

FLOWING FORWARD

A COMPREHENSIVE WATER BLUEPRINT

for the SAN JOAQUIN VALLEY

Meeting the San Joaquin Valley's Greatest Water Challenge

Water resource management in the San Joaquin Valley is difficult and complex, and the Valley is facing an unprecedented water crisis that threatens the economic, social, and environmental health of the region.

Most of the valley's current water supply, storage, conveyance, and delivery system was envisioned over 100 years ago and constructed over 70 years ago. The system was originally designed with agriculture as the priority, but now must also address today's social, environmental, and economic demands. And as expected, the system is exhibiting signs of age, wear and deterioration that must be addressed in addition to the need to make upgrades to address current conditions.

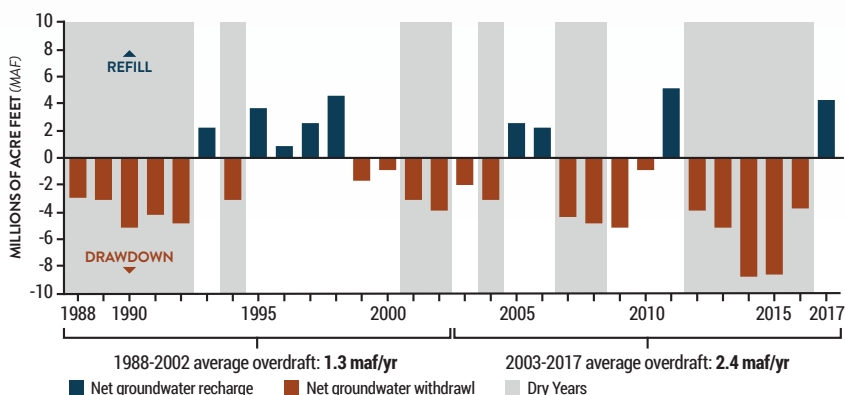
Looking ahead to the remainder of the 21st century, water availability for communities in the San Joaquin Valley is being shaped by key – and interrelated – conditions and objectives, including:

- **Implementing the Sustainable Groundwater Management Act** to limit overdraft and stabilize regional groundwater conditions;
- **Meeting water quality goals** that manage salt and nitrate loading to groundwater, securing safe sources of drinking water for Valley residents;
- **Ensuring safe operations** for endangered and threatened species in the Sacramento-San Joaquin Delta and elsewhere; and
- **Adjusting to potential changes** in the amount or timing of water needed to support human, plant, and ecosystem health due to climate change.

WHAT HAPPENS IF WE DO NOTHING?

Under a "do nothing" scenario, the current infrastructure, regulatory, and water project operations result in a **water supply shortfall of about 2.5 million acre-feet per year** in the San Joaquin Valley (Figure 1), a scenario that would result in lasting, disastrous effects for disadvantaged communities, agriculture, the environment, and urban centers. The San Joaquin Valley Water Blueprint (Blueprint), developed with input from a broad range of stakeholders representing Valley needs and communities, is intended to serve as the roadmap to modernizing the water infrastructure systems and optimizing system operations to help address the water imbalance while meeting the objectives above.

Figure 1. GROUNDWATER OVERDRAFT & RECHARGE



Source: PPIC

MISSION of the BLUEPRINT EFFORT

To develop a plan of action to sustain and improve the communities, habitats, working landscapes, and jobs of the San Joaquin Valley by:

ACKNOWLEDGING the challenges facing the region,

IDENTIFYING policy and infrastructure solutions to address the challenges,

EDUCATING elected officials and the public about the challenges and solutions, and

ADVOCATING for the implementation of the Blueprint.

Using an engagement process that fosters transparent, innovative and creative problem solving for water resources management, the Blueprint will provide recommendations to upgrade, enhance, and modernize the State's 70-year old water system to accommodate today's social, environmental, and economic conditions, and the foreseeable water needs expected over the next 100 years, specifically in the San Joaquin Valley. The Blueprint recommendations will include, but not be limited to, watershed management programs and services; surface water and groundwater storage facilities; transfer, conveyance, distribution and delivery facilities; drinking water facilities; recycled water facilities; and habitat restoration for threatened and endangered species native to the San Joaquin Valley.

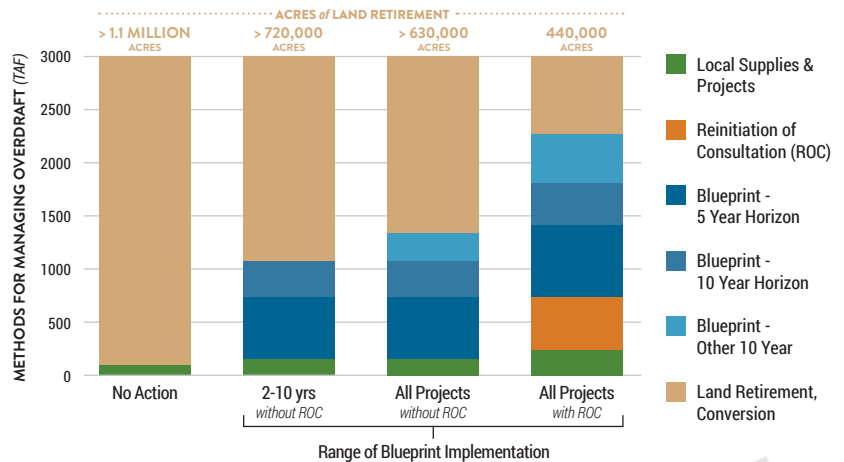
RESULTS OF PRELIMINARY STUDIES

Since the Blueprint effort began in January 2019, initial members of the coalition have conducted preliminary studies to determine whether achieving a water balance is even possible. Recently completed operations analyses link, for the first time, significant groundwater recharge opportunities throughout the San Joaquin Valley with available water supplies (Figure 2).

Even after implementing these actions, land retirement will still be necessary to fully close the gap in water supply. The coalition of entities working on the Blueprint would like to maximize opportunities for the Valley and its communities by reducing adverse economic impacts, and investments in some of these opportunities appear to show promise.



Figure 2. COMPARISON OF HOW BLUEPRINT AND REINITIATION OF CONSULTATION (ROC) AFFECT THE NEED FOR LAND RETIREMENT



FUTURE CLIMATE CONSIDERATIONS

The State of California has made significant investments in climate research that has suggested future conditions in the San Joaquin Valley may include:

- Precipitation falling predominantly as rain instead of snow.
- Shorter periods of precipitation coming earlier in the year.
- Less ability to rely on snowpack for water storage.
- Greater need to capture and deliver surface water to groundwater recharge facilities when flood flows are available.

The Blueprint has identified, and will continue to call attention to infrastructure investments and operational changes required to capture and store the available supply under changed climate conditions either in the mountains (additional reservoir storage), or on the Valley floor through expanded conveyance and delivery systems for on-farm recharge; dedicated recharge basins, and public and private water banks.

DISADVANTAGED COMMUNITY CONSIDERATIONS

In 2019, up to a million California residents continue to lack access to safe, affordable and drought-resilient drinking water. Many of these Californians live in the San Joaquin Valley, where most residents rely on groundwater for some or all of the water they use in their homes for cooking, drinking, and basic hygiene, and a growing number are drawing water from contaminated or depleted aquifers. The Blueprint process will include close engagement with the many community-based organizations and academic institutions that have been actively working in the San Joaquin Valley to identify the drinking water needs for disadvantaged communities. The drinking water needs for disadvantaged communities have been documented in a number of resources including, but not limited to, the Tulare Lake DAC Needs Assessment, Integrated Regional Water Management Plans (IRWMPs), Groundwater Sustainability Plans, SWRCB DAC Needs Assessment, SWRCB Division of Financial Assistance, and SWRCB Division of Drinking Water. The Blueprint process will coordinate closely with the key stakeholder groups to review these information resources to identify the highest and best multi-benefit water projects, and a funding strategy to implement the multi-benefit water projects, to provide safe, affordable, and drought-resilient drinking water supplies to disadvantaged communities in the San Joaquin Valley.

Figure 3. ECONOMIC DISPARITIES OF DISADVANTAGED COMMUNITIES

COUNTY	TOTAL POPULATION	% OF TOTAL POP. IN DAC OR SDAC	MEDIAN HOUSEHOLD INCOME	% OF FAMILIES BELOW POVERTYLEVEL
VALLEY COUNTIES <i>(significantly more disadvantaged communities than coastal counties)</i>				
Fresno	963,160	72.8%	\$48,730	20.8%
Kern	871,337	30.9%	\$50,826	18.7%
Kings	150,261	49.7%	\$49,742	16.3%
Tulare	455,769	57.0%	\$44,871	23%
COASTAL COUNTIES <i>(fewer disadvantaged communities)</i>				
Contra Costa	1,107,925	5.7%	\$88,456	6.9%
Monterey	430,201	10.3%	\$63,249	11.1%
San Luis Obispo	278,680	18.2%	\$67,175	6.6%
State of CA	38,654,206	18.9%	\$67,169	11.1%

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ENVIRONMENTAL CONSIDERATIONS

WATERSHED MANAGEMENT

It is well established that forests can be managed to achieve water resource goals, and the Blueprint will consider the potential benefits of investments in watershed management to increase water supply yield, improve water quality, protect wildlife habitat, and repair and rebuild recreational assets. Improved watershed management is a prime example of how the Blueprint can facilitate engagement from different interest groups to plan, design, and implement programs and services that provide benefits for multiple interests and Valley communities.

HABITAT AND SPECIES

The Blueprint provides a unique opportunity for agricultural, disadvantaged communities, environmental, and urban interests to work together in a meaningful engagement process to identify projects, programs and services required to preserve, restore, and enhance environmental resources and ecosystems that are native to the San Joaquin Valley. This process will include recommendations for public, private, and philanthropic investments in habitat restoration to recover endangered species, and provide community benefits for others in the Valley.

AGRICULTURE CONSIDERATIONS

Many of the San Joaquin Valley's 4.2 million residents are multi-generational descendants of immigrants that arrived in the early to mid-decades of the twentieth century from throughout the globe and all over the U.S. Through their vision and effort, the San Joaquin Valley is now globally recognized as an agricultural powerhouse unmatched worldwide. In 2019, the State of California produced \$59.6 billion in agricultural products, and \$34.9 billion (~59 percent) of that production was generated in the eight-county San Joaquin Valley. If the San Joaquin Valley was its own

WATER USE AND BASIN EFFICIENCY CONSIDERATIONS

In response to historic water supply availability concerns, the San Joaquin Valley has become globally-recognized as home to some of the most innovative water-use efficiency research, development and commercialization activities being conducted in the world. The Blueprint will include recommendations for continued research, development, and deployment of on-farm water-use efficiency technologies for improved crop yield and crop quality. The objective will be to foster continued collaboration between growers and innovators from all over the world to pilot-test and demonstrate technologies that can improve water use efficiency at a reduced cost and reduced implementation burden, so that more farms can cost-effectively deploy advanced technology for improved on-farm water use efficiency. In addition, the ability to manage groundwater basins via conjunctive use, recharging in wet years through dedicated and in lieu recharge, and the ability to fallow in dry years can be an effective management approach for parts of the San Joaquin Valley.

FINANCING CONSIDERATIONS

The Blueprint will present recommendations for a regionally-coordinated funding strategy in the San Joaquin Valley that can be used to finance much needed water system improvement projects, programs, and services that will benefit the water demands of agricultural, disadvantaged community, environmental, and urban interests in the San Joaquin Valley.



Photo courtesy of Grassland Water District

state, it would be the No. 2 agricultural producing state in the nation behind California. The Blueprint process will include close engagement with the many agricultural interest groups and academic institutions that have invested significant resources in the development of water management strategies to support the Valley's thriving agricultural economy. The Blueprint will include recommendations for public, private, and philanthropic investments in water supply management projects, programs and services that directly support agriculture, but also provide community benefits.



The recently completed City of Fresno Southeast Surface Water Treatment Facility is actively contributing to meeting the water usage consideration goals of the Blueprint.

The funding strategy will likely include a blend of public, private, and philanthropic investment to modernize the system and optimize the operations and utilize the opportunity to leverage state and federal funds with private and philanthropic investments.



BLUEPRINT PROCESS

Areas of Primary Focus



PARTNERSHIPS

Identify strategic public, private, and philanthropic partnerships that can be relied upon to participate in the development of Blueprint recommendations for the benefit of all Valley communities.



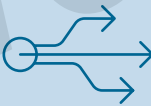
ENGAGEMENT & CO-OPERATION

Establish a meaningful, consensus-based engagement process that allows for broad input on water resources management from all Valley communities and interest groups.



WATER DATA & ESTIMATES

Improve the accuracy and transparency of water supply availability data, water demand data, and groundwater overdraft estimates for the entire San Joaquin Valley region and sub-regions.



EXECUTION ROADMAP

Develop a program delivery roadmap that accurately defines the scope, scale, and nature of the technical, regulatory, financial, social, and institutional challenges associated with implementing elements of the Blueprint.



SCHEDULES & COSTS

Prepare a program delivery schedule and cost estimate for Blueprint recommendations.



FINANCING PLAN

Prepare a financing plan that relies on a combination of public, private, and philanthropic funding to implement the recommended programs, projects, and services presented in the Blueprint.

GENERAL BLUEPRINT PLANNING, INPUT, COLLABORATION, AND SUPPORT IS BEING PROVIDED BY

Various photos throughout courtesy of California Department of Water Resources.