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California Water Action Plan Implementation Report **2016 Summary of Accomplishments**

January 9, 2017





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California Water Action Plan Implementation Report **2016 Summary of Accomplishments**

January 9, 2017

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This report was prepared by the California Natural Resources Agency in coordination with the California Environmental Protection Agency and the California Department of Food and Agriculture for the fiscal and appropriate policy committees of each house of the California Legislature, and for the public.

This report is available in electronic form: http://resources.ca.gov/california_water_action_plan.

An immense amount of work remains ahead but progress made in 2016 offers a clear trajectory and a recipe for success: build coalitions, invest boldly, evolve policies, get it done.

—excerpted from Action 4, p. 7



Construction of over 500 acres of shallow water habitat at the Salton Sea's Red Hill Bay is underway. The project will provide habitat for hundreds of bird species and prevent harmful dust emission from the dry land.

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A Note about Climate Change and the California Water Action Plan

Our climate is changing. Coastal sea levels are rising. Sierra snowpack is fading. Drought conditions seem more baseline than anomaly. What's more, California's most vulnerable communities are experiencing disproportionately intense effects. Therein lies the root of the challenge, as California faces a future of even greater climatic change and cascading consequences. The state is thriving economically, culturally, and socially. But we are already experiencing significant impacts, and their slow (yet increasingly rapid) advance is real and must be addressed directly.

Adapting to climate change is inherently difficult work. It means re-assessing land-use strategies, investing in complex watershed restoration projects, strengthening transportation and other critical infrastructure, and anticipating urban and agricultural water shortages. California leads the nation in preparing for the effects of climate change, as epitomized by the *Safeguarding California* plan. The Governor affirmed his commitment to Safeguarding California by issuing Executive Order B-30-15. Led by the California Natural Resources Agency, in coordination with other State agencies, Safeguarding California is a multi-sector assessment of climate-related vulnerabilities and adaptation strategies intended to spark and guide government action. The *California Water Action Plan* (Action Plan) plays a prominent role in that document and forms the foundation of the State's water-sector adaptation strategies. Each aspect of the water management cycle (precipitation – treatment– delivery – use, etc.) is affected by climate change. The Action Plan's 10 actions and numerous sub-actions are discrete climate counter-measures. A few examples:

- Rising sea levels threaten the Sacramento-San Joaquin Delta ecosystems, water supply infrastructure, and agricultural economy. Action 3 — *Achieve the Co-Equal Goals for the Delta* — emphasizes climate-informed tidal habitat restoration, new State/federal water system conveyance, and financial assistance for local government.

- Climate change will likely bring extended periods of drought. Action 5 — *Manage and Prepare for Dry Periods* — includes strategies for operating our complex water systems more flexibly and efficiently to ensure greater reliability in the face of climate change.
- Changing precipitation patterns will likely bring larger Sacramento River flows, threatening urban and small communities protected by levees. Action 8 — *Increase Flood Protection* — calls for new regulatory, financial, and operational mechanisms to reduce flood risk and protect our communities.

The data is irrefutable: our climate is changing. One of the big questions facing us now is how to prepare for it. For those concerned with the future of water management, the Action Plan begins to answer that question. This report on Action Plan accomplishments is proof-positive that California is and will continue to be a global leader in this important work.



Ground meadow restoration at Antelope Lake, Plumas National Forest.

Introduction: Steady Progress on Many Fronts in 2016

Achieving reliable and resilient water systems and restoring our most important ecosystems require consistent progress on myriad fronts. In 2016, projects and planning progressed at the local, regional, and State levels. A great deal was accomplished under all 10 actions set forth in the *California Water Action Plan* (Action Plan). With the urgency of drought unabated and the resources of Proposition 1 at the ready, the kind of momentum needed to safeguard California's water supplies continues to build, even in the face of climate change.

Key achievements in 2016 include an infusion of funds to bring to fruition two mandates: sustainability of water supplies and more sophisticated conservation measures. Hundreds of millions of dollars in State bond funds, which will leverage hundreds of millions of dollars in local and federal funds, were disbursed to local water districts and others for water recycling, installation of more efficient irrigation technology on farms, and many other projects. Dozens of habitat restoration projects were funded or launched, including the largest-ever tidal wetlands restoration project in the Sacramento-San Joaquin Delta (Delta). In addition, California supported the implementation of Klamath dam removal through bond funding and amendments to a key multi-party agreement.

In response to the Governor's call to action through Executive Order B-37-16, five State agencies issued a draft framework for moving beyond emergency, one-size-fits-all drought restrictions on water use to more sophisticated, durable conservation requirements that take into account local climate and demographics.

Implementation of the Sustainable Groundwater Management Act (SGMA) continued through adoption of regulations that will guide counties, cities, and local water districts in the formation of groundwater sustainability agencies. These new agencies will bring groundwater pumping and recharge into balance and ensure communities manage their water sustainably. The release of a feasibility study on direct potable reuse of recycled water brought the state closer to making full use of wastewater. Water quality regulators began updating the water quality standards and

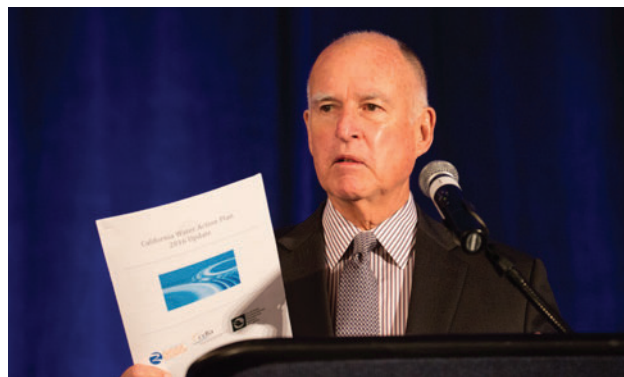
flow requirements in the Delta to balance the needs of, and to better protect, fish, farms, and cities.

Moreover, the California Water Commission (CWC) adopted regulations to guide the investment of \$2.7 billion in Proposition 1 funds in surface water and groundwater storage projects that will provide public benefits.

State engineers and biologists, recognizing the ecological value of floodplains and riverine habitat, finalized a Central Valley flood management plan that will improve water supply, water and air quality, agriculture, and recreation. Experimental release of farm drainage water through the Yolo Bypass — one of 13 actions charted to help pull Delta smelt from the brink of extinction — shows great promise for spurring the production of microscopic food for native fish.

All these actions and more are carried out by the administration of Governor Edmund G. Brown Jr., under the unifying principles of the Action Plan and in coordination with a broad array of federal, State, local, private, and tribal partners.

This report highlights the year's efforts and accomplishments, in a timeline and under the rubric of each of the Action Plan's 10 primary actions. A roadmap to sustainable water resources, the Action Plan will guide the efforts of State leaders for years to come.



In January 2016, Governor Brown released the updated California Water Action Plan, citing its balanced set of solutions designed to make the state's water system stronger and more resilient. Photo courtesy of ACWA.

Figure 1: 2016 Highlights

January

Proposed Budget Funds Water Priorities

Governor proposes 2016-2017 State Budget, providing \$323M for emergency drought response and an additional \$600+ M for other Action Plan priorities. *(All Actions)*

Two-Year Old Action Plan Gets an Update

CNRA, CalEPA, and CDFA release the 2016 Action Plan update. *(All Actions)*

Restoration Grant Programs Funded

CDFW announces \$31.4M in Prop 1 funds for 24 projects aimed at restoring species and enhancing water supply. *(Action 4)*

Water Rights Regulations Adopted

SWRCB adopts measurement and reporting regulations for surface water-right holders and claimants who divert water. *(Action 5)*

Truckee River Flows Improved

Diverse groups gathered to celebrate decades of effort to improve flows to benefit the environment and recreation. *(Actions 4, 6)*

March

21 Counties Receive Groundwater Grants

DWR awards \$6.7M in Prop 1 grants to address stressed and critically overdrafted basins. *(Action 6)*

Disadvantaged Communities Receive Technical Assistance

DWR and SWRCB help DACs and tribes develop Prop 1-eligible drinking water, wastewater, stormwater, and groundwater projects. *(Actions 2, 7)*

Salmon Protected by Renewed Regulation

The Russian River Tributaries Emergency Regulation renews SWRCB's authority to collect information from landowners and water suppliers to inform future actions. *(Actions 4, 5)*

May

Governor Takes Action to Make Water Conservation a CA Way of Life

With EO B-37-16, Gov. Brown bolsters the state's climate and drought resilience. SWRCB adopts emergency "stress test" regulation. *(Actions 1, 5)*



Urban Water Loss Audits Aid Compliance

SWRCB awards \$3.2M to establish the Water Loss Control Collaborative, making statewide water management more efficient and resilient. *(Action 1)*

February

Resolutions Affirm Rights to Water

SWRCB adopts pair of resolutions affirming the human right to water, tribal cultural uses of water, and subsistence fishing. *(Actions 1, 7)*

Water and Habitat Projects Receive Millions in Prop 1 Funding

SWRCB and WCB award over \$322M in Prop 1 funding for projects targeting water quality and supply, habitat restoration, and public access. *(Actions 2, 4, 5, 7)*

Delta Tributary Settlement Agreement Process Begins

CNRA and CDFW initiate ecosystem restoration planning that complements SWRCB Bay-Delta Water Quality Control Plan. *(Actions 3, 4)*

April

On-Farm Irrigation Efficiency Enhanced

CDFA awards \$16M from AB 32 for 129 projects to reduce water and energy use. *(Action 1)*



Commitment to Klamath Renewed

California and Oregon, with federal, tribal, and private-sector partners, advance historic agreement to remove dams. *(Action 4)*

June

Historic Groundwater Regulations Adopted

DWR adopts regulations to guide the development of GSPs, as mandated by the Sustainable Groundwater Management Act of 2014. *(Action 6)*

Delta Conservation Framework Launched

CDFW launches high-level conservation framework for the Delta, Yolo Bypass, and Suisun Marsh, to serve as the long-term continuation of CA EcoRestore. *(Action 3)*

Recycled Water Use Streamlined

SWRCB adopts General Order to streamline permitting of recycled water use. *(Actions 1, 2, 5)*

First Consolidation of Small and Large Water Systems

SWRCB issues first consolidation order, directing City of Tulare to provide water to a DAC whose water system was in violation of arsenic levels. *(Action 7)*

For definitions of the acronyms and abbreviations used in Figure 1, refer to "Acronyms and Abbreviations" on page 16.

July

Funding Aims to Improve Engagement of Disadvantaged Communities

DWR issues guidelines for Prop 1 IRWM grant funds, with \$51M allocation to improve DACs statewide. *(Action 2)*

Strategy Promotes Delta Smelt Resiliency

CNRA releases science-based strategy to address legacy and future challenges to Delta smelt sustainability. *(Actions 3, 4)*

Funding Targets Coastal Water Quality

SWRCB approves \$10M to help protect the coastline and public health by rehabilitating aging sewer infrastructure. *(Actions 2, 4, 7)*

Hearings Begin on Proposed Water Supply Diversions

SWRCB holds public hearings on DWR's request to add three new diversion points for CA WaterFix. *(Action 3)*

September

New Flow and Salinity Objectives Proposed

SWRCB releases draft objectives for water flow in major tributaries to San Joaquin River and for salinity levels in southern Delta. *(Actions 3, 4)*

Ecosystem Restoration and Water Quality Grants

Delta Conservancy allocates \$6.3M from Prop 1 for nine ecosystem and water quality projects. *(Actions 3, 4)*



State Explores Feasibility of Direct Potable Reuse

SWRCB submits report to Legislature on the feasibility of developing criteria for direct potable reuse. *(Actions 2, 5, 7)*

November

Elevating Delta Science and National Awareness

DSC brings together key scientists from across the country to improve national awareness of the Delta and develop a world-class Delta science program. *(Actions 3, 4, 9, 10)*

Public Weighs in on Flood Feasibility Study

DWR, after receiving stakeholder input, release Sacramento and San Joaquin river basin-wide feasibility studies, addressing multi-benefit flood improvements. *(Action 8)*

Framework for Conservation as a CA Way of Life Released

DWR, SWRCB, CPUC, CEC, and CDFA, in consultation with stakeholders, release draft framework on long-term water conservation in CA. *(Actions 1, 5)*

August

East Porterville Gets Permanent Water Supply

DWR hooks up the first 31 properties to new, sustainable water source, eliminating the need for emergency water deliveries. *(Actions 2, 5, 7)*

Restoration Project Benefits Smelt

DWR and SFCWA break ground on the Tule Red Restoration Project, opening wetlands to tides in Suisun Marsh, per USFWS's Delta Smelt OCAP BiOp. *(Action 4)*

State-Federal Support for Salton Sea Affirmed

Deputy Interior Secretary Connor and CNRA Secretary Laird sign an MOU to coordinate management activities to benefit the Salton Sea. *(Action 4)*

October

CA Water Plan 2018 Launched

DWR hosts public meeting for CA Water Plan, focusing on investment and finance strategies, as called for in the CA Water Action Plan. *(All Actions)*

Levee Project Protects Feather River Communities

SBFCA and CVFPB complete the multi-phase Feather River West Levee Project, providing 200-year-level flood protection. *(Action 8)*

Barrier Prevents Fish Entrainment

RD 108 and DWR break ground on the Wallace Weir Fish Rescue Facility, preventing adult salmonids from straying into the Colusa Basin Drain. *(Actions 3, 4, 8, 9)*



December

Delta Flood Risk Assessment Released

DPC identifies feasible financing mechanisms to pay for levee improvements and other methods of reducing Delta flood risk. *(Actions 3, 8, 10)*

Central Valley Flood Protection Plan Updated

CVFPB and DWR release public draft of the updated flood plan; the final plan will be adopted in 2017. *(Actions 4, 8, 10)*

Sea Level Rise and Water-Energy Studies Funded

CEC awarded \$30M to 30 studies of sea level rise and innovative water-energy efficiency technologies. *(Actions 2, 4, 5, 7)*

Action I — Making Water Conservation a California Way of Life

Increasing long-term water conservation, using water more efficiently, and strengthening local and regional drought planning are critical to California's resilience to drought and climate change. Accordingly, Governor Brown issued Executive Order (EO) B-37-16, "Making Water Conservation a California Way of Life." The executive order builds on temporary statewide emergency water restrictions to establish long-term water conservation measures, which include permanent monthly water use reporting; new, permanent water use standards in California communities; bans on wasteful practices, such as hosing off sidewalks, driveways, and other hardscapes; strengthened urban water shortage contingency planning; and improved agricultural water-use efficiency and drought planning.

As required by EO B-37-16, the California Department of Water Resources (DWR), the State Water Resources Control Board (Water Board), the California Department of Food and Agriculture (CDFA), the California Public Utilities Commission, and the California Energy Commission formed two advisory groups: the Agricultural Advisory Group and the Urban Advisory Group. The two groups consist of water suppliers, local governments, environmental groups, academia, consultants, and other interested parties. In November, 2016, State agencies released the public review draft of the report, *Making Water Conservation a California Way of Life: Implementing Executive Order B-37-16*. The report recommends actions that can be implemented under existing authorities, as well as actions that require additional authorities for implementation. The final report is planned for release in early 2017.

A previous executive action on drought also saw progress. EO B-29-15, issued in 2015, required agricultural water suppliers servicing between 10,000 and 25,000 acres to prepare agricultural water management plans (AWMPs) by mid-2016, an important new requirement for the duration of the drought. The agricultural sector responded. By the end of 2016, 16 AWMPs were submitted for DWR review

and approval. Additionally, 370 urban water suppliers reported their 2015 water use, as compared with their interim target for 2015, from Senate Bill x7-7 (2009). Urban water suppliers' average water use was 133 gallons per capita per day, a 33 percent reduction from the baseline established by the same legislation.

The State provided significant financial assistance to help local agencies and others boost water conservation.

- The Water Board awarded \$3.2 million through the water loss technical assistance program for water loss audit and validation, targeting one of the most prevalent weak links in urban water management.
- The CEC awarded \$1 million for research and development of innovative leak detection and repair technologies.
- DWR awarded nearly \$30 million from Proposition 1 for 44 agricultural water-efficiency projects.
- DWR and CDFA collaborated on a jointly managed pilot program intended to finance innovative on-farm and agricultural water-agency efficiency projects.
- In April and November, CDFA awarded a total of \$38 million from the Greenhouse Gas Reduction Fund (GGRF) (Assembly Bill [AB] 32) for 296 projects that will implement on-farm irrigation systems that use less water and energy. Since 2014, the State Water Efficiency and Enhancement Program has led to an estimated annual reduction of 59,755 acre-feet (af) of water and 60,330 metric tons of carbon dioxide.

Action 2 — Increase Regional Self-Reliance and Integrated Water Management Across All Levels of Government

Over the past two decades, voters have approved billions of dollars to incentivize local and regional investment in sustainable water resource management. This infusion of public funding — matched by local resources — has built a foundation for local sustainability. While those investments, including those described here for 2016, will continue in the next few years with funding from Proposition 1, the future is uncertain. Regions need to become more self-reliant, with stable financing and improved governance to bring regional water management into balance.

In early 2016, DWR awarded the remaining \$232 million in Proposition 84 Integrated Regional Water Management (IRWM) grant funding to 130 projects. All remaining Proposition 50 (2002) IRWM grant funds were awarded in 2016. Proposition 50 allocated \$250 million to DWR and \$250 million to the Water Board for projects across the state. From various bond measures, the Water Board awarded \$10 million to protect State Park beaches. The Water Board awarded \$9.5 million in stormwater planning grants for 28 projects and \$80 million for 27 stormwater construction projects.

Building on the success of the 2015 water-energy grant program, DWR released a solicitation for \$19 million in grants to save water and associated energy use, and to reduce greenhouse gases. Funding is provided by the State's GGRE. More than 20 applications were received, and awards are expected in early 2017.

Proposition 1 includes significant funding to address the particular technical assistance and infrastructure needs of disadvantaged communities. During 2016, DWR and the Water Board brought together representatives of disadvantaged communities and tribes to prioritize key challenges (informed in part by Proposition 84-funded pilot studies) and provide input to the development and rollout of the agencies' Proposition 1 funding programs. The Water Board awarded \$124 million in 2016 to benefit disadvantaged communities, and DWR solicited proposals

with plans to award over \$50 million in early 2017 and another \$50 million or more in subsequent years.

Implementation of the 2014 Sustainable Groundwater Management Act (SGMA) will go a long way toward building regional self-sufficiency. SGMA requires that local agencies work with farmers, businesses, and other water users to establish new regional governance and comprehensive implementation plans. During 2016, DWR and other State agencies provided significant resources to incentivize and support these local efforts. More will be needed in future years. (Refer to Action 6 for details of the State services provided during 2016.)



In early December, State water managers attended the inaugural meeting of the Community Water Leaders, a network of local water-agency board members working to increase access to safe and affordable drinking water for disadvantaged communities in the San Joaquin Valley. Photo credit: Community Water Center.

Action 3 — Achieve the Co-Equal Goals for the Delta

The Delta Reform Act established the co-equal goals of improving statewide water-supply reliability and protecting, restoring, and enhancing the Delta ecosystem. In the spring of 2015, Governor Brown launched California **WaterFix** and California **EcoRestore**, two new strategies aimed at achieving these co-equal goals. What a difference a year makes! In 2016, the State broke ground on 600 acres of tidal habitat restoration, completed the Wallace Weir Fish Rescue Facility, advanced a dozen other EcoRestore projects, and certified the final environmental documents for the construction of new Delta water conveyance infrastructure. Each of these efforts is the product of tremendous coordination, perseverance, and optimism in the face of seemingly endless challenge. Once fully implemented, WaterFix and EcoRestore will support the long-term sustainability of Delta ecosystems and water supplies, furthering the co-equal goals described in the 2009 Delta Reform Act and the Action Plan.

Several other significant Delta milestones were reached throughout the year. In September, the Water Board released a draft proposal to update key portions of its **Bay-Delta Water Quality Control Plan** (Bay-Delta Plan) related to southern Delta salinity and water flows in major tributaries to the San Joaquin River. Initial proposals for similar water quality measures for the Sacramento River watershed were also released. Once finalized, the Bay-Delta Plan will help balance the uses of Delta watershed water. The resolution of these complicated issues is an opportunity for water users reliant on major Delta tributaries to develop voluntary settlement agreements. Voluntary agreements — aligned with the objectives of the Bay-Delta Plan — could include flow and non-flow measures, such as habitat restoration, possibly resulting in a suite of watershed improvements that satisfies regulatory requirements as well as a wider range of interested parties.

Looking beyond EcoRestore's five-year planning horizon, the California Department of Fish and Wildlife (CDFW) initiated a process to develop a high-level document to guide Delta conservation planning and investment until 2050. When completed in 2017,

the Delta Conservation Framework (DCF) will be unique. Not limited to numeric acreage targets for habitat conservation, the DCF will acknowledge and focus on strategies for promoting or re-establishing ecosystem function, explicitly recognizing that we will see greater species response when we plan and implement projects that restore or mimic natural system processes. The DCF will also explicitly recognize that future conservation efforts must integrate into the Delta's unique cultural and socio-economic landscape, especially in relation to agriculture, the Delta's main economic driver. Success over the long run will require stakeholders to recognize the need for long-term evaluation of likely changes ushered by climate change and other challenges, and to recognize the value that conservation will bring to the region.



This graphic depicts real-time salinity measurements, one of many Delta water-quality indicators. In 2016, the Water Board moved forward with its Bay-Delta Water Quality Control Plan process. Graphic courtesy of BayDeltaLive.com.

Action 4 — Protect and Restore Important Ecosystems

Standing on Yurok tribal land on a clear morning in April, Governor Brown joined a coalition of government, tribal, and nongovernmental organization (NGO) leaders to sign an agreement to return free-flowing waters to the Klamath River. The historic coalition gathered to advance what will become the largest dam removal project in the country's history — removal of four hydroelectric dams that have choked the mighty Klamath for almost 100 years.

Throughout 2016, much progress was made to restore California's native ecosystems. A common theme of this diverse work is exemplified by the Klamath River agreement: the need to build strong and durable coalitions. Innovative and collaborative approaches to the ever-increasing complexities of ecosystem restoration are integral to Action 4.

Through the annual State Budget process, California moved hundreds of millions of Proposition 1 dollars toward ecosystem restoration. The California Wildlife Conservation Board (WCB), CDFW, DWR, the Sacramento-San Joaquin Delta and California State Coastal conservancies, additional State conservancies, and other organizations continued the State's commitment to projects large and small.

As part of the effort, the California Natural Resources Agency (CNRA) is now positioned to commit over \$450 million to several of the state's most ambitious and pressing ecological challenges, including Klamath dam removal and the restoration of the San Joaquin River and Central Valley wetlands.

The State also pushed ahead its 10-year plan for habitat construction at the Salton Sea, a critical avian refueling stop on the Pacific Flyway. In 2016, CNRA and the U.S. Department of the Interior reached agreement on a memorandum of understanding to protect bird populations and suppress dust around the dwindling lake. The WCB also awarded a \$14 million grant to DWR to help fund Salton Sea habitat and air quality efforts, which will help meet the Governor's short-term goal of creation of 9,000

acres to 12,000 acres of habitat and dust-mitigation projects.

The Administration and the Legislature worked together to enact several important pieces of legislation. AB 2087 (Levine) authorizes creative new approaches to ecosystem planning and infrastructure permitting. AB 2480 (Bloom) formally recognizes California's watersheds as part of our water management infrastructure system, narrowing the long-institutionalized gap between ecosystem stewardship policies and water management strategies.

In 2016, the Water Board also re-adopted a drought emergency regulation for four Russian River tributaries, requiring all water users to submit information on their water sources and uses to help guide future actions that may need to be implemented during dry periods to protect threatened and endangered fish species.

An immense amount of work remains ahead but progress made in 2016 offers a clear trajectory and a recipe for success: build coalitions, invest boldly, evolve policies, get it done.



Governor Brown, joined by representatives of the Yurok tribe, addresses a crowd of tribal, federal, State, and NGO dignitaries in April, to mark continued Klamath River restoration progress. Photo credit: Travis VanZant, CDFW.

Action 5 — Manage and Prepare for Dry Periods

Recognizing persistent yet less severe drought conditions during the 2015–2016 water year, the Water Board modified and extended its emergency water conservation regulation in May 2016. The new approach allowed suppliers to replace their prior percentage reduction-based water conservation standard with a localized “stress test,” which would demonstrate whether a supply shortfall would develop after three additional drought years. Mandatory conservation levels were set for suppliers with projected shortfalls. In total, the Water Board’s emergency regulations have resulted in conservation of more than 2 million af of water, enough to supply over 10 million people for a year.

In August, 2015, DWR established rebate and direct installation programs for lawn conversion and the replacement of older toilets with more efficient models.

Of the \$24 million DWR allocated for the turf replacement program, about \$22 million has been reserved or spent, with a projected 12 million square feet of turf replacement resulting in an estimated 1,200 af per year of water savings and 2,300 megawatt hours (MWh) of annual energy savings.

DWR also provided rebates for replacing toilets at California single-family residences. The \$6 million program budget is expected to support the replacement of 60,000 toilets throughout the state, with projected water savings of 2,100 af per year and 6 MWh of annual energy savings. By the summer of 2016, all of the toilet rebate funds had been spent or reserved.

In addition, DWR collaborated with NGOs to provide more than 230 workshops statewide on landscape and irrigation efficiency; turf replacement; high-efficiency toilet replacement; water management planning for agricultural and urban water suppliers; and conveyance system audit and leak detection for small water systems, rural communities, agricultural water suppliers, and tribal governments.

Further boosting statewide conservation efforts, the Water Board issued a general order that streamlined the permitting of recycled water use for such projects

as landscape irrigation, public hauling programs, dust control, street cleaning, major pipeline hydrostatic testing, and industrial uses. The Water Board also helped to expand the use of recycled water and develop new drought-proof sources of supply. The Water Board financed over \$430 million in water recycling construction projects projected to provide over 130,000 af per year of recycled water. Seeking to protect senior water-rights holders and better allocate limited water supplies, the Water Board adopted a new regulation requiring measurement and more accurate reporting of water diversions and use by all water right holders. Additionally, the Water Board re-adopted an emergency regulation requiring more frequent reporting of water diversions under claimed senior rights.

The Governor’s interagency Drought Task Force continued its periodic meetings to address drought impacts. The Water Board, the Governor’s Office of Emergency Services (Cal OES), the California Army National Guard, and the California Department of Community Services & Development (CSD) are addressing critical water supply needs in disadvantaged communities — notably in Fresno, Kings, and Tulare counties. Projects include connecting residences to existing distribution systems or new wells, installation of new wells, and consolidation of communities with existing distribution systems.



California Conservation Corps staff prepares a low-water-use demonstration garden at the 2016 State Fair.

Action 6 — Expand Water Storage Capacity and Improve Groundwater Management

The commitment to surface water and groundwater storage and improved groundwater management is driven by an ever-evolving understanding of the complexities of truly integrated management. Investments in water storage must help us deal with the effects of drought and climate change on water supplies for both human and ecosystem needs, as the Action Plan states.

To this end, the CWC adopted regulations for the Water Storage Investment Program (WSIP) which will guide the investment of \$2.7 billion in surface and groundwater storage projects. Those Proposition 1 funds will support water storage projects that provide public benefits, such as ecosystem, recreation, flood control, emergency response, and water quality improvements. The WSIP represents an important opportunity to invest in California's water future and complements the Action Plan's goal of expanding surface water and groundwater storage.

Implementation of the Sustainable Groundwater Management Act (SGMA) continued throughout 2016. In June, the CWC recommended adoption and DWR adopted regulations guiding the formation of groundwater sustainability agencies (GSAs) and the creation of related groundwater sustainability plans (GSPs). Tribes, water suppliers, water users, landowners, disadvantaged communities, and environmental interest groups across the state all provided input during regulation development.

DWR assisted regions in complying with the regulations, including providing over \$1.4 million in facilitation services to 22 local agencies and \$6.7 million in Proposition 1 grant funds to 21 counties identified as having stressed groundwater basins. DWR worked with the Governor's Office, the Water Board, and CDFA to establish the interactive, web-based Groundwater Information Center to provide ready access to real-time data, maps, and other tools that regions need to inform sound decision-making. DWR approved and finalized 39 basin boundary modifications and developed GSA formation notifi-

cation guidelines for local agencies. DWR published best management practices (BMPs) in a series of five documents that provide regulatory clarification, technical guidance, and general examples to assist GSAs and inform local agencies and stakeholders. The BMPs will serve as an important reference, as GSAs develop their plans to sustainably manage California's groundwater basins.

As December ended, DWR was preparing to release the *Water Available for Replenishment* report, which will highlight the regional challenges that lie ahead. The report makes clear that a diversified water resources portfolio is needed at the local, regional, and State levels. Conservation, recycling, desalination, additional storage and conveyance, stormwater capture, and water transfers — all are needed, and no single project will suffice. Managing groundwater sustainably brings to the fore the “all of the above” approach of the Action Plan.

To promote more innovative beneficial reuse of the state's diminished water supply, the Water Board issued its first temporary groundwater storage permit to capture rain-season high flows and adopted a new strategy to optimize resource management of stormwater.

Action 7 — Provide Safe Water for All Communities

In the four years since the passage of AB 685 (The Human Right to Water Act), California has made important progress in its efforts to address the needs of small communities without safe drinking water. In 2016, this progress continued with the enactment of SB 552 (Wolk), which gives the Water Board the authority to contract for the administration of public water systems that fail to provide safe drinking water to disadvantaged communities, and SB 1263 (Wieckowski), which will help prevent the proliferation of unsustainable water systems. Combined with other reforms, such as the authority to require water systems to consolidate, the State is helping communities provide their residents with safe, reliable water. The two most important remaining challenges are making water affordable for low-income customers and financing the operation and maintenance of critical system improvements.

Where these challenges were not insurmountable, the State helped a number of communities. Nowhere in California has drought taken a deeper toll on families

than in the Tulare County community of East Porterville. Through a unique, multi-agency partnership under the leadership of DWR, about 70 East Porterville homes that lacked safe water were connected to the City of Porterville's water system, eliminating the need for State emergency water deliveries.

Also in 2016, the Water Board exercised its new consolidation mandate authority by ordering the City of Tulare to connect Matheny Tract, a disadvantaged community of approximately 1,500 residents, to its water system. This consolidation provides a permanent source of safe drinking water to the community.

During 2016, the Water Board also provided more than \$9 million for emergency drinking water to drought-stricken disadvantaged communities. In addition, the Water Board enacted reforms to the Drinking Water State Revolving Fund in order to streamline the delivery of critical drinking-water infrastructure funding.



The first East Porterville water connection was made in August, 2016, to the home of Leonicio and Guillermina Ramirez and their daughter Tania, who said, "We're so happy. It was kind of scary to know there was no water."

Action 8 — Increase Flood Protection

Even in the midst of extended drought, the state experienced extreme storm events, flooding, and mudslides. California's climate is the most volatile in the nation, and climate scientists project that extreme weather patterns will only intensify in the future.

Following Hurricane Katrina in 2005, California approved bond measures and new policies that provided DWR and the Central Valley Flood Protection Board (CVFPB) with the resources and authority to assess and address flood risk and vulnerability statewide. Continuing this work in 2016, DWR and the CVFPB released a draft update to the 2012 *Central Valley Flood Protection Plan* (Flood Plan), highlighting recommended actions and investment priorities totaling \$17 billion to \$21 billion. Finding the funds to improve our flood system will remain one of the greatest challenges to implementation. The Administration will work with the Legislature and stakeholder community on this pressing need.

Accomplishments in 2016 were considerable. The CVFPB sponsored levee improvements along the American River by the Sacramento Area Flood Control Agency. As part of this effort, the Folsom Dam Joint Federal Project control structure is substantially complete and will be commissioned early next year. This project will significantly reduce flood risk and will contribute to a minimum 200-year level of flood protection for residents and critical infrastructure in the greater Sacramento area, including the State Capitol.

Signaling a commitment to multi-benefit flood projects, DWR is preparing the environmental documents for the Lower Elkhorn Basin Levee Setback

Project. This project increases flood capacity and lowers flood stages in the Yolo Bypass and Sacramento River, maintains floodway agriculture, and increases inundated floodplain habitat and upland habitats for endangered and other important species (e.g., Chinook salmon and giant garter snake). This project will reduce flood risk for 780,000 people in urban, rural, and small communities, with a combined \$53 billion in assets.

The Delta Stewardship Council moved forward with a public discussion draft of the Delta Levee Investment Strategy to help reduce the likelihood and the consequences of levee failures.

The Delta Protection Commission completed a draft *Delta Flood Risk Management Assessment District Feasibility Study*. This draft report reviews the feasibility of instituting new financing mechanisms to support necessary Delta flood system management.

In the fall, State, federal, and local flood management and regulatory agencies came together to sign a charter committing to cooperation on flood emergency operations statewide. DWR, along with federal and local water agencies, celebrated a decade of success in forecast-coordinated reservoir operations in California. This multi-agency partnership and heightened level of coordination have nurtured knowledge-sharing and improvements in tools and technologies, and the innovative operations have reduced downstream peak flood stages and the risk of catastrophic flooding.

Below: Federal, State, and local agencies gathered in the fall of 2016 to sign a charter committing to partner on emergency preparedness and response actions throughout California.



Action 9 — Increase Operational and Regulatory Efficiency

Action 9 of the Action Plan calls for increased coordination among agencies to improve operational and regulatory efficiency, including State coordination of Bay-Delta actions.

The Delta Stewardship Council (DSC) oversaw significant progress toward the goal of “One Delta, One Science,” an effort to help coordinate and enhance the many science ventures focused on the Delta. To this end, the DSC published the *State of Bay-Delta Science*, a synthesis of the best available science on many critical Delta issues, which serves as a valuable resource to inform management decisions in the region. The DSC and the U.S. Geological Survey also hosted a forum — the Delta Science Enterprise Workshop — which gathered scientists and key officials from high-profile ecosystems across the country. The scientists and officials shared their successes related to federal recognition, public and private financing for science, and other critical aspects of large-scale restoration efforts. The DSC’s Delta Plan Interagency Implementation Committee, comprised of 17 high-level State and federal agency leaders, met twice in 2016. Better-coordinated science was a central theme, though the discussion also included issues related to adaptive management, specific restoration projects, and decision-making.

DSC awarded \$4.1 million for three high-impact science investigations that will help guide management decisions related to Delta restoration and native fisheries management. Results will help enhance survival of out-migrating juvenile salmon from the San Joaquin River watershed, improve the EcoRestore adaptive management plan, and refine our current knowledge of how temperature and nutritional quality affect early life stages of sturgeon growth and survival under various flow conditions.

The CVFPB updated California Code of Regulations Title 23, Division 1, to improve permitting processes and recognize multi-benefit projects.

Throughout the year, State and federal agencies (e.g., DWR, U.S. Bureau of Reclamation [Reclamation], USFWS, CDFW, National Marine Fisheries Service, Water Board) worked closely together to cope with persistent drought. DWR and Reclamation developed the *2016 Drought Contingency Plan for Water Project Operations*, and have closely coordinated water operations of the State Water Project (SWP) and the Central Valley Project (CVP), to manage reservoir water resources through real-time efforts. Those efforts included drought operations planning and weekly meetings of the Real-time Drought Operations Management Team. This cooperative environment has allowed the State and federal agencies to collectively provide the necessary information to the Water Board in support of its evaluation of Reclamation and DWR’s requests for modifications to operational standards required under Water Rights Decision 1641. The 2016 Drought Contingency Plan for CVP and SWP water operations builds on the foundation of the State and federal agencies’ planning work over the last few years. The plan focuses on operations in February through November, 2016.

Action 10 — Identify Sustainable and Integrated Financing Opportunities

The Action Plan continues to be instrumental in focusing California leaders, water agencies, and stakeholders on a common set of goals and priority actions to achieve more sustainable management of the state's water resources. As a result of the Administration's and the Legislature's efforts, and with the support of voters, the State has made significant investments in sustainable water management. With the guidance of the Action Plan, these investments have promoted a more integrated approach to planning and managing water.

For example, Proposition 1 authorized \$7.545 billion in general obligation bonds to fund ecosystem and watershed protection and restoration; water supply infrastructure projects, including surface and groundwater storage; and drinking water protection. As shown in the table (below), the Administration and Legislature worked together to commit another \$1 billion to these activities in Fiscal Year 2015/2016, including those identified in the Action Plan.

These investments have been beneficial but are not enough to deliver a sustainably managed system. Existing water finance mechanisms are insufficient

and irregular, resulting in inadequate maintenance of previous infrastructure investments. Many of California's ecosystems continue to decline. It is estimated that California has a funding gap of \$2 billion to \$3 billion per year across water and flood management activities. Moreover, continued implementation of all work described in the Action Plan will require additional investment, over the current base budget, by State, local, and federal agencies.

The 2016 State Budget provided funding to DWR to address Action 10 of the Action Plan in California Water Plan Update 2018 (Update 2018). Update 2018 will identify and prioritize investment needs and describe potential finance options. It will articulate a long-term vision for sustainable water management in California, consistent with the Action Plan, which will support the efforts of State programs to align with common desired outcomes and manage the state's water resources. Development of the 2018 update was officially kicked off in 2016, with the convening of the Policy Advisory Committee, the Tribal Advisory Committee, the State Agency Steering Committee, and the 2016 Plenary Meeting.

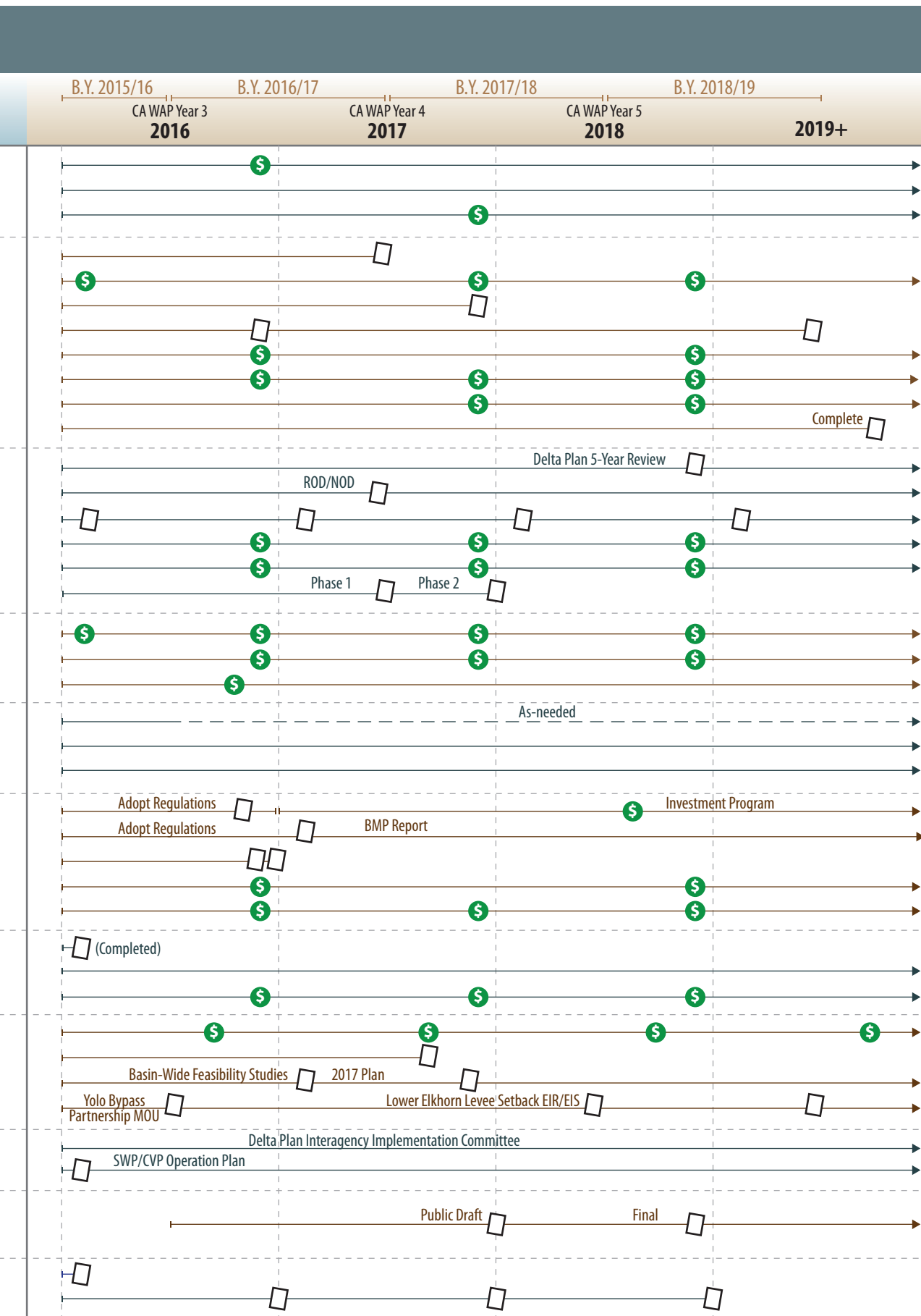
\$5.9 BILLION OF PROP 1 FUNDING WAS COMMITTED TO CALIFORNIA WATER PROJECTS TO DATE (DECEMBER 2016)

| Proposition 1 Chapters | Allocation 7,545,000 | Committed 5,878,434 | Balance 1,666,566 |
|--|-------------------------|------------------------|----------------------|
| Ch. 5, Clean, Safe and Reliable Drinking Water | 520,000 | 485,000 | 35,000 |
| Ch. 6, Protecting Rivers, Lakes, Streams, Coastal Waters and Watersheds | 1,495,000 | 839,000 | 656,000 |
| Ch. 7, Regional Water Security, Climate, and Drought Preparedness | 810,000 | 306,000 | 504,000 |
| Ch. 8, Statewide Water System Operational Improvement and Drought Preparedness | 2,700,000 | 2,700,000 | 0 |
| Ch. 9, Water Recycling | 725,000 | 678,000 | 47,000 |
| Ch. 10, Groundwater Sustainability | 900,000 | 863,000 | 37,000 |
| Ch. 11, Flood Management | 395,000 | 7,900 | 387,000 |

Note: Amounts are in thousands of dollars.

Figure 2: Schedule of Activities and Agency Roles

| Actions | Agency | Activity |
|---|---|---|
| 1. Make conservation a California way of life | DWR DWR, DSC DWR, CDFA, CEC | Prop 50/Prop 1 Urban and Agriculture Local Assistance “Save Our Water” Campaign, Delta Science Seminars Water and Energy Grants |
| 2. Increase regional self-reliance and integrated water management across all levels of government | DWR DWR, Water Board OPR Water Board Water Board Water Board DWR DWR | Regional Sustainability Strategic Plan Prop 84/Prop 1 IRWM Local/Disadvantaged Communities Assistance Land Use/Water Management Recommendations Recycled Water Regulations Prop 1 Stormwater Local Assistance Prop 1 Water Recycling Technologies Prop 1 Desalination Grants Prop 204 Drainage Reuse |
| 3. Achieve the co-equal goals for the Delta | DSC DWR CNRA CDFW, DC, DWR DSC Water Board | Delta Plan California WaterFix California EcoRestore Project Implementation Prop 1 Delta Watershed Restoration Projects Implement High Impact Delta Science Actions, Others Bay-Delta Water Quality Control Plan Update |
| 4. Protect and restore important ecosystems | CDFW, DWR, WCB, others CNRA DWR | Prop 1 Grant Projects Prop 1 State Obligations Habitat Restoration Prop 84 San Joaquin River Water Quality Grant |
| 5. Manage and prepare for dry periods | DWR DWR, CalOES, Water Board, others DWR, Reclamation | Critical Water Shortage Preparedness/Information Management Assist Communities In Need SWP/CVP Operation/Water Transfer Management |
| 6. Expand water storage capacity and improve groundwater management | CWC, Water Board, CDFW, DWR DWR, Water Board DWR DWR Water Board | Prop 1 Water Storage Investment Program Sustainable Groundwater Management Interim Bulletin 118 and Water Replenishment Report Prop 1 Sustainable Groundwater Planning Prop 1 Groundwater Contamination Clean-up Grants |
| 7. Provide safe water for all communities | Water Board Water Board Water Board | Safe Drinking Water Plan for California Prop 1 Wastewater Treatment Projects Prop 1 Drinking Water/Small Community Grant Program |
| 8. Increase flood protection | DWR DSC/DWR DWR, CVFPB CNRA, DWR, CDFW, others | Flood System Improvements (Small Communities, Systemwide) Delta Levee Investment Strategy Central Valley Flood Protection Plan 2017 Yolo Bypass/Cache Slough Partnership Effort |
| 9. Increase operational and regulatory efficiency | DSC, 17 agencies DWR, DSC, CDFW, others | Bay-Delta Activities Coordination State/Federal System Operations Improvements |
| 10. Identify sustainable and integrated financing opportunities | DWR, others | CA Water Plan Update/Investment Strategy and Finance Plan |
| Other Work to Support Action Plan Implementation | CNRA, CalEPA, CDFA CNRA, CalEPA, CDFA | Update to the CA Water Action Plan Action Plan Implementation Management/Reporting |



Acronyms and Abbreviations

| | |
|----------------|---|
| AB | Assembly Bill |
| Action Plan | California Water Action Plan |
| af | acre-feet |
| AWMP | agricultural water management plan |
| Bay-Delta Plan | Bay-Delta Water Quality Control Plan |
| BMP | best management practice |
| CA | California |
| Cal OES | Governor's Office of Emergency Services |
| CalEPA | California Environmental Protection Agency |
| CDFA | California Department of Food and Agriculture |
| CDFW | California Department of Fish and Wildlife |
| CEC | California Energy Commission |
| CNRA | California Natural Resources Agency |
| CPUC | California Public Utilities Commission |
| CSD | California Department of Community Services & Development |
| CVFPB | Central Valley Flood Protection Board |
| CVP | Central Valley Project |
| CWC | California Water Commission |
| DAC | disadvantaged community |
| DCF | Delta Conservation Framework |
| Delta | Sacramento-San Joaquin Delta |
| DPC | Delta Protection Commission |
| DPIIC | Delta Plan Interagency Implementation Committee |
| DSC | Delta Stewardship Council |
| DWR | California Department of Water Resources |
| EIR | environmental impact report |
| EIS | environmental impact statement |
| EO | Executive Order |
| Flood Plan | Central Valley Flood Protection Plan |
| GGRF | Greenhouse Gas Reduction Fund |
| GSA | groundwater sustainability agency |

| | |
|--------------------|--|
| GSP | groundwater sustainability plan |
| GW | groundwater |
| HCD | California Department of Housing and Community Development |
| IRWM | integrated regional water management |
| M | million |
| MWh | megawatt hour(s) |
| MOU | memorandum of understanding |
| NMFS | National Marine Fisheries Service |
| NGO | nongovernmental organization |
| NOD | notice of decision |
| OCAP BiOp | Operations Criteria and Plan Biological Opinion |
| Prop | Proposition |
| Reclamation | U.S. Bureau of Reclamation |
| RD | Reclamation District |
| ROD | record of decision |
| RTDOMT | Real-time Drought Operations Management Team |
| SAFCA | Sacramento Area Flood Control Agency |
| SBFCA | Sutter Buttes Flood Control Agency |
| SFCWA | State and Federal Contractors Water Agency |
| SGMA | Sustainable Groundwater Management Act |
| SWP | State Water Project |
| SWRCB, Water Board | State Water Resources Control Board |
| Update 2018 | California Water Plan Update 2018 |
| USACE | U.S. Army Corps of Engineers |
| USFWS | U.S. Fish and Wildlife Service |
| WCB | California Wildlife Conservation Board |

Useful Web Links

2016 Drought Contingency Plan for Water Project Operations

http://www.water.ca.gov/waterconditions/docs/2016-DroughtContingencyPlan-CVP-SWPOperations-Feb-Nov_1.19.16-FINAL.pdf

Bay-Delta Water Quality Control Plan

http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/bay_delta_plan/water_quality_control_planning/2016_sed/index.shtml

California Water Action Plan — 2016 Update

http://resources.ca.gov/docs/california_water_action_plan/Final_California_Water_Action_Plan.pdf

Delta Conservation Framework

<https://www.wildlife.ca.gov/conservation/watersheds/dcf>

Central Valley Flood Protection Plan (2012)

<http://www.water.ca.gov/cvfmpp/2012-cvfmpp-docs.cfm>

Delta Flood Risk Management Assessment District Feasibility Study

https://delta.blogs.ca.gov/files/2016/10/DRMADFS_2016_Draft_Final_ReportNB.pdf

EcoRestore

<http://resources.ca.gov/ecorestore/>

Making Water Conservation a California Way of Life: Implementing Executive Order B-37-16

<http://www.water.ca.gov/wateruseefficiency/conservation/>

Safeguarding California

<http://resources.ca.gov/climate/safeguarding/>

State of Bay-Delta Science, 2016

http://deltacouncil.ca.gov/sites/default/files/2016/05/Agenda_Item_5_SBDS%20Summary.pdf

Water Available for Replenishment

<http://www.water.ca.gov/groundwater/sgm/wafr.cfm>

WaterFix

<https://www.californiawaterfix.com/>

Appendix A:
2014 and 2015
Highlights

January

Governor Releases Water Action Plan

Governor releases *California Water Action Plan*, following coordination with state agencies, tribes and public

Governor Takes Action on Drought

Governor issues drought emergency declaration and proposes 2014/15 State budget that includes funding for Action Plan implementation, including drought response (**Actions 1-5**)

Drought Forum Raises Awareness

CDFA sponsors forum to discuss drought information needs and ways to improve preparedness (**Action 5**)

Adjusted Operations Save Water

Upon petition by DWR & BOR, State Water Board issues order to allow adjusted operation of the State and Federal Projects to save water for critical needs (**Actions 5, 9**)

Integrated Projects Receive Grants

DWR awards \$153M to 20 regions to support 138 integrated multi-benefit projects (**Actions 2, 5**)

March

Emergency Legislation Helps Drought-Stricken Communities

Governor and Legislature collaborate on accelerated drought relief and Action Plan implementation package (SB 103/104; over \$687M). State agencies quickly responded by working with the American Red Cross and community organizations to deliver water to those in need (**Actions 1, 2, 5, 7**)



Low Interest Loans for Water Recycling

State Water Board makes available \$800M in low-interest loan funds to increase water recycling and provide alternative drought-proof supply for communities (**Actions 1, 2, 5, 7**)

May

Save Our Water Month

Governor proclaims May to be *Save Our Water Month* and State Intensifies public campaign with TV/radio ads and planned State Fair Exhibits (**Actions 1, 5**)

Work Begins to Prioritize Delta Levee Investments

DSC releases concept paper and establishes inter-agency funding agreements to prioritize State investments in Delta levees, consistent with the Delta Plan (**Actions 3, 8**)

State Coordinates Voluntary Actions in Key Watersheds

State Water Board adopts emergency fish flow regulations to maintain minimum flows in 3 Sacramento River tributaries, and coordinates with CDFW to develop voluntary cooperative agreements with landowners to achieve minimum flows (**Action 4**)

Emergency Funding for Drinking Water Systems

State Water Board issues the first grants to aid communities with drinking water systems impacted by drought. By summer's end, over \$13 M was granted (**Actions 2, 5, 7**)

February

State Closes Rivers to Fishing

The CA Fish & Game Commission takes unprecedented emergency action to close waters to fishing to protect native fish from low water flows in waterways significantly impacted by drought (**Actions 4, 5**)



State Addresses Fisheries Crisis

CDFW begins coordinating with federal agencies and commercial fishing industry, leading to State-led trucking of 30M fish to the SF Bay (**Actions 4, 5, 9**)

April

Governor Orders Redoubling of Drought Efforts

Governor issues Executive Order to redouble state response to drought. Aims to increase water management flexibility for state/local water managers and regulatory entities and provide conservation incentives (**Actions 1, 5**)

State Publishes Groundwater Shortages Report

DWR publishes report identifying groundwater basins in the state with potential groundwater shortages and gaps in groundwater monitoring (**Actions 5, 6, 7**)

June

Final State Budget Funds Action Plan and Drought Relief

Final 2014/15 State Budget provides an additional \$100M+ in funding priorities for the Action Plan and helps lay solid fiscal foundation for implementing near-term actions, including money for water supply assessments, local technical assistance, water rights enforcement, and fish habitat restoration (**Actions 1, 2, 4, 5**)

Delta Communities Receive Flood Emergency Response Funds

DWR awards \$5M in grants to flood control agencies in the Delta to prepare for flood emergencies (**Action 8**)

State Prioritizes Groundwater Basins

DWR releases statewide ranking of 515 groundwater basins in the state collectively producing greater than 90% of California's annual groundwater; 127 basins ranked high and medium priority (orange/yellow on map) (**Action 6**)

State Eases Path to Recycled Water Use

State Water Board adopted a new General Order allowing the regional boards to streamline the permitting of recycled water uses, including agricultural and landscape irrigation, dust control, and some industrial processes (**Actions 2, 9**)

July

State Consolidates Water Quality Programs

Effective July 1, Drinking Water Program is relocated from CDPH to State Water Board; consolidating major water quality programs within the Board allows State to better manage/protect water resources and ensure safe drinking water for Californians (**Actions 2, 7, 9**)

State Adopts Emergency Conservation Regulation

State Water Board approves emergency regulation to ensure urban water agencies and their customers increase water conservation or face possible fines/other enforcement (**Actions 1, 5**)

New Grant Program will Restore Wetlands and Reduce Carbon

CDFW releases grant solicitation for wetland restoration projects to be awarded in 2015; projects will sequester greenhouse gas/carbon, restore critical wildlife habitats, and aid water supply objectives (**Action 4**)

September

**Water Year 2014
ends as California's
4th driest**

Landmark Groundwater Legislation Passes

The Legislature passes, and the Governor signs, historic groundwater policy reform that paves the way for sustainable groundwater management across the state. Emphasis is on local control, coordinated basin management, and limited but effective state involvement (**Action 6**)



Families without Drinking Water Get Relief

Governor issues order making funding available through the California Disaster Assistance Act to provide water for drinking and sanitation to households currently without running water (**Actions 5, 7**)

November

Voters Approve Water Bond (Proposition 1)

An unprecedented 64% of California voters approve a \$7.5 billion water bond, designed to help implement the Action Plan's broad range of actions

Agency Coordination Promotes Efficiency on Delta Solutions

Delta Stewardship Council (DSC) convenes the second Delta Plan Interagency Coordinating Committee meeting, focusing on advancing Delta science, cross-agency collaboration, and Action Plan implementation (**Actions 3, 4**)

State Publishes Report on Drought Impacts to Groundwater

DWR publishes report identifying areas where drought has significantly impacted groundwater resources (**Actions 5, 6, 7**)

August

Grants Promote Water Desalination

DWR awards a total of \$8.7M in grants to eight water desalinization projects throughout the state focusing on construction, research, feasibility and/or demonstration (**Actions 1, 2, 5**)

Legislature Approves New Water Bond

The Legislature and the Governor negotiate and approve AB 1471 (Rendon), a \$7.5 billion water bond slated for the November Ballot (**Actions 1-8**)



October

State Publishes California Water Plan Update

DWR, on behalf of the State, publishes the 2013 update of the *California Water Plan* (Bulletin 160), continuing the legacy that began with the 1957 Bulletin 3- California Water Plan. This update includes vital information on the State's water conditions, including groundwater and flooding (**All actions**)

Grants Aid California Farmers

CDFA awards \$3.6M in Greenhouse Gas Reduction funds for 93 projects to implement on-farm irrigation systems that use less water and energy and reduce greenhouse gas (**Actions 1, 5**)

Expedited Grants Increase Regional Self Reliance

DWR announces \$221M in grants to regions (incl. disadvantaged communities) to implement over 100 near-term drought relief projects, leveraging more than \$3 local per \$1 state funds. Shortest grant process in history of IRWM program (**Actions 2, 5**)

December

Grant Program Encourages Water-Energy Efficiency

DWR receives 96 applications requesting \$142M in Greenhouse Gas Reduction Funds for the 2014 Water-Energy Grant Program, well in excess of the \$19M available. Awards will be made in 2015 (**Actions 1, 2, 5**)

State Continues Collaboration with Tribes

California Tribes and state resource agencies finish a year of monthly consultation and coordination meetings about drought response, conservation programs, and impacts on cultural resources (**Actions 2, 5**)

January

Proposed Budget Funds Water Priorities

Governor proposes 2015-16 State Budget, which includes funding for such Action Plan priorities as continued drought response. **(All Actions)**

Local Groundwater Agencies Get Help

DWR offers facilitation services to assist local efforts in forming new groundwater governance entities. **(Actions 2, 6)**



Drought Plan Protects Water Supplies and Fish

State/Federal Water Projects and Fish and Wildlife Agencies propose operational adjustments to protect water supplies and fisheries **(Actions 4, 5, 9)**

March

Governor Signs \$1B Drought Legislative Package

Working with the Legislature, Governor signs \$1B emergency drought legislation. **(Action 5)**

Regulations Issued to Protect Salmon

Water Board adopts emergency regulations to protect fisheries. **(Actions 4, 5)**

State Takes Urgent Conservation Action

Water Board makes urgent changes in water rights to conserve municipal water supplies and protect fish. **(Actions 1, 2, 4, 5, 7)**

Sierra Nevada Watershed Management Effort Begins

Sierra Nevada Conservancy and U.S. Forest Service launch new integrated watershed management program. **(Actions 4, 5, 6, 7, 8)**

May

Emergency Barrier Protects Delta Water Quality

DWR installs barrier to protect Delta water quality from ocean salinity intrusion caused by drought (barrier later removed in November 2015). **(Action 5)**

State Invests in Water & Carbon Savings

DWR awards \$28M for projects that save 270,000 acre-feet of water and reduce 199,000 metric tons of greenhouse gases. **(Actions 1, 2)**

Delta Committee Adopts Science Actions

DSC's Delta Plan Interagency Implementation Committee adopts high-impact science actions to improve Delta management. **(Actions 3, 9)**

Streamlined Guidelines and Drinking Water Funds Announced

Water Board announces streamlined guidelines and \$19M to address emergency drinking water needs. **(Actions 5, 7, 9)**

February

Survey Shows Water Storage Potential

CWC conducts statewide survey to develop inventory of water storage projects that may seek Water Storage Investment Program funding. **(Action 6)**

State Provides Emergency Drinking Water Funding

Water Board announces availability of \$2.1M in emergency drinking water funds for 15 projects in drought-stricken communities. **(Actions 2, 5, 7)**

New Technology Used to Monitor Fish

DWR uses improved camera system to monitor Delta Smelt to reduce fish entrainment. **(Action 3)**

April

Governor Restricts Statewide Water Use

Executive order requires 25% urban water-use reduction statewide. The regulations were adopted by the Water Board in May. **(Actions 1, 5)**

Governor Announces CA EcoRestore and CA WaterFix

State and federal leaders unveil updated plans to achieve Delta ecosystem restoration and water supply reliability. **(Actions 3, 4, 9)**



State Funds Boost Rural Flood Protection

DWR invests \$9M in levee patrol road repair to improve emergency response capabilities for rural flood protection. **(Action 8)**

June

President Obama Announces Federal Drought Assistance for California

President Obama responds to the state's drought crisis with \$18M to provide jobs for CA workers dislocated by the drought. **(Action 5)**

Adopted State Budget Funds Water Priorities

Legislature approves and Governor signs 2015-16 Budget with \$2B for CA Water Action Plan implementation. **(All Actions)**

State Hosts Prop 1 Tribal Government Consultation

CWC, CDFW, DWR, and Water Board sponsor a 2-day Tribal Government Consultation on Prop 1 funding opportunities. **(All Actions)**

Safe Drinking Water Plan Released

Water Board publishes *Safe Drinking Water Plan for California*, a strategy to ensure safe drinking water for all Californians. **(Action 7)**

State Funds Habitat/Carbon Sequestration

CDFW provides \$21M for projects to restore 2,400 acres of Delta/coastal wetlands and mountain meadows. **(Actions 3, 4)**

Climate Report Reveals New Data

DWR releases *California Climate Science and Data Report*, highlighting challenges and opportunities for adaptation. **(Actions 1, 2, 5, 8)**

Guidebook Assists Agricultural Water Suppliers

DWR publishes guidebook to assist agricultural water suppliers affected by drought. **(Actions 1, 5)**

July

Flood Conservation Strategy Released

DWR publishes draft Conservation Strategy to support ecosystem restoration; an essential part of the *2017 Central Valley Flood Protection Plan*. **(Actions 4, 8)**

Landscape Irrigation Ordinance Strengthened

CWC adopts DWR's revised Landscape Ordinance, requiring more efficient landscape irrigation systems statewide. **(Actions 1, 5)**

Summit Showcases Technology-Drought Nexus

The Governor's Office, Imagine H2O, and ACWA sponsor a summit to discuss how to leverage technology to build a drought-resilient California. **(Actions 1, 2, 5)**

Drought-Stricken Community Gets Water

Water Board approves \$0.5M to bring safe drinking water to Central Valley community of 1500 people. **(Actions 5, 7)**

September

Partnership Forms to Advance Flood and Habitat Protection

CNRA convenes federal, State, and local agencies to coordinate Yolo Bypass flood protection and habitat restoration. **(Actions 4, 8)**

State Incentivizes Water Efficiency on Farms

CDFA selects 100 projects totaling \$9.4M to implement efficient on-farm irrigation systems. **(Action 1)**

Scientists Publish Delta Challenges Report

Four former DSC scientists author the *Delta Challenges Report*, laying out the perils of status-quo Delta water supply and ecosystem management. **(Action 3)**

State Hosts Drought Workshops

DWR completes more than 100 drought-related workshops in local communities statewide. **(Actions 1, 5)**

November

Governor Acts to Protect Fish and Bolster Drought Response

Governor issues executive orders directing CDFW, DWR, and other agencies to bolster the State's drought response efforts. **(Actions 1, 5)**

Historic Dam Removal Benefits Salmon

State Coastal Conservancy and partners demolish San Clemente Dam, allowing threatened Steelhead to access 25 miles of historic spawning habitat. **(Actions 4, 8)**

State Readies for "El Niño"

CalOES establishes storm-ready Web portal; DWR finalizes Delta Flood Emergency Plan and completes inspections of 1600 miles of levees. **(Actions 3, 8, 9)**

Input on Climate Adaptation Plan Sought

CNRA publishes draft *Safeguarding California: Implementation Action Plans* to improve CA's response to a changing climate. **(Actions 1-9)**

Ag Water Efficiency Grant Funding Announced

CDFA announces \$16M for investment in systems to reduce water/energy use. **(Actions 1, 5)**

August

State Hosts Chief Army Engineer for Drought and Flood Project Tour

Governor's Office, Senator Feinstein's Office, DWR, and CalOES host top USACE commanders for CA drought tour. Completion of Folsom Dam auxiliary spillway also highlighted. **(Actions 5, 6, 8, 9)**



NASA Casts Light on State's Groundwater Crisis

Supported by DWR, NASA publishes report revealing areas of the state affected by subsidence resulting from excessive pumping of groundwater. **(Actions 5, 6)**

Rebates Incent Urban Water Conservation

DWR provides \$40M in Prop 1 funding for turf removal and replacement of inefficient toilets. **(Actions 1, 5)**

Prop 1 Drinking Water Grant Guidelines Approved

Water Board releases guidelines for providing \$260M grant funding for drinking water infrastructure projects. **(Actions 5, 7)**

October

Salton Sea Legislation Signed

Working with the Legislature, Governor signs various bills to protect Salton Sea, boost water conservation, strengthen groundwater management, and improve water quality. **(Actions 1, 4, 5, 6, 7)**

Prop 1E Funding Set to Lower Flood Risk

DWR awards \$246M for 7 urban flood projects and recommends \$15.3M for critical levee repairs by local agencies. **(Actions 2, 4, 8)**

More Prop 1 Grants Announced

DWR announces availability of Prop 1 grant funding: \$31M for ag. water agencies and \$10M for counties with stressed groundwater basins. **(Actions 1, 6)**

December

Grants Benefit Wildlife and Watersheds

CDFW receives Prop 1 grant applications for ecosystem and watershed protection. Est'd \$31.4M total awards planned for early 2016. **(Actions 3, 4)**

Regions Set to Receive Grants for Integrated Projects

DWR approves \$232M for award in early 2016 to 26 regions (incl. \$50M benefiting disadvantaged communities) for integrated, watershed based projects. **(Actions 1-9)**

Delta Restoration Projects Advance

CDFW, DWR, CVFPB, and others coordinate on funding and permitting of the Knights Landing Outfall Gates project to improve fish passage in the Delta. **(Actions 4, 8)**



