

Increase Water Supply

Increasing California's water supply involves... Insert Project Manger text here

Included in this strategy are:

- 1. Conjunctive Management and Groundwater Storage**
- 2. Desalination**
- 3. Precipitation Enhancement**
- 4. Recycled Municipal Water**
- 5. Surface Storage- Cal FED**
- 6. Surface Storage- Regional/Local**

FUNDING

Funding: Conjunctive Management and Ground Water Storage

- Continue state funding for local groundwater monitoring, management activities and feasibility studies that enhance the coordinated use of groundwater and surface water. Give funding priority to groundwater monitoring projects with a focus on filling data gaps in geographic areas and tracking, both statewide and regionally, changes in groundwater levels, groundwater flows, groundwater quality, land subsidence, surface water flow, surface water quality, and the interaction of surface water and groundwater. Give priority to funding and technical assistance for conjunctive management projects that are conducted in accordance with an IRWMP designed to increase water supplies or provide other benefits, including the sustainable use of groundwater, regional self-sufficiency, improvement in water quality, and enhancement of the environment.

Funding: Desalination

Funding: Precipitation Enhancement

- The State should support the continuation of current projects as well as the development of new projects and help in seeking research funds for both old and new projects. Operational funding support for new projects may be available in the Integrated Regional Water Management program.

Funding: Recycled Municipal Water

- The State should expedite the availability of funding for the preparation of regional Salt Management Plans in order to increase the potential of recycled water.

Funding: Surface Storage- Cal FED

- As indicated in the funding discussion above, DWR is prioritizing future surface storage work efforts due to insufficient funding to complete environmental documentation and feasibility analyses for three CALFED surface storage investigations (NODOS, LVE, and USJRBSI). Reclamation is prioritizing work on four investigations (SLWRI, NODOS, LVE, and USJRBSI). Prioritization criteria include reviewing conclusions and recommendations from ongoing State and federal

planning studies; determining federal, State, and local interest, including willingness to pay; and assessing legal and logistical issues related to specific projects.

- Assess tribal, federal, State, and local interest in the investigations, including opportunities for State and federal investment in broad public benefits.

Funding: Surface Storage- Regional/Local

RESEARCH/ DATA DEVELOPMENT

Research/Data Development: Conjunctive Management and Ground Water Storage

- Develop a statewide comprehensive data management system to compile and track available information about groundwater and conjunctive management projects throughout the State. Develop on a priority basis a conjunctive management tool that may be used to identify conjunctive management opportunities (projects) and evaluate regional and statewide implementation constraints including availability of water for recharge, available means to convey water from source to destination, water quality issues, environmental issues, costs and benefits and potential interference between a proposed project and existing projects.
- Create a framework to assess groundwater management throughout the State to gain an understanding of how local agencies are implementing actions to use and protect groundwater, which actions are working at the local level, and how State programs can be improved to help agencies prepare effective groundwater management plans.

Research/Data Development: Desalination

Research/Data Development: Precipitation Enhancement

- DWR should collect base data and project-sponsor evaluations of existing California and other western states precipitation enhancement projects, independently analyze them, and perform research on the effectiveness of this technology to supplement water supplies while minimizing negative impacts.
- DWR should support research on cloud physics and cloud modeling being done by NOAA labs and academic institutions. With improvement, these models may become tools to further verify and test the effectiveness of cloud seeding activities.
- The State should support research on potential new seeding agents, particularly ones that would work at higher temperatures. Global warming may limit the effectiveness of silver iodide, the most commonly used agent, which requires cloud temperatures well below freezing, around -5° C, to be effective.
- DWR should support efforts by California weather modification project sponsors, such as that proposed in 2002-03 by Santa Barbara County Water Agency, to obtain federal and State research funds for local research experiments built upon their operating cloud seeding projects. In this regard, DWR recommends that the California Energy Commission PIER program include research studies on weather modification.

Research/Data Development: Recycled Municipal Water

Research/Data Development: Surface Storage- Cal FED

- Develop information on costs, effects and how the projects could be operated for a variety of purposes.
- Continue evaluation and presentation of alternatives and potential future scenarios, including alternative Delta conveyance and operations and climate change effects that will allow potential participants to assess their interest in specific projects.

Research/Data Development: Surface Storage- Regional/Local

GOVERNANCE- POLICY and LAW

Governance- Policy and Law: Conjunctive Management and Groundwater Storage

- Streamline the environmental permitting process for the development of conjunctive management facilities, such as recharge basins, when they are designed with pre-defined benefits or mitigation to wildlife and wildlife habitat.
- Streamline the State Water Resources Control Board water rights permitting process to facilitate water transfers associated with the development of statewide and basinwide conjunctive water management strategies.
- Consider changes to Section 13752 of the California Water Code to allow public access to geologic and groundwater information in the Well Completion Reports.

Governance- Policy and Law: Desalination

Governance- Policy and Law: Precipitation Enhancement

Governance- Policy and Law: Recycled Municipal Water

- State agencies including the State Water Board, Regional Water Boards, DPH, and DWR should develop a uniform interpretation of State standards for inclusion in regulatory programs and IRWMPs, and clarify regulations pertaining to water recycling including permitting procedures, health regulations and the impact on water quality. It is important to recognize that uniformity in State standards does not mean uniformity in permit terms and conditions, however as implementation must account for the variability in local conditions and local needs.

Governance: Surface Storage- Cal FED

- CBDA, DWR, and Reclamation should continue their development of conceptual finance plans that will include descriptions of relevant State and federal financial policies and a determination of the potential for State and federal investment in benefits to the general public. The scenarios and finance plans will help facilitate potential investment discussions and then decisions by local, regional, State and federal decision-makers.

EDUCATION/OUTREACH:

Education/Outreach: Conjunctive Management and Groundwater Storage

- Encourage local water management agencies to coordinate with Tribes and other agencies involved in activities that might affect long term sustainability of water supply and water quality. Such regional coordination may take different forms in each area because of dissimilar political, legal, institutional, technical, and economic constraints and opportunities, but will likely include agencies with authority over managing groundwater and surface water quantity and quality, land use planning, human health, and environmental protection. Basinwide groundwater management plans should be developed with assistance from an advisory committee of stakeholders to help guide the development, educational outreach, and implementation of the plans. Advanced tools development should be pursued as part of planning basinwide groundwater management to help quantify the benefit and assess robustness of management strategies.
- Improve coordination and cooperation among local, State, and federal agencies with differing responsibilities for groundwater and surface water management and monitoring, and thus facilitate conjunctive management, ensure efficient use of resources, provide timely regulatory approvals, prevent issuance of conflicting rules or guidelines, and promote easy access to information by the public.

Education/Outreach: Desalination

Education/Outreach: Precipitation Enhancement

Education/Outreach: Recycled Municipal Water

Education/Outreach: Surface Storage- Cal FED

- Engage more stakeholders and potential project participants in the process. The investigations should continue to work with tribes, the public, and agencies in identifying, evaluating, and quantifying potential project effects (i.e. both beneficial and negative effects).

PLANNING

Planning: Conjunctive Management and Groundwater Storage

- Encourage local groundwater management authorities to manage the use of available aquifer space for managed recharge and to develop multi-benefit projects that generate source water for groundwater storage by capturing water not used by other water users or the environment.
- Identify and evaluate local and regional opportunities to reduce runoff and increase recharge on residential, school, park, and other unpaved areas.
- Encourage local and regional coordination of groundwater recharge and flood control activities to enhance recharge of storm flows. Provide a source of funds for studies jointly sponsored by cooperating groundwater and flood control agencies to identify additional opportunities for recharge and the needs for advancing those opportunities.

Planning: Desalination

Planning: Precipitation Enhancement

Planning: Recycled Municipal Water

- Although it is increasingly evident that water recycling projects have been, and continue to be, implemented throughout the state, a comprehensive current inventory of recycling facilities and programs does not exist. The State Water Resources Control Board should establish a centralized data repository of recycling facilities and programs that contains basic information such as the type of treatment, volume of water recycled, uses of recycled water, and costs of operation. A systematic reporting process should be established to ensure maintenance and integrity of the data for future reference. Without such a system it is impossible to quantify water recycling efforts, characterize successes and failures, or make informed decisions as to future endeavors and funding priorities.

Planning: Surface Storage- Cal FED

- DWR, Reclamation, other CBDA agencies and local interests should continue work with related planning efforts including Delta Vision, the California Water Plan Update, and the Bay Delta Conservation Plan.

DISINCENTIVES:

Disincentives: Conjunctive Management and Groundwater Storage

Disincentives: Desalination

Disincentives: Precipitation Enhancement

Disincentives: Recycled Municipal Water

Disincentives: Surface Storage- Cal FED

OTHER

Other: Conjunctive Management and Groundwater Storage

Other: Desalination

Other: Precipitation Enhancement

- DWR should support efforts to investigate the potential to augment Colorado River supply by cloud seeding, in cooperation with the Colorado River Board, the other Colorado River Basin states, USBR, and Metropolitan Water District of Southern California

Other: Recycled Municipal Water

Other: Surface Storage- Cal FED

- Develop mechanisms to provide assurances that projects will be operated in a manner consistent with the objectives.