSRF) cannot be fully addressed for decades. But by adding \$300 million a year in loans, the backlog could be funded by 2035. To help close this significant funding gap, California should leverage additional funding for the CWSRF program through the issuance of revenue bonds. Many other States, with much smaller economies, have leveraged more funding than California for their SRF programs using this mechanism.

8. Financing for Headwaters

The State should significantly expand funding to support healthy, resilient forests. Eligible categories should include: long-term monitoring of post-fire recovery efforts that assess ecosystem response related to water supply and quality, research-based development of adaptive forestry management programs, improved management of roads and other sediment producing areas, watershed resilience activities such as forest thinning and restoration, overall water resources monitoring, and development of a local workforce trained and dedicated to long-term forestry management.

Investing in public water system infrastructure in the wildland urban interface is critical for building greater resilience to the growing threats of catastrophic fire as the climate changes. Such capital investments include expanding water storage facilities for fire flow, upgrading aged distribution pipelines to modern standards, and installing more fire hydrants across affected communities. The Tahoe Water For Fire Suppression Partnership is an excellent example of

local, State, and federal investments to protect the ecological resources and communities of the Tahoe Basin by adding tens of millions of gallons of new fire flow storage, more than 100,000 linear feet of waterline improvements, and hundreds of new fire hydrants throughout the Basin. This collaborative, multi-agency approach to improving public water systems for fire resilience should be supported and replicated across all affected areas of the State. Projects like the City of Shasta Lake's effort to expand its water storage to provide sustained fire flow for first responders are necessary to avoid the potentially devastating consequences of losing access to public water supplies during a raging fire such as the City came close to realizing during the Carr Fire when its limited storage fell to critically low levels. These structural limitations compound the dangers of catastrophic fire to first responders, affected residents, and the affected watersheds.

5. OTHER CONSIDERATIONS

In the spirit of partnership, it is important to share perspectives and to focus on productive collaboration rather than actions that will from ACWA members' perspective conflict with good water management and could actually be counter-productive to achieving **water resilience**. ACWA welcomes a dialog with the Administration to discuss in detail why seemingly productive actions that may be effective in other sectors create difficulties in achieving water resource management objectives. A sampling of these are as follows:

- 1) Loading Orders and Portfolio Standards** – Unlike in the energy sector, all types of water supply are needed for water resilience in light of climate change and population. Many regions have access to only certain supply sources due to local hydrology and limited local resources. Loading orders and portfolio standards are both impractical and counter-productive to building supply diversity and bolstering resilience, including in disadvantaged communities. They would take away flexibility in local water management, which is critical to water resilience.
- 2) Unnecessary and Counterproductive Requirements** – Regulations that are not needed can add to the cost of water service and make water less affordable; a Statewide water tax on local water agencies or their customers would add to the cost of water and make water less affordable. True water supply resilience for the State will require tremendous financial investment at the State level. Concurrently, local agencies need to continue to work to have affordable rates, while at the same time increasing rates to fund resilience-enhancing local supply, storage and water management projects and programs. These projects and water resource management efforts must be complemented with environmental protection, which

can be costly to implement. In recognizing the tension between recovering needed investment through water rate increases and affordability, the State should acknowledge that a State-administered Public Goods Charge (or water tax) on local water agencies or their customers would add to the cost of water, making it less affordable for customers and impacting the financial capacity of local water to make critical resource investments as part of an overall water resilience strategy.

3) Regulatory Uncertainty – Local water agencies plan for and invest in water supply development, storage, conveyance and management that leads to resilience. The more predictable and certain the regulatory climate is, the easier it is for public agencies to feel secure in making investments in a wide variety of water resource initiatives. Uncertainty caused by inadequate collaboration between regulators and water agencies in establishing water and environmental regulations can stall or block this critical work.

6. CLOSING

ACWA sincerely appreciates the Newsom Administration's consideration of these recommendations for the Water Resilience Portfolio. We stand ready to work with the Administration to pursue a collaborative and comprehensive approach to meeting future water needs and ensuring water resilience for the State of California.