Chapter 3. Actions for Sustainability

The state’s complex, interconnected water systems continue to support the values and aspirations that Californians hold in common. These systems were built based on the best available knowledge that existed generations ago. Since then, they have been continually subject to changing natural and human-made conditions. As a result, many Californians now face unacceptable risks from flooding and water quality, unreliable water supplies, continued depletion and degradation of groundwater resources, and habitat and species declines. Managing water resources systems for sustainability will require changing the status quo, addressing critical gaps and urgent needs, and strategically planning for the long-term.

First and foremost, the state must address the foundational challenges, described in Chapter 2, related to governance and alignment, the regulatory framework, institutional capacity, infrastructure, and funding. Addressing these foundational challenges will enable the state to build a clear and efficient path toward water resources sustainability. This chapter recommends actions that need to be initiated to address those foundational challenges and support water resources sustainability across water management sectors and across the state. The chapter also describes the role that State government needs to play in assisting water and resource managers in planning, implementing, monitoring, and funding their activities to ensure the state’s water resources are on a path toward sustainability.

State Leadership Role

Update 2018 focuses on State government’s leadership role in improving the management and the adaptability of California’s water resources and move water resources systems toward sustainability. Given what is at stake for Californians and our complex water management systems, State government must take a leadership role in sustainably managing water and related resources. Update 2018 identifies how the State needs to be more effective at facilitating and demonstrating progress toward water resources sustainability. Update 2018 emphasizes the State’s role in assisting and empowering regional water and resource managers and policy-makers to continuously manage for sustainability by:

- Setting intended outcomes and formulating actions.
- Evaluating whether actions produce their intended outcomes.
- Learning and adapting actions to produce intended outcomes.

State government has the primary responsibilities in these areas:

- **Assisting regions to accomplish necessary water resources management services**, such as helping to ensure that all Californians are provided with basic public health and safety. In some circumstances, the State can function as a service provider of last resort and provide basic services itself when justified.
- **Addressing international, interstate, or trans-boundary issues** that extend beyond the geographical reach and jurisdictional authority of local and regional agencies.
- **Leveraging resources and providing economies of scale** by tapping into the broad expertise and statewide geographical scale of State agency resources.
• Implementing and providing financial assistance for activities that have broad public benefits and advance sustainability through public health and safety, ecosystem vitality, a healthy economy, and opportunities for enriching experiences.
• Constructing, operating, and maintaining infrastructure (green and grey) it owns or is responsible for (e.g., the State Water Project, the State Plan of Flood Control, public waterways, recreation facilities).

Update 2018 recommends how the State should modify and align the delivery of State services related to water management around a shared, statewide definition of sustainability and consistent set of intended outcomes; and track actual outcomes over time. This Water Plan presents a vision of sustainably managing water resources and improves the foundation for the State to address the challenges and opportunities identified in Chapter 2 and the Governor’s California Water Action Plan. The recommended actions in Update 2018 identified below significantly contribute to the Administration’s objectives to provide a more reliable water supply for our farms and communities, restoring important wildlife habitat and species, and helping the state’s water systems and environment become more resilient, as identified in the Governor’s Water Action Plan. Specifically, this Update 2018 builds a stronger foundation for State leadership and regional capacity in the following areas:

• Increase regional self-reliance and integrated water management across all levels of government
• Manage and prepare for dry periods
• Expand storage capacity and improve groundwater management
• Increase flood protection
• Increase operational and regulatory efficiency
• Identify sustainable and integrated financing opportunities

Recommended Actions
This section focuses on actions that the State will initiate over the next five years to support the long-term vision of managing water resources for sustainability, as described in Chapter 1. The recommended actions establish the foundation for addressing critical gaps and urgent needs that must be resolved if California is to progress toward sustainability. The recommended actions are organized as follows:

• Improve Alignment of Agencies’ Initiatives and Governance — A successful transition to managing water resources for sustainability requires more coordinated and aligned efforts from local, regional, State, tribal, and federal levels of governance.
• Improve Regulatory Framework to Reconcile Environmental Needs and Human Activities — Managing water resources for sustainability will require a regulatory framework designed to support achievement of the four societal values; tied to and informed by regional/watershed planning and implementation efforts, including active planning and investing to enhance ecosystem function and viability; based on an ecosystem conservation and reconciliation approach; and tailored for different locations.
• Provide Water Managers Resources, Knowledge, Skills, and Tools Needed for Data-Driven Decision-Making — Technical and facilitation assistance from the State to the regions is needed to strengthen relationships, deepen trust, share information, build institutional capacity, and assess system performance to support managing water resources for sustainability.
• **Modernize and Rehabilitate Water Resources Management Systems** — Managing water for sustainability requires continuous investment in the rehabilitation, modernization, and operations and maintenance of existing and future infrastructure (including green and grey) to provide intended outcomes.

• **Provide Sufficient and Sustainable Funding** — Managing water resources for sustainability requires funding (from local, regional, State, federal, and tribal sources) to develop and update high-quality regional and State plans and to implement priority actions identified in approved regional and State plans.

**Improve Alignment of Agencies’ Initiatives and Governance**

To improve alignment and governance, the following actions are recommended:

- **Align objectives of local, regional, State, and federal water and land-use management organizations and tribes to appropriate societal values.**

  o **Societal Value Legislation.**

    The Governor’s Office of Planning and Research (OPR) should evaluate the benefit of codifying the societal values identified in *California Water Plan Update 2018* (Update 2018) for water resources management, as well as management of related resources, in statute. Legislation would outline the necessity for California water planning and implementation efforts to incorporate societal values and track progress toward managing water resources for sustainability. The codified societal values would include public health and safety, a healthy economy, ecosystem vitality, and opportunities for enriching experiences as presented in Update 2018 and define sustainability as an ongoing, resilient, and dynamic balance among the societal values. State, regional, and local agencies should be left the flexibility to determine their own intended outcomes and performance metrics under the societal values, with the common pursuit of managing water resources sustainably.

  o **State Agency Alignment Around Sustainability.**

    State agencies should realign governance structures, authorities, reporting, and strategic planning to improve the ability for all State agencies to collaborate, integrate, and invest in sustainable water management activities. Aligning State agency efforts around sustainability would allow improved ability for cooperation, coordination, collaboration, integration, and investment in all of the societal values, thus overcoming barriers that can be caused by narrow mission statements and authorities. For example, this could streamline financial assistance provided to local and regional agencies and tribes from State funding sources for multi-benefit, integrated water management projects. Further, State agencies should make recommendations to the Legislature on any changes to agency authorities that would better enable alignment and integration to support managing water resources for sustainability. To accomplish this alignment, agencies should work together through multi-disciplinary collaboration processes to strengthen the collective understanding of sustainability, the societal values, and State incentives for the regions to achieve shared desired outcomes which affords increased flexibility for regions to determine how best to achieve them.

- **Strengthen the alignment of government planning, processes, and tools with regional governance structures so goals and objectives, actions, and tradeoffs can be discussed and**
evaluated holistically at a watershed scale. The focus on watersheds supports the consideration of the unique and interdependent physical, biological, economic, and social processes and functions of California’s watersheds.

- Watershed Sustainability Planning Outreach and Recommendations.

  DWR will conduct a robust stakeholder outreach process with local, regional, State, and tribal representatives to develop a framework for successful watershed sustainability planning statewide. This effort would identify the lessons learned and build upon the successes of integrated regional water management and groundwater sustainability agency (GSA) development and implementation. This outreach would begin in 2019, and by 2021 DWR will develop an initial report to the governor and the Legislature of recommendations for empowering local and regional entities to:

  - Better align IRWM and GSA planning processes.
  - Delineate watershed sustainability planning boundaries based on hydrologic basins.
  - Establish hydrologically based watershed governance structures, where they do not currently exist.
  - Develop holistic watershed sustainability plans with potential to reduce number of other State-required plans.
  - Establish stable and sufficient funding mechanisms for watershed management.
  - Support robust disadvantaged community (DAC) and tribal involvement.
  - Link and consolidate regulations, environmental compliance, and permitting processes to watershed planning.
  - Develop a framework for inter-watershed coordination.

  This outreach would begin implementation of the recommendations presented in DWR’s Stakeholder Perspectives: Recommendations for Sustaining and Strengthening Integrated Regional Water Management. Ultimately, watershed planning would be led and conducted by local and regional entities, with planning, technical, and financial assistance from the State to provide incentives for hydrologically-based, regional planning for sustainability. This recommendation is considered an initial step in this larger effort to develop more holistic watershed sustainability plans, which may take decades to implement. Conducting this initial level of outreach and developing an implementation strategy for the recommendations would require authorization and funding from the Legislature.

- Strengthen relationships with California Native American Tribes that acknowledge and respect tribes’ inherent rights to exercise sovereign authority and ensure that tribes are incorporated into planning and water resources decision-making processes in a manner that is consistent with their sovereign status.

  - Lead Agency Definition.

    The Legislative Analyst’s Office should evaluate the potential for modifying the definition of “lead agency” under the California Environmental Quality Act (CEQA) in government code (State CEQA Guidelines Section 15367, Title 14 California Code of Regulations 15000 et seq) to include recognized tribal governments.

  - Tribal Involvement in Regional Planning Efforts.
DWR, in coordination with the Tribal Advisory Committee and State Agency Steering Committee, will prepare recommendations to assure timely and meaningful communication with tribes and utilization of Traditional/Tribal Ecological Knowledge to inform water resources management at the watershed scale. These recommendations will inform the next Water Plan update and improve understanding of traditional/Tribal Ecological Knowledge by local, regional, and State agencies. Through this effort, tribes and State agencies should work together to develop strategies and options for ensuring greater and early collaboration regarding water resources sustainability projects, as well as watershed planning and management activities, especially where decisions affect tribal trust lands and/or traditional territories/homelands.

- State Contracting with Tribes

As permitted by statute, the California Department of General Services (DGS) should update the State Contracts Manual language and process to reconcile the sovereign status of tribes and the ability of tribes to receive State grants and loans. If required, DGS should make recommendations to the Legislature for amending statute.

Improve Regulatory Framework to Reconcile Environmental Needs and Human Activities

To improve water resources management regulation, the following actions are recommended:

- **Expand regulatory focus to include a systems-oriented approach, rather than just avoiding or mitigating environmental impacts caused by discrete projects, for strategic environmental assessment that reconciles environmental needs and human activities through the dynamic balance among all four societal values.**

- Programmatic Environmental Compliance Task Force.

The California Natural Resources Agency and the California Environmental Protection Agency should jointly convene a task force of local, State, and federal resources and water management agencies and tribes to develop a programmatic environmental compliance process considering multiple project or activity types to balance ecosystem functions and human activity by replacing current site-by-site mitigation requirements, as well as expedite permitting of critical maintenance activities and water system improvement projects. Establishing this task force would require authorization and funding from the Legislature. The task force should develop a report, summarizing its recommendations, for use by the Legislature and Governor in considering statutory, regulatory, and policy adjustments. The task force should be charged with developing recommendations to:

- **Reduce impediments** to project implementation and transactional costs caused by regulations and processes.

- **Tie and consolidate regulations and permitting processes to ecoregional and watershed scale planning**, implementation efforts, and long-term system management for sustainability, which should include active planning and investment to enhance ecosystem function, viability, biodiversity, and resilience to pressures and stressors, including climate change.

- **Support existing regional conservation and regulatory tools, and improve existing tools and processes** to address common challenges and concerns with the current regulatory framework to streamline the permitting process and move beyond traditional
project-by-project mitigation. Other ideas to consider include delegation of regulatory authorities and consolidation of permitting efforts and responsibilities.

- Consider changes to allow more regionally focused approaches to regulation and investments for ecosystem reconciliation. Identify options that allow State and federal regulators to rethink and experiment with more holistic and place-based approaches.

- **Improve resourcing and coordination to address common challenges and concerns regarding current regulatory framework.**

  - Ecosystem Restoration Project Permitting.

  The California Department of Fish and Wildlife should evaluate permitting processes for ecosystem restoration and enhancement projects and make recommendations on potential statutory alterations to mitigation requirements for restoration projects. Recommendations should consider agency resources, improvements to communication and coordination, funding, and how the small habitat retraction project CEQA exemption could be modified. The evaluation should include a determination whether permitting for restoration projects could be considered on a separate track that allows credit for the restoration components of projects, such as by including them in regional conservation plans or strategies to develop mitigation credit agreements. Considerations should also include exempting projects that include a restoration component from additional mitigation requirements necessitated by the impacts of that restoration component.

  - Delegation of Federal Permitting.

    State regulatory agencies should work with their federal permitting agency counterparts to seek delegation of authority to reduce the number agencies involved in the permitting process and improve coordination. Precedent exists in the California Environmental Protection Agency and the California Department of Transportation (Caltrans). For example, Caltrans participated in the Surface Transportation Project Delivery Program, under which Caltrans may assume National Environmental Protection Act responsibilities of the U.S. Department of Transportation Secretary with respect to one or more highway projects in California (California Department of Transportation 2014).

  - Cooperative Agreements.

    State regulatory agencies should prepare cooperative agreements for permit reviews among multiple regulatory agencies to increase efficiency by maximizing expertise and available resources. Agencies should seek to reduce the number of regulatory agencies with which a project proponent must coordinate and enable sharing of limited resources, such as staff (this may require recommendations to the legislature). If agreements cannot be reached or are not feasible, regulatory agencies should consider development of web-based tools for “one-stop” permitting support for State permits to help project proponents.

**Provide Water Managers Resources, Knowledge, Skills, and Tools Needed for Data-Driven Decision-making**

To develop long-term capacity and support a culture of learning and adapting throughout California water management, the following actions are recommended:
Use best available science, data, tools, current scientific understanding of ecosystem function, traditional ecological knowledge, and when necessary, develop, promote, and implement new technologies and innovations, to support data-driven decision-making and policies to ensure water management stays on a sustainable path and investments are resilient.

- Climate Science and Monitoring Program.
  The California Natural Resources Agency, the California Environmental Protection Agency, and the Governor’s Office of Planning and Research, in partnership with federal agencies and academia, should jointly develop a Climate Science and Monitoring Program. The program would support the monitoring, forecasting, and scientific understanding of the role of the climate system in extreme precipitation events and better inform water resources management during extreme events. Ongoing research collaborations including tracking atmospheric rivers, rain/snow trends, upland watershed monitoring, paleohydrology, sea-level rise, seasonal winter outlooks, and changes in streamflow and stream temperatures should be funded by this program. The program would also ensure that climate science and best available information are used to modernize the water resources management system. The program would require authorization and annual, long-term funding from the Legislature to ensure success. This program would help implement the actions recommended in the Governor’s Water Action Plan to “revise operations to respond to extreme conditions” and “provide essential data to enable sustainable groundwater management.”

- Comprehensive Water Resources Data Collection and Management Program.
  State water resources agencies should jointly develop a Comprehensive Water Resources Data Collection and Management Program to assist local and regional entities and build regional capacity by developing, monitoring, maintaining, and sharing information, data, models, and other tools. State agencies should work with regions to determine data and data management needs. State agencies should publish and update quarterly State-held water and ecological datasets on a comprehensive and open data platform (as required under Assembly Bill 1755, California Water Code section 12410). State agencies should also maintain minimum protocols, as well as best practices, for data-sharing, documentation, quality control, public access, and promotion of open-source platforms and decisions support tools related to water and ecological data. This program would require authorization and annual, long-term funding from the Legislature to ensure success. This program would help implement the actions recommended in the Governor’s Water Action Plan to “provide essential data to enable sustainable groundwater management” and “prepare for the future through better technology and improved procedures.”

- Watershed Sustainability Outlooks.
  DWR will engage regional stakeholders in developing and maintaining Watershed Sustainability Outlooks (Outlooks), as introduced in Chapter 2, to provide a regional-scale snapshot and evaluation of the metrics or indicators demonstrating movement toward sustainability, including the status of water-related contributions to public health and safety, healthy economy, ecosystem vitality, and opportunities for enriching experiences. The Outlooks should include an assessment of the efficacy of governance, regulations, and funding of water resources management activities statewide and for individual regions. The Outlooks should utilize Traditional/Tribal Ecological Knowledge. From this base of
understanding of current conditions, DWR will work with regional stakeholders to define regional-scale intended outcomes and recommended actions to achieve them. To enable effective collaboration around this effort, DWR will develop tools to allow collection of information needed to assemble the Outlooks. The Outlooks should be used to inform updates of the California Water Plan and future watershed sustainability plans. Prior to Update 2023, the Outlooks will be developed for, and applied within, the 10 hydrologic regions. A determination will be made if subsequent applications of the Outlooks are needed at a more refined scale. This determination will be made based on input received during the Watershed Sustainability Planning Outreach and Recommendations action described above.

- **State Water Management Sector Plans.**

  The appropriate State agencies will develop and maintain thematic plans that define strategies and processes, as well as intended outcomes, to support sustainable water resources management at the thematic level. Water Management Sectors include flood management, water supply reliability, water quality, ecosystems, and people and water (i.e., recreation, social and cultural uses, and aesthetics). These plans should include statewide and regional overviews of the specific management area. Water Management Sector plans should be updated every five years and over time should incorporate information from future watershed sustainability plans. These plans should provide an overview of statewide conditions, articulate policy priorities, and ensure intended outcomes for each thematic area are clearly identified. Previous efforts under DWR’s Statewide Flood Management Planning Program and CDFW’s State Wildlife Action Plan have made strides in initiating thematic plans in these areas. Development of State Water Management Sector Plans would support development of watershed sustainability plans by providing overarching State priorities and intended outcomes for the thematic areas to inform and incent watershed planning and management efforts. Development of these plans would require authorization and funding from the Legislature to ensure State resources are available.

- **Plan Alignment.**

  DWR will evaluate timing and opportunities to improve efficiencies and effectiveness of all legislatively mandated, water resources-related plans and make recommendations for modifying any legislatively mandated deadlines to ensure effective and efficient integration of information into the California Water Plan (Water Plan). Ideally, all required State agency plans related to water management activities would be completed at least two years before the next Water Plan update. For example, the Central Valley Flood Protection Plan was released in 2017, as mandated by legislation, just months before the public draft of California Water Plan Update 2018. Staggering the release of required plans will allow better integration and application of the information at a statewide scale.

  The State Water Management Sector plans recommended above should be completed at least two years before Water Plan updates, to ensure information from these plans is used to develop the Water Plan. Recommendations should specify that the timing of required local plans allow for efficient utilization of local information in required State plans. The recommendations should also ensure that local and regional plans be aligned and consolidated to reduce duplication and inconsistency, and help inform groundwater sustainability plans, integrated regional water management plans, and ultimately watershed sustainability plans. This action is important to improve coordination and efficiency of
multiple, at times uncoordinated, planning efforts at all levels of government and reduce duplication of information and data development, tracking, and reporting.

- Statewide Water Storage Program
  DWR will establish an ongoing Statewide Water Storage Program to evaluate surface and groundwater storage opportunities in the state and provide technical support to local and regional water agencies and groundwater sustainability agencies. As part of the program, DWR initially will prepare a statewide evaluation to identify the benefits, costs, hydrologic and engineering attributes, environmental attributes, and other tradeoffs and feasibility indicators regarding surface and groundwater storage opportunities. The evaluation should include optimal locations for groundwater recharge throughout California. Such an evaluation should inform the potential role of surface and groundwater storage in advancing recent and emerging State initiatives, future bonds/initiatives, and watershed sustainability.

  The statewide storage evaluation should reflect 21st-century planning conditions and priorities that include seeking strategies that provide multiple benefits, taking a systemwide planning approach, planning transparency, changing societal values/goals, changing hydrology and water supply under a changing climate (including loss of snowpack), and improved assessment tools. This program should provide an assessment of feasible storage and recharge opportunities throughout the state and should be a companion to DWR’s System Reoperation Study and the Water Availability for Replenishment report. This program should also demonstrate State government leadership in the form of regional capacity-building and partnerships, since most local and regional entities do not have the resources or technical ability to conduct such an evaluation across jurisdictions. Activities should be designed to assist in implementing the Sustainable Groundwater Management Act statutes and Action 6 of the California Water Action Plan (Expand Water Storage Capacity and Improve Groundwater Management). This program would require authorization and annual, long-term funding from the Legislature to ensure success. This program would help implement the actions recommended in the Governor’s Water Action Plan to “revise operations to respond to extreme conditions” and “improve statewide groundwater recharge.”

- Regional Engagement in California Water Plan Update 2023.
  Through the California Water Plan Update 2023 (Update 2023) process, DWR will continue utilizing an enhanced regional planning process and regional forums to effectively engage and empower regional water management groups, groundwater sustainability agencies, and other existing regional and local entities foundational to effective regional planning and management. DWR and participating local and regional entities will establish working groups and venues at regional scales for collective representation to State government. The local and regional entities should be large enough to effectively interface with State government, yet small enough to effectively plan, implement, and manage areas defined by unique hydrologic and ecosystem conditions. These regional working groups will shape Update 2023 recommendations for State actions and investments. The recommendations will be specific to each hydrologic region in the following areas:
  - Shared vision & values.
  - Policy and investment priorities.
- Water management and investment needs.
- The Sustainability Outlook, as applied in each region.
- Exploration of opportunities to integrate and reconcile local plans and State statues mutually supported by State and regional representatives (e.g., groundwater sustainability plans, urban water management plans, land use decision-making, and flood management).
- Development of regional reports and/or an atlas for Update 2023, which will contain:
  - Identification of State’s desired outcomes.
  - Identification of shared State/regional desired outcomes.
  - State Investment in shared outcomes for each area.
  - Recommend State incentives and funding sources.
  - Implementation plans.

**Strengthen regional integrated water management planning, track program performance, and report intended versus actual outcomes on regular cycles to promote continuous learning and adaptation.**

- **State Agency Performance Tracking and Reporting.**
  
  State agencies should develop, maintain, and make available data and information management systems needed to conduct the system performance assessments and to support integrated planning and implementation for sustainability, including water budgets, system assessment and performance, and ecosystem conditions. State agencies should collect data and information needed describe how agency actions support sustainability, to update the Sustainability Outlooks as described in Chapter 2 on an annual basis, and develop the Watershed Sustainability Outlooks as described above. Tracking and reporting efforts should support and improve the ability of State agencies to adaptively management water resources systems by establishing long-term trends and flagging when activities are not producing the desired outcomes.

- **Reporting Requirements for State Funding.**
  
  State agencies should require performance tracking and reporting for all projects funded or partially funded with State funds. All planning and implementation efforts should address societal values and track progress toward managing water resources for sustainability. Additionally, State agencies should require performance tracking and reporting on the societal values and sustainability in grant program guidelines and proposal solicitation packages. Language should be standardized in grant program guidelines and proposal solicitation packages across programs, and in authorizing bond language, so links to sustainability and the societal values are consistent. Progress toward achieving sustainable management of water resources at a regional scale should be tracked and documented in Watershed Sustainability Outlooks and future watershed sustainability plans.

- **Provide technical and facilitation assistance and improve access to data and tools for under-represented and economically disadvantaged communities to facilitate their participation in planning efforts at all planning scales.**

  - **Disadvantaged Community Liaisons**
State agencies should support disadvantaged community (DAC) involvement through technical, facilitation, and funding assistance to manage water resources sustainably. State agencies should engage proactively and consistently with different local, regional, State, and federal agencies and tribes to promote more effective integration and cooperation. Appropriate State agencies should create DAC liaison positions to seek candidates that have adequate qualifications and understanding of DACs’ needs to support more effective integration. This Task Force would further the action recommended in the Governor’s Water Action Plan to “provide assistance to disadvantaged communities.”

- **Disadvantaged Community Engagement in Integrated Regional Water Management Groups**
  
  State government should provide noncompetitive base-level funding, subject to State accountability requirements, for IRWM regions to support stakeholder engagement; coordination and collaboration; IRWM plan updates; and participation of underrepresented groups, such as disadvantaged communities and local agencies with budget constraints. This engagement would further the action recommended in the Governor’s Water Action Plan to “provide assistance to disadvantaged communities.”

- **Encourage, educate, and train the next generation of water resources managers.**

  - **Water Resources Education.**
    
    State agencies should work with school districts and universities to expand water resources curricula and programs. State agencies should first determine needs and opportunities to develop or expand curricula and programs. All State conservancies, DWR, DFW, and California State Parks should improve outreach and education to children and in disadvantaged communities that will improve public health, support California’s outdoor lifestyle, and promote wise use of water resources.

**Modernize and Rehabilitate Water Resources Management Systems**

To modernize and rehabilitate the water management system, the following actions are recommended:

- **Undertake modernization and rehabilitation of water- and flood-related infrastructure to reduce risks associated with aging and/or deficient infrastructure and the effects of climate change.**

  - **Statewide Water Resources Management Systems Assessment Program.**
    
    DWR will develop a Statewide Water Management System Assessment Program to provide technical and financial assistance to local, regional, State, and federal water managers. The purpose is to gain a better understanding of the current status of their water resources systems (green and grey infrastructure) and their ability to perform the desired level of service and support managing water resources for sustainability. The program will assist local, regional, and State water managers and facility owner/operators to assess their water resources management systems for critical deficiencies, remaining useful life, climate resiliency, potential effects of subsidence, and benefits of system modernization, as needed. The assessment will also consider whether any components of the water management system have outlived their useful life and require decommissioning. Facility owners and operators will be
responsible for determining whether an assessment is necessary and for assessing their own facilities, if a sufficient assessment program does not already exist. Facility owners and operators will also be responsible for requesting State technical and financial assistance, if needed, in compliance with State funding guidelines developed for the program. Results of the assessment program would be used to prioritize State investment in the Statewide Water Resources Management Systems Modernization and Rehabilitation Program described below. Results should also be used by local and regional entities in the development of Watershed Sustainability Outlooks and future watershed sustainability planning. In addition, results would support local asset management programs and forecasting of capital improvements. This program would require authorization and funding from the Legislature to ensure sufficient resources are allocated. This program would help implement the actions recommended in the Governor’s Water Action Plan to “support and expand funding for integrated water management planning and projects,” “encourage State focus on projects with multiple benefits,” “improve statewide groundwater recharge,” and “encourage flood projects that plan for climate change and achieve multiple benefits.”

- Statewide Water Resources Management Systems Modernization and Rehabilitation Program

  DWR will develop a Statewide Water Infrastructure Modernization and Rehabilitation Program to help ensure statewide water resources systems are rehabilitated from the effects of subsidence, resilient to a changing climate, and provide flexibility for managing water resources into the future. This program should include funding for major rehabilitation, replacement, and new facilities that promote modernization of water- and flood-related infrastructure. The program will assist local, regional, and State water managers and facility owner/operators to modernize and rehabilitate their water resources management systems, as needed. Facility owners and operators will be responsible for requesting State technical and financial assistance, if needed, in compliance with State funding guidelines developed for the program. State modernization and rehabilitation funding assistance should capitalize on local and federal cost-sharing. The program should utilize an integrated approach to rehabilitation and modernization, including ecosystem restoration and climate change adaptation. This program would help implement the actions recommended in the Governor’s Water Action Plan to “support and expand funding for integrated water management planning and projects,” “encourage State focus on projects with multiple benefits,” “improve statewide groundwater recharge,” and “encourage flood projects that plan for climate change and achieve multiple benefits.”

As part of this program, DWR, in consultation with the U.S Army Corps of Engineers, regional flood agencies, groundwater sustainability agencies, and landowners, will prepare a comprehensive plan for integrating flood, surface water supply, and groundwater management. This could include using flood flows to reduce flood risk; stopping or slowing groundwater overdraft and subsidence; reconnecting floodplains; and improving ecosystems, drought preparedness, and water quality. The plan should examine expanded flood bypasses and flood easements in conjunction with groundwater recharge strategies, including groundwater banking and storage. These strategies should include using agricultural and grazing lands for recharge, expanded conveyance of flood flows to recharge areas, and reoperation of reservoirs for early releases of water for recharge prior to storms.
This program should be informed by the results and prioritization established in the Statewide Water Management System Assessment Program. Results of this program should be tracked and reported routinely to assess the attainment of the intended outcomes. Results should also be considered in the development of Watershed Sustainability Outlooks and future watershed sustainability planning. This program would require authorization and funding from the Legislature to ensure sufficient resources are allocated.

- **Ensure facility operations and maintenance practices are based on current, best available data and management practices, and operating plans and manuals are routinely updated, as appropriate for the facility type.**

  - Statewide Water Resources Management Systems Operations and Maintenance Assessment Program.

  DWR will develop a Statewide Water Management System Operations and Maintenance Assessment Program to provide technical and financial assistance to help owners and operators of water resource systems (green and grey infrastructure) gain a better understanding of the current status of the operations of water infrastructure statewide and its ability to perform the desired level of service and to support the management of water resources for sustainability. The program should assist local, regional, and State water managers to assess, on a system scale (i.e., larger infrastructure/systems, rather than the equipment scale), deferred maintenance; outdated operational procedures and manuals; and operational changes needed to address extreme hydrology, increase aquifer replenishment, reconcile operations and maintenance activities with ecosystem vitality, and modernize benefits (i.e., reoperation). Facility owners and operators will be responsible for determining if an assessment is necessary and for assessing their own facilities, if a sufficient and routine assessment program does not already exist. Facility owners and operators will also be responsible for requesting State technical and financial assistance, if needed, in compliance with State funding guidelines developed for the program. Results of the assessment program would be used to prioritize State investment in the Statewide Water Resources Management Systems Operations and Maintenance Modernization Program described below.

  The assessments should be updated every five years, or in a time frame appropriate to the facility and local conditions (i.e., susceptibility to changing physical conditions and hydrology). Results of this assessment program would be used to prioritize funding for a Statewide Operations and Maintenance Modernization Program. Results should also be considered in the development of Watershed Sustainability Outlooks and future watershed sustainability planning. This program would require authorization and funding from the Legislature to ensure sufficient resources are allocated. This program would help implement the actions recommended in the Governor’s Water Action Plan to “support and expand funding for integrated water management planning and projects,” “encourage State focus on projects with multiple benefits,” “revise operations to respond to extreme conditions,” “improve statewide groundwater recharge,” “encourage flood projects that plan for climate change and achieve multiple benefits,” and “prepare for the future through better technology and improved procedures.”

DWR will develop a Statewide Operations and Maintenance Modernization Program to provide technical and financial assistance to help owners and operators of water resources management systems (green and grey infrastructure) extend California’s water infrastructure’s useful life by reducing deferred maintenance, undertaking modernization of water- and flood-related operations and maintenance (O&M) procedures and manuals, providing for resiliency to extreme hydrology (e.g., floods and droughts), reconciling O&M needs with ecosystem vitality, and modernizing benefits through reoperation. Facility owners and operators will be responsible for requesting State technical and financial assistance, if needed, in compliance with State funding guidelines developed for the program. State funding should capitalize on local and federal cost-sharing. The program should be informed by information and prioritization established by the Statewide Water Resources Management Systems Operations and Maintenance Assessment Program. Results of this program should be tracked and reported routinely to assess the attainment of the intended outcomes. Results should also be considered in the development of Watershed Sustainability Outlooks and future watershed sustainability planning. This program would require authorization and funding from the Legislature to ensure sufficient resources are allocated. This program would help implement the actions recommended in the Governor’s Water Action Plan to “support and expand funding for integrated water management planning and projects,” “encourage State focus on projects with multiple benefits,” “revise operations to respond to extreme conditions,” “improve statewide groundwater recharge,” “encourage flood projects that plan for climate change and achieve multiple benefits,” and “prepare for the future through better technology and improved procedures.”

- **Promote the use of vegetation, soils, and other elements and land use practices, such as working landscapes and mountain meadow and forest management, to restore some of the natural processes required to manage water and create healthier urban, rural, and natural environments.**

  o **Statewide Green Infrastructure and Working Landscapes Task Force.**

    The California Natural Resources Agency and the California Department of Food and Agriculture should jointly lead a Statewide Green Infrastructure and Working Landscapes Task Force. The task force would review alternatives and establish a framework for developing a conservation easement program that supports green infrastructure and working landscapes and considers protection of groundwater recharge areas and natural upper watershed lands. The Task Force should prepare a report summarizing its findings and recommendations for use by the Legislature and the Executive Branch in developing statute, regulations, and policy. Establishing this task force would require authorization and funding from the Legislature to ensure adequate resources are allocated. This Task Force would further the actions recommended in the Governor’s Water Action Plan to “improve land use and water alignment” and “improve statewide groundwater recharge.”

  o **Integrated Land Use and Water Management Implementation Program**

    The California Natural Resources Agency, Governor’s Office of Planning and Research, and the California Department of Food and Agriculture should jointly implement an Integrated Land Use and Water Management Implementation Program to promote the integration of land use and water management activities. This program should be designed to enable the
State to improve the integration of its own infrastructure, as well as provide technical and financial assistance to local and regional agencies. This program should facilitate stronger collaboration between land use planners and water planners. This program should provide regulatory and financial incentives for local and regional plans that include integrated water management (IWM) and provide technical tools and data resources to make it easier for local governments to prepare land use plans that include IWM. The program should encourage measures that also include preservation of existing floodplains, aquifer recharge areas, agricultural lands, and alluvial fans; reduction of hardscapes; implementation of low-impact development practices; restoration of natural floodplain functions; and design measures to increase post-flood resiliency. This Task Force would further the actions recommended in the Governor’s Water Action Plan to “improve land use and water alignment” and “improve statewide groundwater recharge.”

Provide Sufficient and Sustainable Funding

To ensure sufficient and sustainable funding for water resources management activities over time, the following actions are recommended:

- **Commit to consistent, ongoing, State investment designed to deliver specific long-term outcomes that contribute to the four societal values.**
  - Investment Prioritization.
    State government should prioritize investments based on expected contribution of a program or project to the four societal values, cost effectiveness, and ability to improve watershed resiliency.

- **Use consistent, reliable, and diverse funding mechanisms, with an array of revenue sources, to support managing water resources for sustainability, including ongoing management actions and capital projects.**
  - Removal of Funding Barriers
    DWR will engage local water managers and elected officials in compiling strategies and best practices to remove barriers to local and regional funding for water projects. This evaluation should include recommendations to clarify the 1996 Right to Vote on Taxes Act’s (Proposition 218’s) applicability to water-related fees and taxes, including potential recommendations to modify legislation, if necessary. The evaluation will also identify limitations to implementing multi-district/multi-benefit projects, such as using fees from assessment districts for out-of-district actions. This activity would help implement the action recommended in the Governor’s Water Action Plan to “remove barriers to local and regional funding for water projects.”
  - Novel Funding Mechanisms Feasibility Study.
    In collaboration with water managers, decision-makers, and other stakeholders, DWR, through the Water Plan Team, will work with stakeholders and develop a feasibility study to identify any potential changes to existing funding mechanisms and explore novel funding mechanisms. Novel funding mechanisms may include an assessment to help fund the public benefits of water projects or a statewide flood insurance program for funding flood...
management activities. The study will provide recommendations to the Legislature and Administration regarding novel funding mechanisms, who would pay them, how they would be collected, and how they could be used. This program would help implement the action recommended in the Governor’s Water Action Plan to “analyze user and polluter fees.”

**Summary Table of Recommendations**

Table 1 provides a summary of how the actions described above could support sustainability and a range of costs and time to implement. How each action may support sustainable water resources management in California is scored by determining if the action has an indirect, low, moderate, or high potential to contribute to the four societal values. The potential range of annual capital and State operations costs for each of the identified actions is identified by the following ranges of costs:

- $ < $2 million
- $$ $2 million - $10 million
- $$$ $10 million - $50 million
- $$$$ $50 million - $200 million
- $$$$$ $200 million - $500 million
- $$$$$$ $500 million +

Table 3-1 also identifies the potential range of time to implement each of the identified priority actions. The ranges of time are:

- 1–2 years
- 3–5 years
- Over 5 years
- Continuous
### Table 3-1. Summary of How the Recommended Actions Support the Societal Values and the Estimated Cost and Time to Implement the Actions

<table>
<thead>
<tr>
<th>Policy Recommendation / Prioritized Actions</th>
<th>Societal Values</th>
<th>Agency Alignment</th>
<th>Operational and Regulatory Efficiency</th>
<th>Annual Cost</th>
<th>Time to Implement</th>
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<td>Healthy Economy</td>
<td>Thriving Ecosystems</td>
<td>Enriching Experiences</td>
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**Modernize and Rehabilitate Water Resources Management Systems**

| Statewide Water Resources Management Systems Operations and Maintenance Assessment Program               | i | i | i | i | ⚫ | ⚫ | ⚫ | $$$ | 3-5 years |
| Statewide Water Resources Management Systems Operations and Maintenance Modernization Program          | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | $$$ | Continuous |
| Statewide Water Resources Management Systems Asset Assessment Program                                    | i | i | i | i | ⚫ | ⚫ | ⚫ | $$$ | 3–5 years |
| Statewide Water Resources Management Systems Modernization and Rehabilitation Program                   | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | $$$ | Continuous |
| Statewide Green Infrastructure and Working Landscapes Task Force                                        | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | $ | 1–2 years |
| Integrated Land Use and Water Management Implementation Program                                         | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | $$$ | 3-5 years |

**Provide Sufficient and Stable Funding**

| Investment Prioritization                                                                               | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | $ | Continuous |
| Removal of Barriers                                                                                     | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | $ | 1-2 years |
| Novel Funding Mechanisms                                                                               | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | ⚫ | $ | 1-2 years |
Notes:
i  Potential indirect contribution to this outcome
O  Low potential contribution to this outcome
●  Moderate potential contribution to this outcome
●●  High potential contribution to this outcome

$ < $2 million
$$ $2 million - $10 million
$$$ $10 million - $50 million
$$$$ $50 million - $200 million
$$$$$ $200 million - $500 million
$$$$$$ $500 million+