

Water Fix Policy Paper

Preamble

"Great interests were in active contention. The engineer who advocated a plan or measure seeming favorable to any one of these, was condemned by all others; and he who pursued any independent course, as to policy or works, was in favor with none of them; while the great public took no interest in the matter except to condemn anything which contemplated general taxation...The truth did not prevail where misrepresentation could be made to serve a desired selfish purpose, and blind prejudice was everywhere present."

William Hammond Hall, 1904
California's first water engineer, appointed in 1878

Californians have waged water wars for more than a century. Little investment has been made in water infrastructure since the days when Earl Warren and Pat Brown were governors of California. Since then, our population has more than doubled at the same time that we have become far more aware of the water needs of our environment. Our water crises have become more severe and will become even more so as a result of climate change, sea level rise, and continued population growth. The time has come for forging consensus, for Californians to shed parochial views and join together in pursuit of solutions that work for all regions and improve water supply reliability for all categories of water users: urban, agricultural, and environmental. The California Water Action Plan released in January by Governor Brown's administration is a welcome step in the right direction. It acknowledges California's current reality:

"There is broad agreement that the state's water management system is currently unable to satisfactorily meet both ecological and human needs, too exposed to wet and dry climate cycles and natural disasters, and inadequate to handle the additional pressures of future population growth and climate change."

We fully support the holistic goals proposed in the Water Action Plan: conservation, regional self-reliance and integrated water management at all levels of government to better manage demand; storage, conveyance, ground water management, and increased operational and regulatory efficiency to give us the flexibility to manage around the uncertain precipitation patterns nature has given us; actions to protect and restore important ecosystems, increase flood protection, and provide safe water to all communities. The Delta Stewardship Council Delta Plan establishes policies and recommendations to advance a similarly integrated approach to achieving the Two Co-Equal Goals for the Sacramento-San Joaquin Delta while protecting the unique values of the Delta as an evolving place.

What is different about this policy proposal?

First, it is a call to action. The administration has characterized the Water Action Plan as "aspirational." It states challenges and goals but timelines and a financing plan should be added. This policy paper attempts to move California closer to an implementation plan. No water system in the world has been studied as much as California's water system. We urge that action begin now and that our political leadership put a stake in the ground calling for completion of all the critical components of the Water Action Plan by 2030 and leaders in all arenas work to forge the agreements and consensus to get things done.

California's approach to water management over the last few decades has been crisis-management. While we don't know for sure when the droughts will occur, we know with certainty that they will come. We muddle through each painful crisis, and then wait for the next one to occur. This third year

of drought is demonstrating the substantial consequences of California's failure to invest sufficiently in water infrastructure.

We understand that addressing all components of a comprehensive "Water Fix" for California will be expensive, but there is no more important infrastructure for the state, and the concept of "beneficiary pays" enables us to begin implementation immediately. As is the case for all major infrastructure undertakings, all of the financing will not be identified from the get-go, but we can begin implementation based on funding that is accessible if political leadership is effectively exercised. Important discussions are underway now about additional funding to help pay for the public benefits of the required investments.

Second, we strongly support concurrent advancement of all components of the solution.

Historically, stakeholder groups have advanced their preferred component, leaving others concerned about implementation of other parts of the solution. A key element to maximizing the benefits to be achieved from investments in all of these components is to move them all forward as expeditiously as possible as a comprehensive, integrated whole, which will more quickly further achievement of the Two Co-Equal Goals than will fragmentary implementation. We understand that funding availability will influence timing of implementation for each component, but political leadership can help earn stakeholder trust and propel action by ensuring resource allocations to all components, demonstrating a steadfast commitment to convergence of all components by 2030. While all agree that a comprehensive approach is needed, differences remain regarding how to ensure integrated action, implementation, and operations. Some participants maintain that reliable linkages and commitments are needed to achieve results. Others are concerned that linkages and commitments will only ensure that implementation will bog down and nothing will be accomplished. Additional work is needed to bridge these different perspectives.

Third, and perhaps most important, this policy paper is an effort to help forge consensus. The participants in the "Water Fix" discussions leading to the development of this paper included a diverse group of stakeholders from across the state: the general managers of water agencies in the Bay Area, Delta, San Joaquin Valley, and Southern California; the Association of California Water Agencies (ACWA) and Northern California Water Association (NCWA); the Delta Vision Foundation and The California Partnership for the San Joaquin Valley; County Supervisors from Contra Costa, Sacramento, Solano, and Yolo counties and a prominent civic leader from San Joaquin County; and environmental organizations. While not signatories to this document, representatives from the California Department of Water Resources and the California Department of Fish and Wildlife participated in some of the discussions leading to the development of this document.

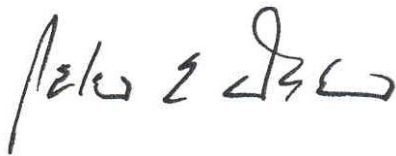
This is an at-will collaboration. Our names and affiliations are appended to this preamble. The group came together because California's water system is now in a chronic state of crisis and the array of solutions that must be implemented will take the better part of the next two decades to complete. The group sought to find common ground on the actions that must be taken to ensure water security for the State for the balance of this century. As a consequence of these conversations, we now share a better understanding of each other's needs and a commitment to solutions that work as well as possible for all of us. We entered into these discussions knowing how difficult it is to reach 100% consensus, particularly on a subject as complex and controversial as California water. At the end of each monthly meeting, we took a vote to determine if we should continue the discussions. Every vote was unanimously supportive of continuation. In the end, all but four of the participants agreed to sign on to this policy proposal.

When this policy paper was nearing completion, the group asked that it be reviewed by a panel of distinguished Californians with extensive experience on water matters. The list of review panel members is also appended to this preamble.

Signatories

(Affiliations for identification purposes only)

We, the undersigned, support the “Points of Agreement” listed in Chapter 3 of this report and urge the Governor, the President, the California Legislature, the California Congressional delegation, and Federal officials to provide leadership, direction, and accountability to ensure a comprehensive “Water Fix” for California is implemented consistent with the Points of Agreement and the integrated actions described herein. A comprehensive “Water Fix” plan would propel the Governor’s California Water Action Plan into actual “action,” with specific actions, timetables, funding sources, assurances, and accountability provisions. We have worked together to address this challenge and will continue to work with each other, within our organizations, and with others to advance coordinated, comprehensive actions for the state. At stake are California’s environment, economy, and quality of life and their value to the nation.



Peter Weber
California Partnership for the San Joaquin Valley



Sunne Wright McPeak
Delta Vision Foundation



Fritz Grupe
The Grupe Company
San Joaquin County



Timothy Quinn
Association of California Water Agencies



Alexander Coate
East Bay Municipal Utilities District



Walter Wadlow
Alameda County Water District



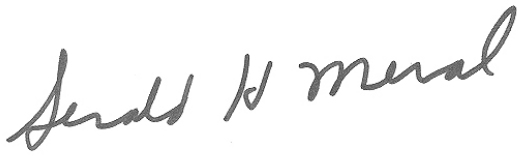
Ronald Jacobsma
Friant Water Authority



Jerry Brown
Contra Costa Water District



Jeff Kightlinger
Metropolitan Water District of Southern California



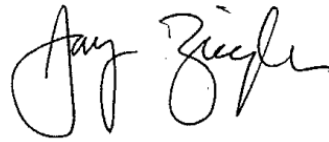
Gerald Meral
Natural Heritage Institute



John Vasquez
Supervisor, Solano County



David Guy
Northern California Water Association



Jay Ziegler
The Nature Conservancy



Dan Nelson
San Luis Delta Mendota Water Authority



Thomas Birmingham
Westlands Water District



Beau Goldie
Santa Clara Valley Water District

Policy Paper Reviewers

The following individuals provided important review comments during the development of this policy paper.

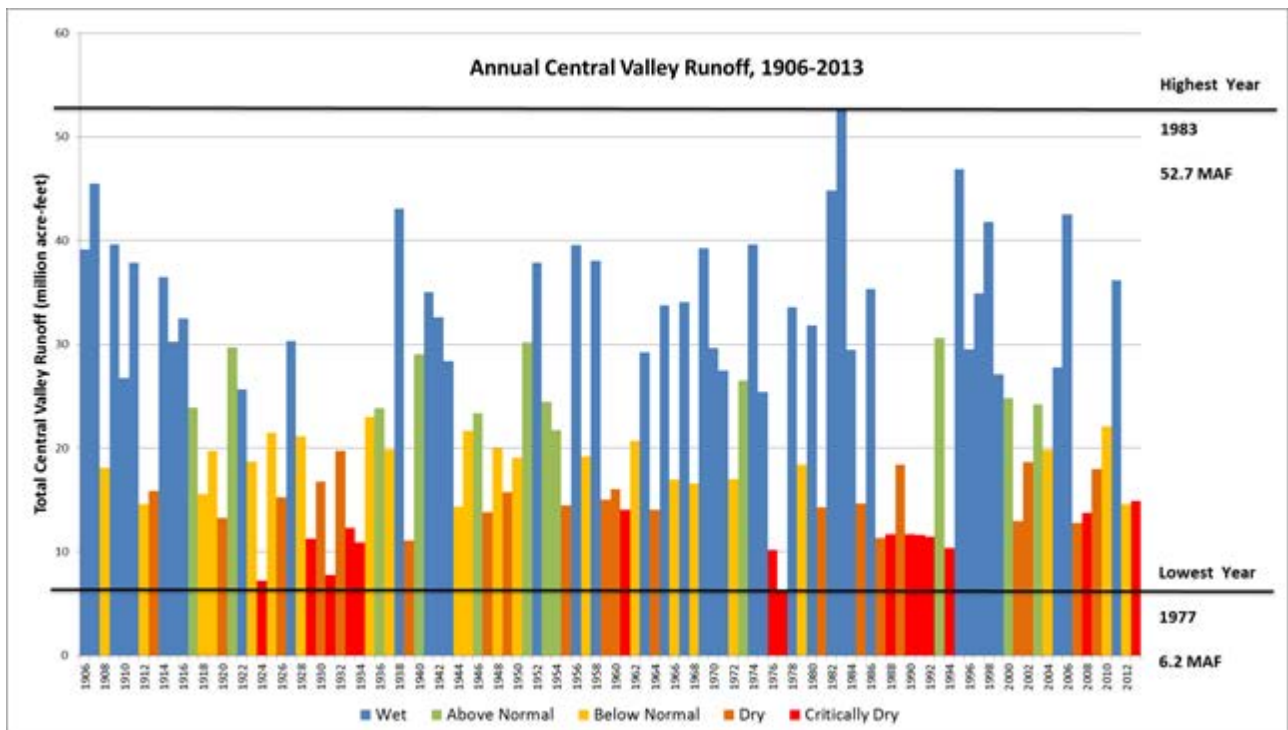
- William Reilly, Former Director, U.S. Environmental Protection Agency
- John Coleman, President, Association of California Water Agencies
- Dr. Jerry Meral, Natural Heritage Institute
- John Kirlin, Delta Vision
- Ellen Hanak and Dr. Jeffrey Mount, Public Policy Institute of California
- Dr. Peter Moyle, University of California at Davis

Water Fix Policy Paper

Executive Summary

California’s water challenges are daunting but not insurmountable. There would likely be enough water to go around in most years if the State had sufficient facilities to capture, convey, and store a lot more water in wet times than is physically possible today and all water users are efficient and sustainable in their water use in all years, particularly in areas where groundwater use is currently unsustainable. As shown in Figure 1 below, only about 3 years out of every 20 are “Normal” with the balance being either “wet” or “dry.” Note that the Central Valley runoff in the year of greatest precipitation (1983) was nearly nine times higher than the year of lowest precipitation (1977). That is an extraordinary range. Note also that “dry” and “wet” years can come in bunches. The State experienced an eight-year drought between 1987 and 1994 (with only one year slightly above “normal”). Immediately following this drought period, the State experienced five consecutive years of water abundance between 1995 and 1999. Climate change is expected to exacerbate this pattern: wet periods will be wetter (bigger storms) and dry periods may be drier and longer, so historical records may not provide an accurate forecast of future runoff.

Figure 1 – Central Valley Runoff, 1906-2013



(DWR, <http://cdec.water.ca.gov/cgi-progs/iodir/WSIHIST>)

While in many individual years there is not enough managed water for all needs, California precipitation, averaged over a long-term period, provides sufficient water to meet reasonable needs for drinking water, ecosystem protection, and economic uses (provided we make a continuing commitment to continued water use efficiency improvement, conservation and appropriate demand management programs).¹ Conflicting demands—particularly between fish and farms—arise most frequently during times of low rainfall. Ironically,

¹ Average statewide runoff is approximately 70-75 million acre-feet (MAF) per year. Statewide net water use is approximately 63 MAF for urban, agricultural, and environmental needs (Department of Water Resources, September, 2013)

in some dry years, a higher percentage of water is exported from the Sacramento-San Joaquin Delta watershed than during wet years. The necessary facilities don't exist to take greater advantage of an abundance of water in wet periods and reduce conflicts related to diverting water from the Delta watershed in dry years. The challenge—and opportunity—is to construct the essential infrastructure to capture significantly more water in wet times, fill reservoirs and groundwater storage above and below the Delta, and manage both supply and demand to get through times of low rainfall. This would leave more water in the Delta during dry periods when it is most needed for the fish. To facilitate this common-sense approach, more integrated modeling is needed to determine how much water can be collected and stored in years of abundance and how, over time, that can help recover critically overdrafted aquifers, particularly in the Central Valley.

In 2009, the California Legislature established new policy direction for water management in the Sacramento-San Joaquin Delta, the heart of the state's water management systems. The legislation established the Two Co-Equal Goals for managing the Delta:

Achieve the two coequal goals of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem. The coequal goals shall be achieved in a manner that protects and enhances the unique cultural, recreational, natural resource, and agricultural values of the Delta as an evolving place.

This policy paper outlines the issues, agreements, and actions to move California forward to resolve long-standing conflicts and achieve the Two Co-Equal Goals. We propose actions to address three broad strategies:

- Invest in Water Management and Water Use Efficiency.
- Build a Fully Integrated Water Infrastructure System.
- Implement a Coordinated Operating and Regulatory Structure.

CHAPTER 1 describes the purpose of this policy paper: to articulate a comprehensive solution developed and supported by a diverse group of stakeholders and to call on political leadership to move to implementation with the urgency that the situation demands. There is no question that some compromises and flexibility will be required, but there are solutions that meet the essential needs of all regions.

CHAPTER 2 provides a primer on the Delta, its critical role in supplying water to two-thirds of all Californians, how it has evolved as a result of human activity over the last 160 years and as societal demands have changed, and what needs to be done to modernize the system to serve California's needs for the next several decades. The status quo is unsustainable. For more than two decades California has lurched from water crisis to water crisis, and, as will be described later in this paper, there is strong reason to expect future crises will be longer and deeper.

CHAPTER 3 describes the ten "Points of Agreement" reached by the signers of this policy paper, agreements that guided the drafting of this paper.

1. California precipitation, averaged over a long-term period, provides sufficient water to meet reasonable needs for drinking water, ecosystem protection, and economic uses. The problem is that precipitation is highly variable year-to-year and current infrastructure is unable to capture available surpluses in wetter periods to help carry the state through drought.
2. The water resources of the state, including surface and groundwater, need to be managed more efficiently and in a more integrated way to achieve multiple benefits. California's aquatic ecosystems are highly stressed and/or collapsing, in part due to flow alteration, loss of physical habitat, introduction of non-native species, and pollution caused by human activity.
3. All parties want to achieve the co-equal goals, while protecting and enhancing the unique cultural, recreational, natural resource, and agricultural values of the Delta as an evolving place.
4. The current water system does not and cannot achieve the co-equal goals because it does not offer the flexibility to store water when it is abundant and move it to where it is needed when it is needed in a way that is consistent with the achievement of the co-equal goals.

5. Improved Delta conveyance alone will not entirely address the co-equal goals; a comprehensive plan of integrated actions is required to achieve them.
6. Moving water through the Delta is complex and highly controversial. All of us agree that the status quo on conveyance is not sustainable. Some of us think that Improved Through-Delta Conveyance alone can be the solution. Others of us conclude that Dual Conveyance, which includes both Through-Delta Conveyance and a new isolated component, is necessary. To resolve the longstanding conflicts regarding conveyance, measures to improve through-Delta conveyance and investments in new storage to improve flexibility of water operations and water management should be pursued expeditiously while dual conveyance continues through its decision process.
7. Improved water management and a sustained commitment to continuous improvement in water use efficiency in all regions are necessary to increase system flexibility and reduce conflicts resulting from scarcity.
8. Protection and enhancement of headwaters areas is needed to increase retention, contribute to system flexibility, and adapt to climate change.
9. It is vitally important that the proposed system solution consider the economic interests of every affected region and costs are allocated based on the benefits received, including general public benefits, e.g., environmental enhancement and meeting drinking water needs of disadvantaged communities.
10. Any solution to achieve the co-equal goals must be developed consistent with the public trust, state and federal environmental requirements, water rights, and area of origin protections.

CHAPTER 4 offers a straw-man proposal for the implementation of the principles stated in Chapter 3. It begins with a summary of the existing policy framework that guides action and implementation now, including the Delta Plan, Bay-Delta Water Quality Control Plan, and Central Valley Flood Protection Plan. Chapter 4 describes the strategies and actions and quantifies some of the outcomes needed to solve California's water issues. It is intended to focus and advance development of a comprehensive action plan to be developed by the Governor's administration, focused on three major strategies:

(1) Invest in water management and water use efficiency to reduce demand and increase system flexibility.

Californians must commit to improve water efficiency and sustainability and to reduce reliance on the Delta in meeting future water supply needs. Groundwater overdraft must be reversed in areas where it is affecting other users or public infrastructure. All regions that depend on water from the Delta watershed must improve surface and groundwater storage and management, water use efficiency, recycled water use, stormwater management, desalination, and other water management tools to increase self-reliance and support system flexibility to achieve the Two Co-Equal Goals. Recent measures adopted at the State and federal level in response to the current drought will help advance this strategy.

(2) Implement a fully integrated California water system. California's existing water infrastructure places the Two Co-Equal Goals in direct conflict because there is little flexibility in the timing or location of water flows through the Delta. California must invest in the necessary infrastructure to collect water when it is abundant and have flexible systems to convey it to where it is needed, when it is needed. And it must begin to implement such a system with the urgency the situation demands. There are five key components to such a system:

- **Natural Watersheds** – Up to two-thirds of the State's developed water supply is derived from natural watersheds in the headwaters areas of northern California and the Sierra Nevada. Better forest and watershed management can increase water retention, promote healthy ecosystems, reduce fire risk, and offset some impacts of climate change.
- **Surface and Groundwater Water Storage** – California needs more surface and groundwater storage, north and south of the Delta, to collect water in years of abundance to minimize impacts in "dry" years. Several large water storage projects have been studied since 2000, but only one has moved beyond studies. Action must be taken to reverse the unsustainable overdrafting of California's natural aquifers, particularly in the San Joaquin Valley.

- **Conveyance** – Delta conveyance has been extensively studied by the California Department of Water Resources (DWR) and other agencies. The focus of these studies has been on ways to improve how water is conveyed to reduce conflicts between human water use and ecosystem health. While there is remaining controversy about how much water can be conveyed and how it should be conveyed (see Chapter 4), the signatories to this Policy Paper agree that the current conveyance system in the Delta is unsustainable.
- **Levee and Floodplain Improvements** – Levees and floodplains in and near the Delta are critical for protecting people, land uses, ecosystems, infrastructure, water supply, and water quality. These facilities and areas can be designed and managed to serve both ecosystem and economic functions and support multiple benefits. Irrespective of whether conveyance occurs exclusively through the Delta or through a dual conveyance system, there are critical “strategic” levees in the Delta on which California’s water system will continue to depend.
- **Delta Ecosystem Restoration** – Numerous projects have been identified to protect, restore, and enhance Delta ecosystems. Some of these projects are required as part of permits for water diversions or as mitigation for other activities in the Delta (e.g., levee improvements). These and other projects are part of the Delta Plan and other restoration plans. In the last 15 years, little on-the-ground progress has been made restoring the Delta ecosystem.

Also included in Chapter 4 is a description of the actions that need to be taken to minimize and mitigate impacts from infrastructure construction.

(3) Implement a coordinated operating structure to achieve the Two Co-Equal Goals. Multiple agencies are involved in managing California’s water systems. Building the comprehensive water infrastructure system California needs will not deliver optimal results unless these agencies make coordinating their activities and managing the water infrastructure consistent with the Two Co-Equal Goals a priority and standard of performance. A coordinated operating structure to implement “more in wet and less in dry” will require close cooperation among operators, regulatory agencies, and local water managers; early involvement on Delta projects with representatives of the five Delta counties; improved transparency of storage, diversions, operations, and management actions; and consistent, effective enforcement of policies and requirements.

CHAPTER 5 describes the policies, institutions, and finances that must be put in place as a foundation for action. Operational parameters must be established to ensure all water systems are operated consistent with the Two Co-Equal Goals. Ecosystem management must consider the interaction between the multiple species that inhabit the Delta. Implementation timelines must demonstrate a commitment to act with the urgency the situation demands. A comprehensive water bond should be put before the voters this year as a vehicle to support the “all of the above” approach articulated in the California Water Action Plan. Because specific beneficiaries rather than the general public are anticipated to pay 50% to 60% of the estimated \$40 to \$45 billion required for comprehensive implementation, reliable assurances to ensure those investments result in their expected benefits are critical. Institutional agreements must reinforce commitments and build trust among diverse interests and beneficiaries. Progress and performance must be transparent and reported regularly to increase accountability. Leaders and champions must step forward from all corners to make integration and implementation work.

CHAPTER 6 is a call to action. No estuary has been studied as much as the Delta. This policy paper has emphasized infrastructure because it takes time to build and the State has not made necessary investments for more than a generation. Water storage projects have been studied since before the turn of the century. Conveyance options have been evaluated for decades. California is already in crisis. Further analysis and procrastination will not help. California will remain vulnerable while the problem will only get worse. The solutions are sufficiently understood. We know enough to act and adapt as we learn more. Ultimately, only real-world adaptive management and rigorous monitoring will provide the answers to achieve the Two Co-Equal Goals. Political leadership, built on the broad areas of consensus described herein, is urgently needed to move to implementation.

Things do not happen. They are made to happen....

Nothing could be more disastrous for this country than for the citizens of one part of the state to feel that everything they have is theirs and that it should not be shared with the other citizens of this state....That is the way to stand still....

Progress represents the combined will of the American people, and only when they are joined together for action, instead of standing still and thinking that everything that had to be done has been done. It's only when they join together in a forward movement that this country moves ahead and that we prepare the way for those who come after us....

President John F. Kennedy at the Groundbreaking Ceremonies for San Luis Dam, 1963