



MEMORANDUM

TO: SLDMWA Finance and Administration Committee/Board of Directors, Alternates

FROM: Scott Petersen, Water Policy Director

DATE: June 3, 2019

RE: Approval of \$15,000 Expenditure from the Technical Budget to Provide Initial Funding Support to the San Joaquin Valley Blueprint Effort

BACKGROUND

The San Joaquin Valley Water Blueprint (Blueprint) is a multi-stakeholder effort to address challenges facing the San Joaquin Valley as a result of implementation of the *Sustainable Groundwater Management Act*. The Blueprint, which was developed with input from a broad range of stakeholders, is intended to serve as a roadmap to modernizing the water infrastructure systems and optimizing system operations to address the Valley's water imbalance.

The mission of the blueprint effort is 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

ISSUE FOR DECISION

Whether to recommend to the Board of Directors approval of a \$15,000 expenditure from the Technical Budget to provide initial funding support to the San Joaquin Valley Blueprint effort.

RECOMMENDATION

Staff recommends the Finance and Administration Committee recommend that the Board approve a \$15,000 expenditure from the Technical Budget to provide initial funding support to the San Joaquin Valley Blueprint effort.

ANALYSIS

The Blueprint is an effort to create a framework to address the nearly 2.5 million acre-feet water imbalance in the San Joaquin Valley, and is intended to be the larger policy discussion

that leads to solutions to ease implementation of the Sustainable Groundwater Management Act and minimize the amount of land retirement required to reach sustainable groundwater use.

The Blueprint initial funding effort, which is intended to generate sufficient funds for the remainder of the 2019 calendar year, consists of the following estimated expenditures:

Governance (\$25,000)

- Initial formation of 501(c)(3) education organization and 501(c)(4) advocacy organization
- Corporate compliance and related legal and accounting work

Economic Analysis (\$100,000)

- Completion of 8-county study, using IMPLAN, to describe the economic and socio-economic impacts of water supply deficit in the Valley

Consulting (\$75,000)

- Political consulting and related outreach

Education (\$50,000)

- Preparation of educational materials related to the Blueprint effort and above-described economic analysis
- Updating of Blueprint brochure (attached)

A \$15,000 contribution to the initial funding effort provides the Authority the opportunity to be a voting member of the Blueprint effort and continue to assist in the development of the Blueprint effort in a way that is advantageous to the Authority and its member agencies, while leveraging funding of other stakeholders for a collaborative effort to increase water supply reliability south of the Sacramento-San Joaquin Bay-Delta.

BUDGET IMPLICATIONS

The Technical Budget has substantial resources remaining and a \$15,000 expenditure for this effort is warranted to protect the Authority's interest and to leverage the funds of other agencies for Valleywide water supply benefits.

MEMORANDUM

May 15, 2019

TO: SJ Valley Water Blueprint Group

FROM: Melissa Frank
Bryce McAteer
Tommy Esqueda

SUBJECT: Economic Impact Analysis of Sustainable Groundwater Management Act

With the adoption of the Sustainable Groundwater Management Act (SGMA) in September 2014, local Groundwater Sustainability Agencies (GSAs) are currently working to prepare Groundwater Sustainability Plans (GSPs), which will define water budgets, minimum thresholds, and sustainable yields for each GSA. In February 2019, the Public Policy Institute of California (PPIC), published a report titled, *"Water and the Future of the San Joaquin Valley"*, which forecasts the need to fallow or retire approximately 500,000 to 750,000 acres of productive farmland to address the existing groundwater overdraft and water supply deficit in the San Joaquin Valley.

To define the nature, scope, and scale of the economic impacts associated with reduced farm receipts resulting from land retirement, the San Joaquin Valley Water Blueprint team has identified the need to commission an economic impact analysis for the eight-county San Joaquin Valley. To date, economic impact analyses have been conducted for six of the eight counties in the SJ Valley, and all of the analyses were prepared using the IMPLAN regional economic input-output model (See Attachment A). The economic impact analyses were conducted as three separate projects and prepared by separate economists using slightly different methodologies and approaches, which limits the ability to compare and contrast the results collectively or independently. Accordingly, there may be value in preparing a single economic impact analysis for the entire eight-county San Joaquin Valley using a common methodology and approach.

The Scope of Services associated with the economic impact analysis is as follows:

- (1) The consultant shall conduct the economic impact analysis of SGMA implementation for the eight-county SJ Valley region.
- (2) The consultant shall prepare the economic impact analysis using the IMPLAN regional economic input-output model.
- (3) For the period of record from 2008 to 2018, and on a county by county basis, the consultant shall report the historic farm gate receipts for all agricultural products by county, sales tax generation by county, property tax generation by county, personal income tax generation by county, median household income by county, and agriculture-related employment numbers by county.
- (4) The consultant shall identify the largest downstream agricultural support industry in each county (e.g. nut processing, milk or cheese production, wine production, food processing, packing and shipping, etc.).
- (5) The consultant, with support from the Blueprint team, shall estimate the water deficit anticipated for each county as a result of SGMA.

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Economic Impact Analysis of SGMA

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- (6) Based on the anticipated water deficit for each county, the consultant shall prepare alternative forecasts of crop reductions for each county. Alternative forecast scenarios will be identified in consultation with the Blueprint team, and may include, but not be limited to, crops with the lowest commodity price, proportional reductions across all commodities, crops with the highest water use, crops with the lowest water use, etc. These scenarios will attempt to represent the different types of approaches or mechanisms that could drive crop reduction strategies applied in the future to reduce water demands.
- (7) Based on the estimated crop production losses for each forecast scenario, the consultant shall provide estimates of job losses, sales tax losses, and property tax losses for each county.
- (8) Additionally, the consultant will prepare an estimated “value” that each acre-foot (AF) of water provides for each county. For example, if 1,000 AF of water could preserve \$1 million dollars in economic value for a given county, then the value of water to that county would be \$1,000 per acre foot.
- (9) The consultant shall attend monthly meetings of the Blueprint team to provide updates on project progress, describe the work to be completed the following month, present requests for information and data, and identify issues that could impact project quality, schedule, or budget.

It has been estimated that the scope of work described above can be completed in approximately six months for a cost of \$100,000. To develop the scope of work, schedule, and budget, the Blueprint team has consulted with several public and private organizations that have completed similar studies in the San Joaquin Valley. If it is determined that there is a need to modify the scope, there may be a corresponding change in fee and schedule.

ATTACHMENT A
Summary of Economic Impact Analyses

March 15, 2019

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County	Date Published	Base Year	Total Annual Economic Output Loss	Total Job Loss
San Joaquin ⁽¹⁾	Jan-17	2015	\$3,194,565,527	13,206
Stanislaus ⁽¹⁾				
Merced ⁽¹⁾				
Madera	No economic impact analysis identified.			
Fresno ⁽²⁾	Sep-17	2016	\$3,009,719,009	50,268
Kings ⁽²⁾		2016		7,700
Tulare ⁽³⁾	Apr-19	2019	\$2,190,000,000	1,550
Kern		2013	\$4,200,000,000	24,300

Table Notes

(1) Data provided from economic impact analysis commissioned by the three counties to assess impacts of Unimpaired Flow reductions and SGMA compliance. Output losses and job losses reported for Peak Year conditions for three-county study area.

(2) Data provided from economic impact analysis commissioned by Westlands Water District for the Protracted Drought Scenario. Economic output losses are reported for the Westlands Water District only.

(3) Data provided from economic impact analysis commissioned by White Area growers representing 34,000 acres of White Area in the Eastern Tule Groundwater Sustainability Agency. Output and job losses reported are only for 34,000 acres of White Area in Eastern Tule GSA based on complying with the sustainable yield starting 2020 versus a phased curtailment from 2030 to 2034. The economic impact of SGMA compliance for all White Areas in the Tule Subbasin are estimated to be 4.5 times the value shown.

FLOWING FORWARD

A COMPREHENSIVE WATER BLUEPRINT

for the SAN JOAQUIN VALLEY

Meeting the San Joaquin Valley's Greatest Water Challenge

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.



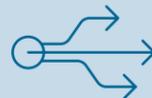
ENGAGEMENT & CO-OPERATION

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.

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.

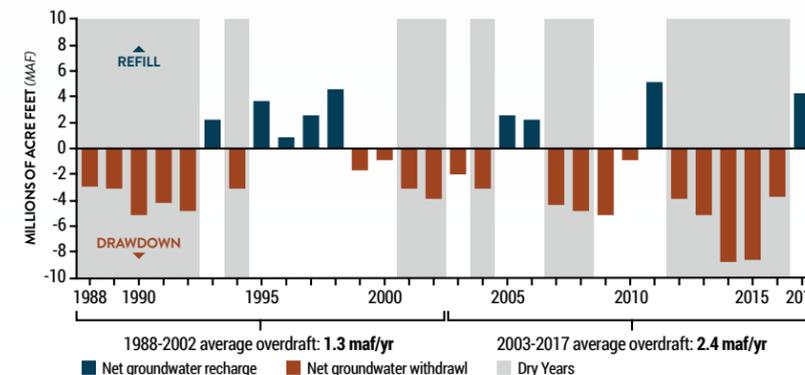
Looking ahead to the remainder of the 21st century, water availability for communities in the San Joaquin Valley is being shaped by key – and interrelated – conditions and objectives, including:

- **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



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.

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

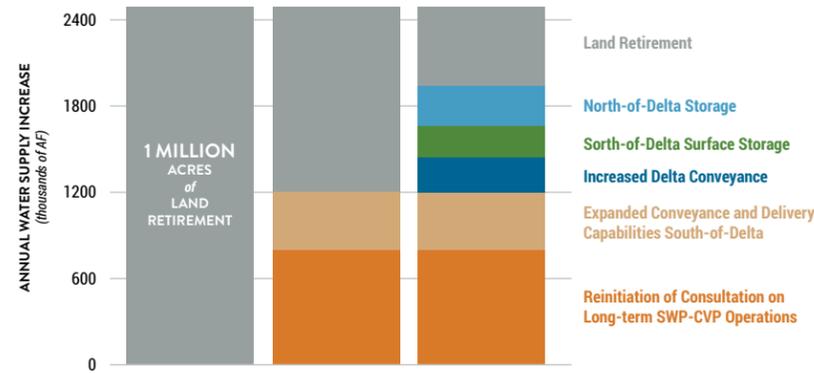
ADVOCATING for the implementation of the Blueprint.

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 minimize land retirement, and resulting economic impacts, for the Valley and its communities, and investments in some of these opportunities appear to show promise.

Figure 2. THREE APPROACHES TO ACHIEVING WATER BALANCE



Preliminary Blueprint analyses show that a valley water balance by securing about 2 million acre-feet annually may be possible with the implementation of multiple engineering and policy options, some of which have been considered in the past.

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 for moving and storing runoff when it 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 are in the San Joaquin Valley. Most of our Valley 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. Many of these communities have relied on the recharge that has occurred by their proximity to agricultural lands irrigated with surface water. When surface supplies are reduced or curtailed, so are recharge opportunities in rural areas or small, predominantly low-income communities of color.

The Blueprint process will include close engagement with the many community advocacy organizations and academic institutions that have invested significant resources in evaluating and implementing alternative corrective actions to provide disadvantaged communities with access to safe and affordable water. The Blueprint will include recommendations for public, private, and philanthropic investments in water-related infrastructure, programs, and services to ensure that disadvantaged communities have access to safe, affordable, and drought-resilient drinking water supplies.

Figure 3. ECONOMIC DISPARITIES OF DISADVANTAGED COMMUNITIES

COUNTY	% OF POPULATION 16 YRS AND OVER IN LABOR FORCE	MEDIAN HOUSEHOLD INCOME	% OF FAMILIES BELOW POVERTY LEVEL
Contra Costa	64.5%	\$88,456	6.9%
Fresno	60.7%	\$48,730	20.8%
Kern	58.3%	\$50,826	18.7%
Kings	55.6%	\$49,742	16.3%
Monterey	60.4%	\$63,249	11.1%
San Luis Obispo	58.5%	\$67,175	6.6%
Tulare	58.6%	\$44,871	23%
State of CA	63.5%	\$67,169	11.1%

Source: U.S. Census Bureau, 2013-2017 ACS 5-Year Estimates

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



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.

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

In a report prepared by the Public Policy Institute of California (PPIC), it is reported that over 85-percent of the funding required for water system improvement projects in California is provided by locally-approved rates, fees, and charges, and the balance is provided by federal and state agencies through grants, principal-forgiveness loans, low-interest loans,



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

and similar. 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.