

California Water Plan, 2013 Update Plenary Session

Technology Caucus Co-Chairs

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Objective 11

Invest in Water Technology & Science

Identify, develop, and prioritize research needs for new technologies

To achieve extended benefits

Objective 11 — Invest in Water Technology & Science

State government will continue to work with California research and academic institutions —such as the California Academy of Sciences, California Council on Science and Technology, the University of California, California State University, and other universities and colleges

11.1 Advance new water technology to improve Data Management and Modeling

11.1.1 Development and implementation of a standardized protocol for water use and quality measurement

11.1.2 Development and compliance of protocol for distributed data storage

11.1 Advance new water technology to improve Data Management and Modeling

11.1.3 Development of effective
interactive database portals

11.1.4 Support the maintenance of
current modeling protocols and
standards that provide guidance to
water stakeholders and decision-
makers

11.2 Advance new water technology to improve both *in situ* (on-site) and remote sensing for data

11.2.1 Developing closer coordination between *in situ* sensing and remote sensing.

11.2.2 Supporting technology fairs and/or other effective venues for presenting licensing opportunities for technology.

11.2 Advance new water technology to improve both *in situ* (on-site) and remote sensing for data

11.2.3 Increasing the deployment of land based radar.

11.2.4 Development is required of protocol for data acquisition and compatibility of associated equipment.

11.2.5 Development of cost effective sensors.

11.2 Advance new water technology to improve both *in situ* (on-site) and remote sensing for data

11.2.6 Development and use of remote sensors capable of accurately determining chemical and physical parameters for fresh water bodies.

11.2.7 Development of inexpensive, local remote sensors to replace or complement *in situ*.

11.2 Advance new water technology to improve both *in situ* (on-site) and remote sensing for data

11.2.8 Continue the development of utilizing airborne drones to provide targeted data to complement satellite data (e.g., snowpack, reservoir level).

11.2.9 Increased partnerships between the National Aeronautics and Space Administration (NASA), state and private.

11.3 Advance new water technology to improve efficiencies for the Water-Energy Nexus

11.3.1 Smart grid technologies for water and energy management and conservation.

11.3.2 Use of renewable energy for water treatment and transport processes.

11.3 Advance new water technology to improve efficiencies for the Water-Energy Nexus

11.3.3 Developing anaerobic processes to facilitate energy recovery from supply and wastewater organic residuals.

11.3.4 Improve technology for residential use of point-of-use (POU) and point-of-entry (POE) treatment.

11.4 Advance new water technology to improve Membrane Water Treatment

11.4.1 Further development of more robust, cost- and energy-efficient, general-purpose membranes for use in seawater desalination, brackish water treatment, and wastewater and water reuse applications.

11.4.2 Further development of energy recovery technologies, particularly for high-pressure reverse osmosis units.

11.4 Advance new water technology to improve Membrane Water Treatment

11.4.3 Further development of smart control technology that provide dependable operation of treatment facilities for remotely located treatment facilities.

11.4 Advance new water technology to improve Membrane Water Treatment

11.4.4 Development of membrane separation technologies capable of reliable and economic deployment.

11.4.5 Significantly broadened deployment of brine disposal technologies.

11.5 Advance new water technology to improve Biological Water Treatment

11.5.1 Development and deployment of technologies focused on wastewater cleanup for recycling process and wastewater.

11.5.2 Development of technologies to reduce chemical use and increase energy efficiency.

11.5 Advance new water technology to improve Biological Water Treatment

11.5.3 Technology development to support the increased use of affordable distributed biological water and wastewater treatment.

11.5.4 Development of better control technology for biological treatment.

11.6 Advance new water technology to improve watershed management

11.6.1 Software development that leads to more effective combining and utilizing of applicable models.

11.6.2 Improved data collection for surface-water and groundwater basin descriptive parameters, including water runoff and storage.

11.6 Advance new water technology to improve watershed management

11.6.3 Expanded use of flood plains and other sites having good recharge potential for groundwater recharge.

11.7 Advance new water technology to improve Agricultural Water Use Efficiency

11.7.1 Increase the adoption of field level water measurement (flow and total) and soil moisture-sensing technologies.

11.7.2 Promote the use of high-efficiency water irrigation systems.

11.7 Advance new water technology to improve Agricultural Water Use Efficiency

11.7.3 Increased adoption of one or more technologies for irrigation scheduling (e.g., including remote sensing, weather based, and/or crop/soil-based technologies).

11.7.4 Development of cost-effective irrigation system performance information monitoring platforms.

11.7 Advance new water technology to improve Agricultural Water Use Efficiency

11.7.5 Increase the number of water districts that provide water deliveries on a demand basis.

11.7.6 Use agricultural water and land whenever appropriate to provide local environmental benefits .

11.7 Advance new water technology to improve Agricultural Water Use Efficiency

11.7.7 Identification of shared-use opportunities for water supplies (e.g., water exchanges between agricultural and urban users).

11.8 Advance new water technology to improve Urban Water Use Efficiency

11.8.1 Metering infrastructure to promote more efficient water use.

11.8.2 Continued advancement of plumbing code and efficiency standards for low-flow appliances and fixtures.

11.8 Advance new water technology to improve Urban Water Use Efficiency

11.8.3 Increased use of American Water Works Association water-loss software and verification program.

11.8.4 Greater use of low-water-use landscaping efficient irrigation management.

Questions?

Thank you!