

**STATE OF CALIFORNIA**  
**Budget Change Proposal - Cover Sheet**  
 DF-46 (REV 10/20)

<b>Fiscal Year</b> 21-22	<b>Business Unit</b> 3860	<b>Department</b> Water Resources	<b>Priority No.</b>
<b>Budget Request Name</b> 3860-007-BCP-2021-GB		<b>Program</b> 3230	<b>Subprogram</b>

**Budget Request Description**  
 Climate Vulnerability and Adaptation Strategy for a San Joaquin Basin Watershed

**Budget Request Summary**

The Department Of Water Resources (DWR) requests a new appropriation of \$4,190,000 (\$2,100,000 from Proposition 68, the California Drought, Water, Parks, Climate, Coastal Protection, and Outdoor Access for All Act of 2018, Chapter 1, Section 80006(a) and \$2,090,000 from the Environmental License Plate Fund) in FY 21-22 to conduct an assessment to prepare for climate vulnerability in the San Joaquin Basin. This proposal has three components: (1) working with local partners on a flood-focused climate vulnerability and adaptation strategy for a San Joaquin Basin watershed; (2) supporting Regional Flood Management Planning groups to identify multi-sector, multi-benefit projects; and (3) evaluate lower San Joaquin River flood risks. Work will be performed by 5 existing positions and consultants.

<b>Requires Legislation</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<b>Code Section(s) to be Added/Amended/Repealed</b>	
<b>Does this BCP contain information technology (IT) components?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <i>If yes, departmental Chief Information Officer must sign.</i>	<b>Department CIO</b>	<b>Date</b>

**For IT requests, specify the project number, the most recent project approval document (FSR, SPR, S1BA, S2AA, S3SD, S4PRA), and the approval date.**

**Project No.** [Click or tap here to enter text.](#)    **Project Approval Document:**

**Approval Date:**

**If proposal affects another department, does other department concur with proposal?**  Yes     No  
*Attach comments of affected department, signed and dated by the department director or designee.*

<b>Prepared By</b> Ajay Goyal	<b>Date</b> 12/16/2020	<b>Reviewed By</b> Duard MacFarland	<b>Date</b> 1/6/2021
<b>Department Director</b> Kathie Kishaba	<b>Date</b> 1/6/2021	<b>Agency Secretary</b> Amanda Martin	<b>Date</b> 1/6/2021

**Department of Finance Use Only**

**Additional Review:**  Capital Outlay     ITCU     FSCU     OSAE     Dept. of Technology

<b>PPBA</b> Sergio Aguilar	<b>Date submitted to the Legislature</b> 1/8/2021
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## Analysis of Problem

### A. Budget Request Summary

This proposal requests a new appropriation of \$4,190,000 (\$2,100,000 from Proposition 68, the California Drought, Water, Parks, Climate, Coastal Protection, and Outdoor Access for All Act of 2018, Chapter 1, Section 80006(a) and \$2,090,000 from the Environmental License Plate Fund) in FY 21-22 to address potential change in weather patterns which will exacerbate flood risks and add challenges for water supply, ecosystems, and groundwater sustainability. This proposal involves three components. DWR will: (1) work with local partners to develop a comprehensive flood-focused climate vulnerability and adaptation strategy for a San Joaquin Basin watershed with an emphasis on multi-benefit projects, green infrastructure, smart land-use planning, co-management of water sectors, and other approaches; (2) support Regional Flood Management Planning (RFMP) groups to identify regional flood management alternatives with a focus on multi-benefit projects and related approaches; and (3) utilize existing data and results from this proposal to evaluate flood risk in the lower San Joaquin River. This funding will enable DWR to complete a watershed study (\$3,700,000) and fund three San Joaquin River Regional Flood Management Planning groups (\$100,000 per group for \$300,000 total) to articulate intended outcomes for the San Joaquin Basin Master Plan. The proposed work will be informed by, and build on, DWR's studies for Merced and Tuolumne watersheds. Conducting this work will support the following actions in the Governor's Water Resiliency Portfolio: Action 25.4 – Update and refine the regional flood management strategy in the Central Valley Flood Protection Plan to account for the projected impacts of climate change; Action 27.1 – Support regional decision making with watershed-scale climate vulnerability and adaptation assessments; and, Action 3.4 – Explore ways to further streamline groundwater recharge and banking efforts. The proposed work is essential to gain knowledge and approaches to reduce flood risk and improve groundwater management in the San Joaquin Basin/watershed; inform local response to drought and flood events; and improve ecosystem and groundwater management. This proposal also includes a cost-saving measure allowing Delta flood modeling update to be done in-house (\$190,000). The work will be carried out by 5 existing positions, contracts with RFMPs, and consultants.

### B. Background/History

California will continue to experience recurring extreme weather events, including droughts and floods, that are becoming more consequential with climate change -- altering snowpack, sea level, and seasonal and peak river flows. More precipitation will fall as rain instead of snow, with more variable weather patterns throughout California. The anticipated changes in weather patterns will elevate flood risk, leading to longer and more severe droughts, and intensifying challenges for public health and safety, water supply reliability, ecosystem health, and groundwater sustainability.

There is increasing evidence of these trends. The driest four consecutive years of statewide precipitation in the historical record were in 2012-2015. In March 2015, the state had record-low statewide mountain snowpack of only five percent of average. The drought resulted in a lack of adequate surface water supply, which forced numerous water users to modify their water use, including an increase of groundwater pumping in many areas. During this drought, the Sustainable Groundwater Management Act (SGMA) went into effect, establishing a new state framework and local tools for managing California's groundwater, significantly changing how groundwater is managed in the state.

Additionally, the five years of drought were followed by the wettest water year on record. Storms started in late November 2016 and intensified through February 2017. These storms caused local flooding and high water in major streams. More than 100 incidents were reported

by the State-Federal Flood Operations Center by mid-March 2017, including boils, seepages, sloughing, bank erosion, overtopping, slippage, levee breaks, and local flooding. Several reservoirs encroached their flood reservation pool from the heavy precipitation and high reservoir inflows. The San Joaquin River flow remained near flood stage for months, as heavy rains were followed by snowmelt. Climate change impacts related to flooding are expected to be particularly severe in the San Joaquin River Basin because it is a high-elevation, snow-melt driven watershed.

DWR and other state, federal, regional, and local entities, are recognizing the need to:

1. Conduct climate vulnerability assessments for California's major watersheds,
2. Evaluate the risks to water management sectors,
3. Identify adaptation strategies at a watershed scale, and
4. Implement cost-effective, multi-sector, multi-benefit projects.

Watershed-based planning and analysis is DWR's recommended approach to manage California's water resources for sustainability and resilience. The proposed Climate Vulnerability and Adaptation Strategy will use the risk-based decision-scaling approach, and consist of a headwater to groundwater analysis of the San Joaquin Basin watershed and identify untapped opportunities for multi-benefit flood, groundwater, water supply, and facilitate inter-watershed and regional solutions; such an evaluation has not been done before in this region. For the proposed work, DWR will use the methodology developed for the Merced and Tuolumne watersheds under the Flood-MAR Program.

### **C. State Level Consideration**

This request supports the following actions of the Governor's Water Resilience Portfolio:

Action 25.4: Update and refine the regional flood management strategy in the Central Valley Flood Protection Plan to account for the projected impacts of climate change in order to protect vulnerable communities and infrastructure and restore floodplains along the San Joaquin River and its tributaries.

Action 27.1: Support regional decision making with watershed-scale climate vulnerability and adaptation assessments that include strategies to address risks to water supply, ecosystems, and water quality.

Action 3.4: Explore ways to further streamline groundwater recharge and banking efforts that do not exacerbate water quality issues, and provide technical assistance to facilitate the redirection of water during periods of extended high flows to allow water to sink into aquifers, including on agricultural land. Ensure diversions are protective of native fish and wildlife.

### **D. Justification**

Flood managers recognize that development of a regional flood management strategy for the San Joaquin River region will require multi-sector water management integration and solutions. Sustainability in flood risk reduction must be implemented in collaboration with surface water supply, ecosystems, and groundwater sustainability managers throughout the

region. Local agencies lack the technical capacity to work at the watershed scale and with the other water management sectors. DWR, using Watershed-based Analytics and Planning, will provide a technical and collaborative foundation for development of a San Joaquin Master Plan that will also serve as a regional flood management strategy. This request will fund one additional tributary watershed study for the San Joaquin Region, providing the third of six needed Climate Vulnerability and Adaptation Strategies for a San Joaquin Basin Watershed and support San Joaquin River Regional Flood Management Planning (RFMP) groups to prepare for use of the analytical tools and development of the regional flood management strategy.

DWR's Merced River Flood-MAR Reconnaissance Study and Tuolumne Climate Change Vulnerability Assessment are demonstrating that an integrated headwater to groundwater analysis at a watershed-scale reveals significant untapped potential for flood risk reduction, groundwater recharge, and ecosystem enhancement considering climate change, existing and modernized infrastructure, and modified operations. Merced Irrigation district (MID) is considering using the integrated toolset developed in the study for real-time operations. MID is also considering implementing Flood-MAR projects using the findings of the study.

## E. Outcomes and Accountability

### Projected Outcomes

Workload Measure	CY	BY	BY+1	BY+2	BY+3	BY+4
Develop a multi-sector analytical toolset for the additional San Joaquin tributary watershed.		X				
Develop adaptation strategies and evaluate performance for multiple water management sector adaptations.		X				
Contract with three San Joaquin River Regional Flood Management Planning groups to articulate intended outcomes for the San Joaquin Basin Master Plan.		X				
Evaluate lower San Joaquin River flood risk.		X				
Develop Delta flood model (SCHISM).		X				

## F. Analysis of All Feasible Alternatives

**Alternative 1: Approve the request to appropriate \$2,100,000 from Proposition 68 and \$2,090,000 from the Environmental License Plate Fund to support the San Joaquin Basin Watershed Climate Vulnerability and Assessment Strategy.**

Pros: This funding will enable DWR to develop essential analytical tools and adaption planning concepts to facilitate the required regional flood management strategy in time for the 2027

Central Valley Flood Protection Plan Update, including collaboration with local/regional partners. The regional flood management strategy will, by extension and in the San Joaquin Master Plan, improve alignment between local/regional and State priority actions and projects to provide sustainability and resilience outcomes for water supply, ecosystems and groundwater sustainability.

Cons: There is a state cost.

**Alternative 2: Deny this funding request.**

Pros: There will be less of a state cost.

Cons: The opportunity for DWR to support development of a San Joaquin regional flood management strategy and associated master plan will be lost.

**G. Implementation Plan**

DWR will collaborate with local partners and other agencies to develop a Watershed-based Analytics and Planning study of one additional tributary watershed of the San Joaquin Region, engage San Joaquin River RFMP groups to prepare for using the analytical toolset and identify local and regional outcomes of the San Joaquin regional flood management strategy, and develop a SCHISM model.

**H. Supplemental Information**

None.

**I. Recommendation**

Approved Alternate 1, the request for a new appropriation of \$2,100,000 from Proposition 68 and \$2,090,000 from the Environmental License Place Fund to develop a Watershed-based Analytics and Planning study for a tributary watershed of the San Joaquin Region.

# BCP Fiscal Detail Sheet

BCP Title: Climate Vulnerability and Adaptation Strategy for a San Joaquin Basin Watershed

BR Name: 3860-007-BCP-2021-GB

## Budget Request Summary

### Personal Services

Personal Services	FY21 Current Year	FY21 Budget Year	FY21 BY+1	FY21 BY+2	FY21 BY+3	FY21 BY+4
Salaries and Wages Earnings – Permanent	0	633	0	0	0	0
<b>Total Salaries and Wages</b>	<b>\$0</b>	<b>\$633</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
Total Staff Benefits	0	319	0	0	0	0
<b>Total Personal Services</b>	<b>\$0</b>	<b>\$952</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>

### Operating Expenses and Equipment

Operating Expenses and Equipment	FY21 Current Year	FY21 Budget Year	FY21 BY+1	FY21 BY+2	FY21 BY+3	FY21 BY+4
5301 - General Expense	0	960	0	0	0	0
5340 - Consulting and Professional Services – External	0	2,278	0	0	0	0
<b>Total Operating Expenses and Equipment</b>	<b>\$0</b>	<b>\$3,238</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>

### Total Budget Request

Total Budget Request	FY21 Current Year	FY21 Budget Year	FY21 BY+1	FY21 BY+2	FY21 BY+3	FY21 BY+4
<b>Total Budget Request</b>	<b>\$0</b>	<b>\$4,190</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>

### Fund Summary

#### Fund Source

Fund Source	FY21 Current Year	FY21 Budget Year	FY21 BY+1	FY21 BY+2	FY21 BY+3	FY21 BY+4
State Operations - 0140 - California Environmental License Plate Fund	0	2,090	0	0	0	0

Fund Source	FY21 Current Year	FY21 Budget Year	FY21 BY+1	FY21 BY+2	FY21 BY+3	FY21 BY+4
State Operations - 6088 - California Drought, Water, Parks, Climate, Coastal Protection, and Outdoor Access For All Fund	0	2,100	0	0	0	0
<b>Total State Operations Expenditures</b>	<b>\$0</b>	<b>\$4,190</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b>Total All Funds</b>	<b>\$0</b>	<b>\$4,190</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>

## Program Summary

### Program Funding

Program Funding	FY21 Current Year	FY21 Budget Year	FY21 BY+1	FY21 BY+2	FY21 BY+3	FY21 BY+4
3230 - Continuing Formulation of the California Water Plan	0	4,190	0	0	0	0
<b>Total All Programs</b>	<b>\$0</b>	<b>\$4,190</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>

# Personal Services Details

## Salaries and Wages

Salaries and Wages	FY21 Current Year	FY21 Budget Year	FY21 BY+1	FY21 BY+2	FY21 BY+3	FY21 BY+4
VR00 - Various	0	633	0	0	0	0
<b>Total Salaries and Wages</b>	<b>\$0</b>	<b>\$633</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>

## Staff Benefits

Staff Benefits	FY21 Current Year	FY21 Budget Year	FY21 BY+1	FY21 BY+2	FY21 BY+3	FY21 BY+4
5150600 - Retirement - General	0	197	0	0	0	0
5150900 - Staff Benefits - Other	0	122	0	0	0	0
<b>Total Staff Benefits</b>	<b>\$0</b>	<b>\$319</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>

## Total Personal Services

Total Personal Services	FY21 Current Year	FY21 Budget Year	FY21 BY+1	FY21 BY+2	FY21 BY+3	FY21 BY+4
<b>Total Personal Services</b>	<b>\$0</b>	<b>\$952</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>