

Big Valley Groundwater Basin Advisory Committee (BVAC)

Unapproved Meeting Minutes

BVAC Members:

Lassen County BVAC – Aaron Albaugh, Board Representative; Gary Bridges, Alt. Board Representative; Kevin Mitchell, Public Representative; Duane Conner, Public Representative
Modoc County BVAC – Geri Byrne, Board Representative; Ned Coe, Alt. Board Representative; Jimmy Nunn, Public Representative; John Ohm, Public Representative

Wednesday, June 2, 2021

2:00 PM

Adin Community Center
605 Highway 299
Adin, CA 96006

BVAC Convene in Special Session.

Present: Committee Members: Byrne, Albaugh, Mitchell, Ohm, and Nunn.
Absent: Committee Members: Conner

Also in attendance: BVAC Secretary Maurice Anderson
BVAC staff Tiffany Martinez
BVAC Recorder Brooke Suarez
Modoc County Counsel Sean Cameron (via Zoom)

BVAC Chairman Byrne called the meeting to order at 2:19 p.m.

Flag Salute: Chairman Byrne requested Kevin Mitchell lead the Pledge of Allegiance.

General Update by Secretary: None

Matters Initiated by Committee Members:

Vice-Chairman Albaugh expressed concerns that there has been no response from Governor Newsom to the letters that have been sent to him. Vice-Chairman Albaugh was disappointed that DWR was not in attendance to talk about the Allen Camp Dam as he had requested.

Correspondence (unrelated to a specific agenda item): None

Approval of Minutes (May 5, 2021) –

A motion was made by Vice-Chairman Albaugh to approve BVAC meeting minutes from May 5, 2021. The motion was seconded by Representative Mitchell. The motion was carried by the following vote:

Aye: 5 – Byrne, Albaugh, Mitchell, Ohm, and Nunn.

Public comment rules were read by Chairman Byrne.

Laura Snell facilitated the meeting

Tiffany Martinez reviewed the time line and schedule for the GSP. Vice-Chairman Albaugh commented that only a small portion of the GSP schedule has input from the GSAs. Martinez also recapped the DWR review process. Chairman Byrne requested that both the Modoc and Lassen Boards of Supervisors be updated on the GSP prior being taken to the boards to be voted upon. Vice-Chairman Albaugh recommended that T. Martinez present at the Lassen Board of Supervisors and M. Anderson present at the Modoc Board of Supervisors.

SUBJECT #1:

Introduction of Revised Draft Chapter 8 (*Monitoring Networks*) of the GSP.

ACTION REQUESTED:

1. Receive reports from the pertinent ad hoc committees, BVAC Secretary, Staff, and/or Consultant.
2. Receive public comment.
3. Accept and “set aside” Revised Draft Chapter 8 for future inclusion into the Draft GSP.

Chapter 8 revisions were presented by David Fairman. Laura Snell explained why the minimum threshold of the 12 monitoring wells changed from 150 feet to 140 feet. The 140 feet considers the depth of all the 12 wells; plus, water cost feasibility diminishes after 140 feet. Chairman Byrne asked if fall 2021 levels are lower than the 2015 baseline, should the 2021 levels replace the 2015 baseline levels in the GSP. The answer was “yes” the baseline can be changed to the 2021 levels.

D. Fairman stated that there should be little to no cost for monitoring the wells. Data from monitoring the wells will be coming from different reporting entities. M. Anderson brought up that the CASGEM wells, though currently being monitored by DWR, are contractually to be monitored by the counties. DWR currently has no intention of discontinuing the monitoring.

Committee comment:

Vice-Chairman Albaugh had verbiage changes. He also questioned why we are doing all the contour mapping. L. Snell explained that they are easy to view and help with project work locations. Patterns emerge very quickly with these maps.

Discussion was held on the water budget. Land use data for the water budget was in contention. Vice-Chairman Albaugh stated that what he has seen of DWR land use data is inaccurate. D. Fairman said that the land use data can be estimated from year to year as it will not change that much. L. Snell said that the data is rough now but will continued to be refined.

L. Snell was concerned with consistency of how the phrases sustainability indicators and sustainable management criteria are being used in the GSP. D. Fairman said indicators are the six different items that are looked at for sustainability and the sustainable management criteria are the measured values of those indicators.

Public comment:

Brian Hutchinson wanted to be sure the tributaries of Ash Creek were not forgotten in the GSP.

Motion to “set aside” Chapter 8 -

A motion was made by Chairman Albaugh to “set aside” Chapter 8 with changes. The motion was seconded by Representative Mitchell. The motion was carried by the following vote:

Aye: 5 – Byrne, Albaugh, Mitchell, Ohm, and Nunn.

Break: 3:37 to 3:42

SUBJECT #2:

Introduction of Public Draft Chapter 9 (*Project and Management Actions*) of the GSP.

ACTION REQUESTED:

1. Receive reports from the pertinent ad hoc committees, BVAC Secretary, Staff, and/or Consultant.
2. Receive public comment.

David Lile presented the Chapter 9: Projects and Management Actions. He talked about the main possible projects. There are projects that can happen now and projects that could happen in the future. The projects are aimed at enhancing the water availability so that there are not water restrictions down the road. Agricultural managed aquifer recharge (AgMAR) is a possible project which involves flooding fields. Recharge has to be done in the off season but it has to be

done when the ground is not frozen and infiltration is hard in some places. The GSAs also need to do research and development projects to close the data gaps. Surface water storage could be increased by expanding reservoirs or possibly building the Allen Camp Dam. Recharge from uplands could be increased by thinning Juniper and stream channel enhancements. There could be increased voluntary water conservation. Irrigation efficiency could be increased.

Committee comment:

Vice-Chairman Albaugh had verbiage changes. Discussion was held on injection wells as a possible project. Chris Peterson from GEI Consultants had some clarifications on injection well requirements. Injection wells require filtering and testing for water quality. L. Snell stated that DWR also requires permits for recharge. T. Martinez said that there may be funding for this project.

Vice-Chairman Albaugh stated that if the state can control the water, they can control the people.

K. Mitchell stated that a dam would help reduce groundwater pumping.

Public comment:

Julie (online) Some domestic wells increasingly are having recharge issues, people are sinking wells deeper. If projects can be focused where this is happening, you will forestall the “revolt”. Doreen Smith Power has a letter she wants the committee to read. She also said the agreement needs to be listed as an objective. The agreement also needs to be tracked so an agency needs to be identified to track it and she talked about funding.

SUBJECT #3:

Introduction of Public Draft Chapter 10 (*Implementation Plan*) of the GSP.

ACTION REQUESTED:

1. Receive report from the pertinent ad hoc committees, BVAC Secretary, Staff, and/or Consultant.
2. Receive public comment.

Maurice Anderson presented draft Chapter 10. There are strict implementations of projects because of the stipulations of the codes governing the projects. Staff will interpret the code sections to benefit the GSP as best as possible. The codes will make the projects lengthy and costly. Funding will be required to meet the long-term goals.

Committee comment:

Chairman Byrne doesn't want to become surface water police. Representative Mitchell read that the state has allocated money for the monitoring of water but not for helping the water situation. Vice-Chairman Albaugh stated codes are open to interpretation.

Discussion was held on the DWR annual reporting year. The irrigation season for the Big Valley basin doesn't correspond with the DWR cut offs, so technically, as Vice-Chairman Albaugh stated, the reporting year is one year behind. D. Fairman said he will check with colleagues to see how they would handle this issue.

Vice-Chairman Albaugh had verbiage changes.

A table created by Rodney Fricke had outlined other GSP project prices. Chairman Byrne would like to compare future costs with similar basins. D. Fairman said there are no similar basins to compare to.

Public comment:

Ian Espinoza commented that funding will still become available and DWR is willing to work with the community to improve land use reports. He is also looking into staff attending the BVAC meetings.

Doreen Smith Powers stated that water quality is an issue.

Matters Initiated by the General Public (regarding subjects not on the agenda): None

Establish next meeting date: July 7, 2021 at 2:00 pm. in Bieber.

Adjournment: There being no further business, Chairman Byrne asked for a motion to adjourn.

A motion was made by Representative Nunn to adjourn the meeting which was seconded by Representative Ohm at 5:26 pm.

The motion was carried by the following vote:

Aye: 5 – Byrne, Albaugh, Mitchell, Ohm, and Nunn.

Big Valley Groundwater Sustainability Plan GSP Regulations Checklist (Elements Guide) for Chapters 11 and 12

This checklist of the GSP Elements and indicates where in the GSP each element of the regulations is addressed.

Article 5. Plan Contents for Big Valley Groundwater Basin				GSP Document References				Notes
				Page Numbers of Plan	Or Section Numbers	Or Figure Numbers	Or Table Numbers	
§ 354.4.			General Information					
			Each Plan shall include the following general information:					
(a)			An executive summary written in plain language that provides an overview of the Plan and description of groundwater conditions in the basin.	X	ES			
(b)			A list of references and technical studies relied upon by the Agency in developing the Plan. Each Agency shall provide to the Department electronic copies of reports and other documents and materials cited as references that are not generally available to the public.	X	12			
			Note: Authority cited: Section 10733.2, Water Code.					
			Reference: Sections 10733.2 and 10733.4, Water Code.					
§ 354.10.			Notice and Communication					
			Each Plan shall include a summary of information relating to notification and communication by the Agency with other agencies and interested parties including the following:					
(a)			A description of the beneficial uses and users of groundwater in the basin, including the land uses and property interests potentially affected by the use of groundwater in the basin, the types of parties representing those interests, and the nature of consultation with those parties.	X	11.4			
(b)			A list of public meetings at which the Plan was discussed or considered by the Agency.	X	11.5		11-1	Also Appendix 11A
(c)			Comments regarding the Plan received by the Agency and a summary of any responses by the Agency.	X	11.7			Also Appendix 11C
(d)			A communication section of the Plan that includes the following:					
	(1)		An explanation of the Agency's decision-making process.	X	11.6	11-1		
	(2)		Identification of opportunities for public engagement and a discussion of how public input and response will be used.	X	11.5, 11.7			
	(3)		A description of how the Agency encourages the active involvement of diverse social, cultural, and economic elements of the population within the basin.	X	11.4			
	(4)		The method the Agency shall follow to inform the public about progress implementing the Plan, including the status of projects and actions.	X	11.8			
			Note: Authority cited: Section 10733.2, Water Code.					
			Reference: Sections 10723.2, 10727.8, 10728.4, and 10733.2, Water Code					

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Abbreviations and Acronyms

Basin	Big Valley Groundwater Basin
BVGB	Big Valley Groundwater Basin
BVAC	Big Valley Groundwater Basin Advisory Committee
BVWUA	Big Valley Water Users Association
C&E	Communication and Engagement

38	DWR	Department of Water Resources
39	GSA	Groundwater Sustainability Agency
40	GSP	Groundwater Sustainability Plan
41	LMFCWCD	Lassen-Modoc Flood Control and Water Conservation District
42	MOU	Memorandum of Understanding
43	NCNRCDC	North Cal-Neva Resource Conservation and Development Council
44	SGMA	Sustainable Groundwater Management Act of 2014

11. Notice and Communications (§354.10)

11.1 Background

Sustainable Groundwater Management Act (SGMA) compliance, outreach, and communication efforts in the BVGB began before Groundwater Sustainability Plan (GSP) development. When SGMA was signed into law, local agencies in the Big Valley Groundwater Basin (BVGB or Basin) explored options for forming Groundwater Sustainability Agencies (GSAs) by the June 30, 2017 statutory deadline. On February 23, 2016, Lassen and Modoc Counties held a public meeting of the Lassen and Modoc County Boards of Supervisors in Adin to explore whether the Lassen-Modoc Flood Control and Water Conservation District (LMFCWCD) could become a GSA for the Basin and if that option was preferred over the two Counties becoming the GSAs. These were the only two options available under existing public agency structures. The preferred options resulting from the meeting was that the two Counties become the GSAs for their respective Basin jurisdictions and develop a single, coordinated GSP.

The County Boards moved forward to become GSAs, held public hearings and passed resolutions in early 2017. They registered with DWR as the Big Valley Modoc GSA and Big Valley Lassen GSA, each covering the portion of the Basin in their respective county. After becoming established as the GSAs, the counties developed a workplan to determine the scope, schedule, and cost for GSP development; an application for a State grant was submitted and grant awarded; and the GSAs submitted a notice of intent to develop one GSP to cover the entire BVGB. A timeline of these events is presented in **Table 11-1** below.

Table 11-1 Pre-GSP Development Outreach Efforts

Date	Activity
February 2016	Joint Lassen-Modoc Board of Supervisors meeting to explore GSA options to comply with SGMA
January 2017	Public outreach meeting in Bieber to solicit comment on the Counties becoming GSAs
February 2017	County of Modoc GSA Formation Public Hearing
March 2017	County of Lassen GSA Formation Public Hearing
July-September 2017	GSP Workplan developed to determine scope, schedule, and cost of GSP development
November 2017	Lassen County submits application for State grant to fund GSP development
June 2018	Notice of Intent to develop one GSP for the entire BVGB submitted to DWR
November 2018	Lassen County entered into SGMA grant agreement with the State
February 2019	GSP development started

11.2 Challenges of Developing GSP During COVID Pandemic

Text to be added

11.3 Goals of Communication and Engagement

In developing the GSP, the GSAs implemented communication and engagement (C&E) with the goals of:

Educating the public about the importance of the GSP and their input. Public input is an important part of the GSP development process. The local community defines the values of the basin and the priorities for groundwater management. This input guided decision-making and development of the GSP, particularly the development of the sustainability goal, sustainable management criteria, and projects and management actions.

Engaging stakeholders through a variety of methods. One size does not fit all when it comes to stakeholder engagement. This chapter outlines how the GSAs performed C&E at multiple venues through a variety of media to reach varied audiences.

Making public participation easy and accessible. The C&E described in this chapter describes the many methods employed to make it easy for the public to be informed and provide input.

Providing a roadmap for GSP development. The GSAs provided a schedule for stakeholders, keeping C&E efforts consistent and on track.

11.4 Stakeholder Identification

The Water Code §10723.2 requires consideration of all beneficial uses and users of groundwater. Primary beneficial uses of groundwater in the BVGB include agriculture, domestic use, and habitat. In addition to farmers and individual well owners in the valley, this includes a small community system in Bieber, the Intermountain Conservation Camp, and the Department of Fish and Wildlife which uses groundwater to supplement and maintain some habitat in the Ash Creek Wildlife Area in the center of the Basin. Other significant uses include industrial uses such as logging, construction, and fire suppression.

The Big Valley GSAs recognize that C&E with Big Valley water users and stakeholders is key to the success of GSP development and implementation. Particularly important is the engagement of local landowners given that the county seats are distant from Big Valley. Both counties have engaged stakeholders through various processes and efforts, including Modoc County's groundwater committee, and Lassen County's GMP development and Basin Management Objectives program implementation, and the Big Valley Advisory Committee (BVAC) described in this chapter. In addition, the GSAs performed several public workshops to solicit more input

from interested parties. A listing of the BVAC, public workshop, and other public outreach meetings is included in **Appendix 11A**.

The following is an initial list of interested parties that were contacted during GSA formation and GSP development.

- Agricultural users
- Domestic well owners
- Public Water Systems (including Lassen County Waterworks District No. 1)
- California Department of Fish and Wildlife
- Surface Water User Groups (including Big Valley Water Users Association (BVWUA))
- Federal Agencies (including the U.S. Forest Service and Bureau of Land Management)
- Tribes (including the Pit River Tribe)
- California Department of Water Resources (DWR)
- North Cal-Neva Resource Conservation and Development Council (NCNRCDC)

Prior to establishing themselves as the GSAs, the names and contact information for the above groups were compiled in spreadsheets. People on the interested parties lists were under no obligations, and received information about GSP development, including meeting announcements and opportunities to provide input and become more involved.

[We reached out to tribes through the interested parties list and I understand there has been a tribal advocate at many of the BVAC meetings. Can somebody add some text here to describe any specifics about how tribes were reached out to and how they have been involved. We want to call out this stakeholder in particular because DWR will definitely be looking at tribal engagement. Multiple DWR staff have point this out to me in conversations before.]

The GSAs developed a website (described below) to facilitate C&E, and anyone interested in GSP development or implementation in the BVGB was able add themselves to the interested parties list. In addition, sign-in sheets at all public meetings allowed attendees to add themselves to the interested parties list.

11.5 Venues and Tools

11.5.1 Stakeholder Survey

The GSAs performed a C&E survey with the purpose of soliciting information about how stakeholders wish to be involved in the GSP and what concerns they have relevant to the GSP. Paper copies of the survey were available at public meetings and was also available on the GSP website. The survey is located at: <https://www.surveymonkey.com/r/TQ9HCQK>.

11.5.2 Website and Communication Portal

A website (<https://bigvalleygsp.org>) was deployed for GSP development to facilitate communication and track the communication in a database. The website was not meant to replace, but to enhance, outreach efforts. Tools of the website allowed the GSAs to communicate with interested parties. These tools include the following:

- **Calendar.** The website included a calendar with meeting dates, locations, times, and documents such as meeting agendas, meeting minutes, presentations, and BVAC packets.
- **Interested Parties List.** The website allows users to add themselves to the interested parties list and to select whether they wish to receive communication through email or physical mail.
- **Documents.** In addition to the meeting documents mentioned above, the website has a general documents page where the GSAs posted GSP chapters, scientific references, and other supported documents related to GSP development.
- **E-Blast.** E-mails will be sent to interested parties using the e-blast tool. E-blasts helped to notify interested parties with email addresses to receive information about GSP development progress, upcoming meetings, and new information or documents available.
- **Public Comment.** GSP chapters posted on the website were available for public comment. A web form was available for anyone to submit comments on draft GSP documents. The form allowed the user to comment by page and line number stored the information for GSA review and response.

The web address was included on printed materials and announced at public meetings.

11.5.3 Community Flyers

Physical copies of flyers announcing upcoming public meetings were posted in heavily trafficked locations such as community centers, public buildings, local markets, and post offices.

11.5.4 Newspaper

All public meetings, including BVAC meetings were announced in the Lassen County Times, the Modoc Record, and the Mountain Echo.

11.5.5 Social Media

Information about GSP development and meeting announcements were made through social media, including: Laura, can you fill in here.

11.5.6 Brochure

In 2021, the GSAs transitioned from the background and scientific portions of the GSP (Chapters 1-6, including basin setting and water budget) to the policy and decision-making portions of the GSP (Chapters 7-9, sustainable management criteria, monitoring networks, and projects and management actions). To facilitate engagement of people who may have been coming into the process at that time, a 4-page informational brochure was developed, summarizing Chapters 1-6. This brochure was distributed on the website, through email, and at public meetings. The brochure is included as **Appendix 11B**.

11.5.7 Big Valley Advisory Committee

The GSAs established the BVAC through a memorandum of understanding (MOU) to advise both Lassen and Modoc counties on GSP preparation. The goals of the BVAC, as stated in the MOU (**Appendix 1C**), include the following:

- Advise the two GSAs on the preparation of a Groundwater Sustainability Plan (GSP).
- Provide a forum for the public to comment during the preparation of the GSP.
- Provide recommendations to the two GSAs that would result in actions which have as minimal impact as possible on the residents of Big Valley.
- Advise the two GSAs on the preparation of a GSP to produce the lowest possible future costs to the residents of Big Valley.
- Ensure local control of the Big Valley Groundwater Basin be maintained by the two GSAs.
- Provide a recommendation to the GSA boards on whether to approve the GSP.

Membership of the BVAC was composed of:

- One member of the Lassen County Board of Supervisors selected by said Board.
- One alternate member of the Lassen County Board of Supervisors selected by said Board.
- One member of the Modoc County Board of Supervisors selected by said Board.
- Two public members selected by the Lassen County Board of Supervisors. Said members must either reside or own property within the Lassen County portion of the BVGB.
- Two public members selected by the Modoc County Board of Supervisors. Said members must either reside or own property within the Modoc County portion of the BVGB.

The BVAC operated in compliance with the Ralph M. Brown Act (Brown Act). BVAC meetings were noticed and agendas posted according to the Brown Act. BVAC meetings were open to the public and allowed public comment.

During the development of Chapters 7 through 9, the BVAC established Ad Hoc committees to investigate, discuss, and recommend content for the sustainability goal, sustainable management criteria, monitoring network, and projects and management actions.

11.6 Decision Making Process

The MOA describes the decision-making process for the BVAC. However, while the BVAC made recommendations, it was not a formal decision-making body like the Lassen or Modoc GSAs. The Lassen County GSA, led by the Lassen County Board of Supervisors, and the Modoc County GSA, led by the Modoc County Board of Supervisors, were ultimately responsible for adopting and submitting a GSP to DWR. The GSAs considered all input received from the BVAC and other interested parties.

To develop each chapter of the GSP, the GSAs followed an iterative process illustrated in **Figure 11-1**. The process involved multiple drafts of each chapter, including administrative, public, and (often multiple) revised drafts. Once the BVAC was satisfied that the chapter was at a point where the GSAs were comfortable to move on, they voted to “set aside” the chapter until the entire draft GSP was assembled. This recommendation did not indicate approval but was implemented to keep the development process moving forward. The GSP was then assembled into a complete draft to undergo the same process of administrative, public, and revised drafts. The BVAC will then vote whether to recommend to the GSA boards if they should approve the GSP. The GSA boards will vote whether to approve the GSP prior to submittal to DWR.

11.7 Comments and Incorporation of Feedback

All formal feedback on the GSP were documented both through the GSP website and from public meetings. The comments received, including how each comment was addressed is included in **Appendix 11C**.

11.8 Communication and Engagement During Plan Implementation

The BVAC was established by the GSAs for the specific purpose of advising during development of the GSP and making recommendations to the GSA boards on whether to approve the GSP. The MOU establishing the BVAC therefore expires after the GSP is adopted by the GSAs and submitted to DWR. The C&E during Plan implementation will then shift to the GSA Boards who will continue to inform the public about Plan progress and status of projects and management actions as required by §354.10(d)(4) of the regulations.

This ongoing C&E will be performed through the forum of meetings of the County Boards of Supervisors where GSA staff will give regular reports to the boards and the public along with annual reports to be submitted to DWR as required by GSP Regulations. Communication to stakeholders on the interested parties list will continue to occur via email and physical mail.

Development of annual reports and coordination and implementation of projects and management actions will require significant effort from GSA staff. The GSAs are considering the development of an MOU to clearly define roles, responsibilities, and costs of each GSA.

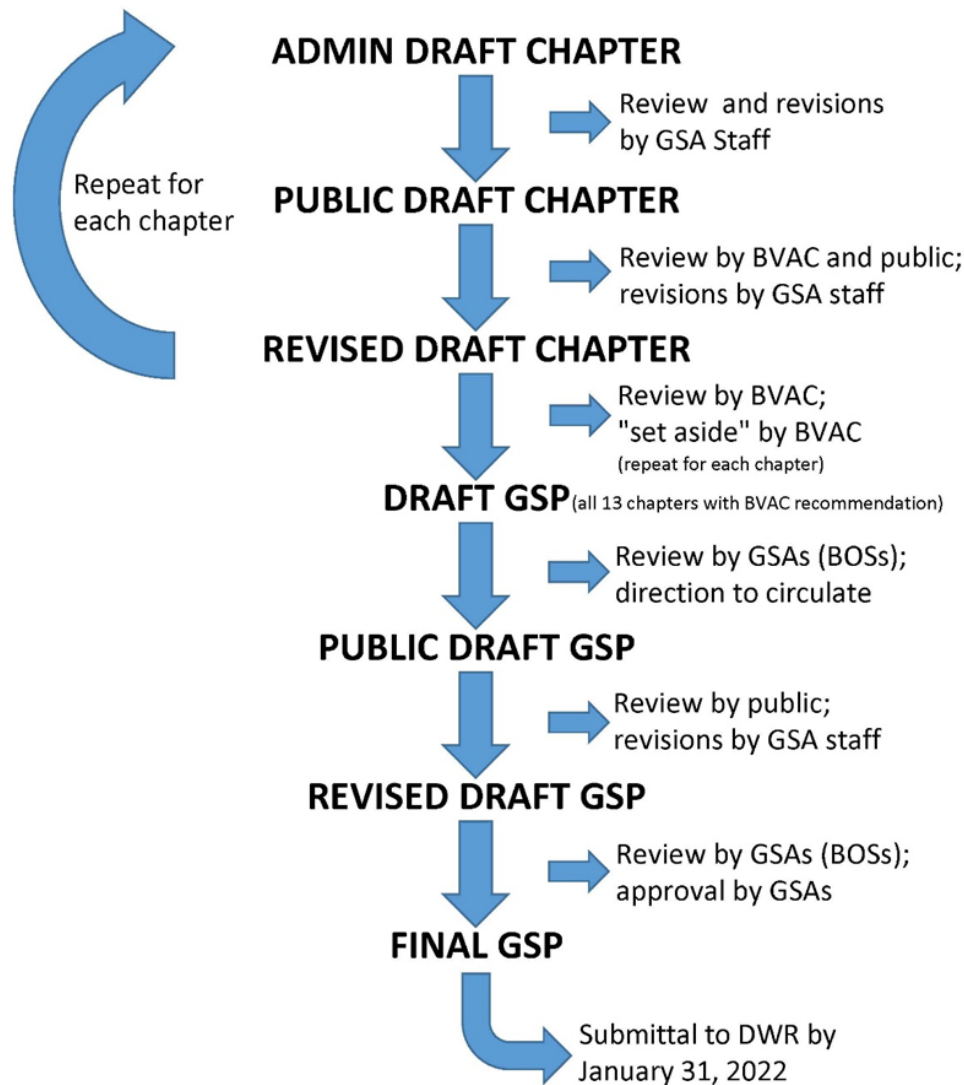


Figure 11-1 GSP Development Process

11.9 References

none

Appendix 11A

List of Public Meetings

Meetings Held By Lassen and Modoc Counties Related to GSP Development

Event	GSA(s)	Date	Time	Location
Special Joint Meeting of the Lassen County and Modoc County Board of Supervisors	Lassen County, Modoc County	2/23/2016	2:00:00 PM	Adin Community Building 609 Main Street Adin, CA 96006
Meeting of the Lassen-Modoc County Flood Control and Water Conservation District	Lassen County, Modoc County	2/23/2016	2:00:00 PM	Adin Community Building 609 Main Street Adin, CA 96006
Public Outreach Meeting	Lassen County, Modoc County	1/27/2017	9:00:00 AM	Bieber Veterans Memorial Hall 657-575 Bridge Street Bieber, CA 96009
Meeting of Modoc County Board of Supervisors	Modoc County	2/28/2017	10:00:00 AM	Board of Supervisors Room 204 South Court Street #203 Alturas, CA 96101
Lassen County Board of Supervisors Meeting	Lassen County	3/14/2017	9:00:00 AM	Board Chambers 707 Nevada Street Susanville, CA 96130
Public Outreach Meeting June 2019	Lassen County, Modoc County	6/3/2019	2:00:00 PM	Bieber Veterans Memorial Hall 657-575 Bridge Street Bieber, CA 96009
Public Outreach Meeting Sept 2019	Lassen County, Modoc County	9/4/2019	4:00:00 PM	Adin Community Center 605 Highway 299 Adin, CA 96006
Big Valley Groundwater Basin Advisory Committee (BVAC) Meeting	Lassen County, Modoc County	2/3/2020	4:00:00 PM	Bieber Veterans Memorial Hall 657-575 Bridge Street Bieber, CA 96009
Big Valley Groundwater Basin Advisory Committee (BVAC) Meeting	Lassen County, Modoc County	3/4/2020	4:00:00 PM	Adin Community Center 605 Highway 299 Adin, CA 96006
Big Valley Groundwater Basin Advisory Committee (BVAC) Meeting	Lassen County, Modoc County	5/6/2020	4:00:00 PM	Bieber Veterans Memorial Hall 657-575 Bridge Street Bieber, CA 96009
Big Valley Groundwater Basin Advisory Committee (BVAC) Meeting	Lassen County, Modoc County	7/1/2020	4:00:00 PM	Adin Community Center 605 Highway 299 Adin, CA 96006
Big Valley Groundwater Basin Advisory Committee (BVAC) Special Meeting	Lassen County, Modoc County	9/24/2020	4:00:00 PM	Bieber Veterans Memorial Hall 657-575 Bridge Street Bieber, CA 96009
Big Valley Groundwater Basin Advisory Committee (BVAC) Meeting	Lassen County, Modoc County	11/4/2020	4:00:00 PM	Adin Community Center 605 Highway 299 Adin, CA 96006
Big Valley Groundwater Basin Advisory Committee (BVAC) Special Meeting	Lassen County, Modoc County	12/2/2020	4:00:00 PM	Adin Community Center 605 Highway 299 Adin, CA 96006
Big Valley Groundwater Basin Advisory Committee (BVAC) Meeting	Lassen County, Modoc County	2/3/2021	4:00:00 PM	Adin Community Center 605 Highway 299 Adin, CA 96006
Big Valley Groundwater Basin Advisory Committee (BVAC) Special Meeting	Lassen County, Modoc County	3/3/2021	4:00:00 PM	Adin Community Center 605 Highway 299 Adin, CA 96006
Groundwater Management Workshop	Lassen County, Modoc County	3/24/2021	5:00:00 PM	Adin Community Center 605 Highway 299 Adin, CA 96006
Big Valley Groundwater Basin Advisory Committee (BVAC) Meeting	Lassen County, Modoc County	4/7/2021	4:00:00 PM	Adin Community Center 605 Highway 299 Adin, CA 96006
Big Valley Groundwater Basin Advisory Committee (BVAC) Special Meeting	Lassen County, Modoc County	5/5/2021	2:00:00 PM	Bieber Veterans Memorial Hall 657-575 Bridge Street Bieber, CA 96009
Big Valley Groundwater Basin Advisory Committee (BVAC) Meeting	Lassen County, Modoc County	6/2/2021	2:00:00 PM	Adin Community Center 605 Highway 299 Adin, CA 96006
Big Valley Groundwater Basin Advisory Committee (BVAC) Meeting	Lassen County, Modoc County	7/7/2021	2:00:00 PM	Bieber Veterans Memorial Hall 657-575 Bridge Street Bieber, CA 96009

Assembled 6/18/2021

Appendix 11B

Brochure Summarizing the Big Valley GSP May 2021

Summary of the Big Valley Groundwater Sustainability Plan

bigvalleygsp.org

May 2021

In 2014, California's Sustainable Groundwater Management Act (SGMA) was signed into law, requiring local governments and agencies in groundwater basins designated as high and medium priority to create governance structures and develop, adopt, and implement a Groundwater Sustainability Plan (GSP) for each basin. The Big Valley Groundwater Basin (BVGB) is identified as a medium-priority basin by the California Department of Water Resources (DWR) and is therefore subject to SGMA. The "high" and "medium" designations were assigned by DWR prior to the adoption of SGMA. Local agencies in the BVGB contested the medium-priority designation, which DWR denied, and are preparing a GSP to comply with the law because non-compliance may result in intervention by the State Water Board. Intervention could include metering, reporting, and fees for pumping groundwater. All formal basin-priority challenges have been denied to-date but may be revisited in the future.

Location and Boundaries

BVGB is a small basin in the north-eastern region of California. It encompasses a 144-square-mile area located in portions of Modoc and Lassen counties, including the unincorporated communities of Adin, Lookout, Bieber, and Nubieber. SGMA applies only to the areas inside the basin boundary (**Figure 1**), but GSP projects may include areas outside the boundary. The boundary lacks accurate detail in places and does not follow the DWR boundary definition, so leaders in the BVGB submitted a basin boundary modification request to DWR in 2016 that was denied. There are plans to submit another basin boundary modification request in the future.

GSP Content and Structure

Governments and agencies in basins subject to SGMA form one or more Groundwater Sustainability Agencies (GSA) to develop a GSP and oversee its implementation. The two counties, Lassen and Modoc, have designated themselves as the GSAs for the Basin and that designation has been confirmed by DWR. The counties took on this huge responsibility because no other local agencies were able to serve as the GSAs. If the counties had not agreed to be the GSAs, the State Water Board would have assumed management responsibility (e.g., "intervention"). Each GSA manages the portion of the basin in its county. In 2019, the Big Valley Groundwater Basin Advisory Committee (BVAC) was formed to advise the GSAs on preparation of a single GSP for the entire BVGB. The BVAC consists of representatives from each county's board of supervisors and two BVGB residents from each county who were appointed by the GSAs after extensive outreach was conducted to all residents of the BVGB. The BVAC holds regular meetings which are open to the public. Meeting information can be found on the Big Valley GSP website: <https://bigvalleygsp.org>.

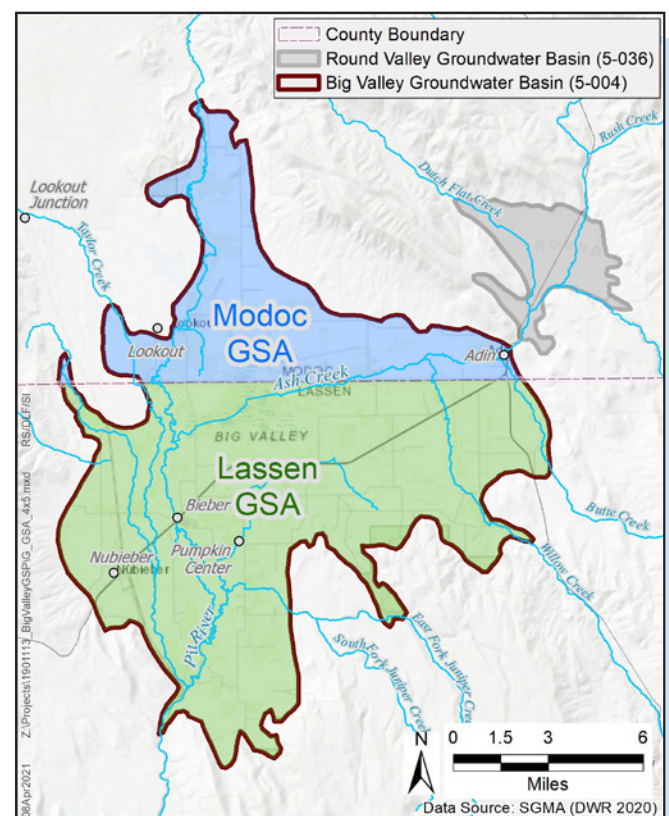


FIGURE 1: BIG VALLEY GROUNDWATER BASIN AND GSA BOUNDARIES

Physical Characteristics

The BVGB GSP follows a very specific structure because SGMA regulatory requirements dictate the information that must be contained within the document. First, the GSP must describe the general background and physical characteristics of the groundwater basin. In the BVGB GSP, this information is covered in Chapters 1 through 4 as follows:

- **Chapter 1.** Introduction to BVGB
- **Chapter 2.** Agency Information
- **Chapter 3.** Plan Area
- **Chapter 4.** Hydrogeologic Conceptual Model

Plan Area (Chapter 3) and Hydrogeologic Conceptual Model (Chapter 4) introduce important information, such as land use, geology, and hydrology, that will be used to make decisions throughout the planning process. They are based on the best available scientific data, but also include assumptions where reliable data is not available. The term ‘hydrogeologic conceptual model’ refers to a written description of the physical characteristics of the basin – where the water flows, the makeup of the soils, how deep the groundwater is, etc.

Drafts of Chapters 1 through 4 were developed in 2020, reviewed by the BVAC and the public, and “set aside” in order to move forward with the GSP. They will be revisited once the entire document is assembled. The “set aside” drafts are available and open for comment on the home page of the BGVB website (<https://bigvalleygsp.org>). Previous chapter versions, comments submitted, and other relevant information is available on the documents page.

Figures 2 and 3 show data highlights from Chapters 3 and 4 of the GSP.

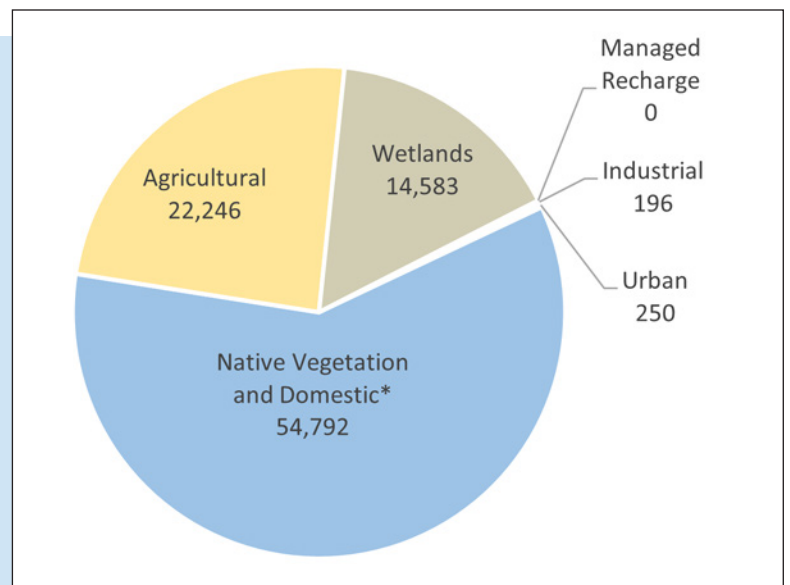


FIGURE 2: BIG VALLEY GROUNDWATER BASIN LAND USE

* Domestic use generally occurs in conjunction with agricultural and native vegetation and is best categorized with native vegetation, as most of the agricultural area is delineated by field and does not include residences.

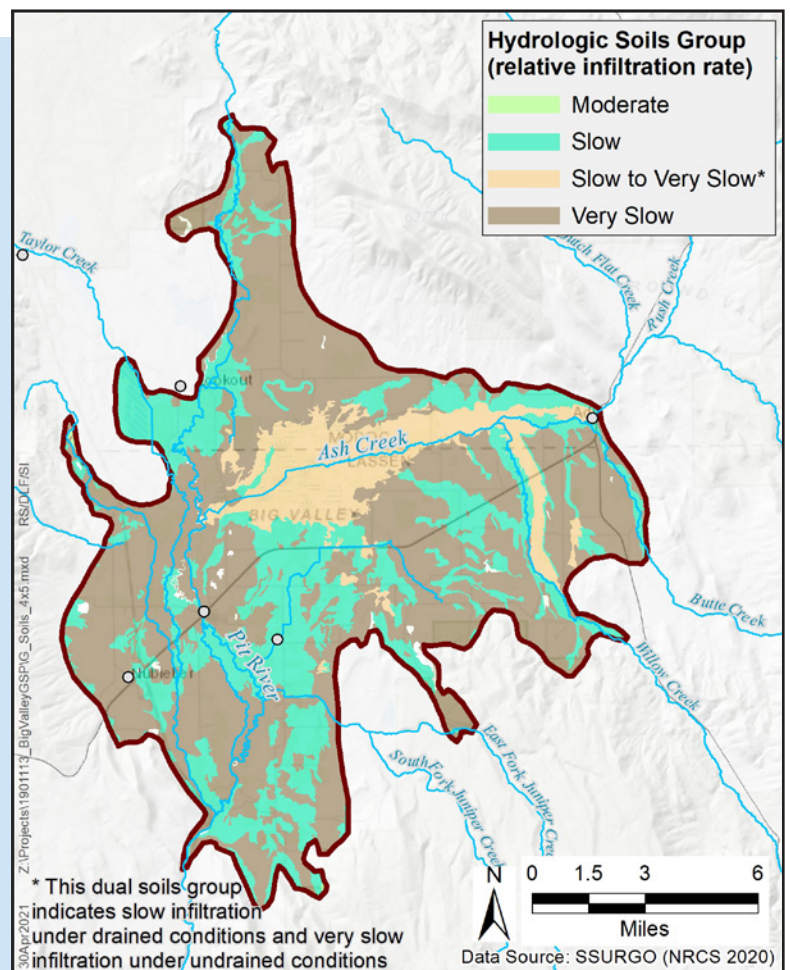


FIGURE 3: BIG VALLEY GROUNDWATER BASIN HYDROLOGIC SOILS GROUPS

Groundwater Conditions

Professional geologists and hydrogeologists examined data from wells throughout BVGB to determine groundwater conditions. They observed that most areas of the BVGB have experienced little to no change in water levels, while other areas have fluctuated more. They also found that groundwater in the BVGB is generally of excellent quality. The details of their findings are available in BVGB GSP **Chapter 5. Groundwater Conditions** (which has been temporarily “set aside” by the BVAC). Chapter 5 also includes other data required by the GSP regulations including changes in groundwater storage, water quality, land subsidence, and interconnected surface water. None of these indicators have shown undesirable results.

Figure 4 shows the estimated direction of groundwater flow in the BVGB.

An important tool to monitor groundwater sustainability is a water budget. BVGB GSP **Chapter 6. Water Budget** (“set aside”) has estimates of the volume of water flowing into and out of the basin – from causes such as rain, rivers, and evaporation. Comparing the volumes of water entering and exiting the basin indicates if the basin is in balance, is in overdraft, or has surplus water. **Figure 5** shows the draft historical water budget (1984 to 2018).

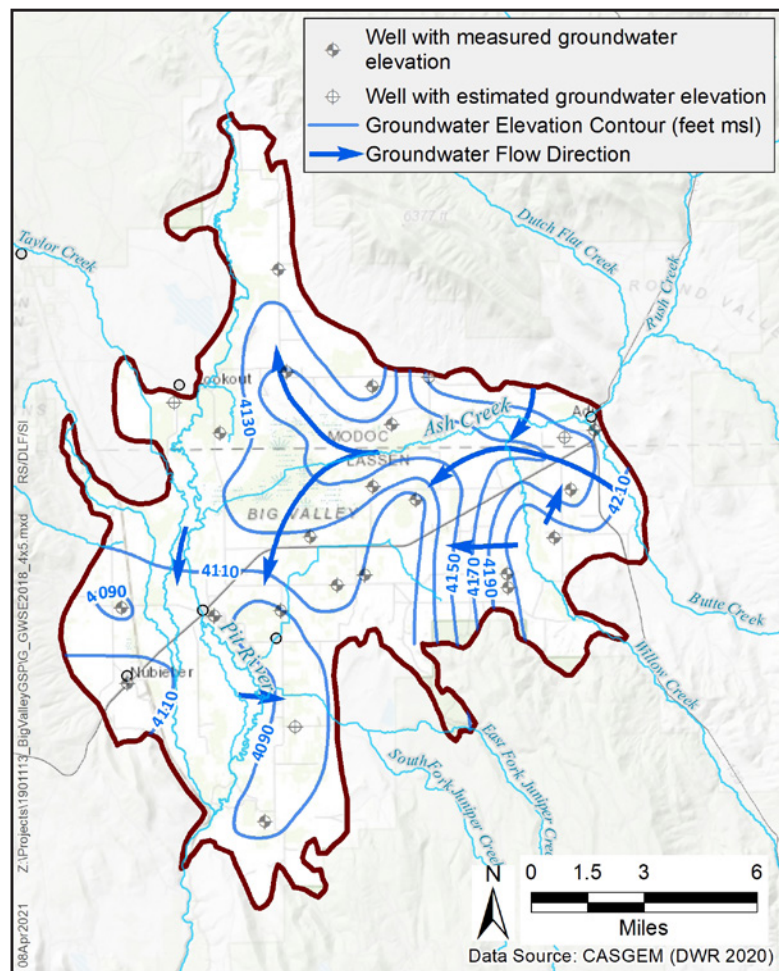


FIGURE 4: BIG VALLEY GROUNDWATER BASIN GROUNDWATER CONTOURS AND ESTIMATED FLOW DIRECTION

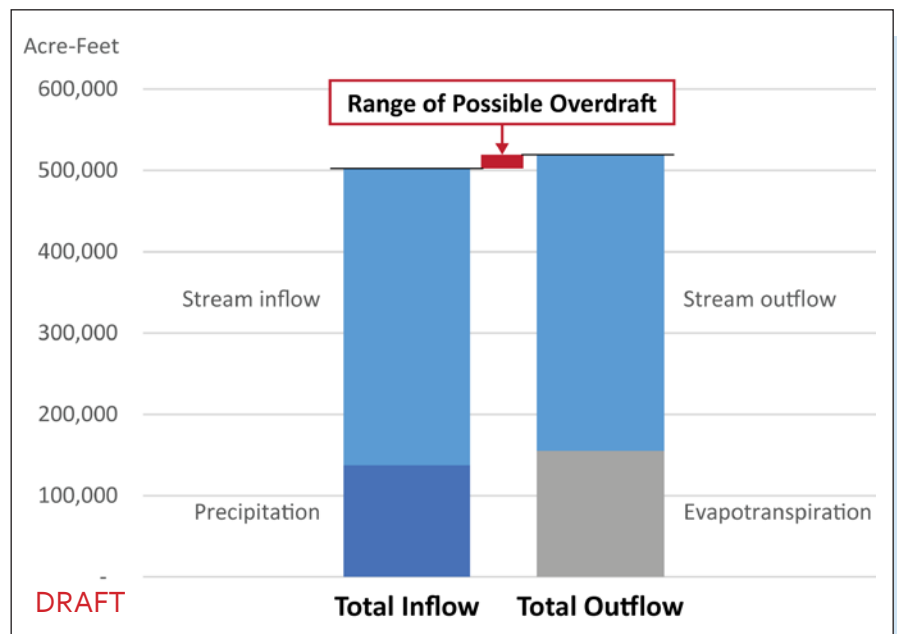


FIGURE 5: DRAFT AVERAGE ANNUAL WATER BUDGET (1984–2018)

Figure 6 shows the change in groundwater storage and indicates that most of the deficit is due to the 2000-2018 time frame being drier than it had been historically. Conversely, the extended wet periods that occurred in the late 1990s caused groundwater levels to recover.

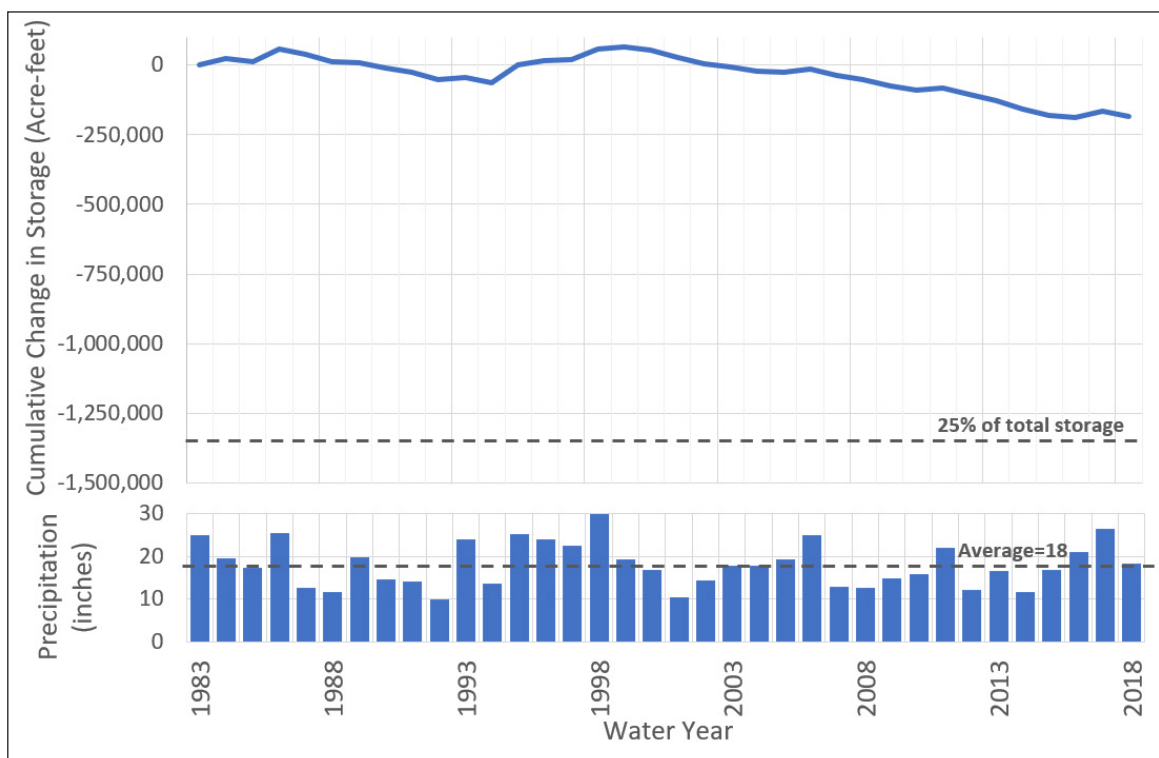


FIGURE 6: CUMULATIVE CHANGE IN STORAGE (1982-2018)

Up Next: Projects and Actions

The next steps in the GSP process are to set measurable criteria to track progress toward sustainability and to define projects and actions to help move the basin toward sustainable groundwater management. The BVAC and GSAs are currently developing these items, and **you are invited** to participate.

How to Participate

- Register as an interested party on our website: <https://bigvalleygsp.org>.
- Attend BVAC meetings, which are advertised to interested parties and viewable on the online calendar: <https://bigvalleygsp.org/calendar>.
- View draft GSP documents and offer your comments using the online form: <https://bigvalleygsp.org/comment/new>.

Thank you for your interest in the Big Valley GSP.

Appendix 11C

Comment Matrix

Big Valley GSP Comment Matrix Chapters 1-3

Document	Page & Line Number	Comment	Date	Response
Public Draft Chapters 1 and 2	Section 1.2, line 23	Prove description of Lassen County Basin. DWR boundary definitions and the GSP need to be more specific.	3/4/2020	The boundaries of the basin are established by DWR in their Bulletin 118 for SGMA. A basin boundary modification process is allowed under SGMA and can be investigated, but is outside the scope of writing the GSP. A background section has been added to Chap 1 that describes the County's request for basin boundary modification that was denied by DWR.
Public Draft Chapters 1 and 2	Section 1.3	DWR prioritization criteria are subjective. Groundwater irrigated acres need to be differentiated from surface water irrigation. DWR doesn't respond to questions.	3/4/2020	A section was added describing the basin prioritization process and the interaction between the counties and DWR regarding the ranking. DWR's dataset that they used to determine irrigated acres is documented on their website. The acreage irrigated by groundwater will be evaluated in Chapter 6: Water Budget. The extent of lowering groundwater levels in the basin will be evaluated in Chapter 5: Groundwater Conditions. DWR's lack of responsiveness to questions is noted.
Public Draft Chapters 1 and 2	Chap 2 Line 61	Add that GSA was established because we have to, it is not voluntary	3/4/2020	A Background section was added describing the basin prioritization, basin boundary modification request, and correspondence between the counties and DWR. The overarching message of this new text is to document that the counties did not start this process willingly. Wording was changed in Chap 2 to add the word "mandate" when referring to SGMA to emphasize that compliance with this law is not voluntary.
Public Draft Chapters 1 and 2	Page #: 1.1, Line #: 6,7,&8	1.1 Lines 6,7,&8 Should state in the body with verbiage of the fact that the Stake Holders" contested DWR findings and protested the priority ranking.1.3 Line 54 graphWhat is it? Where do these numbers come from?I also think that we should refer to the land owners with wells effected by the basin should be referred to as "Stake Holders"	3/5/2020	A background section has been added to Chap 1 that describes the prioritization and the Counties' responses. DWR provides some of the data it used for prioritization on its website, at the URL shown on Line 53. Use of the term "stakeholders" will be defined and used in future chapters.

Big Valley GSP Comment Matrix Chapters 1-3

Document	Page & Line Number	Comment	Date	Response
Public Draft Chapters 1 and 2	Page #: 1-2, Line #: 42	I would like to recommend that the description of the boundary of the Big Valley Basin be amended to include the water delivery sources which feed into the water table of the valley. These water sources are varied and include a number of perennial and ephemeral drainages, springs and reservoirs. For example:North: Halls Canyon Creek, Howell Canyon Creek, Fox Draw, Hayes Canyon and seventeen (17) Unnamed ephemeral drainages along Barber and Ryan Ridges.East: Ash Creek, Butte Creek and seven (7) Unnamed Ephemeral drainages.South: Willow Creek, Juniper Creek, Juniper Creek " South Fork, Hot Springs Slough, Gobel Slough, Big Valley Canal and twenty (20) Unnamed ephemeral drainages.West: Taylor Reservoir, Kramer Reservoir, Lower Roberts Reservoir, Taylor Creek, Widow Valley Creek, Bull Run Slough, Egg Lake Slough and fifteen (15) Unnamed ephemeral drainages.My reasoning for this recommendation to include these delivery systems is due to the topographic gradients that assist in the recharging of the Big Valley Basin groundwater. The Pit River itself offers limited influence on recharging groundwater levels to the West and southwest areas of the basin. It offers very little to no influence to the north, east and southern areas. The elevation gradient in the basin varies approximately from 4450 feet in the east to 4160 feet in the west a drop of a few hundred feet. These areas are vital to not only modeling the water budget for the Basin, but provide potential areas for remediation projects. It will make it easier for project planning in the future since we will not have to go through amending the original boundaries at a later date.Although DWR Bulletin 118 determines the boundary based on alluvial deposits, the basin does not exist in an environmental vacuum and is dependent upon all of its water delivery systems.	3/8/2020	A background section has been added to Chap 1 that, in part, describes Lassen County's request for a basin boundary modification that was denied by DWR in 2016. DWR will again accept requests for basin boundary modifications in 2023. The current GSP will need to honor the currently established basin boundary. With that said, the GSP will acknowledge the importance of areas outside the basin on recharge. Projects and management actions described in the Plan are not restricted to being inside the groundwater basin.
Public Draft Chapter 3	Section 3.1 lines 23-34	Says that Round Valley is separated from the basin by a 1/2 mile gap. What is the proof of that?	5/6/2020	This text describes how the basin boundaries were drawn by DWR. The text has been updated to reflect this. Connectivity to the Round Valley groundwater basin may be investigated at a later time.
Public Draft Chapter 3	Section 3.4.2	Concern expressed that domestic well is being combined with agricultural use.	5/6/2020	Text has been updated and domestic categorized as a separate use from agriculture
Public Draft Chapter 3	Section 3.4.1	Disagree with USGS being represented as a public supply well.	5/6/2020	There are specific definitions used by the SWRCB with regard to a public water supply system, and the text reflects this categorization. Text has been modified to emphasize that the USFS station does not serve a resident population.
Public Draft Chapter 3	Section 3.5	The addition of monitoring wells into the well inventory increases the well density per square mile. This is not right. There is some confusion on the public supply wells, with 6 on the maps, but only 2 public water supply systems.	5/6/2020	The figures in this section only show wells that are designated by drillers on their well completion reports as production, domestic, and public supply. Some of the public supply wells on the map are inactive. The map has been updated to indicate inactive public supply wells.
Public Draft Chapter 3	Section 3.6.1	Information on wells monitored by LMFCWCD says information is not readily available. This information should be public.	5/6/2020	The information has not yet been obtained
Public Draft Chapter 3	3.6.6	Should say that the Lassen County ordinance prohibits extraction of groundwater for use outside the County.	5/6/2020	Noted, text will be updated to reflect this

Big Valley GSP Comment Matrix Chapters 1-3

Document	Page & Line Number	Comment	Date	Response
Public Draft Chapter 3	Fig. 3-2 Jurisdictions	There may be some areas indicated as BLM, that are not BLM. It's possible that this is the same for some Tribal lands.	7/1/2020	Checking with BLM.
Public Draft Chapter 3		There is significant new irrigated acreage in the basin since 2014.	7/1/2020	David: can you see if there are numbers available from 2015 or 2016?
Public Draft Chapter 3	Table 3-1 Crop Use	The crop of rice should say wild rice - this should be changed wherever referenced	7/1/2020	Change made
Public Draft Chapter 3		Do USFS mangagement plans need to be included in the section on Land Use plans? (Are there USFS lands within the Basin?)	7/1/2020	Being discussed.
Public Draft Chapter 3		Regarding response to question about whether surface water supplies are adequate for irrigation, the answer is "YES." There is significant acreage irrigated with surface water supplies.	7/1/2020	
Public Draft Chapter 3		Ash Creek Wildlife Area: This is a "potentially" managed area.	7/1/2020	New text clarifies that the wildlife area is minimally improved.
Public Draft Chapter 3		In response to the question of: "How should Wildlife Area and riparian be represented?" - Show riparian areas along creeks and Pit River, where wetlands make it too wet to farm. Use the footprint of the Wildlife Area in all maps and add riparian lines along the river. For example; "x" number of feet along Pit River, other creeks. Either map it or put it into text - explaining number of river miles and estimating width of riparian corridor. (e.g. 363 acres for Pit River)	7/1/2020	The category of "riparian areas" is removed from the maps, per discussion at the July 1, 2020 BVAC meeting in Adin. Table 3-1, Land Use Summary, has been revised to show 12,407 acres of riparian areas (including Ash Creek Wildlife Management area and corridors along waterways.
Public Draft Chapter 3		The document reports the Wildlife Area and/or riparian area as 12,000 acres v. 14,000. There is a discrepancy in the numbers.	7/1/2020	See previous reponse.
Public Draft Chapter 3		Much of the area of Ash Creek Wildlife Area is not riparian. Some areas along Ash Creek are not riparian. Water supplies for the Wildlife Area include a mix of surface water and groundwater supplies.	7/1/2020	See previous reponse.
Public Draft Chapter 3		Water bodies should be on the map, including lower Roberts Reservoir.	7/1/2020	Water bodies are shown on Map
Public Draft Chapter 3		How is mixed source shown on the map? There are areas represented as groundwater only, where landowners also irrigate with surface water.	7/1/2020	Looking at water rights information from the Modoc County watermaster and Water Boards. If information cannot resolve the question, it may need to be listed as a data gap.
Public Draft Chapter 3	line 91	Remove language on LMFLWCD.	7/1/2020	Deleted.
Public Draft Chapter 3		Beneficial uses: reassess categories of municipal, domestic, recreation (both contact and non-contact).	7/1/2020	First paragraph on surface water regulation reivsed (section 3.5.6) and added new section 3.3.3, Beneficial Uses of Groundwater
Public Draft Chapter 3		There are questions about the accuracy of information (data gaps). Be clear about degrees of uncertainty. How will the GSP deal with data gaps - where is it so wrong that additional survey or study must be done? The GSP needs to note inaccuracies. 70% - 80% accuracy is not good enough.	7/1/2020	Be cautious about identifying data gaps - where DWR may require addressing data gaps without providing funding to do so.
Public Draft Chapter 3		It's not the level of importance about certain points of data. The fact is, that it's not right that we have to make decisions based on inaccuracies. That's an imposition. Having to accept inaccuracies is not reasonable. Where there are questions, Big Valley can make estimate and assumptions to our benefit.	7/1/2020	A paragraph of draft text discusses data uncertainties and decision-making. This will be presented at the next BVAC meeting. Currently place in Chapter 4, page 4-1.

Big Valley GSP Comment Matrix Chapters 1-3

Document	Page & Line Number	Comment	Date	Response
Public Draft Chapter 3		It's not clear what's important. The better information that is collected now, perhaps the basin prioritization will be lowered in the future.	7/1/2020	Other data sets may help increase accuracy - those will need to be looked at.
Ch. 3 Plan Area		The term managed wetlands should be changed to state wildlife habitat	9/24/2020	Change made in text
Ch.3 Plan Area	page 173, line 399	In reference to Diversions: There are claimants on the river that do their own measurements and recordings separate from Water Master @ 2:30:00-2:35:00 Set aside with the condition that the language is revised.	9/24/2020	Changes made in text
Ch 3 Plan Area	Line 404	Ash Creek divergence is not measure past Modoc county line by water master @ 2:31:00-2:35:00	9/24/2020	Changes made in text
Revised Draft Chapters 1-2 v2	Page #., Line #:	Currently BV Groundwater District mapping has defined groundwater zones within its boundaries. Will the district consider groundwater use similar to surface water use (CA riparian doctrine) in that beneficial use and waste or unreasonable use is first applied within zones to help alleviate projected over draft of groundwater reserves within zones? Does the SWRCB have guidance regarding this subject under the current groundwater law? Has this been applied in other groundwater management plans in California?	2/17/2021	
BigValleyGSP_Ch3_Revised_Draft_2020_08_19.pdf	Page #: 3-15, Line #: 323	The estimate of 18 well in the town of Adin is too low. I would guestimate the number of wells to match the number of parcels and homes in town which would come close to 60+ Each home has its own well, and some parcels have two. Many of these wells were put in place long before well drillers appeared in the community. The town sits a the edge of a very large artesian system and many of the homes have wells less than 100 feet deep. For example, my home was built in 1868 with a hand dug well system that reaches down 80 feet.	3/15/2021	
BigValleyGSP_Ch3_Revised_Draft_2020_08_19.pdf	Page #: 3-21, Line #: 403	There is a great deal of precipitation monitoring performed by the US Forest Service Big Valley Ranger Station. they collect both monthly and annual estimates. As a matter of fact, this will be their 78th year of providing this data to NOAA (they received a plaque from NOAA a couple of years ago celebrating their 75th year in providing weather information). Please call Lennie Edgerton who has this information in spreadsheet form at the Forest Service: (530) 299-8444	3/15/2021	
BigValleyGSP_Ch3_Revised_Draft_2020_08_19.pdf	Page #: 3-21, Line #: 407	Using CIMIS data from McArthur CA is incongruous at best. The nearest CIMIS Station that best represents the weather attributes of the Big Valley area is located in Alturas, CA (CIMIS #90). Although located 40 miles to the east, both Alturas and the Big Valley area are located within the Modoc Plateau Physiographic Province, NOT the Fall River Valley. Being over 1000 feet higher in elevation can drive significant differences in precipitation levels and evapotranspiration rates as well as significant differences in soil types. Please reconsider your "source data" ... Even NOAA uses weather information from the Alturas Airport to estimate changes in weather for this area.	3/15/2021	

Big Valley GSP Comment Matrix Chapters 1-3

Document	Page & Line Number	Comment	Date	Response
BigValleyGSP_Ch3_Revised_Draft_2020_08_19.pdf	Page #: 3-21, Line #: 407	Continuation of limited climate information for the Big Valley Basin. There is a Remote Access Weather Station (RAWS) that is located just north of Round Valley on a west facing slope. It has been collecting local weather information for decades. You can find its weather data here: https://raws.dri.edu/cgi-bin/rawMAIN.pl?caCRUS It is named "Rush Creek RAWS"	3/15/2021	

Big Valley GSP Comment Matrix Chapter 4

Document	Page & Line Number	Comment (NOTE: break from 02:19:30-02:28:00)	Date	Response
Public Draft Chapter 4		How much UC Davis information is included in Chapter 4? Is preliminary information available from that Study.		Being looked at
Public Draft Chapter 4		DWR identifies options for defining a basin bottom: bedrock, water quality that precludes use (using resistivity) It's not clear where bedrock occurs, or where water quality decreases. Are using 1,200' as a definable bottom, to capture existing wells.		See conceptual language at the bottom of page 4-10 and at the top of page 4-13.
Public Draft Chapter 4		Data gaps include: basin boundary, confining conditions, definable bottom, faults as barriers to flow, soil permeability, recharge		See conceptual language on page 4-1
Public Draft Chapter 4	Page 1 line 13	Dimensions of basins do not match with Chapter 3.		Being looked at
Public Draft Chapter 4	Page 1 Line 21	Add in 363.63 acres of riparian area (30 miles of Pit River, 50' on each side)		Riparian area is captured in Table 3-1
Public Draft Chapter 4	Sec. 4.4.1	<p>Single principal aquifer is most appropriate for managing groundwater. This should be removed. The BVAC is not interested in managing groundwater. What is the basis for the determination of a single aquifer? To define multiple aquifers, there would need to be evidence of hydrologic separation (such as clay layers). Pumps that have different levels of production could be connected - the differences resulting from the fact that aquifers are not consistent throughout. Also, there is a stream between the upper basin and lower basin. Laura: If there was a bathtub filled with sand, everyone would have the same pumping. However, the bathtub is filled with sand, gravel, clay and silt. There are also layers of lava, faults and streams. Additionally, the basin is thinner at the edges. Better pumping occurs in sand, less production is found where drilling occurred where there is more clay or silt. Wells were drilled to see what the layers of materials are in areas where there aren't many wells. Tiffany: These wells supplement the CASGEM wells.</p> <p>Also: the Wildlife Area looked at adding a monitoring well. However, it is not likely that that the well would have been permitted in time to inform the GSP. (Note:Check into whether this is proceeding?)</p>		<p>Language for section 4.4.1 is that: "a single principal aquifer will be used for this GSP." (will not say "for managing groundwater")</p> <p>Explain that there are potential differences across the basin. There are 21 CASGEM wells. Ranging in depteh from 800' to 50'-100'. It's hard to pin down details and distnintions with 21 wells with a wide range in depth. There are three wells in Lookout (or south of Bieber) that provide a clue that something might be different.</p> <p>Somewhere in the report, say that the GSAs are being asked to make decisions with incomplete information and uncertainties.</p>
Public Draft Chapter 4		Regardless of the complexity and cost of monitoring, it is important to accurately describe the aquifer. If there is variation across the basin, that should be described.		
Public Draft Chapter 4	page 26 Line 423	Shows many small towns and reservoirs. There are also small ponds and reservoirs within the basin. Ranchers have to pay dam fees for reservoirs and water rights fees for stock ponds. These are surface supplies. These should be shown on the maps or described in text.		There will be an opportunity to mark up maps and revise presentation of waterbodies. (Map -14)

Big Valley GSP Comment Matrix Chapter 4

Document	Page & Line Number	Comment (NOTE: break from 02:19:30-02:28:00)	Date	Response
Public Draft Chapter 4	page 26 Line 425	Importing surface water into the basin: Roberts Reservoir and Silver Reservoir has water rights used in this basin, that is stored outside the basin boundaries. Clarify language on imported water. Explain that some water sources used in the basin is stored outside the basin boundaries. Ensure that all incoming supplies are accounted for in water balances.		Imported water refers to surface water supplies that originate from outside the watershed where the supplies are used. This is clarified.
Public Draft Chapter 4	page 27	The issue of definable bottom: What value works to the favor, in the interests of, Big Valley residents? Say that the definable bottom has not been established, there is much variability, and that a bottom is set at "x" for the purposes of the plan. Helpful to know when things are, or are not, in our interest - and to explain why that is so. If the definable bottom needs to be in the plan, say so. Then heavily caveat the number. Any uncertainties should be evaluated in favor of the Basin.		Annual reports require calculations on change in storage for the basin. Those calculations are multiplied by the number of aquifers. Then definable bottoms must be determined for each aquifer. The change in storage is what is important, not the overall storage. The key is to understand the conditions and the best options for optimizing and using the resource to make sure there are not dire consequences in the future. NOTE: GEI provides a list of required elements for each chapter.
Public Draft Chapter 4	Page 23 Line 360	Replace the word "poorer." Perhaps lesser - keep looking... The quality of water that is naturally occurring will not be affected by management decisions. Clarify that this is not about good water quality being degraded.		See suggested alternative language
Public Draft Chapter 4		Explain that there is a lot of complexity across the basin, including temperature and water quality. Show the variety in where water levels are maintaining or going down. Want to focus on the goals, for example - wells not drying up, supporting agriculture, springs going dry. Management will focus on the goals rather than absolute numbers.		This will be the central discussion for creating Sustainable Management Criteria - this suggestion will be included when discussions are underway for developing the criteria
Public Draft Chapter 4		How can the GSP use remedial soils, outside of basin boundaries, to help support recharge to the basin?		This suggestion will be carried forward for discussions on developing "Projects and Management Actions."
BigValleyGSP_Ch4_Revised_Draft_2020_08_19.pdf	Page #: 4-16, Line #: 270	Figure 4.5.1 Taxonomic Soil Orders identified for the Basin are oversimplified and are too "Coarse Grain" to be used effectively for any management implications. It certainly simplifies the landscape analysis process, but does not adequately describe in enough detail as to the attributes of soil classification that supports the poor infiltration and problems with groundwater recharge found in throughout this area. Please include more extensive soil classification descriptions. NRCS soil maps provide a more comprehensive backdrop to the soils out here	3/19/2021	

Big Valley GSP Comment Matrix Chapter 4

Document	Page & Line Number	Comment (NOTE: break from 02:19:30-02:28:00)	Date	Response
BigValleyGSP_Ch4_Revised_Draft_2020_08_19.pdf	Page #: 4-18, Line #: 303	Table 4.5.2 Hydrologic soil descriptions Again, the Hydrologic Soil Descriptions identified for the Basin are oversimplified and are too "Coarse Grain" to be used effectively for any management implications. They do not adequately describe in enough detail as to the attributes of different hydrologic soil classifications that support this area. Please include more extensive hydrologic soil descriptions. These hydrologic soil descriptions are important for protection of rare habitat types found within the Valley which include northern basalt vernal pools.	3/19/2021	
BigValleyGSP_Ch4_Revised_Draft_2020_08_19.pdf	Page #: 4-23, Line #: 400	Figure 4-12 NCCAG Wetland delineation. I am challenging the use of the NCCAG dataset at the principal data source for the delineation of wetland systems in the Big Valley Basin. It appears that wetland acreages are under represented in their data set due to the fact that it is based upon "natural community types", i.e; vegetation. The USGS National Wetlands Inventory Wetland Mapper utilizes multiple variables including soil type, soil profile, oxidation within the soil profile, depth to water, vegetation, hydrologic factors and more when delineating and describing wetland types in their mapping data. I would recommend that the information provided by the USGS National Wetland Inventory be compared with the NCCAG dataset. The history of land use in the Valley by ranching and agricultural activity has has a direct effect on the "vegetation community types" one can identify on an aerial photograph. These activities however, do not necessarily change the underlying attributes of wetland characteristics within the soil. You can access this information via the USGS website: https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/	3/19/2021	
BigValleyGSP_Ch4_Revised_Draft_2020_08_19.pdf	Page #: 4-26, Line #: 454	Figure 4-14 Recharge, discharge and major surface water bodies. The legend that is presented with this Figure has an item listed as "Lake". As mentioned on page 4-27, line 466, this figure represents the streams, ponds and surface waters within and adjacent to the Basin. There are little "lake" effects in the Valley. The surface waters present in the Basin are over-represented in this Figure. We have no reservoirs within the Valley basin. We DO have stock ponds, small impoundments and freshwater ponds located on the Ash Creek Wildlife Refuge. More current aerial photographs of the Basin clearly show extant, smaller and more depleted surface waters than what is presented in this Figure. Please review this data.	3/19/2021	

Big Valley GSP Comment Matrix Chapter 5

Document	Page & Line Number	Comment	Date	Notes and Responses
Public Draft Chapter 5	Subsidence, Section 5.5, pages 5-22 to 5-24	<p>How do the measurements account for agricultural practices that affect ground level? That should be discussed. Subsidence may not be due to changes in groundwater levels. It could be compaction, grazing land converted to row crops - with soils used to enhance levees. Or earthwork done at Caltrans. Or erosion. There may be other actions affecting ground levels, such as new ground disturbance.</p> <p>• Consider a footnote on land use, saying that additional on-ground monitoring is needed. Explain that these measurements show where ground is lower or higher.</p>	9/24/2020	<p>Subsidence associated with groundwater dynamics and pumping generally result in "bulls-eye" patterns of subsidence. Some of the subsidence in Big Valley is likely due to oxidation of organic materials.</p> <p>There are other options for monitoring subsidence, including the survey markers embedded in the new well monitoring foundations.</p> <p>A key consideration is where groundlevel changes are due to groundwater pumping are undesirable.</p>
Public Draft Chapter 5	Water Quality Section 5.4, pages 5-9 to 5-22.	There are concerns that providing quantitative measurements on water quality will encourage micro-analysis by the state.	9/24/2020	<p>Elevated constituents are naturally occurring (iron, manganese, arsenic). Also good to watch specific conductants. The GSP is required to report on contamination sites (such as gas stations and landfills). The graphs do show that there is better water quality (graphs 5-8, 5-9 and 5-10). It can support a baseline groundwater quality monitoring in the GSP. Additional data on water quality can show that conditions are even better than what was seen with Bieber samples.</p>
Public Draft Chapter 5	Groundwater Levels (and surface water interactions)	<p>Don't groundwater levels necessarily need to be the same across the basin?</p> <p>Explain how it's determined that a stream is gaining or losing. It is not understandable.</p>	9/24/2020	<p>Two reasons why surface water depletions are a critical element: surface water rights and groundwater dependent ecosystems.</p> <p>(Response: as long as the wells are in the same geologic formation, the levels should be very close. If a pump is located in a different formation, the response times may be different - and affect the levels)</p> <p>(Response: Pit River and Ash Creek have different water signatures. Additional monitoring and samples will better inform the patterns of gaining and losing.</p>
Public Draft Chapter 5	GDEs, Sec. 5.7, pages 5-26 to 5-31	<ul style="list-style-type: none"> • The acreage for amount of willows in the basin is overstated. There is not 4,700 acres of willows in the basin. • Ash Creek Refuge uses surface water supplies. There was discussion about groundwater levels in that specific area, which are closer to the surface and contribute to surface water supplies. <p><u>Table 5.5, page</u></p> <ul style="list-style-type: none"> • Alfalfa is listed as a native species – change this • Is aspen found in the basin? • Is elderberry found in the basin? • Change "salix" to "willow" 	9/24/2020	<p>Ash Creek Refuge does also use groundwater pumping to irrigate at Ash Creek. This area is known as an ecological preserve and land uses are not likely to change. The consultants were careful to clearly delineate what truly qualifies as a GDE.</p> <p>This current text is about describing likely or potential GDE. The big question is about managing for GDEs, which comes later</p> <p>Species listings are obtained from the Native CalFlora website. The Nature Conservancy website was also reviewed and many of the species listed were deleted for the Big Valley GSP.</p>
Public Draft Chapter 5	GDEs	<p>Do not say that Ash Creek is "managed"</p> <p>Descriptions of GDEs should be verified by those who are working on the land</p>	9/24/2020	Chapter 5 does not contain the word "managed" or "managed wetlands" - the area is referred to as Ash Creek Wildlife Area
Public Draft Chapter 5	River reaches: Page 5-25 b and c	<ul style="list-style-type: none"> • Reaches 6 and 9 are both labeled Upper Pit River • Reach 3 is Willow Creek: water rights and diversions mean that Willow Creek does not exist after a certain point during the summer (Sup. Albaugh spoke to David Fairman about the issue, briefly, before the meeting) - 	9/24/2020	Figure updated
Public Draft Chapter 5		Referring to the Elements checklist guide, there was a question about which items are required.	9/24/2020	Clarification was provided during the presentation.

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Document	Page & Line Number	Comment	Date	Notes and Responses
BigValleyGSP_Ch5_Revised_Draft_2020_10_22.pdf	Page #: 5-29, Line #: 361	Regarding key "Vegetation Areas" ... "Willow" is described as the second largest habitat comprising 41% of the area. Wrong. If anything, we lack willow as a component within or adjacent to creeks, ditches and ponds in this area. We have no habitat for the Willow Flycatcher here. There are scant distributions of willow species among the Ash trees along the full length of Ash Creek, along the edges of freshwater ponds and water compounds on ranches and within the wildlife refuge as well as along Willow Creek. There is a dearth of willow in the basin... especially enough to cover 41% of your vegetative composition. Please review this classification as a vegetation area. Something is in error here	3/19/2021	
BigValleyGSP_Ch5_Revised_Draft_2020_10_22.pdf	Page #: 5-30, Line #: 365	Figure 5-19 NCCAG Wetlands lacks the locations of "riverine" and "seep or spring" on the map ...	3/19/2021	
BigValleyGSP_Ch5_Revised_Draft_2020_10_22.pdf	Page #: 5-31, Line #: 368	Figure 5-20 NCCAG Vegetation. The "willow" component in this figure is in error. The vegetation composition along Ash Creek is not willow at all but Oregon Ash (<i>Fraxinus latifolia</i>). There are a few individual willow shrubs on the ACWR along with a few Black Cottonwood (<i>Populus trichocarpa</i> ssp. <i>trichocarpa</i>) as well as a few other Ash trees distributed here or there. No grand distribution of willow...Has your environmental staff been on the ground here to support your vegetation suppositions? This entire "Willow" vegetation type needs to be reassessed ...	3/19/2021	
BigValleyGSP_Ch5_Revised_Draft_2020_10_22.pdf	Page #: 5-32, Line #: 389	Table 5-5 "Big Valley Common Plant Species" Three out of the six plant species listed in this table do not occur in Big Valley. <i>Carex</i> sp., <i>Alfalfa</i> sp., and <i>Salix</i> sp. are the only ones that occur here. <i>Aspen</i> sp., <i>Sambucus</i> sp. (Elderberry) and <i>Distichlis</i> sp. (saltgrass) do not occur very often if at all in the local landscape. i is recommended that Oregon Ash (<i>Fraxinus latifolia</i>) or Black Cottonwood (<i>Populus trichocarpa</i>) be used for tree species that occur in these areas. There is rooting depth data available for both of these species. Wild rose (<i>Rosa woodsii</i>) is commonly found along Ash Creek and within the ACWR. We KNOW that Idaho fescue (<i>Festuca idahoensis</i>) and Tufted hair grass (<i>Deschampsia cespitosa</i>) are commonly found within wet meadow types, adjacent to ponds and along creekbanks in this area. Develop a more localized species list to use for rooting depth estimates.	3/19/2021	

Big Valley GSP Comment Matrix Chapter 6

Document	Page & Line Number	Comment	Date	Notes and Responses
Public Draft Ch 6, Historic Wtr Budget	Figure 6-2, page 6-2	Why is the atmospheric system not incorporated into the water budget	Nov. 4	Inputs from the atmospheric system appear as precipitation, which is about 12' - 15" per year. The water budget accounts for precipitation as either falling onto land or onto water bodies.
Public Draft Ch 6, Historic Wtr Budget	Figure 6-4, page 6-4	If inflow were to equal outflow, that would represent a balanced system. There are some streams that have crazy flows during periods of high precipitation.	Nov. 4	Yes, which is why it's important to recharge groundwater during high flows - so that stored groundwater can be used during dry periods.
Public Draft Ch 6, Historic Wtr Budget	Section 6.2, page 6-4 and elsewhere	There are no naturally occurring lakes in the basin. Any standing bodies of water are reservoirs.	Nov. 4	Change terms in text to "lakes/reservoirs" including bar charts and figures.
Public Draft Ch 6, Historic Wtr Budget	Footnote 1, page 6-6	What is the definition of long-term (e.g. long-term sustainability)?	Nov. 4	By 2042, mechanisms should be in place to manage water from year to year. When it comes to setting thresholds, those levels should provide room so as to stay in compliance during periods of variation or fluctuation. It may be that, during the next 20 years, conditions might get worse before it gets better.
Public Draft Ch 6, Historic Wtr Budget	Figure 6-8, page 6-6; and PPT slide #15	Double-check the lines calculated by excel.	Nov. 4	The results were checked to see if they were reasonable.
Public Draft Ch 6, Historic Wtr Budget	Appendix 6-A, Land System, Line 1	How are inflows from areas outside the basin boundaries represented? [Note: This is paraphrased from a question by Aaron asking if calculations can be provided to support future requests for boundary modifications.]	Nov. 4	[David: Is this stream inflow to the basin?]
Public Draft Ch 6, Historic Wtr Budget	Page 6-3, Line 49	Has the data from the CIMIS station in McArthur been adjusted for Bieber?	Nov. 4	That is being adjusted for. Also, Steve Orloff has a paper on percent application of water, in terms of ET, for alfalfa in Scott Valley - which may be a helpful estimate.
Public Draft Ch 6, Historic Wtr Budget	Appendix 6-B, (multiple locations)	Why is Managed Aquifer Recharge set at zero?	Nov. 4	Managed Aquifer Recharge refers to actions where the primary objective is recharge (e.g., as opposed to reservoirs, where surface water storage is the primary objective, with recharge is a secondary result). Projects such as flooding for habitat might quantify as Managed Aquifer Recharge. It would be necessary to state that groundwater recharge is an intended benefit from the flooding.
Public Draft Ch 6, Historic Wtr Budget	Figure 6-4, page 6-4	Question from the public: ou mentioned approximately 100K error in stream outflow out of the basin. Also, you said that we know that more water actually flows into the basin than out. (Fig 6-4) Does this explain the approximately 80K difference between the estimated and actual groundwater budget? (not sure of slide #)	Nov. 4	
Public Draft Ch 6, Historic Wtr Budget	Appendix 6A Land System, line 2, assumptions	Ag is not the only user of surface water: surface water is also used by loggers, fire-fighters, Caltrans, illegal marijuana grows, wildlife, etc.	Nov. 4	There is no quantification of other surface water uses.
Public Draft Ch 6, Historic Wtr Budget	Appendix 6A Land System, line 2, data needs	Ash Creek Wildlife Area and Groundwater Pumping: (someone) retired and had maintained a lot of data on groundwater pumping.	Nov. 4	Laura can work to coordinate data transfer.

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Document	Page & Line Number	Comment	Date	Notes and Responses
Public Draft Ch 6, Historic Wtr Budget	Appendix 6A Land System, line 3, data source	Population source shows Bieber - there are other communities as well.	Nov. 4	Bieber has a municipal system, which is different from domestic extractions. Adin will be added in as a public water supply which is a non-municipal use.
Public Draft Ch 6, Historic Wtr Budget	Appendix 6C Land System chart	Do inflows on the Land System bar chart include surface water sources from outside the basin what provide water for irrigation uses within the basin? (e.g., Roberts Reservoir, Silva Flat, etc.)	Nov. 4	Those reservoirs outside the basin are not per se considered here. The flows out of the reservoir are included in the category of the watershed that are ungaged. While flow out of the reservoir is measured, there is not access to a long-term record of that. It is shown as an inflow coming in as stream flow. The diversion of the stream flow to application to the field or ditch is represented as a surface water delivery. (40% of applied water is from surface water.)
Public Draft Ch 6, Historic Wtr Budget	6-4 and 6-5, Section 6.2	How is it possible that inflow exceeds outflow?	Oct. 30	While inflow and outflow may be more equal during certain seasons, outflow may exceed inflow during other seasons. This data represents the total annual inflow and outflow. *Figure 6-4 through 6-7 will be changed to read "Total Annual Water Budget" for clarity.
Public Draft Ch 6, Historic Wtr Budget	pg. 6-5, Figures 6-5, 6-6, 6-7	A better explanation of "Between Systems" is needed.	Oct. 30	Flow between systems is depicted in Figure 6-2 (pg. 6-2) and will be further explained during 11/4/20 BVAC meeting. *Figure 6-2 can be referenced on page 6-5
Public Draft Ch 6, Historic Wtr Budget	Appendix 6A, Land System, items 2 & 3	Need clarification on where assumption of 40% surface water and 60% groundwater used for irrigation comes from.	Oct. 30	Studies will be completed by December 2021 and information can be incorporated.
Public Draft Ch 6, Historic Wtr Budget	Appendix 6A, Land System, items 7 & 8	Need clarification on percentages under "Assumptions" column; change "grounwater" to "groundwater".	Oct. 30	*Explanation about the 85% irrigation efficiency and the 15% inefficiency, resulting in 7.5% return flow and 7.5% recharge, will be included for clarification; typo will be corrected.
Public Draft Ch 6, Historic Wtr Budget	Appendix 6A, GW System item 27	Is it true that no subsurface inflow occurs in the basin?	Oct. 30	Until it can be shown otherwise, it will be assumed that there are no inflows and no connection to Round Valley.
Public Draft Ch 6, Historic Wtr Budget	Appendix 6C, Total Basin bar chart	Stream inflow and outflow are even during some parts of the year but not others; It would be helpful to see exact number of acre-feet on Appendix 6C bar charts	Oct. 30	*Text will be added to read something like "Stream flow varies throughout the year."; Actual number of acre-feet will be added to some of the years on Appendix 6C bar charts
Public Draft Ch 6, Historic Wtr Budget	Appendix 6C, Surface Water bar chart	Explanation is needed for Surface Water Delivery as an outflow. If a percentage used for irrigation goes to the plants, is the percentage that goes back to the groundwater captured in one of the categories on the inflow side of the chart?	Oct. 30	
Public Draft Ch 6, Historic Wtr Budget	Appendix 6C, Groundwater bar chart	Because the colors are similar, it appears that there is a small amount of subsurface inflow on the bar	Oct. 30	*Subsurface Inflow will be removed from the bar chart key

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Document	Page & Line Number	Comment	Date	Notes and Responses
Public Draft Ch 6, Current Wtr Budget		The Tables in Chapter 6 should say "ESTIMATED" or "ASSUMED" for Inflow, Outflow.	Dec. 2	Data is used where it's available, rough estimates are made in other areas, and assumptions based on best professional judgement in still other areas. The water budget is balanced by adjusting the estimates and assumptions within generally acceptable ranges until the budget is balanced. As such, the water budget is not necessarily a unique solution, but represents the best professional estimate. Water budget estimates of this type are considered order of magnitude estimates and can be refined as new data becomes available.
Public Draft Ch 6, Current Wtr Budget		Some areas are shown on the map as irrigated, when they are actually dry farmed. These areas have only been irrigated on a select few occasions.	Dec. 2	In order to reflect these farming practices, the GSP development team needs data to substantiate it. Input was requested on water source throughout the Basin in previous BVAC meetings. Similar input will be solicited at upcoming meetings and the new information can be incorporated into the Water Budget in future revisions.
Public Draft Ch 6, Current Wtr Budget		Concern that the 14,000 acres of the wetland don't show irrigation. Ash Creek Refuge is white on the map, rather than blue.	Dec. 2	The focus was on calculating irrigated acreage. Wetlands are a water use in the water budget - the assumption is that 98% of the water supply on the refuge is from surface water, and 2% groundwater. The wetlands in the Ash Creek Wildlife area have been added to Figure 6-5.
Public Draft Ch 6, Current Wtr Budget		How were the percentages of 98% surface water and 2% groundwater derived for the wetlands?	Dec. 2	Starting with the area of the wetlands, the evapotranspiration values (more specific to the conditions in Big Valley) are combined with crop coefficients. A coefficient was used for crops similar to the vegetation of the wetland. The yields an estimate of evapotranspiration associated with the plants in the wetland. If the refuge did not run any groundwater pumps, then the refuge would be supplied 100% by surface water. Because there are three pumps that are occasionally run, there is some source from groundwater. The 2% was estimated based on professional judgement due to knowledge of the locations of the wells, the areas that they irrigate and conversations from the CDFW about how often they use them (typically for a month or two in the fall to bridge the driest part of the year). Consultant staff has reached out to the CDFW to obtain pumping data, but they have indicated that the data does not exist. As such, 2% is currently the best estimate. Text was added to the chapter to document this estimate.
Public Draft Ch 6, Current Wtr Budget		What are the options for determining runoff? Which way is best?		Modeling or calculations using the "Curve Number Method" (CNM) are the two widely accepted options to determine runoff. In the opinion of the consultants, modeling runoff would not produce significantly improved estimates from CNM, but would take additional time and budget.
Public Draft Ch 6, Current Wtr Budget		Is there a way to get a larger map, or better electronic version, to take a closer look at the basin boundary?	Dec. 2	A KMZ file (viewable in Google Earth) of the Basin Boundary has been posted on the website. An email notification was sent to the interested parties notifying them of the file and how to use it.

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Document	Page & Line Number	Comment	Date	Notes and Responses
Public Draft Ch 6, Current Wtr Budget		Using the numbers on this chart, does this mean that a 7-8% reduction in pumping is needed?	Dec. 2	What this means is that there needs to be about 5,000 AF per year on average in compensation to reduce overdraft. It might involve managed aquifer recharge, reduced pumping or combination of the two. Reducing overdraft can be achieved in various ways.
Public Draft Ch 6, Future Wtr Budget		Is it required to use 50 years of data? Does it specify which years of data need to be used?	Dec. 2	At least 50 years of historical data are required as per the GSP Regulations. Going back further would include data from a time period with higher uncertainty and lower accuracy.
Public Draft Ch 6, Future Wtr Budget		How does an overdraft of about 5-10% compare with other basins? It's surprising that the number is so small, but it would still impact a lot of people.	Dec. 2	Not sure, but there are certainly a lot other basins that are much worse off.
Public Draft Ch 6, Future Wtr Budget		Land System Water Budget Chart, item 2 (inflow between systems): This uses surface water. Ash Creek Wildlife Refuge is here. The assumption is that ag is the only sector that uses surface water. There are other uses and users of surface water.	Dec. 2	The wetlands are also a surface water user and text has been added to describe that. There are also illegal uses, fire uses. There is not a way to measure or quantify those uses. If some reasonable and defensible data or assumptions were provided to the GSP development team, then those uses could be incorporated into the budget.
Public Draft Ch 6, Future Wtr Budget		Land System Water Budget Chart, item 3 (population): This only uses the population from the census of Bieber, there's Adin, New Bieber and Lookout. Those need to be added in.	Dec. 2	The water budget considers the entire population of Big Valley published by DWR. A distinction is made between Bieber and the rest of Big Valley, because Bieber is served by a public water supply system while the rest of domestic use in Big Valley is from individual wells. This is a distinction between "municipal" and "domestic" uses, which SGMA categorizes differently. However, all household use is considered and accounted for in the water budget.
Public Draft Ch 6, Future Wtr Budget		There's a piece of ground that's not on the map that needs to be included (Jimmy Nunn).	Dec. 2	This information can be incorporated once the land is clearly identified. Such information will be solicited at future BVAC and/or public outreach meetings.
Public Draft Ch 6, Future Wtr Budget	Line 38	ideally In concept , each component could be quantified precisely and accurately, and the budget would could	Jan. 22	Changes will be made to next iteration of chapter.
Public Draft Ch 6, Future Wtr Budget	Line 39	come out balanced. In practice, many most of the components can only be roughly estimated, and in	Jan. 22	Changes will be made to next iteration of chapter.
Public Draft Ch 6, Future Wtr Budget	Line 40	some many cases not at all. Therefore, much of the work to balance the water budget is adjusting some many	Jan. 22	Changes will be made to next iteration of chapter.
Public Draft Ch 6, Future Wtr Budget	Line 44	components estimated through the use of the water budget are order of magnitude. Estimation of Suggested wording change to "order of magnitude" comments were that the content needs to be made clearer to the reader	Jan. 22	Wording will be adjusted in the next iteration to make the concept of "order of magnitude" estimates more clear.
Public Draft Ch 6, Future Wtr Budget	Line 56	because it represents an average set of climatic conditions and adequate water level, land use, "adequate water level" What is adequate? Define adequate water levels	Jan. 22	This refers to the fact that many of the wells with water level measurements started in 1983, so the amount of data was "adequate". We can remove the word "adequate"
Public Draft Ch 6, Future Wtr Budget	Line 73	Add a footnote to Figure 6-4 regarding DWR using inaccurate data. Including in the footnote there should be a mention of better data needed for the water budget and that observational and public input has been received regarding the inaccuracy of the map from DWR. (crop and wetland acreages)	Jan. 22	The land use data used for the water budget is different from the data used for basin prioritization. This part of the GSP is not addressing prioritization. We discuss data gaps in previous chapters, but can re-emphasize here.

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Document	Page & Line Number	Comment	Date	Notes and Responses
Public Draft Ch 6, Future Wtr Budget	Line 87	also has three wells that extract groundwater from the <u>deeper aquifers</u> and is applied in portions	Jan. 22	Not sure what the comment is here. Deeper aquifers emphasizes that the ACWA wells are around 800 feet deep and are not pulling solely from shallow (wetland) portion of the aquifer. In other words, the wells are simply re-distributing groundwater from deep portions of the aquifer to shallow (wetland) portions.
Public Draft Ch 6, Future Wtr Budget	Line 110-111	Overdraft occurs when the groundwater system change in storage is negative over a long period. (Remove this sentence)	Jan. 22	Change will be made to next iteration of chapter.
Public Draft Ch 6, Future Wtr Budget	Line 115-116	The current water budget is demonstrated by looking at water year 2018, which is the most recent year with reliable data. (Is 2018 the only year with reliable data? Who states what is reliable?)	Jan. 22	We (GEI) have determined that 2018 is more reliable than 2019 because there were several wells without measurements. We can remove the " which is the most recent year with reliable data. " in the next iteration of the Chapter.
Public Draft Ch 6, Future Wtr Budget	Footnote	long-term undesirable results Who determines this? Suggested to add a note to the chapter where information which covers the details of DWR guidelines for establishing long-term undesirable results.	Jan. 22	Undesirable results are locally defined. This will be discussed in Chapter 7
Revised Draft Chapter 6		This chapter is full of estimates and assumptions. It's not fair to have to make decisions based no such inaccurate and incomplete data	2/3/2021	The water budget uses the best, readily available data to develop the estimates. Improvements to the water budget can and should be made over time as more data is gathered and estimates and assumptions are refined with objective information.
Revised Draft Chapter 6		Figure 6-5: Primary Applied Water Sources is inaccurate.	2/3/2021	Some input from local stakeholders has been used in the map. More field-by-field information will continue to be solicited and incorporated as it becomes available. Text was added to the chapter emphasizing the inaccurate nature of the map.
BigValleyGSP_Ch6_RevisedDraft_2021_01_14.pdf	Page #: 6-3, Line #: 62	Please update your precipitation estimates using local precipitation data from the US Forest Service in Adin and local RAWs (Remote Access Weather Station) on Rush Creek. Weather is significantly different between the Fall River Valley out of McArthur and what we experience here in Big Valley. Part of that is due to the orographic effect of Big Valley Mountain...	#####	
BigValleyGSP_Ch6_RevisedDraft_2021_01_14.pdf	Page #: 6-8, Line #: 132	Land use patterns are changing significantly right now. I have lived in the Valley for 30 years, and have never observed the number of acres under vegetation type conversion and we are seeing now. Hundreds of acres this year alone are being converted from native sagebrush steppe into alfalfa (which demands so much more water). It looks like most of these acreages are being watered using agricultural wells. Land use patterns are not static here ... this variable is currently experiencing a change in what has been known to occur in the past.	#####	
BigValleyGSP_Ch6_RevisedDraft_2021_01_14.pdf	Page #: 6-9, Line #: 149	I challenge the results of your predictive modeling regarding Climate Change for this area. For the last 30+ years Big Valley has been experiencing a contracted drying spell. Winter precipitation in both the form of snow and rain has significantly reduced over that period of time. I do not believe that the choice of your Climate Change predictive model adequately addresses the reality of what is actually happening in this Basin. What many of the locals have observed here are warming temps, drying climate, higher ET rates and less recharge to surface waters. I am challenging you on your "baseline" weather data utilized in all of your hydrologic and climatic models. Consider this a "fatal flaw" that is consistent in the underpinning of a lot of your generated analyses. Your models are only as good as the original data allows, and you utilize data that IS NOT specific to our area ...	#####	

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Document	Page & Line Number	Comment	Date	Notes and Responses
BigValleyGSP_Ch6_RevisedDraft_2021_03_21_setaside.pdf	Page #: 6-9, Line #: 150	Projection with Climate Change.I challenge your projection of the effects of climate change on soil water use and availability in the Big Valley basin. "Wetter and warmer" climate prediction may apply to central California up to its northern boundary at Santa Rosa... but not here.Although the Big Valley area is located within California its floristic, hydrologic and geologic attributes are more similar to the "Great Basin" province of the Intermountain West. The boundaries of the northeastern reach of the Great Basin province are located less than 50 miles east from Big Valley. Future effects of climate change in this area will definitely be seen as reductions in winter snow levels with precipitation coming in the form of rain. Summer temperatures are anticipated to increase as well as the number of days of warm/hot weather. The summer season will become longer and the night time temperatures warmer.Climatic predictions for both Nevada and California were identified in November 2020 in an article presented by the Desert Research Institute. Climate change and a "thirsty atmosphere" will bring more extreme wildfire danger and multi-year droughts to Nevada and California by the end of this century, according to new research from the Desert Research Institute (DRI), the Scripps Institution of Oceanography at the University of California, San Diego, and the University of California, Merced. According to their results, climate change projections show consistent future increases in atmospheric evaporative demand (or the "atmospheric thirst") over California and Nevada. These changes are largely driven by warmer temperatures, and would likely lead to significant on-the-ground environmental impacts. "Higher evaporative demand during summer and autumn means ... faster drying of soil moisture and vegetation" ... explains lead author Dan McEvoy, Ph.D., Assistant Research Professor of Climatology at DRI.With very little recharge coming off of the surrounding mountains due to lack of snow cover, both surface and subsurface water will be affected ... especially with changes in land use patterns. Land use patterns are not static here in Big Valley, and it is unwise to use this variable as a constant for future water use predictions. Vegetation type conversion is changing right now as I write this comment. Hundreds of acres are currently being converted from natural vegetation community types into alfalfa monocultures. New	#####	
Chap 10 Public Draft 5/26/21	10-3, 91-92	Groundwater extractions should also include water used for fire, wildlife, logging, and construction.	6/2/2021	

Big Valley GSP Comment Matrix Chapter 7

Document	Page & Line Number	Comment	Date	Notes and Responses
Public Draft Chap 7 (4/1/2021)	5, 113	Deep freezes can occur from September to May	4/7/2021	Text changed
Public Draft Chap 7 (4/1/2021)	6, 125	Environmental regulations include SGMA	4/7/2021	Text added
Public Draft Chap 7 (4/1/2021)	6, 133	Change "may" to "will"	4/7/2021	Text changed
Public Draft Chap 7 (4/1/2021)	6, 135	Change "may" to "is likely to"	4/7/2021	Text changed
Public Draft Chap 7 (4/1/2021)	6,144-146	Ash creek wildlife area is 14,000 acres of unmanaged land	4/7/2021	Text added
Public Draft Chap 7 (4/1/2021)	7, 197-199	The Basin needs the support of Federal management	4/7/2021	Text changed
Public Draft Chap 7 (4/1/2021)	8, 215	Monitoring also helps DWR	4/7/2021	Text added
Public Draft Chap 7 (4/1/2021)	8, 224	Remove slightly	4/7/2021	Text changed
Public Draft Chap 7 (4/1/2021)	9, 261	If there is no Ag there is no community.	4/7/2021	Text added
Public Draft Chap 7 (4/1/2021)	11, 314-321	Paragraph needs clarification, table or example	4/7/2021	Section was re-worded for clarity
Public Draft Chap 7 (4/1/2021)	11, 327	Add "and breeding grounds"	4/7/2021	Text added
Public Draft Chap 7 (4/1/2021)	11, 328	Add "develop" a new water source	4/7/2021	Text added
Public Draft Chap 7 (4/1/2021)	11, 350	Add text clarifying that storage estimates are based on an assumed aquifer depth of 1200 feet	4/7/2021	Text added
Public Draft Chap 7 (4/1/2021)	15, 479	NCWA is a regulatory program	4/7/2021	Text added. Detail on the nature of the program, regulations and fees needed
Public Draft Chap 7 (4/1/2021)	5, 95-98	Add spring-fed streams verbiage	4/7/2021	Text added

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Document	Page & Line Number	Comment	Date	Notes and Responses
Public Draft Chap 7 (4/1/2021)	6, 127	Add "and roads"	4/7/2021	Text added
Public Draft Chap 7 (4/1/2021)	6, 127	Add "reduction of timber yield tax"	4/7/2021	Text added
Public Draft Chap 7 (4/1/2021)	6, 135	Include effect of low land values, the ongoing cost of monitoring and updates, lower property tax base	4/7/2021	Text added
Public Draft Chap 7 (4/1/2021)	8, 217	Remove "chronic"	4/7/2021	Text removed
Public Draft Chap 7 (4/1/2021)	11, 321	1/3 of representative wells	4/7/2021	Text altered
Public Draft Chap 7 (4/1/2021)	12, 353	decline was less than 16.5 feet in fall, 19.77 in spring	4/7/2021	Text added
Public Draft Chap 7 (4/1/2021)	15, 480	Water quality sample required when home is sold or foster child is placed	4/7/2021	Text added
Public Draft Chap 7 (4/1/2021)	16, 508-510	Remove "Continued... flood risk" sentence	4/7/2021	Text removed
Public Draft Chap 7 (4/1/2021)	16, 519 and 522	Add spring-fed streams verbiage	4/7/2021	Text added
Public Draft Chap 7 (4/1/2021)		Cost of drilling deeper wells needs to be considered	4/7/2021	Right now the GSP only addresses costs of pumping.
Public Draft Chap 7 (4/1/2021)		There is need for domestic users to be considered and need for some domestic users to have to drop their domestic wells and install filters. Calcium is up. Some wells are 20-foot hand-dug wells. Fingers are not being pointed at ag. There are other people coming to the basin for recreation, fishing, and hunting.	4/7/2021	
Public Draft Chap 7 (4/1/2021)		Need better definition of threshold, number of wells by type. How do ditches and canals factor in? Water quality is important.	4/7/2021	The threshold has been defined as 140 feet below the fall 2015 baseline (or lowest water level if there was no 2015 measurement). Chapter 8 details the representative wells, their depths, screen intervals and types. Undesireable results have been defined as when 1/3 of the representative wells are below their MT for 5 years. Recharge from ditches and canals is estimated in the water budget. The guidance from the BVAC has been to not set thresholds for water quality, but to assess at the 5-year updates.
Public Draft Chap 7 (4/1/2021)		What about habitat? Special status? How are we monitoring?	4/7/2021	A set of shallow monitoring wells has been established and will be assessed further at the 5-year update.

Big Valley GSP Comment Matrix Chapter 7

Document	Page & Line Number	Comment	Date	Notes and Responses
Public Draft Chap 7 (4/1/2021)		Of the GDEs, how much of it is springs?	4/7/2021	A map of GDE's can be found in Chapter 5 (Figure 5-20). A map of springs can be found in Chapter 4 (Figure 4-14).
Public Draft Chap 7 (4/1/2021)	6, 119	This helps to justify reasoning to get boundary modification	4/7/2021	The basin boundary and its limitations are discussed in Chapter 4. SGMA applies to areas within the basin boundary, but projects that benefit the basin can be outside the basin boundary.
Public Draft Chap 7 (4/1/2021)	16, 508-510	We don't know that subsidence will continue	4/7/2021	
Public Draft Chap 7 (4/1/2021)	16	DWR induced additional wells because they required off-stream watering sources to have grazing away from streams due to water quality concerns	4/7/2021	This program is independent of the GSP
Public Draft Chap 7 (4/1/2021)		Are we writing off that the Bieber mill site will be revived for novel wood products uses that require significant water?	4/7/2021	The GSP and water budget consider known uses. The future projection of the water budget assumes negligible industrial groundwater use.
Public Draft Chap 7 (4/1/2021)		Can we calculate and add in the cost per foot of deepening wells?	4/7/2021	Right now the GSP only addresses costs of pumping.
Public Draft Chap 7 (4/1/2021)		Any ideas on how to use monitoring data in innovative ways to solve some of Big Valley's specific data gaps and questions that have arisen... beyond the reasons that DWR wants the data collected.	4/7/2021	The detailed water level data from the new monitoring wells is being evaluated and may provide insights into recharge areas, interconnection of streams, and other questions.
Public Draft Chap 7 (4/22/2021)	7-5, 178	Add "California" Department of Fish and Wildlife	5/4/2021	Added and moved to Chapter 1
Public Draft Chap 7 (4/22/2021)	7-5, 187	Add further clarification: appropriately advertised, not much interest in being on BVAC	5/4/2021	Text added and moved to Chapter 1
Public Draft Chap 7 (4/22/2021)	7-6, 246	Insert "...enacting various projects to improve management during the drought periods and wet periods experienced in the Basin..."	5/4/2021	Text added
Public Draft Chap 7 (4/22/2021)	7-6, 263	Insert "In summary, there have not been wide-spread reports of issues or concerns regarding groundwater levels from the residents of the Basin (whether agriculture producers or domestic users or others). Instead the concern was raised by DWR based on isolated wells that experienced limited decline during a drought."	5/4/2021	Text changed
Public Draft Chap 7 (4/22/2021)	7-8, 295	re: word "diminished, work on wording (perhaps that it would be a ghost town or similar	5/4/2021	Text added "and the ability of people to live and work in the basin would be largely absent."
Public Draft Chap 7 (4/22/2021)	7-12, 402-406	All of these should be activated when 1/3 of the wells meet the action level.	5/4/2021	Text changed.
Public Draft Chap 7 (4/22/2021)	Appendix: Monitoring Well Construction Report, Page 6	Would like to see more GEI accountability, and that the public and BVAC wanted the wells re-drilled	5/4/2021	Text changed in the well construction report. Report text removed from the appendix. Appendix now only contains the as-built drawings of the wells.
Public Draft Chap 7 (4/22/2021)	7-16, 550	LAMP needs to be added as a water quality regulatory program	5/21/2021	Text added.

Big Valley GSP Comment Matrix Chapter 8

Document	Page & Line Number	Comment	Date	Notes and Responses
Chapter 8 Public Draft	Appendix 8B	Don't like the inclusion of well logs	4/27/2021	Well logs removed from appendix and well log number added to Appendix 8A.
Chapter 8 Public Draft	1, 67	Add "The assumed" groundwater contours...	5/24/2021	Text added
Chapter 8 Public Draft	1, 68	Shallow groundwater monitoring to "help" define the potential interconnection of groundwater aquifers with surface water bodies	5/24/2021	Text added
Chapter 8 Public Draft	Table 8-1	Revise table to adjust to 140 feet below 2015 baseline	5/24/2021	Table replaced.
Chapter 8 Public Draft	Figure 8-1	During the summer, Willow Creek is 100% allocated. There is no water. If you were going to argue that there is a surface water/groundwater connection, what is it connected to if there is no water? Same for Ash Creek.	5/24/2021	This comment should be addressed in Chapter 5, when it is updated and compiled into the entire draft of the GSP.
Chapter 8 Public Draft	4, 89:97	It is noted that many of the DWR wells are domestic which have pumps all the time. How is this accounted for?	5/24/2021	The end of the paragraph addresses this, where staff that monitor the wells should be noting when the well or a nearby well is pumping.
Chapter 8 Public Draft	4, footnote 2	Moniutoring needs to be late october. Needs to be communicated and coordinated with DWR who collects level measurements.	5/24/2021	Text changed to "late-October"
Chapter 8 Public Draft	5, 116	It needs to be noted that the BVAC has done a great job making sure the wells are spatially distributed.	5/24/2021	The factual statement that the wells are distributed throughout the basin should suffice. DWR or other readers can make their own judgment on this.
Chapter 8 Public Draft	5, 8.2.1.2	We would like to understand the contour mapping requirements better. Doesn't make sense.	5/24/2021	Groundwater contours are presented in Chapters 4 and 5
Chapter 8 Public Draft	5, 136:143	Modify text: Chapter 5 discusses the lack of interconnected surface water and describes the perennial streams in the BVGB which may be interconnected to the groundwater aquifer. As described in Chapter 7 there is currently no conclusive evidence for interconnection of perennial streams with the groundwater aquifer, and the volume of depletions (if any) is unknown. Therefore, measurable objectives, minimum thresholds, and a representative monitoring network for depletion of interconnected	5/24/2021	Text modified.

Big Valley GSP Comment Matrix Chapter 8

Document	Page & Line Number	Comment	Date	Notes and Responses
Chapter 8 Public Draft	Table 8-2	DWR, 2016a : What is this?	5/24/2021	This is a reference (documented in the references list) to a best management practices paper published by DWR. This is used as guidance on monitoring standards so that data gaps can be assessed.
Chapter 8 Public Draft	Table 8-2	"Data must be sufficient for mapping groundwater depressions, recharge areas, and along margins of basins where groundwater flow is known to enter or leave a basin" Comment: There is no data.	5/24/2021	This table identifies the data gaps
Chapter 8 Revised Draft 5/24/21	8-1, 60	If monitoring from outside agencies change their monitoring, it shouldn't be up to the counties (GSAs) to pick up the slack.	6/2/2021	Text added: "The monitoring networks will generally be adjusted to the availability of data collected and provided by the outside agencies."
Chapter 8 Revised Draft 5/24/21	8-1, 65	What is the "groundwater storage" sustainability indicator?	6/2/2021	Text regarding groundwater storage removed.
Chapter 8 Revised Draft 5/24/21	8-4, 93-94	Measurements need to be taken March 15 or before beginning of pumping season in spring, and taken after Oct 15 in the fall	6/2/2021	This statement refers to historic data. Footnote (3) clarifies when measurements should be taken in the future.
Chapter 8 Revised Draft 5/24/21	8-5, 116	Need to point out that the the distribution of representative wells is excellent and based on a thoughtful, comprehensive review of the wells	6/2/2021	Text changed and added: "Extensive discussion and consideration was performed by the GSAs and local stakeholders to determine an appropriate water level monitoring monitoring network. Based on the comprehensive review of the wells, the network was selected based on:"
Chapter 8 Revised Draft 5/24/21	8-5, 136	Note that water in the basin is 100% allocated.	6/2/2021	Text added: "and all summer flows are 100% allocated based on existing surface water rights."
Chapter 8 Revised Draft 5/24/21	8-5, 137	Delete "which may be interconnected to the groundwater aquifer"	6/2/2021	Text removed
Chapter 8 Revised Draft 5/24/21	8-7, 181	second row, last column. Owner of well 06C1 is very unlikely to agree to monitoring again	6/2/2021	Comment noted. The table states that the absence of that well is a data gap.
Chapter 8 Revised Draft 5/24/21	8-8, 183	Please define "anomalous", perhaps in a footnote	6/2/2021	Footnote added.
Chapter 8 Revised Draft 5/24/21	8-11, 231	We don't want to have the land use data collection fall on the GSAs	6/2/2021	The text is written in a way that states the GSAs will rely on DWR for land use data.

Big Valley GSP Comment Matrix Chapter 9

Document	Page & Line Number	Comment	Date	Notes and Responses
Chapter 9 Public Draft 5/24/21	1, 21	change "returning to" to "remaining"	6/2/2021	
Chapter 9 Public Draft 5/24/21	4, 95	What is meant by a "water storage basin"	6/2/2021	
Chapter 9 Public Draft 5/24/21	6, 120-121 7, 180-181	Change "towards sustainability" to "remain sustainable"	6/2/2021	
Chapter 9 Public Draft 5/24/21	7, 160-161	Regarding sentence "Development of additional wells strictly for monitoring is also of interest as they provide unobstructed measurements year round". It's not necessarily desirable. Remove or change wording.	6/2/2021	
Chapter 9 Public Draft 5/24/21	8, 195-196	change "achieve sustainability" to "maintain sustainability"	6/2/2021	
Chapter 9 Public Draft 5/24/21	8, 198	Insert "several" to discussion of reservoirs. Multiple reservoirs could be expanded.	6/2/2021	
Chapter 9 Public Draft 5/24/21	9, 228-235	In discussion of Allen Camp Dam, strengthen language regarding the need for the reservoir	6/2/2021	
Chapter 9 Public Draft 5/24/21	9, 240 et seq	Add controlled burns to potential actions	6/2/2021	
Chapter 9 Public Draft 5/24/21	12, 329	add "as compared to SGMA". to end of sentence	6/2/2021	
Chapter 9 Public Draft 5/24/21	14, 375	Add text about illegal marijuana grows	6/2/2021	

Big Valley GSP Comment Matrix Chapter 10

Document	Page & Line Number	Comment	Date	Notes and Responses
Chap 10 Public Draft 5/26/21	10-2, 45-56	Why do we have to download, repackage, and send data back to state	6/2/2021	The GSP Regulations require this to be done as per §356 et. seq. Unlike most other basins in California, all Big Valley data is being collected by outside agencies, including DWR taking water level measurements in the Basin. Therefore, the GSAs are downloading the data from the collecting agencies (e.g. DWR) to include in the annual report. The GSAs and their consultants are working to ensure that the data and figures that need to be submitted in the annual reports are able to be generated and submitted as easily as possible with little effort from GSA staff and/or consultants. Text has been added to point out the fact that the GSAs are regurgitating data.
Chap 10 Public Draft 5/26/21	10-3, 91-92	Groundwater extractions should also include water used for fire, wildlife, logging, and construction.	6/2/2021	A note has been made for future updates to Chapter 6 (Water Budget) to include these items. For water budgeting purposes these will fit under the umbrella of industrial uses. A footnote was added to this portion of Chapter 10 referring to these uses
Chap 10 Public Draft 5/26/21	10-3, 93-94	Surface water supply is 100% allocated	6/2/2021	A footnote was added to emphasize this point.
Chap 10 Public Draft 5/26/21	10-3, 95-96	Add industrial uses	6/2/2021	Industrial was added, with a footnote detailing the various users.
Chap 10 Public Draft 5/26/21	10-3, 101	"Progress toward achieving measurable objectives". Change wording to reflect that already sustainable.	6/2/2021	Wording changed
Chap 10 Public Draft 5/26/21	10-7, 138	Why do we need to manage water quality when it is already good.	6/2/2021	The discussion and approach to water quality data was changed to reflect that the GSAs will rely on the SWRCB to store and provide water quality data via their GAMA Groundwater Information System.
Chap 10 Public Draft 5/26/21	10-2, 40	The water year is difficult to apply to Big Valley	6/2/2021	Sentence added, pointing this out. "While the WY as defined by DWR isn't ideal for use in Big Valley, the GSAs will assemble data based on DWR's definition as per SGMA statute and regulations. The discussion and approach to water quality data was changed to reflect that the GSAs will rely on the SWRCB to store and provide water quality data via their GAMA Groundwater Information System.
Chap 10 Public Draft 5/26/21	10-13, 234	Poor wording	6/2/2021	Wording changed
Chap 10 Public Draft 5/26/21	10-15, 270	Poor wording. Rewrite to emphasize that basin is economically disadvantaged and residents can't afford new taxes or fees	6/2/2021	Wording changed
Chap 10 Public Draft 5/26/21	Appendix 10A	Don't like grant funding	6/2/2021	Wording changed

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Big Valley Groundwater Sustainability Plan GSP Regulations Checklist (Elements Guide) for Chapter 9

This checklist of the GSP Elements and indicates where in the GSP each element of the regulations is addressed.

Article 5. Plan Contents for Big Valley Groundwater Basin				GSP Document References				Notes
				Page Numbers of Plan	Or Section Numbers	Or Figure Numbers	Or Table Numbers	
SubArticle 5. Projects and Management Actions								
§ 354.42. Introduction to Projects and Management Actions								
			This Subarticle describes the criteria for projects and management actions to be included in a Plan to meet the sustainability goal for the basin in a manner that can be maintained over the planning and implementation horizon.					
			Note: Authority cited: Section 10733.2, Water Code.					
			Reference: Section 10733.2, Water Code.					
§ 354.44. Projects and Management Actions								
(a)			Each Plan shall include a description of the projects and management actions the Agency has determined will achieve the sustainability goal for the basin, including projects and management actions to respond to changing conditions in the basin.	X	9		9.3	
(b)			Each Plan shall include a description of the projects and management actions that include the following:					
	(1)		A list of projects and management actions proposed in the Plan with a description of the measurable objective that is expected to benefit from the project or management action. The list shall include projects and management actions that may be utilized to meet interim milestones, the exceedance of minimum thresholds, or where undesirable results have occurred or are imminent. The Plan shall include the following:					
		(A)	A description of the circumstances under which projects or management actions shall be implemented, the criteria that would trigger implementation and termination of projects or management actions, and the process by which the Agency shall determine that conditions requiring the implementation of particular projects or management actions have occurred.	X	9		9.3	
		(B)	The process by which the Agency shall provide notice to the public and other agencies that the implementation of projects or management actions is being considered or has been implemented, including a description of the actions to be taken.	X	9		9.3	
	(2)		If overdraft conditions are identified through the analysis required by Section 354.18, the Plan shall describe projects or management actions, including a quantification of demand reduction or other methods, for the mitigation of overdraft.					
	(3)		A summary of the permitting and regulatory process required for each project and management action.	X	9		9.3	
	(4)		The status of each project and management action, including a time-table for expected initiation and completion, and the accrual of expected benefits.					
	(5)		An explanation of the benefits that are expected to be realized from the project or management action, and how those benefits will be evaluated.	X	9		9.3	
	(6)		An explanation of how the project or management action will be accomplished. If the projects or management actions rely on water from outside the jurisdiction of the Agency, an explanation of the source and reliability of that water shall be included.	X	9			

"X" indicates that the element has been addressed.

Shaded areas are elements of the regulations that don't have to be addressed in the GSP

Article 5. Plan Contents for Big Valley Groundwater Basin				GSP Document References				Notes
				Page Numbers of Plan	Or Section Numbers	Or Figure Numbers	Or Table Numbers	
	(7)	A description of the legal authority required for each project and management action, and the basis for that authority within the Agency.						
	(8)	A description of the estimated cost for each project and management action and a description of how the Agency plans to meet those costs.		X	9		9.3	
	(9)	A description of the management of groundwater extractions and recharge to ensure that chronic lowering of groundwater levels or depletion of supply during periods of drought is offset by increases in groundwater levels or storage during other periods.						
(c)		Projects and management actions shall be supported by best available information and best available science.						
(d)		An Agency shall take into account the level of uncertainty associated with the basin setting when developing projects or management actions.						
		Note: Authority cited: Section 10733.2, Water Code.						
		Reference: Sections 10727.2, 10727.4, and 10733.2, Water Code.						

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Appendices

None

Abbreviations and Acronyms

AgMAR	Agriculture Managed Aquifer Recharge
ASR	Aquifer Storage and Recovery
CC	canopy cover
CRP	conservation reserve project
DOI	Department of the Interior
ET	evapotranspiration
GDE	Groundwater Dependent Ecosystems
LESA	Low Energy Sprinkler Application
LMFCD	Lassen Modoc Flood Control Water Control District
SMC	sustainable management criteria
SWC	snow water content
WRP	wetland reserve project

9. Projects and Management Actions

Through an extensive planning and public outreach process, the GSA's have identified an array of projects and management measures that may be implemented to meet sustainability objectives in the Big Valley Groundwater Basin. Additionally, numerous state and federal programs are available in the basin to help meet the sustainability goals. Some of the projects can be implemented immediately while others will take significantly more time for necessary planning and environmental review, navigation of regulatory processes, and implementation. The Big Valley Basin is relatively small, and while recharge does occur within the basin itself, significant recharge comes from the extensive uplands surrounding the basin. Projects will be located within the greater Big Valley watershed boundary shown in **Figure 9-1**.

Although the Big Valley area is extremely rural, and resource capacity is limited, there are a number of local, state, and federal agencies that can assist in project development.

Project implementation will also be impacted by funding acquisition. **Table 9-1** lists current state and local funding sources that can be targeted to support project planning and implementation.

With a proactive approach to identify projects for increased recharge and conservation in the Big Valley basin and surrounding watershed, it is envisioned that the GSAs will be successful in remaining a sustainable groundwater basin. With the possible exception of a large surface water storage project such as Allen Camp Dam, the projects and management measures describe in this chapter are expected to work in combination and should be considered as a whole rather than dependent on any single strategy. Should sustainability not be realized, additional projects and management actions will be considered and developed as appropriate. A timeline for projects can be found in **Table 9-2** and additional details fulfilling state requirements can be found in **Table 9-3**.

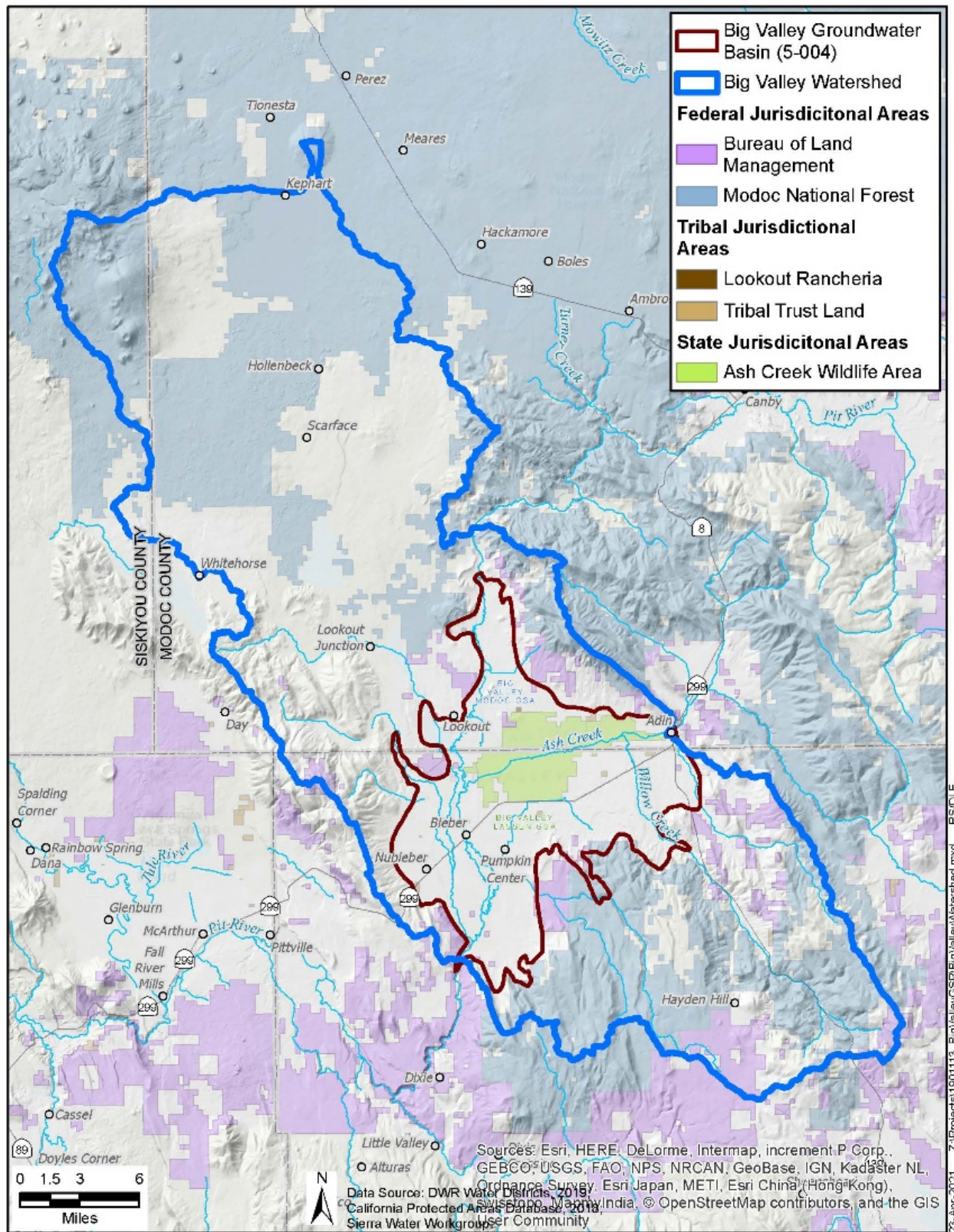


Figure 9-1 Big Valley Watershed Boundary

27 **Table 9-1 Available Funding Supporting Water Conservation**

Funding Program Title	Managing Agency	Description of Funding
Wetlands Reserve Program, Crop Reserve Program, Environmental Quality Improvement Program (WRP, CRP, EQIP)	Natural Resource Conservation Service (NRCS) (website)	Cost share funding for wide array of soil, water, and wildlife conservation practices. Funding priorities developed locally.
Conservation Innovation Grants (CIG)	NRCS (website)	Supports development of new tools, approaches, practices and technologies to further conservation on private lands
Partners for Fish and Wildlife Program	US Fish and Wildlife Service (USFWS) (website)	Private land meadow, forest, or rangeland restoration, conservation easement
State Water Efficiency and Enhancement Program (SWEET)	California Dept of Food and Agriculture (CDFA) (website)	Supports implementation of water saving irrigation systems
Healthy Soils Program (HSP)	CDFA (website)	Supporting management and conservation practices for enhancing soil health (which includes water holding capacity)
Farmer/Rancher and/or Professional + Producer grants	Western Sustainable Agriculture Research and Education (Western SARE) (website)	Farmer-driven innovations in agricultural sustainability including profitability, stewardship, and quality of life.
Alternative Manure Management Program (AMMP) (link)	CDFA (website)	Financial assistance for non-digester manure management
Sustainable Groundwater Management (SGM)	Dept of Water Resources (DWR) (website)	Planning and implementation grants supporting sustainable groundwater management. Disadvantaged communities and economically distressed areas.
State Forest Health Program	Cal Fire (website)	Improve forest health throughout California
USDA for household well deepening	USDA Rural Development (website)	No interest loan up to \$11K to improve existing domestic wells

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29

30 **Table 9-2 Projects and Potential Implementation Timeline**

No.	Category	Description	Estimated Time for Potential Implementation (years)		
			0-2	2-8	>8
1	9.1 Recharge Projects	AgMAR	X	X	X
2		Drainage and Basin Recharge	X	X	X
3		Ag Injection Wells			X
4	9.2 Research and Data Development	Stream Gauges	X		
5		Refined Water Budget	X	X	
6		Agro-Climate Station	X		
7		Voluntary Installation of Well Meters	X	X	
8		Adaptive Management	X	X	X
9		Mapping and Land Use	X	X	
10	9.3 Increased Storage Capacity	Expanding Existing Reservoirs		X	
11		Allan Camp Dam			X
12	9.4 Improved Hydrologic Function	Forest Thinning and Management	X	X	X
13		Juniper Removal	X	X	X
14		Stream and Meadow Restoration	X	X	X
15	9.5 Water Conservation	Irrigation Efficiency	X	X	
16		Landscaping and Domestic Water Conservation	X	X	
17		Conservation Projects	X	X	
18	9.6 Education and Outreach	Public Communication	X		
19		Information and Data Sharing	X	X	
20		Fostering Relationships	X		
21		Compiling Efforts	X	X	
22		Educational Workshops	X		

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32 Table 9-3 Required Elements for Projects and Management Actions

Project	Brief description	Circumstances under which the project will be implemented	Public notification process	Permitting and regulatory process	Benefits	Schedule	Estimated cost	Legal authority
9.1 Basin Recharge Projects	Agricultural Managed Aquifer Recharge is the practice of using excess surface water (when available) and applying it to agricultural fields to intentionally recharge groundwater aquifers	AgMAR will be performed during winter months during high surface flows. The nature, frequency, and timing of these flows will be evaluated through a Water Availability Analysis (WAA).	Notification of available water and success of this projects will be communicated through the Big Valley Groundwater Advisory Committee. Agreements will be made between the GSAs and interested producers.	Following development of the WAA, an AgMAR permit for surface water diversions can be solicited from the State Water Resources Control Board. Currently this permitting process can take 6-18+ months and cause significant economic burden to the applicant. An organized application for Basin wide winter diversions by the GSAs could lessen some of the regulatory burden since they qualify for a streamlined process but a waiver of fees for extremely disadvantaged communities working to improve groundwater recharge may also be needed.	Irrigating every 5-7 days for roughly 10 weeks in the winter/spring would benefit 2-5 acre-feet of water per acre. Previous research has quantified that over 90% of water is recharged to deep aquifers or available in the soil profile with AgMAR. The limitation to this project is available winter for recharge but a project goal of 1,000 acres per year could provide roughly 10,000 acre/feet of water per year benefit.	Water budget planning and permitting will take 6-18 months and possibly more depending on the case load at the department of water resources. After an off-season water budget is completed, permitting can be distributed to the GSAs for winter recharge location selection. AgMAR could start being used at productive scale by 2024 if all processes go smoothly.	The cost to develop the WAA is still being developed, but may be covered under existing grants from DWR. The cost of submitting a streamlined permit will also be developed, including fees .	[Need support here, potentially from council on the authority of the GSAs to coordinate this permitting]
9.2 Research and Data Development	Stream gages are scientific instruments used to collect streamflow and water quality data in order to decrease scientific uncertainty in order to inform water management decisions. Agri-climate/ CIMIS stations are helpful in monitoring for climactic factors such as temperature, humidity, wind speed, etc and overall help refine estimates of ET in the basin. Refining the water budget for the basin will improve the accuracy with which management decisions are made because many of the assumptions used to generate the water budget stem from data gaps that need to be addressed, or other efforts to collect and analyze data submitted through other regulatory programs.	In addition to the continued use of existing stream gages which monitor many of the seasonal streams that contribute inflow to the Big Valley Basin, stream gages may be installed if locations and need are determined. Presently, Modoc County is working to install an additional stream gage at the Shaw Pit. Data from agri-Climite/CIMIS stations may be utilized in order to make water management decisions with regard for climactic factors such as wind, rain etc. Adaptive management will be employed throughout the implementation process to allow for management decisions to reflect the best available data as more information comes available. Employing adaptive management strategies will expand our capacity to conduct research and data development, also. Refining the water budget will be done as more data becomes available through the combination of the data development projects described previously.	Stream-Gauge All research and other data development progress will be shared at public GSA meetings. Data collected from gaging stations will be publicly available.	We will continue to work with the Department of Water Resources to ensure compliance with any relevant laws and to obtain any necessary permits related to stream gage installation and maintenance, as well as for other projects that fall under adaptive management strategies and the water budget.	Decreasing data gaps would decrease reliance on assumptions to govern groundwater management decisions. As more data becomes available, more accurate estimates of evapotranspiration would allow for more precise water budgeting estimates.	Gaging stations being installed where necessary early in the planning process in order to decrease uncertainty related to streamflow. They will be monitored throughout. Adaptive management strategies are anticipated to be employed throughout the GSP development and implementation phases. Refining the water budget is important early on in order to create a GSP that best reflects existing conditions in the basin, and which may be referenced in the future to perform adaptive management.	Funding is available through (DWR?) for the development of new gaging stations. Maintenance costs may vary, but one estimate projects the annual maintenance cost for a single gage to be around \$15,000. Federal funding for stream gages generally covers 30% of the cost. Additional funding may be obtained through DWR. (Source) Funding for projects related to adaptive management and refining the water budget will be acquired as necessary. Presently, there is funding to maintain or install flow meters on private wells. More funding is likely available for similar projects, such as refining mapping and land use designations within the Basin.	
9.3 Increased Surface Water Storage Capacity	Surface water storage may be used to reduce reliance on groundwater by providing an alternative water source. As water levels in streams and other water courses diminish during the dry months, existing diversions may not adequately meet the needs of users. Storing water from snowmelt and storm events could provide a more reliable supply of water for these users. Several options related to surface water storage may be explored in order to meet ground water sustainability goals including expanding Robert's Reservoir and reassessing the Allan Camp Dam and Reservoir.	Projects intended to increase surface water storage will be implemented when it is economically advisable to do so, and when they may help mitigate basin overdraft.	Pursuant to environmental review, these projects will have opportunities for public comment and project documents will be made publically available whenever appropriate. Both NEPA and CEQA compliance mandate opportunities for public comment.	Permitting for surface water storage projects will be subject to NEPA and CEQA depending on whether the project sites are located on federal or state land respectively.	Increasing the capacity to store surface water by capturing runoff could reduce reliance on groundwater during summer months. Further, increasing surface water storage would improve water security during dry years.	The timeframe for largescale infrastructure projects would likely be upwards of 8 years, as the regulatory and environmental review processes generally require extensive coordination between agencies and stakeholders for planning and compliance.	Large infrastructure projects can be quite expensive. 1\$ in May 1981 had the same buying power as \$2.97 in April 2021. A ball park estimate of the capital costs for the Allan Camp Project in its entirety would amount to approximately \$344,041,830, with the Dam and Reservoir component amounting to \$174,487,500. These figures are Funding may be available from the federal government in the form of loans under the Small Reclamation Projects Act of 1956.	

35 Continued

Project	Brief description	Circumstances under which the project will be implemented	Public notification process	Permitting and regulatory process	Benefits	Schedule	Estimated cost	Legal authority
9.4 Improved Hydrologic Function and Upland Recharge	Upland forest recharge enhancement occurs in conjunction with vegetation management and forest fuels reduction by increasing snow water content (SWC) and reducing dense forest canopy and associated evapotranspiration	Upland forest recharge will take place will be enhanced by implementation of forest health and fuels reduction projects within the Big Valley watershed. Such projects are on-going and in varying stages of planning and implantation. Support from GSA's and local, state, and federal partners will increase implementation rate and scope. Water availability and recharge enhancement will be realized along with fire/fuels and wildlife habitat benefits.	On federally managed lands public notification of projects will be conducted under NEPA (National Environmental Policy Act).by the Modoc National Forest or Applegate BLM. State funded projects will follow CEQA public notification process. Opportunities on private land be communicated by GSA's, Pit Resource Conservation District , and other state and local entities.	Projects permitting will vary by land ownership. On federal lands NEPA and applicable federal land policies. On private lands state forestry rules are applicable and programs such as Cal Fire's Forest Health Program will help clarify and streamline permitting processes.	Snow water content has been shown to increase by 33 to 44% from a dense conifer canopy to an open area. Surface run-off has also been shown to respond to treatments. Recharge figures are difficult to quantify, but even a modest increase in recharge over 10% of the potential upland recharge area could result several thousand acre-ft of water.	The initial upland forest recharge project "Wagontire Project" is scheduled for implementation in 2022 and is expected completion in a 2 to 4 year window.	Project costs vary by site but an estimated average is from \$500 to \$650 per acre.	
9.5 Water Conservation Projects	Water conservation and water use efficiency projects would primarily be adopted by growers and homeowners on their private property. Infrastructure improvements, while requiring capital outlay are not subject to permitting or public environmental review.	Project implementation will be voluntary with cost-share incentives. Projects will be implemented on a site-by-site basis and designed for overall production and economic efficiency, along with water use savings.	Notification of opportunity to participate will be through local agricultural organizations, extension outreach meetings and by sponsoring agencies. Broad public notification of individual projects is not required.	Projects in this category such as upgrading irrigation infrastructure, irrigation management techniques, home landscaping, etc. are generally not subject to permitting requirements.	Some practices have been shown to result in efficiency increases in the range of 10% at the field scale. Multiplied over a number of farms, water use savings could be significant.	Irrigation infrastructure and water use efficiency incentives are on-going. UC Cooperative Extension has submitted a grant proposal to SWEET to initiate an outreach education program in 2022.	Costs vary widely. New irrigation infrastructure on a field scale can exceed \$100,000. Soil moisture meters for irrigation scheduling can be in the \$100's to \$1,000's of dollars per farm. Landscaping and homeowner water efficiency projects in the \$100's to \$1000's per home.	Farmers and homeowners have legal authority to make upgrades to their own systems.
9.6 Education and Outreach	Education and outreach efforts can drive beneficial changes in patterns of use and protect water resources. Existing efforts employed by the GSAs include outreach about funding opportunities that support water conservation methods, coordinating information sharing efforts and facilitating informational meetings with stakeholder groups.	As an essential part of sustainability, outreach and education will be conducted throughout the development of the GSP, with many opportunities for public engagement.	Public information is available through the Big Valley GSP communication portal, accessible at bigvalleygsp.org . Informational brochures will be distributed to interested parties in order to make information about the GSP more accessible.	Public engagement is important to the regulatory process of SGMA and other acts that the GSP may be subject to. However, education and outreach is an incredibly important part of meeting the sustainability goals of this GSP, especially as it relates to equity and inclusion.	Public involvement in the GSP development is crucial in attaining sustainability. Research has shown that here are many social, economic and environmental benefits to education and outreach efforts in water management. These benefits can vary widely, but generally include increased levels of social cohesion, equity and conflict avoidance, improved water use efficiency and improved water quality.	Ongoing efforts to engage the public in outreach and education programs related to groundwater management are essential as part of the Groundwater Sustainability Plan. The anticipated timeline for outreach and education efforts is indefinite, but especially important for the next 8 year window.	Costs may vary depending on program type.	

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9.1 Basin Recharge Projects

Enhancing recharge to get more of the available water into the aquifer is one of the key means to attaining sustainability. For off-season diversion recharge projects to be widely available in the Big Valley Basin, an off-season water availability study must be completed for the Pit River watershed up-river of Big Valley such that growers could obtain a permit for winter flow diversion. This study would include a survey of potential water rights held for off-season use, storage, and hydroelectric power. A more detailed description of what is needed in this process can be found at

(https://www.waterboards.ca.gov/waterrights/water_issues/programs/applications/groundwater_recharge/docs/streamlined_waa_guidance.pdf). Once this survey is completed and approved by a licensed engineer, permits to divert for available surface water can be solicited from the Department of Water Resources. Currently this permitting process can take 6 to 18+ months and cause significant economic burden to the applicant. An organized application for Basin wide winter diversions by the GSAs could lessen some of the regulatory burden since they qualify for a streamlined process but a waiver of fees for extremely disadvantaged communities working to improve groundwater recharge may also be needed. More information about this streamlined process can be found here.

(https://www.waterboards.ca.gov/waterrights/water_issues/programs/applications/groundwater_recharge/streamlined_permits.html). Along with permitting costs, there are also costs to the irrigator in electricity and labor costs to apply water.

9.1.1 Agriculture Managed Aquifer Recharge (AgMAR)

One approach to basin recharge currently being considered is the intentional recharge of groundwater aquifers by spreading water over agricultural fields at times when excess surface water is available, a concept called agricultural managed aquifer recharge, or AgMAR (Kocis & Dahlke, 2017, Dahlke et al. 2018). With significant surface water irrigation and diversions already present in Big Valley, AgMAR is a viable option in the Basin. Much of the current research on AgMAR has been completed on relatively well-drained soils that are not present in Big Valley. Research in Big Valley on soils with infiltration rates of slow to very slow looks initially promising. While recharge of groundwater may be slower in the Basin, it could still be a feasible means for deep water recharge, and filling the shallow aquifer and root zone. AgMAR can be utilized for both, increasing recharge and decreasing water application of groundwater during the growing season due to a saturated soil profile. A conservative estimate of 25,000 acres in Big Valley of agricultural and native vegetation lands are accessible to surface water and available for AgMAR. Priority will be given to low infiltration over very low infiltration soils for recharge and areas addressing more critical groundwater levels.

Among the perennial crops, alfalfa is considered a promising candidate for AgMAR for several reasons and significant initial research has been completed throughout California on its feasibility (Dahlke et al. 2018). 80-85% of the alfalfa in California is irrigated by flood irrigation

which in turn could allow for areas where surface water can be utilized for groundwater recharge (Dahlke et. al. 2018). Alfalfa is widely grown in Big Valley and flood irrigation is common. Alfalfa is a nitrogen-fixing plant that seldom receives nitrogen fertilizer, which reduces the risk of leaching excess nitrate to groundwater, one of the main concerns of AgMAR (Putnam and Lin 2016; Walley et al. 1996). Dahlke, H.E., Et. al. 2018 found that winter recharge had no discernible effect on alfalfa yield (first and second cutting) and led to increased crop water availability in the deep soil profile offsetting potential irrigation deficits during the growing season.

Research currently being completed in Big Valley on the feasibility of AgMAR on perennial grass pasture and hay fields looks promising. Although soils in Big Valley have lower infiltration rates, winter recharge rates of 0.2 - 0.5 acre-feet per acre per irrigation in March and April have shown no damage to crops. Soil infiltration rates show 2-3.5 inches of infiltration over a 24 hour period to be feasible. Irrigating every 7-10 days for 6 irrigations in the winter/spring would benefit 1-2 acre-feet of water per acre into groundwater storage. This is the first AgMAR research completed on grass which is a dominant perennial crop in Big Valley. Given that some forms of applied nitrogen, particularly nitrate, have a propensity for leaching which has presented a challenge in other parts of the state, there has been some concern over nitrogen application and AgMAR. This can easily be addressed with best management practice (BMPs) of applying nitrogen outside of the winter recharge window. This work could also be easily applied to AgMAR feasibility on adjacent rangeland, conservation reserve project (CRP) or NRCS wetland reserve project (WRP) land.

9.1.2 Drainage or Basin Recharge

Using the same principles as used in AgMAR, excess surface water can be diverted into irrigation drainages or canals, and recharge basins to percolate into the groundwater table and replenish upper levels of the aquifer. This water is then available to be extracted at a later date for beneficial use. The volume of water recharged is limited by the availability and access to surface water, infiltration rates of the soils, losses to evaporation, and available infrastructure.

The total number of feet or miles of irrigation canals or ditches needs to be determined along with the availability of current water storage basins (reservoirs) for recharge. Additional basins may need to be created for the sole purpose of groundwater recharge. Producers wanting to participate in this program would notify the GSA and report diverted water for the purpose of drainage or basin recharge. The development of a water availability study and permitting as described on in **Table 9-3** also applies to this project. Unlined drainages, canals, and basins could recharge up to 90% of diverted surface water to the shallow aquifer.

9.1.3 Aquifer Storage and Recovery (ASR) and Injection Wells

ASR is the artificial method of storing water underground to be used for later dates by injecting surface water during wet periods to fill underground aquifers. It can be used as a more

economical and practical alternative to reservoirs and other surface water storage techniques in some areas. There is significant concern about the quality of water for injection and whether treating water before it is injected into the wells will be required. It is unclear if this is solely in systems used for drinking water or whether environmental regulation also requires this in agriculture applications, if so cost would be raised significantly and would eliminate practicality of ASR for many situations.

Before injection can be used, significant knowledge of the subsurface of the injection site is needed including but not limited to the types of minerals present, existing and potential sources of contamination, and soil water content. Structure and capacity of the well also needs to be analyzed. Agriculture production wells with high elevation screening may be applicable to this use. More research needs to be completed as to whether this option is applicable to Big Valley.

<https://www.epa.gov/uic/aquifer-recharge-and-aquifer-storage-and-recovery>

9.2 Research and Data Development

Data gaps are mentioned and detailed throughout the GSP chapters. Continuing to fill these gaps, participate in research, and collect data to support the GSP is a necessity to continue to work towards sustainability using the best science available.

9.2.1 Additional Stream Gauges and Flow Measurement

Several seasonal streams contribute inflow to the Big Valley Basin (**Figure 9-2**). Many of these streams had historical stream gauges or have current gauges monitored by the USGS and DWR. The Pit River which is a major inflow river and significant contributor of surface water irrigation and recharge in Big Valley has a gage 13 miles from where the Pit River enters Big Valley at the Canby bridge. There are many springs and small tributaries that flow into the Pit River after the Canby bridge as well as irrigated lands water use between Canby and the Big Valley Basin. Modoc County has been working to install an additional stream gauge at the Shaw pit to fill this data gap and provide more current stream flow information for GSP development and water management. There is also funding for additional stream gauges if locations of need can be determined. The current and proposed stream gauges are in **Figure 9-2**.

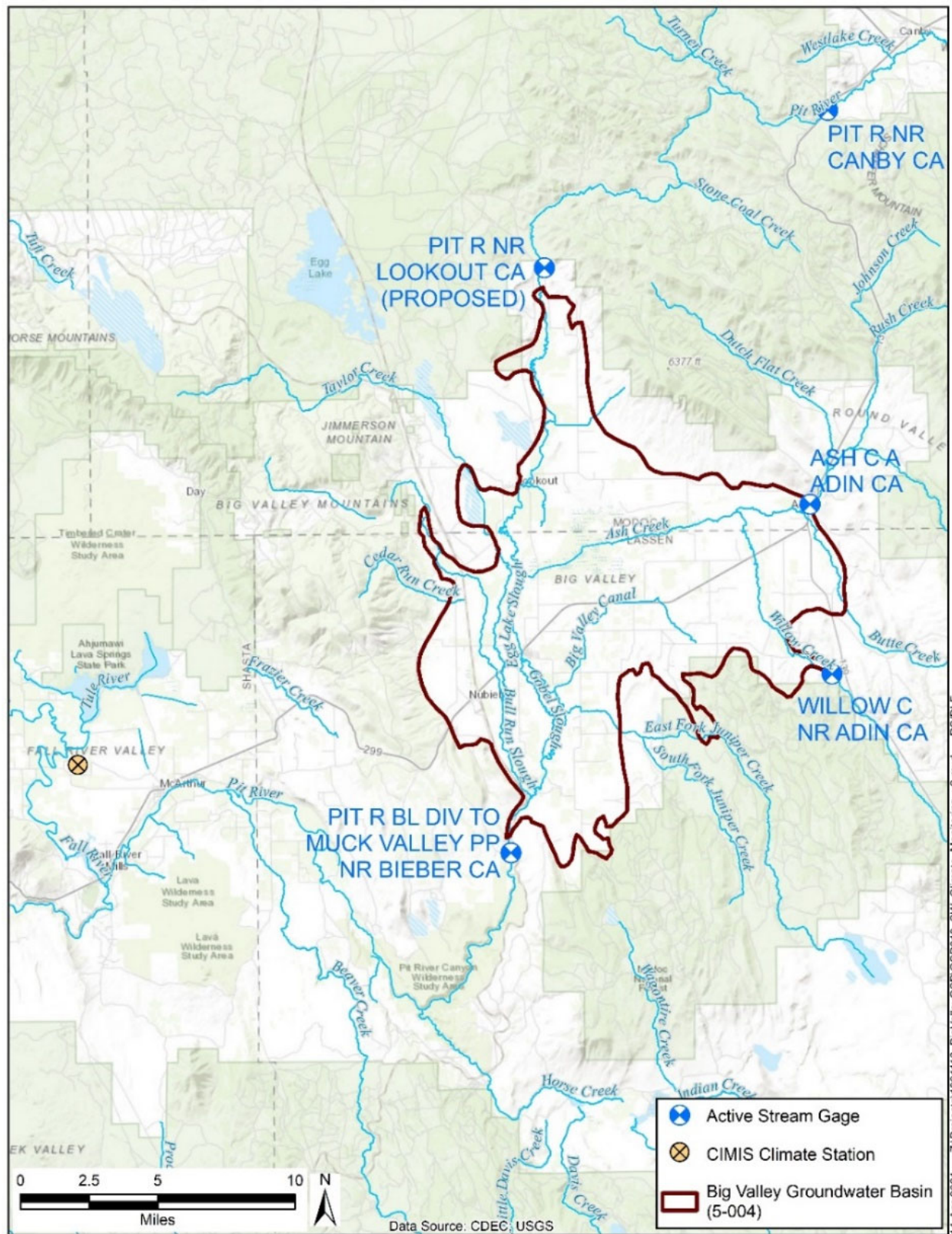


Figure 9-2 Current and Proposed Stream Gauges

9.2.2 *Refined Water Budget*

Many assumptions were taken to create the Big Valley water budget in Chapter 6. Some of these assumptions stem from data gaps that need to be addressed and other areas are opportunities to collect and analyze data that is being submitted through other regulatory programs. This section describes a combination of projects that will help improve the accuracy of the water budget and in-turn better inform groundwater management in Big Valley.

There is currently no agri-climate or CIMIS station located in Big Valley. Nearby stations in other basins have helped to create models to determine averages but significant geologic features affecting elevation often make weather patterns unpredictable from nearby basins. These stations have more sensors than typical weather stations including solar radiation, soil temperature, air temperature, wind speed and direction, relative humidity, soil moisture, and rain gauging. These measurements can determine accurate evapotranspiration (ET) which is very helpful in creating a more refined water budget for the basin and help maintain sustainable groundwater conditions. ET is used as a metric for applied water especially when meters on actual applied water are not available. These stations can also help farmers in determining irrigation need and promote water conversation especially early in the growing season.

With an accurate estimate of ET, the next assumption is the relationship between ET and applied water in Big Valley. Since most crops grown in Big Valley are hay crops, irrigation must be stopped when cutting, drying, and baling even though ET continues. Pinpointing the relationship between ET and applied water could greatly refine the water budget and amount of irrigation water that is being applied.

An effort to refine mapping and land use designations would further increase the accuracy of estimates related to water use within Big Valley. The water budget's assumptions are primarily derived from existing sources, many of which may need to be updated or expanded upon to reflect current conditions. DWR's LandIQ mapping resource has been a primary tool in estimating irrigated acres, although there is some uncertainty related to the accuracy of the land classifications which field studies could address.

A voluntary well monitoring program has been available in Big Valley for upwards of two decades through the Lassen Modoc Flood Control Water Control District (LMFCD). Reinvigorating this program by identifying meters that need to be replaced, conducting outreach to add new wells to the program, and organizing the historical data fills a data gap and also provides critical data to refine the water budget and pinpoint areas of concern. Meters are available for agricultural and domestic water users. Funding from DWR in a grant to Modoc County is currently available to provide well meters to voluntary applicants. Further, it would be beneficial to identify additional monitoring wells to provide unobstructed measurements year-round. Several such wells have been installed at five sites within the basin and generate monthly data across fifteen-minute intervals. Expanding on this existing program would further refine the water budget.

Collectively, the continuation of applied research efforts will help to better quantify the impacts from those actions and thus help refine the water budget. Some such research efforts, which will be discussed in depth in later sections of this chapter, include evaluating the effectiveness of off-season groundwater recharge in hay crop fields and pastures, the impacts of forest thinning projects, such as fuels reductions and the removal of invasive junipers on water availability within the watershed, and the extent to which surface water systems, including drainages, canals, and reservoirs contribute to recharge within the Basin. Additional research projects to support the water budget will be identified and undertaken as needed, contingent on funding.

9.2.3 Adaptive Management

There are many unknowns and data gaps with respect to groundwater resources in the Big Valley basin. As a result, estimates, and assumptions are currently used in the plan to determine several key variables. To address the lack of necessary information, a significant commitment to the continued monitoring of both ground and surface water is described in this plan. By further developing and enhancing monitoring networks in Big Valley we can gather the data necessary to inform management and set criteria as more information becomes available.

This describes an adaptive management strategy. Adaptive management is an approach to improve natural resource management which focuses on learning by doing. Learning occurs through monitoring, data development, outreach and collaborative interpretation. Then, the adaptation of management criteria and tools is applied to existing practices as critical information becomes available. This approach is very applicable to the Big Valley Groundwater Basin and will serve as a bridge towards sustainability by providing current site specific information to inform appropriate sustainable management criteria (SMCs) and thresholds as well as the ongoing assessment of projects and management actions in the basin.

Although it is recognized that the Big Valley Basin does not have the unsustainable conditions seen in other basins around the state, monitoring and filling data gaps from SMCs that were determined to not require thresholds helps us prepare for annual reports and five-year revisions and make management decisions. These SMCs without identified thresholds include interconnected surface water and groundwater, water quality, and subsidence. Additionally, monitoring could aid in the analysis of the relationship between groundwater levels and Groundwater Dependent Ecosystems (GDE).

9.3 Increased Surface Water Storage Capacity

Increasing the capacity to store surface water run-off during winter/spring high-flows could provide significant amounts of water for summer irrigation. An increase in surface water available for irrigation would lessen the reliance on groundwater and thus remain sustainable.

9.3.1 Expanding Existing Reservoirs

Expansion of several existing reservoirs serving Big Valley Basin would increase the capacity of surface water for irrigation and recharge projects as well as help balance the water budget. An increase in water storage would make the basin more sustainable to climate variability and decreases in snowpack while also relieving pressure on groundwater for irrigation in Big Valley. One larger reservoir, Robert's Reservoir, is located northeast of Lookout and has a current capacity of 5,500 acre-feet. Possible scenarios for raising this reservoir's dam are shown in **Figure 9-3**. For example, raising Robert's Reservoir three feet would increase capacity 1900 acre-feet, an increase of 35%. Expanding current reservoirs may possibly be the more time and cost-effective alternative for expanding surface water storage compared with building new reservoirs, for which navigating the environmental review process and other regulations can be difficult.

9.3.2 Allen Camp Dam

The Allen Camp Dam and Reservoir (**Figure 9-4**) was authorized by the Department of the Interior (DOI) as part of the Allen Camp Unit of the Central Valley project in 1976 to regulate flows of the Pit River primarily for irrigation and fish and wildlife purposes, as well as flood control and recreation services. Although the DOI's Report concluded that based on the existing criteria the proposed project was economically inadvisable, it may be appropriate to conduct a new investigation into the feasibility of this project to reflect the changes to water needs of the community, environment, and State that have occurred over the last 40 years.

Located around 11 miles north of the Modoc-Lassen County line, Allen Camp Reservoir would have a 90,000 acre-foot storage capacity, an 18,000 acre-foot surcharge, 2,350 acres of water surface area and a normal year yield of 22,400 acre-feet. The Dam would be constructed from earth and rock fill and would measure 103 feet from the streambed. The construction of the various proposed project components would require the acquisition of about 18,240 acres of private land through easements or through fee titles, and the withdrawal of roughly 11,845 acres of public land. Most of the land acquired would be allocated for the Dam and Reservoir project features, a total of 18,015 acres with another significant allocation, 11,562 acres, for the proposed Big Valley National Wildlife Refuge, intended to offset habitat loss for species such as deer, and migratory waterfowl. The remaining land would be partitioned at 355 acres for the Hillside Canal, 148 acres for the Lateral distribution system, and 5 acres for the Nubieber protective dike.

In 1981, there were 62 ownerships slotted to receive deliveries from this project, accounting for a total 11,700 irrigable acres all of which would benefit from full or supplemental water deliveries. The report stated that the groundwater basin area of the project has a storage capacity of roughly 532,000 acre-feet with a safe yield of 7,000 acre-feet per year, with 5,000 acre-feet of that developed. These numbers may have changed over the 40 years that have elapsed since the report was published and should be reviewed under an updated feasibility study. An increasingly

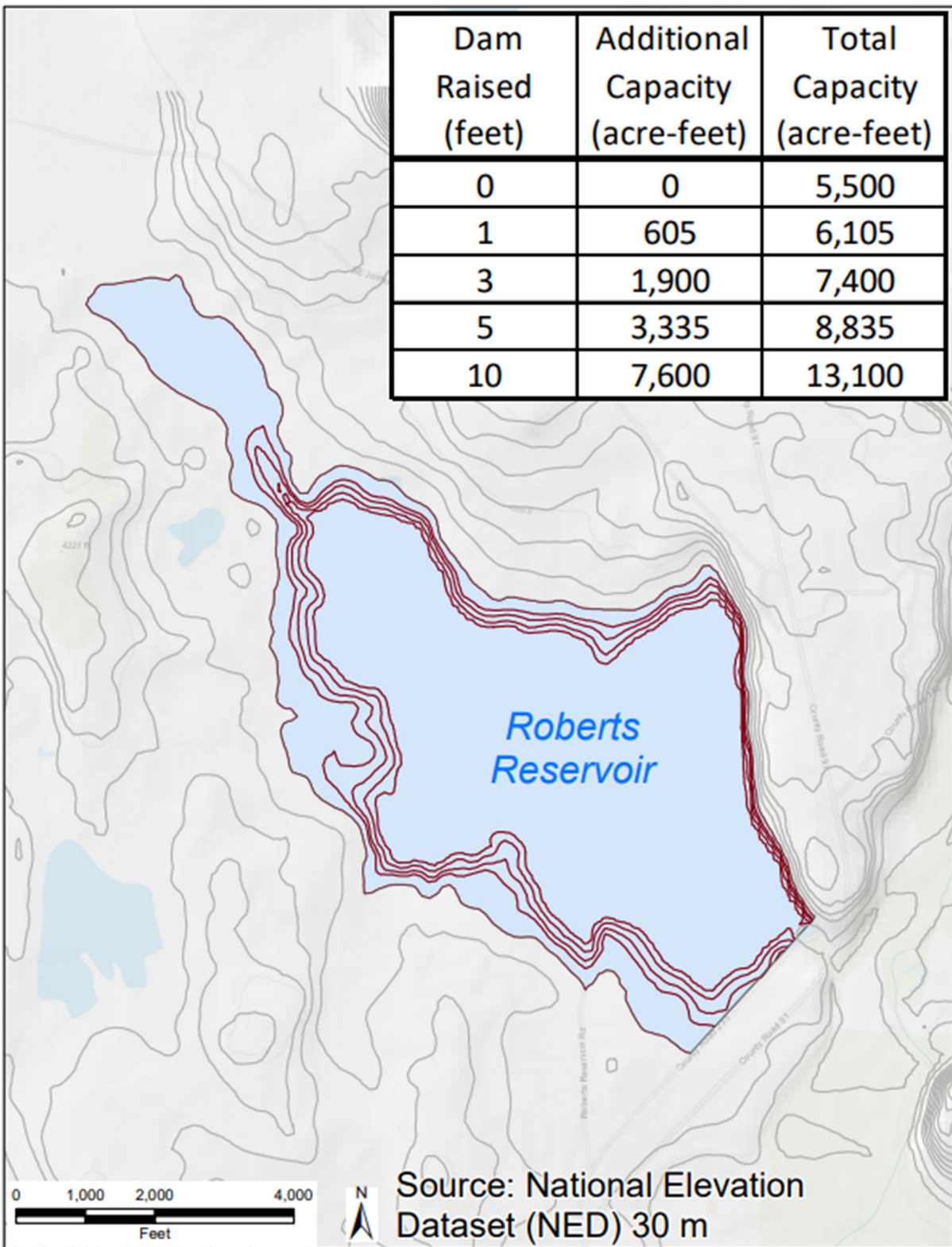


Figure 9-3 Robert's Reservoir Scenarios

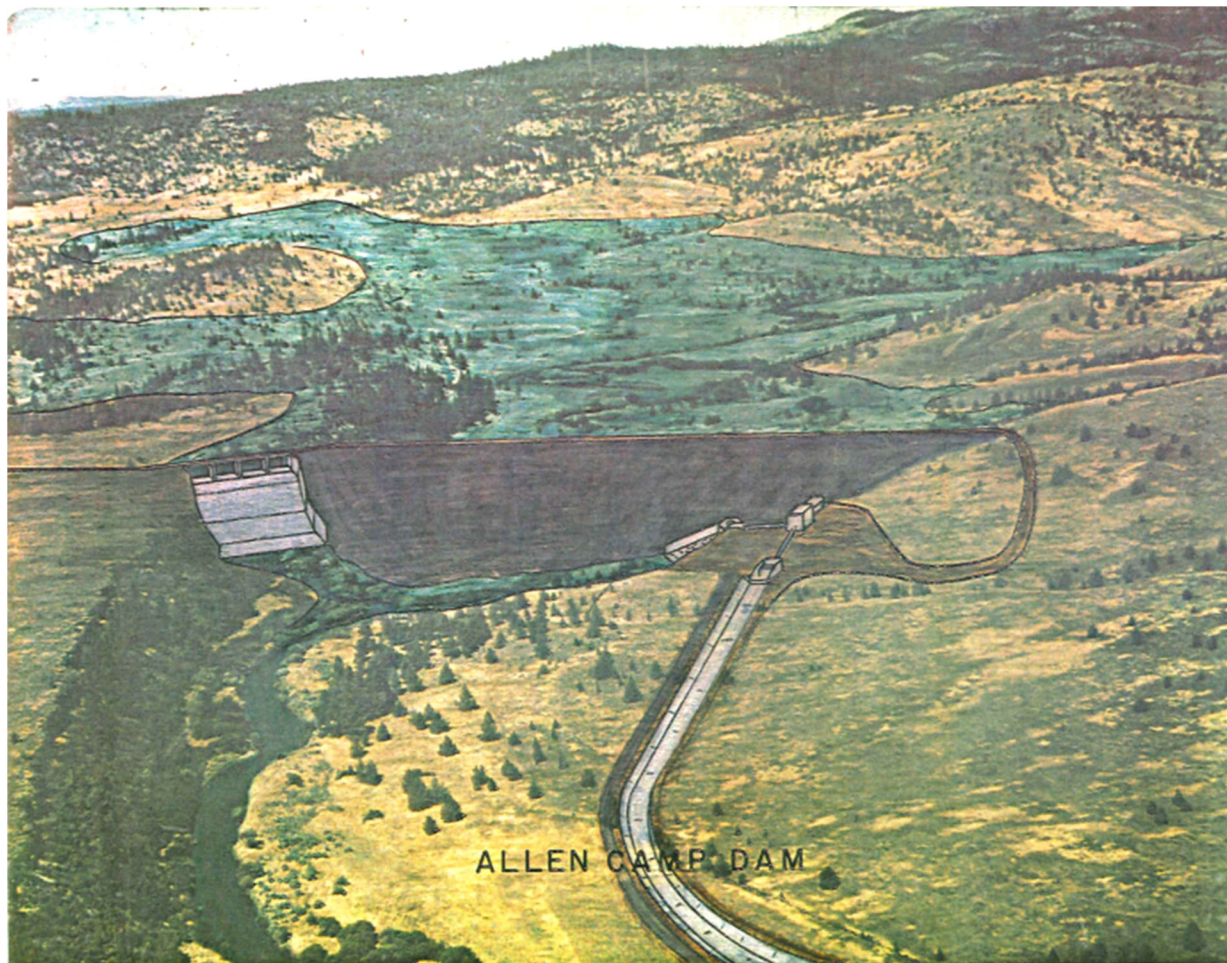


Figure 9-4 Allen Camp Dam Drawing

variable climate casts uncertainty over water availability, with drier years driving an increased reliance on groundwater supplies. Further, an updated feasibility study might consider how this project could mitigate some of the effects of climate variability and watershed conditions on the Big Valley Groundwater Basin by providing a reliable source of surface water and contributing to basin recharge.

9.4 Improved Hydrologic Function and Upland Recharge

9.4.1 Forest Health / Conifer and Juniper Thinning

The watershed surrounding the Big Valley Basin is comprised of approximately 800,000 of conifer forest and rangeland (**Figure 9-5**). Management policies have resulted in tree densities that are currently much higher than at the beginning of the 20th century. This includes both mixed conifer forests and western juniper (Stephens 2016) (Miller and Tausch 2001).

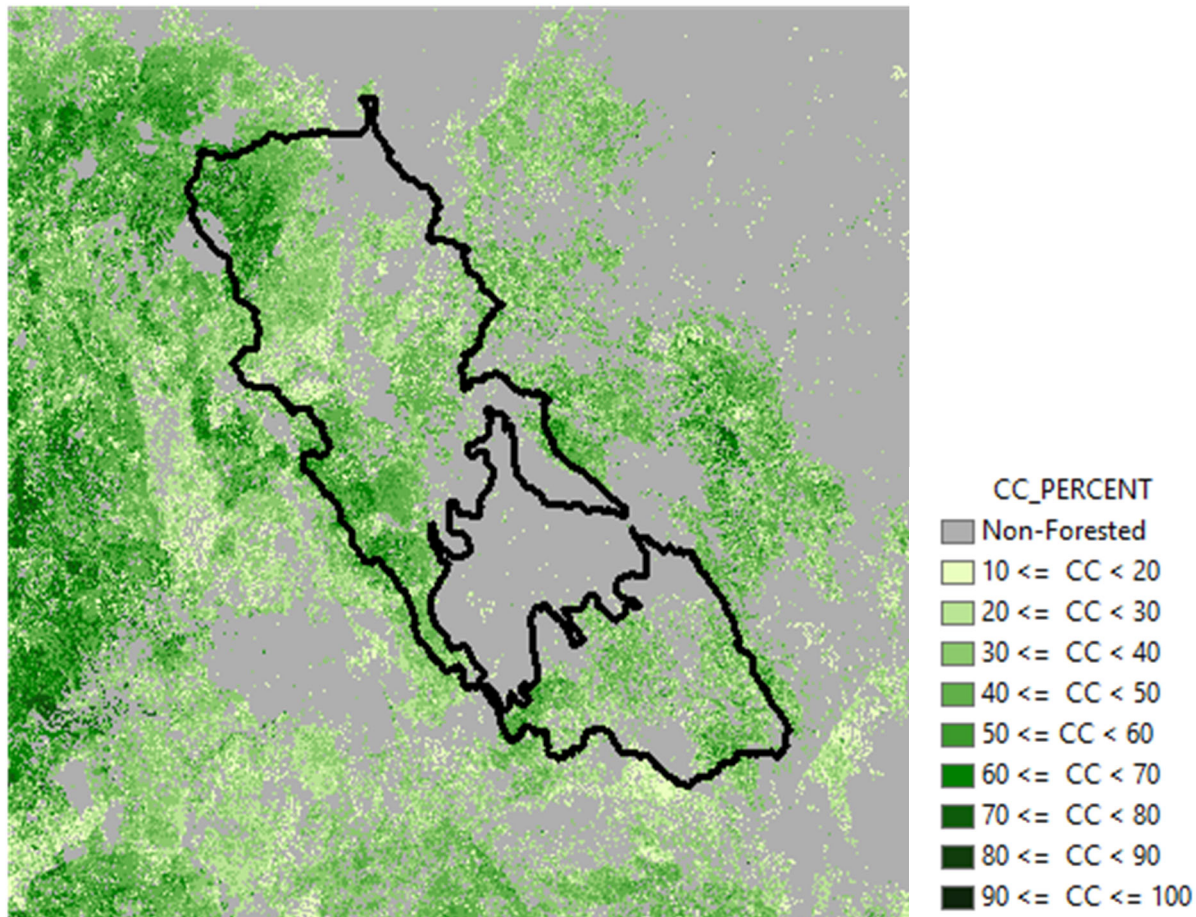


Figure 9-5 Canopy cover (CC) percentage of forested areas within the Big Valley watershed

There are two main mechanisms by which dense conifers impact water availability in forested watersheds. First is the interception of snow (primarily) and rain that gets caught in branches and needles and evaporates before ever reaching soil surface and second is the high rate of transpiration due to dense layered canopy and vigorous network of roots (Ryel 2011). An excellent summary paper by Smerdon et al (2009) describes linkages between forest health and tree density and groundwater recharge in a variety of landscapes.

Spring snow water content (SWC) ranged from 33% to 44% higher in the aspen and an open meadow SNOTEL site vs adjacent conifer forest where interception of snowfall was much higher (LaMalfa 2008). Averaged over the entire catchment, strategically placed fuel treatments in the wetter central Sierra Nevada (American River) creating a relatively light vegetation decrease (8%), resulted in a 12% runoff increase, averaged over wet and dry years. Wildfire, with and without forest treatments, reduced vegetation by 38% and 50% and increased runoff by 55% and 67%, respectively. Forest fuel reduction in drier sites in the southern Sierra had less increase in run-off than wetter sites in the central Sierra Nevada Range (Saska 2020).

A similar increase in water availability has been documented on juniper-invaded rangelands. During the period of maximum water uptake, mature trees used between 45 and 69 times more water than juniper saplings depending on precipitation and, consequently, soil water availability.

In summary, 1) juniper water use varies greatly with precipitation and 2) because of the large difference between mature and sapling trees, juniper control results in considerable water savings, even after a 14-year period of juniper regrowth. (Mata-Gonzales 2021). Paired watershed studies in Oregon have demonstrated increased deep soil moisture, increased spring flow, and increased surface water run-off after juniper harvest compared to untreated areas. They have also documented a hydrologic connection between shallow groundwater on juniper sites and a nearby riparian valley. (Ochoa 2016).

The opportunity to enhance upland watershed recharge is significant as projects are already in planning and implementation stages to reduce fire risk and improved wildlife habitat (citation), and programs such as Cal Fire's Forest Health Program support project implementation funding. Forest health projects can be developed and meet multiple resource objectives including hydrologic values. Removal of conifers from meadow edges, drainages, and spring areas as well as improving hydrologic function of road crossings, ditches, and stream channels (where feasible) will enhance hydrologic and recharge benefit of forest health projects. Given the vast land area surrounding Big Valley, even a fraction of the land area is treated a significant amount of the current recharge deficit can be mitigated. Recently, controlled burns and fuels reductions have gained considerable traction as forest management tools and could be utilized for the purposes discussed.

9.4.2 Stream Channel Enhancement and Meadow Restoration

Several meadow restoration techniques exist for the purpose returning proper hydrologic function to montane and rangeland meadows. Two commonly used in the Big Valley Basin and surrounding uplands include pond and plug and beaver dam analogs. Both techniques result in reconnection of a stream channel with a functioning floodplain and restoration of a degraded meadow's water table up to its historic level. Restoration of the meadow water table results in re-watering of meadow soils and vegetation, with significant effects throughout the restored floodplain for meadow hydrology, wildlife, and forage. Restored floodplain connectivity spreads flood flows so that a meadow's natural ability to settle the coarse or fine sediment delivered from steeper stream reaches is restored and natural percolation can occur. When floodplain function is restored, a portion of winter and spring runoff is stored in meadow soils rather than racing down the pre-project gully during the runoff season. Data indicates that release of this stored runoff results in increased stream flow in late spring. (Hunt 2018)

In mountains of the western United States, channel incision has drawn down the water table in many meadow floodplains. Increasing climate variability is resulting in earlier melt and reduced snowpack and water resource managers are investing in meadow restoration which can increase springtime storage and summer flows. Between 2012 and 2015, during a record setting drought, a pond and plug restoration in Indian Valley in the Sierra Nevada Mountains was implemented and monitored. Despite sustained drought conditions after restoration, summer base-flow from the meadow increased 5 to 12 times. Before restoration, the total summer outflow from the meadow was 5% more than the total summer inflow. After restoration, total summer outflow from the meadow was between 35% and 95% more than total summer inflow. In the worst year

of the drought (2015), when inflow to the meadow ceased for at least one month, summer base-flow was at least five times greater than before restoration. Groundwater levels also rose at four out of five sites near the stream channel. Filling the incised channel and reconnecting the meadow floodplain increased water availability and streamflow, despite unprecedented drought conditions. (Hunt 2018).

Other studies have also shown that these techniques may increase surface and subsurface storage and groundwater elevations that contribute to channel complexity and residence times. These factors could lead to stronger flow permanence in channels subject to seasonal drying. Increased availability of water and productivity of riparian vegetation can also support human uses in arid regions, such as irrigation and livestock production. (Pilliod 2018).

9.5 Water Conservation

9.5.1 Irrigation Efficiency

The fundamental objective of an irrigation system is to deliver an optimum amount of water for crop growth during spring, summer and fall growing season while temperature and daylength are conducive to plant growth but natural precipitation is lacking. Irrigation water and water application costs comprise the single biggest operational cost associated with alfalfa or grass hay production in the intermountain area accounting for approximately 30% of total operating costs (Wilson 2020) (Orloff 2016). Increasing the efficiency of crop water use is an economic as well conservation minded goal. Farmers in the Big Valley area have been adopting water conservation measures and as feasible opportunities arise will continue to do so. Support for infrastructure, new technology and education outreach will help attain this goal.

Flood, wheel-line, and center pivot irrigation systems are all used on Big Valley farms. The best irrigation system depends on water availability, crop, soil type, and infrastructure. Commonly, center-pivots are rated as the most efficient systems but there are appropriate uses for all three types. Many advancements in irrigation efficiency have been made and will continue to be developed and implemented. It is critical that implementation is done at a farm-by-farm basis in such a way as to fit specific conditions and production systems. A one-size fits-all application will be neither effective nor economically viable, such as SGMA.

It is important that any irrigation system be well maintained to operate properly. Flood irrigated fields should be appropriately leveled with appropriate width and length of irrigation check to provide for a uniform application of water. Sprinkler systems should be regularly checked for function and be designed with the right nozzle size for available flow and pressure. Systems that can utilize larger diameter nozzles can reduce droplet size and evaporation loss. Length of irrigation set should make use of soil water holding capacity without incurring excessive tailwater. Specialized systems such as Low Energy Sprinkler Application (LESA) can improve water use efficiency up to 15%. Length of irrigation set should make full use of soil water holding capacity without incurring excessive run-off.

To optimize efficiency of water use, the amount and timing of irrigation water applied should closely match the amount of water needed by the crop thus maintaining adequate soil moisture for crop growth while minimizing tail water run-off. Effective use of irrigation technology such as soil moisture sensors, tracking of evapotranspiration, flow meters etc. are available to help farmers manage irrigation timing and length of set to get the most of their irrigation system. While some of these have been applied in Big Valley some are relatively novel.

Genetic selection and the continued improvement of forage crop species as has resulted in the increased availability of drought tolerant, heat tolerant, or short-season forage grasses that may provide growers and viable alternatives in certain situations where water availability is otherwise limited. Crop selection is often based on the best fit for particular soil depth, soil texture, and water availability in conjunction with value and marketability. Although Big Valley cropping systems are heavily constrained by climate and growing season, on-going forage crop improvement may provide growers with a wider range of species and variety options.

Overall good agronomic practices in terms of soil fertility, weed control, harvest etc. is critical and promotes an efficient use of all resources including water. Finally, as mentioned in other places in this plan, agricultural fields and farms provide important wildlife habitat in the valley. Irrigated lands are an important part of the overall landscape. A good example is that flood irrigated pastures are highly valued by migratory birds particularly in the spring. Emphasis on water efficiency is important but should not become such a single-focused objective that other resource values or farm profitability are ignored.

It should be clear that efficient use of water for irrigated forage crop production is multi-faceted, and several small improvements, strategically together to fit on-farm conditions, is the most effective approach. To this end, education outreach via U.C. Cooperative Extension, technical support from Natural Resources Conservation Service, and cost-share and grant programs are all critical to supporting water use efficiency measures. Support and incentive programs that have been used and can be further expanded upon in Big Valley are listed in **Table 9-1** (funding program table).

9.5.2 Landscaping and Domestic Water Conservation

While Big Valley is extremely rural, there are opportunities to enhance water conservation among domestic water users as well. Particularly with regarding domestic landscaping, use of native drought adapted plants, irrigation timers, effective mulch, and rainwater/snow water catchments can reduce water requirements. Low water landscaping can also be integrated with homeowner firesafe planning. Landscaping guides for homeowners can be distributed at public centers and at regional garden supply stores (Hartin 2014) (California Native Plant Society, 2021).

9.6 Public Education and Outreach

The GSAs believe that public education and outreach are an important component of this plan. Education can change use patterns that promote water conservation and protection of water resources. The GSAs support continued education on preventing illegal dumping, illegal marijuana grows, properly sealing abandoned wells, and best management practices. Continued outreach to support the coordination of efforts and information sharing, fostering relationships with relevant agencies and organizations, and attending meetings with local and region groups involved in water management is also important. This includes increasing public outreach about funding opportunities and programs that support water conservation methods, increased recharge, and mediation opportunities for decreasing water levels. A table of example funding opportunities is 9.1. More information on public outreach and communication can be found in Chapter 11.

Outreach methods that can be expanded include radio public service announcements, cooperator workshops with UCCE, and social media posts informing the public about upcoming meetings and deadlines, BMPs, plan updates, recharge opportunities, and updated water conditions. An organized effort to compile recharge and conservation activities would aid GSAs in tracking impacts for future plan revisions.

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Big Valley GSP Comment Matrix Chapter 9

Document	Page & Line Number	Comment	Date	Notes and Responses
Chapter 9 Public Draft 5/24/21	1, 21	change "returning to" to "remaining"	6/2/2021	
Chapter 9 Public Draft 5/24/21	4, 95	What is meant by a "water storage basin"	6/2/2021	
Chapter 9 Public Draft 5/24/21	6, 120-121 7, 180-181	Change "towards sustainability" to "remain sustainable"	6/2/2021	
Chapter 9 Public Draft 5/24/21	7, 160-161	Regarding sentence "Development of additional wells strictly for monitoring is also of interest as they provide unobstructed measurements year round". It's not necessarily desirable. Remove or change wording.	6/2/2021	
Chapter 9 Public Draft 5/24/21	8, 195-196	change "achieve sustainability" to "maintain sustainability"	6/2/2021	
Chapter 9 Public Draft 5/24/21	8, 198	Insert "several" to discussion of reservoirs. Multiple reservoirs could be expanded.	6/2/2021	
Chapter 9 Public Draft 5/24/21	9, 228-235	In discussion of Allen Camp Dam, strengthen language regarding the need for the reservoir	6/2/2021	
Chapter 9 Public Draft 5/24/21	9, 240 et seq	Add controlled burns to potential actions	6/2/2021	
Chapter 9 Public Draft 5/24/21	12, 329	add "as compared to SGMA". to end of sentence	6/2/2021	
Chapter 9 Public Draft 5/24/21	14, 375	Add text about illegal marijuana grows	6/2/2021	

Big Valley Groundwater Sustainability Plan GSP Regulations Checklist (Elements Guide) for Chapter 10

This checklist of the GSP Elements and indicates where in the GSP each element of the regulations is addressed.

Article 5. Plan Contents for Big Valley Groundwater Basin				GSP Document References				Notes
				Page Numbers of Plan	Or Section Numbers	Or Figure Numbers	Or Table Numbers	
§ 354.6.			Agency Information					
			When submitting an adopted Plan to the Department, the Agency shall include a copy of the information provided pursuant to Water Code Section 10723.8, with any updates, if necessary, along with the following information:					
(a)			The name and mailing address of the Agency.	X	2.1			
(b)			The organization and management structure of the Agency, identifying persons with management authority for implementation of the Plan.	X	2.2, 2.3			
(c)			The name and contact information, including the phone number, mailing address and electronic mail address, of the plan manager.	X	2.3			
(d)			The legal authority of the Agency, with specific reference to citations setting forth the duties, powers, and responsibilities of the Agency, demonstrating that the Agency has the legal authority to implement the Plan.	X	2.4			
(e)			An estimate of the cost of implementing the Plan and a general description of how the Agency plans to meet those costs.	X	10.6,10.7		10-4, 10-5	
			Note: Authority cited: Section 10733.2, Water Code.					
			Reference: Sections 10723.8, 10727.2, and 10733.2, Water Code.					
§ 354.40.			Reporting Monitoring Data to the Department					
			Monitoring data shall be stored in the data management system developed pursuant to Section 352.6. A copy of the monitoring data shall be included in the Annual Report and submitted electronically on forms provided by the Department.					
			Note: Authority cited: Section 10733.2, Water Code.					
			Reference: Sections 10728, 10728.2, 10733.2, and 10733.8, Water Code.					

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Appendices

Appendix 10A California Financing Coordinating Committee 2021 Funding Fair Handbook

Abbreviations and Acronyms

Basin	Big Valley Groundwater Basin
BVGB	Big Valley Groundwater Basin
BVAC	Big Valley Groundwater Basin Advisory Committee
CASGEM	California Statewide Groundwater Elevation Monitoring
CDEC	California Data Exchange Center
CIMIS	California Irrigation Management Information System
DMS	Data Management System
DWR	Department of Water Resources
ET _o	Reference Evapotranspiration
GAMA	Groundwater Ambient Monitoring and Assessment Program
GIS	Geographic Information System
GRA	Groundwater Resources Association of California
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
InSAR	Interferometric Synthetic Aperture Radar, a technology used to detect subsidence
LMFCWCD	Lassen-Modoc Flood Control and Water Conservation District
North Cal-Neva Regs	North Cal-Neva Resource Conservation and Development Council GSP Regulations: California Water Code Title 23, Division 2, Chapter 1.5, Subchapter 2
SGMA	Sustainable Groundwater Management Act of 2014
SWRCB	California State Water Resources Control Board
USGS	United States Geologic Survey
WIFIA	Water Infrastructure Finance and Innovation Act
WIIN	Water Infrastructure Improvement for the Nation Act
WY	Water Year (October 1 to September 30)

10. Implementation Plan

Groundwater Sustainability Plan (GSP) implementation generally consists of four categories of activities:

- GSA Administration and Public Outreach
- Monitoring and Data Management
- Annual Reporting
- Plan Evaluation (5-year updates)
- Projects and Management Actions

This chapter contains discussion of the details for each of these activities, then sets forth a schedule for implementation, estimates costs of implementation, and discusses funding alternatives.

10.1 GSA Administration and Public Outreach

The nature of groundwater sustainability agency (GSA) administration is not addressed explicitly in the GSP Emergency Regulations (Regs). Much of the work to implement portions of the GSP (e.g. monitoring and projects and management actions) will be performed by outside entities such as DWR and hydrology professionals. However, this work will need to be coordinated by the GSAs and some work will need to be performed by GSA staff.

One category of work that rests on GSA shoulders is public outreach. The level of effort needed from GSA staff depends greatly on the details of public outreach discussed in Chapter 11. In addition to the public outreach performed during GSP development, the Regs (§354.10(d)) require GSAs to develop a communication section of the plan that includes the following:

- (1) An explanation of the Agency's decision-making process*
- (2) Identification of opportunities for public engagement and a discussion of how public input and response will be used.*
- (3) A description of how the Agency encourages the active involvement of diverse social, cultural, and economic elements of the population within the basin.*
- (4) The method the Agency shall follow to inform the public about progress implementing the Plan, including the status of projects and actions.*

Chapter 11 will contain the Communications and Engagement Plan, but the requirements of the Regs are presented here for awareness by GSA staff to refine this chapter and understand the level of effort and expense that may be required for this component of GSP implementation. Decisions will need to be made regarding whether the Big Valley Advisory Committee (BVAC) continues as a functioning body after completion of the GSP, and if the BVAC continues what

role they take and how often they meet will determine the level of GSA staff effort to facilitate BVAC meetings and activities.

10.2 GSP Annual Reporting

According to §356.2 of the Regulations, the Big Valley Groundwater Sustainability Agencies (GSAs) are required to provide an annual report to DWR by April 1 of each year following the adoption of the GSP. The first annual report will be provided to DWR by April 1, 2022 and will include data for the prior Water Year (WY), which will be WY 2021 (October 1, 2020 to September 30, 2021). While the WY as defined by DWR isn't ideal for use in Big Valley, the GSAs will assemble data based on DWR's definition as per SGMA statute and regulations. The Annual Report will establish the current conditions of groundwater within the Big Valley Groundwater Basin (BVGB or Basin), the status of the Groundwater Sustainability Plan (GSP) implementation, and the trend towards ~~achieving~~maintaining sustainability. While conditions won't differ significantly from when the GSP was developed, the GSAs will submit the annual report to comply with GSP regulations. A general outline is included below.

- ❖ General Information

- Executive Summary
- Introduction (1 map of Basin)

- ❖ Basin Conditions

- Groundwater Elevations (2 contour maps, 12 hydrographs)
- Estimated Groundwater Extractions (1 table from water budget)
- Estimated Surface Water Supply (1 table from water budget)
- Estimated Total Water Use (1 table from water budget)
- Estimated Change in Groundwater Storage (2 maps, 1 graph, and 1 table)

- ❖ GSP Implementation Progress

- Progress Toward Measurable Objectives
- Updates on Projects and Management Actions

Another way to organize this requirement and for GSA staff and stakeholders to understand the level of effort and expense involved in developing annual reports is to outline major technical tasks. Much of the effort to develop the annual reports is to take available data collected by outside agencies, generate figures based on that data and then re-submit to DWR. Below is a summary outline of tasks to be performed by GSA staff and/or consultants to develop the annual report.

- ❖ Download Water Level Data from state website and generate:

- Hydrographs for 12 representative wells.
- Spring and Fall groundwater contours.
- Groundwater difference contours. (e.g. Fall 2020 to Fall 2021)

- ❖ Download water budget data from state websites¹
 - Run water budget for the water year and generate estimates of:
 - Groundwater extractions.
 - Surface water supply.
 - Total water use.
- ❖ Assemble and write annual report.
- ❖ Upload report and data to state website.

10.2.1 General Information

In accordance with §356.2(a), each Annual Report will include, at the front of the report, an executive summary that will summarize the activities and the condition of groundwater levels within the BVGB for the prior year. The executive summary shall also include a map of the BVGB, its GSAs, and the monitoring network.

The annual report will include an introduction that will describe the following:

- A description of the BVGB and the two GSAs
- The general conditions of the BVGB for the prior water year (precipitation, surface water allocations, crop demands, municipal demands, etc.)
- Any significant activities or events that would impact the water supply and/or groundwater conditions for the BVGB

10.2.2 Basin Conditions

Included in the annual report will be a discussion of specific local water supply conditions per §356.2(b). This section will provide a description of the water supply conditions for the preceding water year along with a graphical representation of the conditions. A water year shall be defined as the 12-month period starting October 1 through September 30 of the following year. Water supply conditions that will be discussed include:

- Groundwater Elevations – elevation data from the monitoring network, including hydrographs for the representative wells and groundwater contours for spring and fall.
- Groundwater Extractions – groundwater pumping estimates and measurements for agricultural, municipal ~~and~~ domestic pumping, and industrial² generated from the water budget
- Surface Water Supply – data from surface water supplies to irrigation demand³, conveyance losses, and groundwater recharge, generated from the water budget

¹ This includes precipitation and reference evapotranspiration (ET_o) from CIMIS and streamflow data from CDEC, BVWUA, Brookfield Energy, and other sources.

² This includes both in-basin industries as well as fire, wildlife, logging, and construction.

³ Summer flows in the BVGB are 100% allocated under existing water rights.

- Total Water Use – total water uses by agricultural, municipal and domestic sectors, generated from the water budget
- Change in Groundwater Storage – a determination of the groundwater (volumetric) change, calculated from groundwater difference contours and/or the water budget.

10.2.3 Plan Progress

The annual report also needs to describe progress of the Plan since the previous report, including progress ~~toward-in maintaining~~achieving measurable objectives and status of projects and management actions.

10.3 Data Management System

The Regs require a data management system (DMS), but do not give strict guidance on format or how to develop and maintain the DMS. §352.6 of the Regs states:

“Each Agency shall develop and maintain a data management system that is capable of storing and reporting information relevant to the development or implementation of the Plan and monitoring of the basin.”

The data management system proposed for Big Valley is separated into two categories: data for annual reports and data for GSP updates.

10.3.1 Annual Report DMS

Annual reports require water level data and other data to update the water budget. **Table 10-1** lists the data needed and the sources of those data. The DMS can be stored using common software (Microsoft Excel and ArcGIS) on GSA servers. Water level data will be downloaded from the state website⁴ and stored in an Excel hydrograph spreadsheet tool. This tool will store the well information, water level data, water year types, and sustainable management criteria (minimum thresholds and measurable objectives). The tool will allow users to generate hydrographs and provide the data needed to generate contours. **Figure 10-1** shows a screenshot of the Excel Water Level Tool for storing water well and water level data and generating hydrographs.

Water budget data will also be stored in an Excel spreadsheet tool as shown in **Figure 10-2**. Each of these spreadsheet tools has instructions, sheets to store raw data, and sheets that perform calculations and generate the needed figures for annual reports or other purposes.

Annual reports require maps, which are generated with widely-used ArcGIS software. The geographic information system (GIS) data, including base data such as streams, roads, and well locations will be organized into a folder structure as shown in **Figure 10-3**. Water level data will be imported into GIS to generate contours for annual reports.

⁴ Currently water level data for Big Valley is being managed and stored through [DWR's CASGEM system](#). Once the GSP is completed, the data will be brought into DWR's new [SGMA Portal](#) Monitoring Network Module (MNM). Data from either of these systems is available through the [SGMA Data Viewer](#).

Big Valley GSP Chapter Revised Draft
Big Valley Groundwater Basin
June 23, 2021

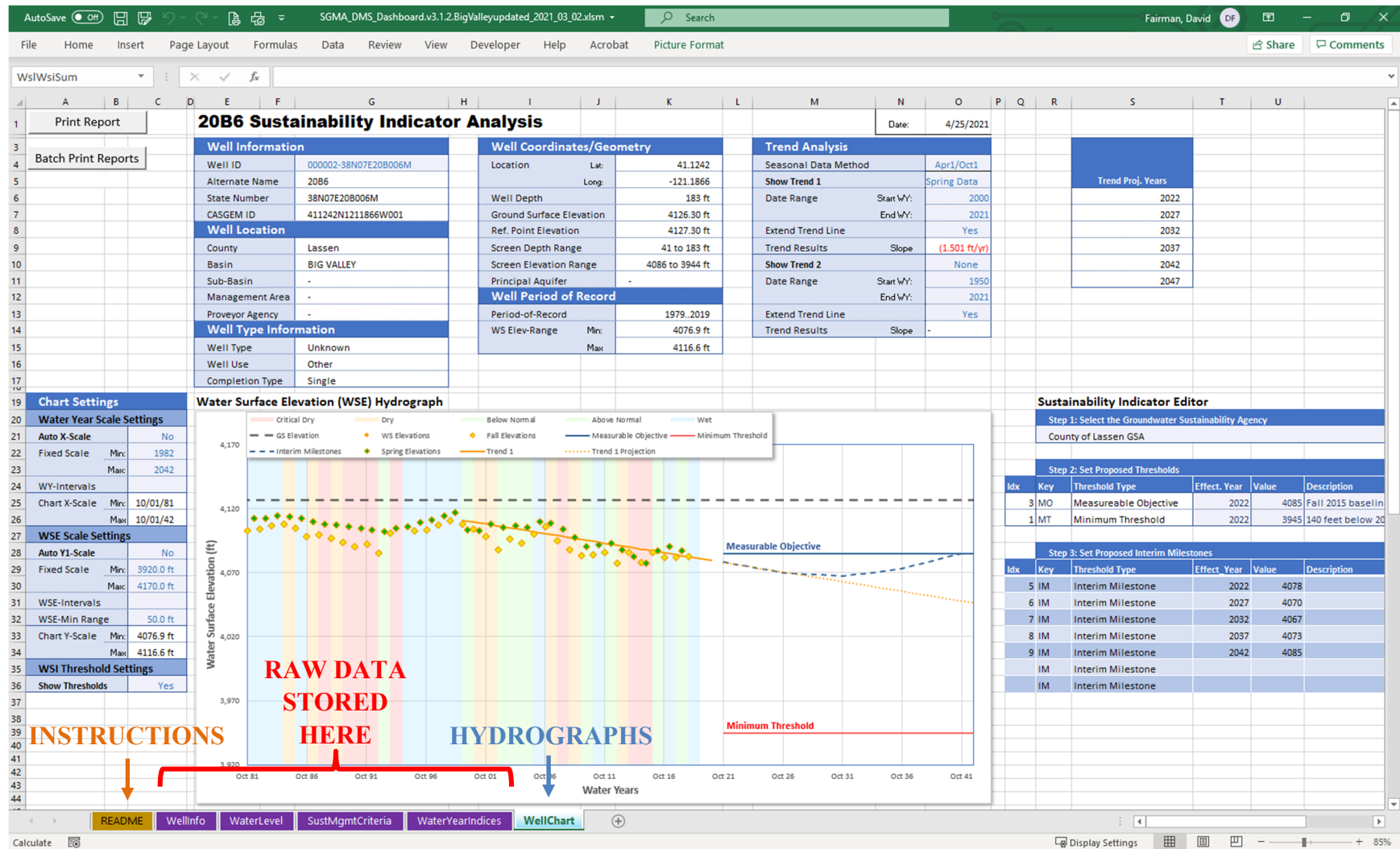


Figure 10-1 Excel Water Level Tool

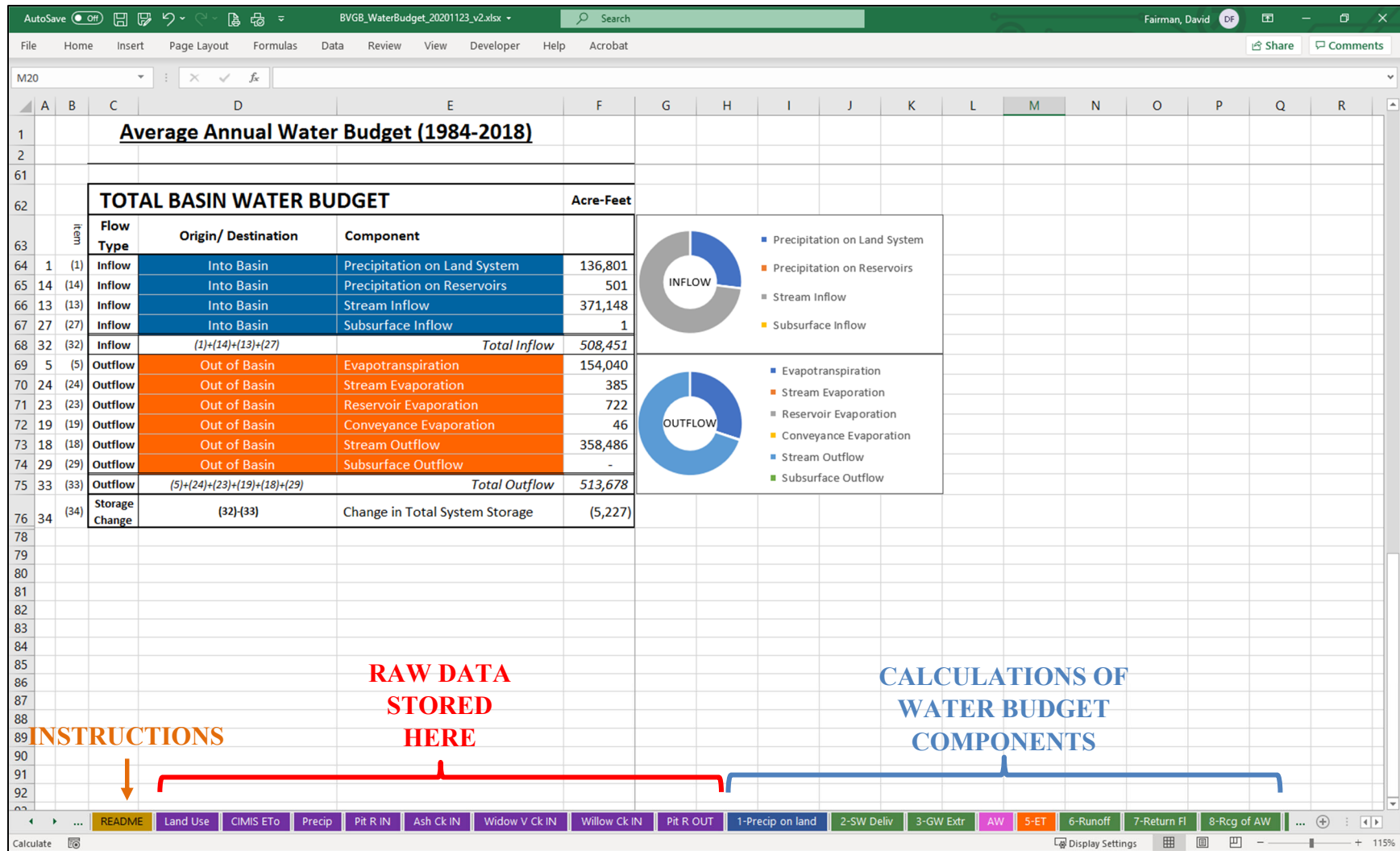


Figure 10-2 Excel Water Budget Tool

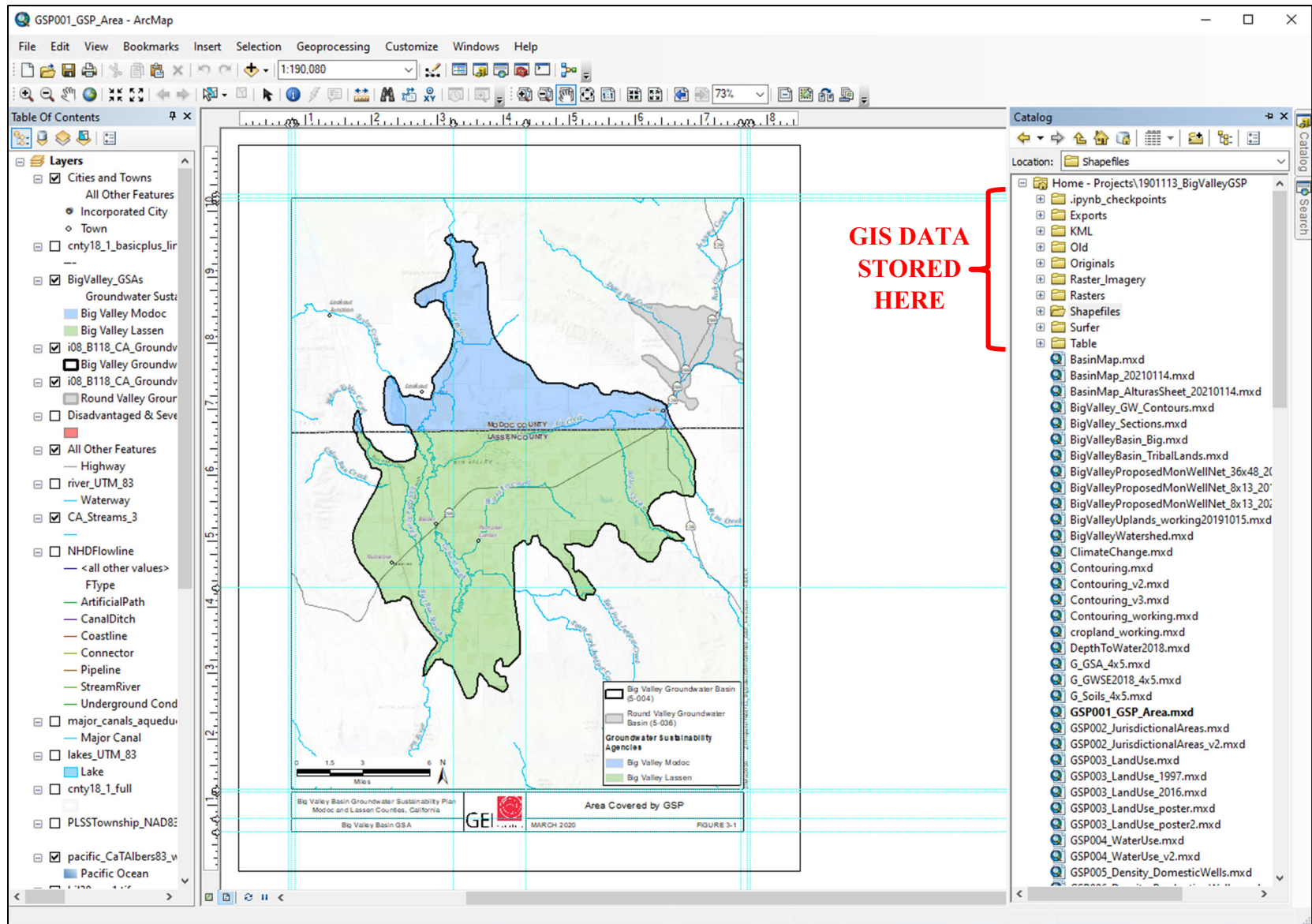


Figure 10-3 GIS Database

Table 10-1 Annual Report DMS Data Types

Data Type	Collecting Entity	Data Source	DMS Tool
Water Levels	DWR	SGMA Data Viewer	Excel Water Level Tool
Precipitation	DWR	CIMIS	Excel Water Budget Tool
Evapotranspiration	DWR	CIMIS	Excel Water Budget Tool
Streamflow (gages)	USGS/DWR	CDEC	Excel Water Budget Tool
Streamflow (water rights reporting)	SWRCB	eWRIMS	Excel Water Budget Tool
GIS Base Data ¹	GSAs	various	GIS Database

¹ Base data includes GIS layers such as the county boundaries, streams, roads, well locations, etc which generally don't change over time and don't need to be updated.

10.3.2 GSP Update DMS

Additional types of data are needed to update the GSP, listed in **Table 10-2**. Much of this additional data is GIS-based and will be stored in the GIS database, shown in **Figure 10-3**. ~~One type of data that will need its own management structure is water quality. The State Water Resources Control Board (SWRCB) makes groundwater quality data from its various programs available on its GAMA Groundwater Information System site. This water quality data will need to be downloaded from the State Water Resources Control Board's (SWRCB's) GAMA groundwater system in 2026 to support the 5-year update, and will be managed in a spreadsheet tool shown on Figure 10-4.~~

Table 10-2 GSP Update DMS Data Types

Data Type	Collecting Entity	Data Source	DMS Tool
Water Levels	DWR	SGMA Data Viewer	Excel Water Level Tool
Precipitation	DWR	CIMIS	Excel Water Budget Tool
Evapotranspiration	DWR	CIMIS	Excel Water Budget Tool
Streamflow (gages)	USGS/DWR	CDEC	Excel Water Budget Tool
Streamflow (water rights reporting)	SWRCB	eWRIMS	Excel Water Budget Tool
Water Quality	SWRCB	GAMA	Excel Water Quality Tool Data to be downloaded for 5-year update.
Land Use	DWR	SGMA Data Viewer	GIS Database
Subsidence (InSAR)	DWR	SGMA Data Viewer	GIS Database
GIS Base Data ¹	GSAs	various	GIS Database

¹ Base data includes GIS layers such as the county boundaries, streams, roads, well locations, etc which generally don't change over time and won't need to be updated.

10.4 Periodic Evaluations of GSP (5-year Updates)

Updates and amendments to the GSP can be performed at any time, but at a minimum the GSAs must submit and update and evaluation of the plan every five (5) years. (§356.4) While much of the content of the GSP will likely remain unchanged for these 5-year updates, the Regs require that most chapters of the plan be updated and supplemented with any new information obtained in the preceding five years. Chapters that are likely to require significant updates and re-evaluation include:

- Chapter 4: Hydrogeologic Conceptual Model
- Chapter 5: Groundwater Conditions
- Chapter 6: Water Budget
- Chapter 7: Sustainable Management Criteria
- Chapter 8: Monitoring Network
- Chapter 9: Projects and Management Actions

Similar to this first version of the GSP, the Basin Setting (Chapters 4 through 6) will need to be signed and stamped by a California Professional Geologist or Engineer.

10.5 Implementation Schedule

Figure 10-5 shows the implementation schedule. Schedules for individual projects are still under development in Chapter 9.

10.6 Cost of implementation

DWR gives little guidance on how to develop and define costs. An analysis of GSPs from critically overdrafted basins found a broad variety of approaches, categories of costs, and level of detail, from a single cost with no detail or justification to detailed costs for multiple categories. The purpose of this section is to present some information of cost ranges given for other basins and to give estimates of costs for the categories of implementation presented in this chapter, listed below. These costs may change based on how the GSAs choose to implement the GSP (e.g. the amount and type of public outreach and the amount and type of support sought from outside hydrology professionals such as consultants and/or UCCE).

- GSA Administration and Public Outreach
- Monitoring and Data Management
- Annual Reporting
- Plan Evaluation (5-year updates)
- Projects and Management Actions

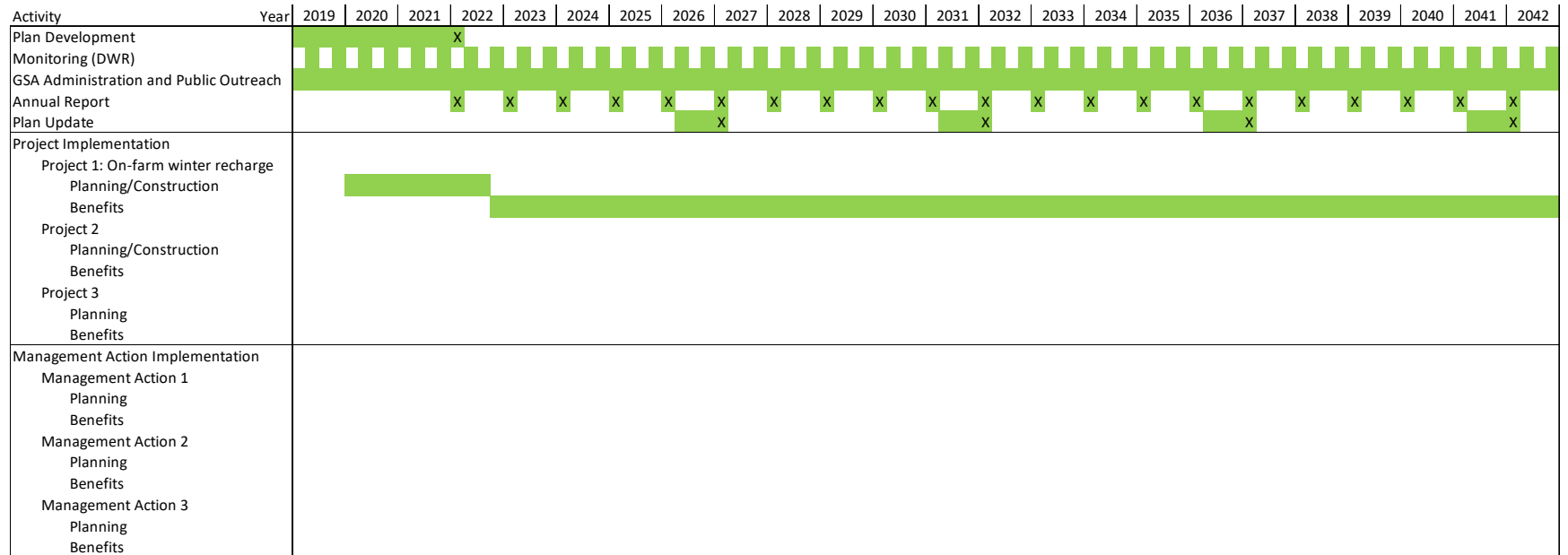


Figure 10-4 Implementation Schedule

Cost is a fundamental concern to the GSAs and stakeholders in the BVGB, as the Basin is a disadvantaged community and there is little to no revenue generated in the counties to fund the state-mandated requirements of SGMA. Therefore, the approach in implementing the plan and estimating costs is to leverage as much outside funding and technical support as possible to cover costs. (See Section 10.6 below) For costs that must be borne by the GSAs, efficient implementation methods while still meeting the SGMA requirements to support the GSP is the desired outcome. **Table 10-3** shows a summary of the costs from GSPs submitted in 2020. As mentioned, not every GSP had every category of costs listed, but the number of GSPs that did detail costs for each category is shown. It should be noted that Big Valley is extremely unique in a variety of ways documented in this GSP. However, looking at the costs estimated by others gives a check on the reasonableness of cost estimates for Big Valley.

Table 10-3 GSP Implementation Cost Statistics for 2020 GSPs in California

	Annual Cost Details						5-Year Update
	Total Annual	GSA Admin	Public Outreach	Annual Monitoring	DMS Update	Annual Report	
count	34	21	11	23	8	15	20
min	\$ 50,000	\$ 51,000	\$ 5,000	\$ 20,000	\$ 10,000	\$ 20,000	\$ 50,000
max	\$ 2,596,384	\$ 1,538,794	\$ 75,000	\$ 1,057,590	\$ 170,000	\$ 350,000	\$ 1,400,000
mean	\$ 981,296	\$ 607,861	\$ 27,573	\$ 293,907	\$ 42,875	\$ 56,267	\$ 455,369
median	\$ 720,100	\$ 418,900	\$ 20,000	\$ 136,000	\$ 20,000	\$ 25,000	\$ 330,000

Source: Fricke 2020

10.6.1 GSA Administration and Public Outreach

The fundamental activities that will need to be performed by the GSAs are public outreach and coordination of GSP activities. Public outreach may entail updates at County board of supervisors meetings and/or public outreach meetings. At a minimum the GSAs will receive and respond to public input on the Plan and inform the public about progress implementing the Plan as required by §354.10(d)(4) of the Regs. Coordination activities would include ensuring monitoring is performed, developing and/or coordinate the development of annual reports and 5-year updates, and coordinating projects and management actions. Based on current grants which have funded filling of data gaps and identifying recharge opportunities, the GSA administrative costs of projects and management actions may be largely covered by grant funds (see Section 10.6).

In other GSPs already submitted, 21 itemized GSA administration and their estimates ranged in cost from \$51,000 to over \$1.5 million per year, with a median of about \$200,000. However, most of these basins are much larger than Big Valley, have more complex governance structures (i.e. have multiple GSPs in the Basin), and more stakeholder groups. This cost for Big Valley could vary depending on the nature of public outreach written in the Plan.

10.6.2 Monitoring and Data Management

Twenty-three GSPs submitted to DWR to date have itemized annual monitoring with cost estimates ranging from \$20,000 to over \$1 million per year with a median of about \$65,000. Twelve GSPs itemized DMS updates with costs ranging from \$3,000 to \$170,000 with a median of \$15,000.

DWR staff currently measures water levels in the Basin and posts them on their website and has indicated that they will continue to do so for the foreseeable future and that they could monitor water levels in the newly constructed monitoring wells. If DWR follows through on this assumption, there would be little to no costs to the GSAs for monitoring. The GSAs would need to download and populate the DMS tools detailed above. However, for costing purposes, we have assumed this to be covered under the Annual Report cost category. There may be some minimal costs associated with hosting the servers where the data is stored, but that cost is assumed to be negligible.

If DWR chooses to discontinue its water level monitoring of wells in Big Valley, the cost could be on the order of \$2,000 to \$3,000, which equates to 40 to 60 staff-hours.

10.6.3 Annual Reporting

Annual report costs were estimated in 15 GSPs ranging from \$20,000 to \$350,000 with a median of \$25,000. Annual reports have substantial requirements and assembling the data, processing, and generating the necessary charts, maps, and tables described in Section 10.2. There are ways to streamline and automate the process, many of which are described in Section 10.2.3.

~~However, there does need to be a level of professional effort and judgement to ensure that the data is accurate and reasonable. The level of professional judgment could~~The level of effort and cost will be reduced over the course of the first few years, but an initial estimate of \$25,000 for developing an annual report, then dropping to perhaps about \$10,000. ~~In this case,~~ if the annual report is developed, written, and submitted by GSA staff, this would equate to about 200 staff-hours.

10.6.4 Plan Evaluation (5-year Updates)

The cost of updates to the GSP will be lower than the cost of initially developing the GSP. However, the Regulations require all parts of the GSP to be updated with recent data and information and will require substantial effort from a licensed professional. Of the 20 GSPs submitted that had GSP update cost estimates, they ranged from \$50,000 to \$1.4 million with a median of \$330,000. However, many of the GSPs already submitted are in basins with multiple GSPs. In those types of basins, the basin setting (Chapters 3-6) is typically performed on a basin-wide basis. Therefore, the basins that are estimating on the low end won't have to bear some of the cost the Big Valley will have to because Big Valley will have to update the basin setting. Therefore, a range of about \$200,000 to \$300,000 is estimated to update the GSP.

10.6.5 Projects and Management Actions

Costs of projects and management actions are addressed in Chapter 9.

Table 10-3 summarizes the cost estimates of annual and 5-year updates discussed above.

Table 10-4 Summary of Big Valley Cost Estimates

	Annual Cost Details				5-Year Update
	Total Annual	GSA Admin and Public Outreach	Annual Monitoring and DMS Update	Annual Report	
Low	\$ 30,000	\$ 20,000	\$ -	\$ 10,000	\$ 200,000
High	\$ 68,000	\$ 40,000	\$ 3,000	\$ 25,000	\$ 300,000

10.7 Funding Alternatives

This section discusses funding alternatives. **Table 10-5** describes the various funding options available to the GSAs. The table describes both outside funding (state and federal assistance and grants) and local funding (general fund, fees, and taxes). Annual costs are less likely to be funded directly by outside sources because of the premise of SGMA that groundwater basins are best managed locally, and administration, monitoring and reporting costs are most likely to be seen as an obligation for the local GSAs under this premise. However, 5-year updates and particularly projects and management actions are good candidates for outside funding. Some of this outside funding that currently exists could through the DWR Prop 1 grants obtained by the North Cal-Neva Resource Conservation & Development Council (North Cal-Neva) and Modoc County could potentially be leveraged to support annual reporting in the next year or two. This depends on the degree that there is overlap between the scopes of work for the grants and the annual report requirements. These two existing grants are laying the groundwork for recharge projects and filling data gaps.

The entire BVGB is disadvantaged community with much of the basin designated as severely disadvantaged. The GSAs are opposed to imposing BVAC has stated that they are unable to impose any new taxes or fees because of the inability of the disadvantaged communities to pay such costs to cover the implementation of this GSP for compliance with the annual reporting and 5-year update requirements prescribed in the GSP regulations as and the way it would harm the community and alter the ability of residents to live and work in the Basin. The GSAs will identify and pursue grants to fund the implementation of this GSP. To that end the BVGB GSA will work closely with state and federal grant administrators, including those who will look toward funding options presented by the participate in the California Financing Coordinating Committee's (CFCC) annual through their Funding Fairs. More information on CFCC including their 2021 Funding Fairs Handbook, included as **Appendix 10A**, is available at <https://www.cfcc.ca.gov/funding-fairs/>.

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Table 10-5 Summary of GSP Funding Mechanisms

Funding Mechanism		Description
Assistance Programs		DWR offers Technical Services Support and Facilitation Services Support Programs to assistance GSAs in development and implementation of their GSPs. If granted, services provided under these programs are offered at no-cost to the GSAs.
Grant Funding	State Grants	<p>DWR’s Sustainable Groundwater Management Grant Program, funded by Proposition 1 and Proposition 68, provides funding for sustainable groundwater planning and implementation projects. Both DWR and the State Water Resources Control Board offer a number of grant and loan programs that support integrated water management, watershed protection, water quality improvement, and access to safe drinking water.</p> <p>Other state agencies and entities with grant or loan programs related to water and environment include the California Department of Fish and Wildlife and California Water Commission.</p>
	Federal Grants	Federal grant and loan programs related to water planning and infrastructure include the Water Infrastructure Finance and Innovation Act (WIFIA), Water Infrastructure Improvement for the Nation Act (WIIN), and the U.S. Department of the Interior, Bureau of Reclamation’s WaterSMART program.
General Funds		Cities and counties maintain a general fund which include funding from taxes, certain fees, state shared revenue, interest income, and other revenues. While not a funding mechanism, the general funds from cities and counties may be used to fund or provide in-kind services for GSA activities and GSP implementation.
Fees	Fees	<p>Fees include “various charges levied in exchanges for a specific service” (Hanak et al., 2014). This includes water and wastewater bills, or developer or connection fees, and permitting fees.</p> <p>Under rules established by Proposition 218 (1996), new property-related fee increases are subject to a public hearing and must be approved by either a simple majority of property owners subject to the fee or by two-thirds of all registered voters (Hanak et al., 2014; League of California Cities, 2019).</p>
	Groundwater Extraction Fees	SGMA grants GSAs certain powers and authorities including the authority to impose fees. Section 10730 of the Water Code states that a GSA may “permit fees and fees on groundwater extraction

Funding Mechanism		Description
		or other regulated activity, to fund the costs of a groundwater sustainability program, including, but not limited to, preparation, adoption, and amendment of a groundwater sustainability plan, and investigations, inspections, compliance assistance, enforcement, and program administration, including a prudent reserve.”
	Assessments	Assessments are a specific type of fee that are levied on property to pay for a public improvement or service that benefits that property.
Taxes		<p>Taxes imposed by local agencies include general taxes, special taxes, and property taxes. Taxes generally fall into one of two categories: general or special (Institute for Local Government, 2016). <i>General taxes</i> are defined as “any tax imposed for general governmental purposes.” (Cal. Const. art. XIII C, § 1, subd. [a])</p> <p><i>Special taxes</i> are “any tax imposed for specific purposes, including a tax imposed for a specific purpose, which is placed into a general fund.” (Cal. Const. art. XIII C, § 1, subd. [d]). Proposition 218 (1996) states that special districts “could not levy general taxes, but only special taxes, and it clarified that local general taxes always required simple majority voter approval and that local special taxes always required two-thirds voter approval.”</p>

10.8 References

- Fricke, R., 2020. Personal communication and analysis of GSP implementation costs assembled and presented at 2020 Groundwater Resources Association’s (GRA’s) annual conference.
- Hanak, E., Gray, B., Lund, J., Mitchell, D. Fahlund, A., Jessoe, K., MedellinAzuaara, J, Misczynski, D. Nachbaur, J., and Suddeth, R., 2014. Paying for Water in California. Available at: https://www.ca-ilg.org/sites/main/files/file-attachments/basics_of_municipal_revenue_2016.pdf
- Institute for Local Government, 2016. Understanding the Basics of Municipal Revenues in California; Cities, Counties and Special Districts. Available at: https://www.ca-ilg.org/sites/main/files/file-attachments/basics_of_municipal_revenue_2016.pdf.
- League of California Cities, 2019. Proposition 26 and 218 Implementation Guide, May 2019. Available at: <https://www.cacities.org/Prop218andProp26>.

Appendix 10A

California Financing Coordinating Committee 2021 Funding Fair Handbook

MISSION STATEMENT

Infrastructure Financing for the 21st Century

The purpose of CFCC is to foster cooperation among the many funding agencies that administer water, wastewater, and other public infrastructure needs. The CFCC encourages the efficient use of funds by reducing administrative costs for recipients and funding agencies and evaluating methods for improved performance. CFCC members provide a forum to resolve state and federal program requirement conflicts that may make multi-funded projects difficult to administer. Additionally, funding fairs provide the CFCC with an opportunity to present current program information to the public. Attendees will also have the opportunity to speak with program staff directly.



What is CFCC?

Formed in 1998, CFCC composed of many state, federal, and local agencies. CFCC members facilitate and expedite the completion of various types of infrastructure projects helping customers combine the resources of different agencies. Project information is shared between members in support of identifying additional resources. Each year, CFCC members conduct free funding fairs to educate the public and potential customers about the different member agencies and the financial and technical resources available.

Who Should Attend

Representatives from water industry professionals, public works, local governments, and California Native American Tribes should attend. This includes city managers and planners, economic development and engineering professionals, officials from privately owned facilities, water and irrigation district managers, financial advisors, and project consultants.

Eligible Project Types

CFCC agencies fund the following types of eligible infrastructure projects: drinking water, wastewater, water quality, water supply, water conservation, water use efficiency, energy efficiency, and flood management. Some of the participating agencies also fund other types of infrastructure projects including streets and highways, emergency response vehicles, and community facilities.

CFCC Information

Please visit the CFCC website at www.cfcc.ca.gov for the CFCC member directory and general information.



California Financing Coordinating Committee

2021

Funding Fair

H A N D B O O K

Seeking Funding For Your Infrastructure Project?



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California Financing Coordinating Committee

State Agencies

- California Department of Housing and Community Development
 - California Infrastructure and Economic Bank
 - California Governor’s Office of Emergency Services
 - California Department of Forestry and Fire Protection
 - California Department of Resources, Recycling, and Recovery
 - California Strategic Growth Council
 - California Department of Water Resources
 - California State Water Resources Control Board

California Department of Housing and Community Development (HCD)



California Department of Housing and Community Development
2020 West El Camino Avenue
Suite 200
Sacramento, California 95833

Program Contact

Roxann Kuhnert
(916) 263-6468
Roxann.Kuhnert@hcd.ca.gov

Website: <http://www.hcd.ca.gov>



Community Development Block Grant (CDBG)



- Housing
- Wastewater
- Water
- Roadways
- Community Facilities
- Public Accessibility

May 2021

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California Department of Housing and Community Development

Program Guidelines

Community Development Block Grant

Type

Grants to city and county jurisdictions.

Funding Limits

Funding limits vary by activity as specified in each notice of funding availability (NOFA).

CEQA/NEPA

A NEPA environmental impact statement must be completed and submitted with application to meet program threshold requirements.

Terms/Dates

The NOFA released on January 29, 2021. Applications may be submitted online. Application submittal start date: January 29, 2021. Application due dates are as follows:

- Community Development Activities: April 30, 2021, by 5 p.m. (PDT)
- Economic Development Activities: May 31, 2021, by 5 p.m. (PDT)

Eligibility Requirements

Non-entitled cities or counties that do not receive funding from the U.S.

Department of Housing and Urban Development's (HUD's) CDBG entitlement program.

Jurisdictions can pay for their own system, project, or community facilities, or grant or loan funds to private or public entities.

Contact HCD regarding special restrictions for Native American and Colonia funding.

Program Contacts

Roxann Kuhnert (916) 263-6468
Felicity Gasser (916) 263-6514



May 2021

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Public Improvements – Water

Purpose

The project must principally benefit low/moderate income persons/households. For example, make water system upgrades for residents of communities with more than 51 percent of its residents being low/moderate income, or extend water service to a site for a business that creates jobs for low/moderate income persons.

Eligible Uses

- Pay for project feasibility study, final plans and specs, site acquisition and construction, and grant administration costs.
- Pay for repair or new construction of town’s water tank.
- Pay for one-time assessment fees for low-income families.
- Pay for installation of private laterals and hook-up fees for low-income families under housing rehabilitation activity.

Ineligible Uses

- Maintenance costs.
- Refinancing of existing debt.

Public Improvements – Wastewater

Purpose

The project must principally benefit low/moderate income persons/households. For example, make upgrades to a sewage collection and treatment system for residents of a community with more than 51 percent of its residents being low/moderate income, or extend wastewater system to a site for a business that creates jobs for low/moderate income persons.

Eligible Uses

- Pay for project feasibility study, final plans and specs, site acquisition and construction, and grant administration costs.
- Rehabilitate or construct sewer/water lines or sewer lift station.
- Pay for one-time assessment fees for low-income families.

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Pay for installation of private laterals and hook-up fees for low-income families under housing rehabilitation activity.

Ineligible Uses

- Maintenance costs.
- Refinancing of existing debt.

Public Improvements – Roadways

Purpose

The project must “principally” benefit low/moderate-income persons/households. For example, install new roads or curbs, gutters, and sidewalk, or new street drainage system for residents of a community with more than 51 percent of residents being low/moderate income.

Eligible Uses

Pay for project feasibility study, final plans and specs, site acquisition and construction, and grant administration costs. Must be rehabilitation or a new road and can include installing streetlights, landscaping, and sidewalks. For example, assist families to install sidewalks in front of their home.

Ineligible Uses

- Maintenance costs.

Community Facilities

Purpose

The project must “principally” benefit low/moderate-income persons/households. For example, create a facility for homeless services or a healthcare facility in a community where at least 51 percent of residents are low income.

Eligible Uses

- Pay for project feasibility study, final plans and specs, site acquisition and construction, and grant administration costs.
- Types of facilities: fire and police stations, homeless and battered family shelters, day care centers for seniors or kids, social service and health care facilities, teen centers.

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Ineligible Uses

Refinancing existing debt.

Buildings for general use by local government.

To be eligible, public facilities must provide HUD-eligible public services. Contact CDBG for additional information.

Other

Purpose

The project must “principally” benefit low/moderate-income persons/households. For example, create or improve a park in a community where at least 51 percent of residents are low/moderate income, or upgrade public access to a facility to comply with requirements of the Americans With Disability Act (ADA).

Eligible Uses

Pay for project feasibility study, final plans and specs, site acquisition and construction, and grant administration costs.

Installation of ADA improvements in public facilities.

Ineligible Uses

Maintenance costs.

Refinancing existing debt.

Building of general use by local government.

Inquire regarding special restrictions for Native American and Colonia funding.

2021 California Financing Coordinating Committee Funding Fair

Workshop Notes

[illegible]

California Infrastructure and Economic Development Bank (IBank)

1325 J Street, Suite 1300
Sacramento, California 95814
(916) 341-6600

Website: <http://www.IBank.ca.gov>
Email: IBank@IBank.ca.gov



Rendering of IBank bond-financed Powerhouse Science Center

Bonds (tax-exempt or taxable)

- Section 501(c)(3) Bonds
- Industrial Development Bonds
- Public Agency Revenue Bonds
- Exempt Facility Bonds

Types of Bonds

Section 501(c)(3) Bonds

Tax-exempt financing to eligible nonprofit public benefit corporations for the acquisition or improvement of facilities and capital assets. Typical borrowers include cultural, educational, charitable and recreational organizations, research institutes, and other types of nonprofit organizations that provide public benefits.

California Infrastructure and Economic Development Bank

Industrial Development Bonds

Tax-exempt financing up to \$10 million for qualified manufacturing and processing companies for the construction or acquisition of land, facilities, and equipment.

Exempt Facility Bonds

Tax-exempt financing for projects that are government owned or leased to private parties and may consist of improvements within publicly or privately owned facilities. The qualifying projects include private airline improvements at publicly owned airports, docks and wharves, mass commuting facilities, solid waste disposal facilities, high-speed intercity rail facilities, local district heating or cooling facilities, and facilities for the furnishing of water.

Public Agency Revenue Bonds

Bond financings for various state and local government agencies for various public or economic development projects.

Types of Loans

Loans – Infrastructure State Revolving Loan Fund (ISRF)

Purpose

The ISRF Program provides direct loan financing to public agencies and nonprofit corporations sponsored by public agencies, for a wide variety of infrastructure and economic development projects (excluding housing). ISRF financing is available in amounts ranging from \$50,000 to \$25 million with loan terms for the useful life of the project up to a maximum of 30 years.

Eligible ISRF applicants include any subdivision of a local government, including cities, counties, special districts, assessment districts, joint powers authorities, and eligible nonprofit corporations.



IBank's ISRF Program financed the new Fresno Yosemite International Airport.

Eligible ISRF projects include:

- City streets.
- County highways.
- State highways.
- Drainage, water supply, and flood control.
- Educational, cultural, and social facilities.
- Environmental mitigation measures.
- Goods movement-related infrastructure.
- Parks and recreational facilities.
- Port facilities, public transit.
- Power and communications facilities.
- Sewage collection and treatment.
- Solid waste collection and disposal.
- Water treatment and distribution.
- Defense conversion.
- Public safety facilities.
- Military infrastructure.
- Industrial, utility, and commercial.

Loans – California Lending for Energy and Environmental Needs (CLEEN) Center

Purpose

The CLEEN Center provides direct loan financing to public agencies including municipalities, universities, schools, and hospitals (MUSH borrowers) to help meet the State’s goals for greenhouse gas reduction, water conservation, and environmental preservation. The CLEEN

Center offers two programs: the Statewide Energy Efficiency Program (SWEET) and the Light Emitting Diode (LED) Street Lighting Program. Financing can be in amounts from \$500 thousand to \$30 million.



Eligible CLEEN applicants include any subdivision of a local government, including cities, counties, special districts, assessment districts, joint powers authorities and nonprofit corporations (as deemed eligible), municipalities, public universities, schools, and hospitals.

Eligible CLEEN Projects include:

- Advanced metering systems to support conversion of master-metered buildings to sub-metering.
- Data center, information technology, communications.
- Energy management or control systems.
- Demand response programs.
- Water/wastewater, pipeline, mining/extraction, and similar end-use processes, facilities, buildings, and infrastructure.
- Lighting and control systems.
- Converting incandescent to CFL.
- LED repairs, replacements, and upgrades.
- Heating, ventilation, and air conditioning systems (HVAC).
- Building envelope.
- Occupant plug load management systems.
- Load reduction.
- Zero-emission vehicles.
- Hydrogen fueling stations.
- Thermal and electric energy storage.

Other projects with proven technologies will be considered.

Small Business Support

Purpose

The IBank Small Business Finance Center (SBFC) helps businesses create and retain jobs and encourages investment in low- to moderate-income communities. The SBFC has a Jump Start Loan Program, a Small Business Loan Guarantee Program, a Disaster Relief Loan Guarantee Program and a Farm Loan Program. The SBFC partners with seven Financial Development Corporations throughout the State.



Eligible Small Business Loan Guarantee applicants include eligible nonprofits and small businesses located in California with 1 to 750 employees and eligible nonprofits.

SBFC, Disaster Relief Loan Guarantee and COVID-19 Disaster Relief Loan Guarantee terms:

- Loans up to \$20 million.
- Max guarantee \$1 million.
- Guaranteed up to seven years; term can be longer.
- Guarantees up to 80 to 95 percent of loan.
- Loan interest rates negotiated between lender and borrower.
- Qualifications based on lender criteria.

Eligible uses of funds include:

- Start-up costs.
- Construction.
- Inventory.
- Working capital.
- Export financing.
- Franchise fees.

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- Business expansion.
- Lines of credit.
- Gap financing.
- Agriculture.
- Disaster relief.

California Rebuilding Loan Fund

The California Rebuilding Fund is a loan program to support California's small businesses—especially those located in economically disadvantaged and historically under-banked areas of the state. Businesses who employed 50 or less full-time equivalent employees and had gross revenues of less than \$2.5 million or below in 2019 are eligible to apply.

The loans are flexible, transparent, and are designed to help businesses access the capital and advisory services they need to get through these challenging economic times.

The loans are not forgivable in part or whole. The loans will need to be paid back over a three- or five-year term with a fixed annual interest rate that is currently 4.25 percent.

Not all businesses will be matched with a participating community lender based on each lender's initial criteria. If matched, you will be connected with a local community lender, which will be a certified Community Development Financial Institution (CDFI). The community lender will work with you on your full loan application. If approved, the loan will be made through that community lender and you will continue to work with them throughout the life of your loan.

The following criteria is the minimum required for a business to be considered eligible for a loan under this program:

- The business must have employed 50 or fewer full-time equivalent employees prior to March 2020; please note: any and all affiliates are counted in this total, including businesses with shared ownership.
- The business must have had gross revenues of less than \$2.5 million in 2019.
- The business must have suffered a direct economic hardship as a result of COVID-19 which has materially impacted operations (as evidenced by at least a significant reduction in revenues since January 2020).

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- The business must have returned to or sustained, for at least one-month, at least 30% of pre-COVID revenues relative to a similar period in 2019.
- The business must have demonstrated positive net income in 2019 (not including depreciation and amortization expenses).
- The business must have been in operation since at least June 30, 2019.
- The main office or headquarters for the business must be in California. The loan must be used to support only a business's California operations.

Eligible Jump Start Loan applicants include small businesses or individual(s) becoming a small business, located in California.

Jump Start Loan Program details:

- Borrowers must be a low-wealth entrepreneur with a business located in a declared disaster area, or
- Borrowers must be a low-wealth entrepreneur located in a low-wealth community within both:
 - A county with a per capita income equal to or less than 115 percent of the statewide average.
 - A city or unincorporated area with an unemployment rate equal to or greater than the statewide average.
- Borrowers annual income must be equal to or less than the statewide average.
- Loan proceeds must be used in California.

Eligible uses of Jump Start Loan funds include:

- Start-up costs.
- Property.
- Buildings.
- Machinery.
- Equipment.
- Inventory.
- Tenant Improvements.

Program Contacts

Direct Loans – ISRF Program and CLEEN Center

Bonds
Fariba Khoie
(916) 341-6644

SBFC
Megan Hodapp
(916) 341-6609

IBank Email
IBank@IBank.ca.gov

2021 California Financing Coordinating Committee Funding Fair

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California Governor's Office
of Emergency Services
(Cal OES)



Hazard Mitigation Assistance (HMA) Branch

California Governor's Office of Emergency Services
3650 Schriever Avenue
Mather, California 95655

Program Contacts

Ron Miller
Hazard Mitigation Operations
and Technical Analysis
(916) 845-8853
Ron.Miller@caloes.ca.gov

Carlene Croisdale
Hazard Mitigation Assistance
(916) 328-7553
Carlene.Croisdale@caloes.ca.gov

The Hazard Mitigation Assistance (HMA) Branch works to reduce vulnerability to disasters and their effects and promote community resiliency after a hazard event. Furthermore, HMA programs reduce response and recovery resource requirements in the wake of a disaster or incident, which results in a safer community that is less reliant on external financial assistance.

Visit Us

Cal OES website: <https://www.caloes.ca.gov/home>

Hazard Mitigation Grant Program (HMGP) website:
<https://www.caloes.ca.gov/cal-oes-divisions/recovery/disaster-mitigation-technical-support/404-hazard-mitigation-grant-program>

Pre-Disaster Mitigation & Flood Mitigation Assistance Program website:
<https://www.caloes.ca.gov/cal-oes-divisions/hazard-mitigation/pre-disaster-flood-mitigation>

HMA Eligibility Requirements

Eligible applicants include:

- Local and State governments.
- Federally recognized Tribes.
- Private nonprofit (PNP) organizations providing essential government services.
- Special districts.

Hazard Mitigation Assistance Criteria:

- Programs HMGP, Building Resilient Infrastructure and Communities (BRIC) and Flood Mitigation Assistance (FMA).
- Must have a Federal Emergency Management Agency (FEMA)-approved Local Hazard Mitigation Plan (LHMP); plans are valid for five years.
- PNPs are exempt from the LHMP requirement.
- 25 percent non-federal cost share (match) required.
- 36-month grant performance period.
- Must obtain environmental clearances (CEQA and NEPA).
- Projects must demonstrate cost-effectiveness.
- Projects must be a stand-alone solution to mitigate risk to life or property from a natural hazard.

How to Apply for HMA Funding at Cal OES

Visit the Cal OES HMGP website for funding opportunities resulting from presidentially declared major disasters.

Visit the Cal OES pre-disaster mitigation (PDM)/FMA website for information about the annual hazard mitigation funding opportunities.

For more detailed information on eligibility criteria, visit the FEMA Hazard Mitigation Assistance Guidance website.

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Funding Programs

Hazard Mitigation Grant Program (HMGP)

Purpose

HMGP funds development of local hazard mitigation plans and hazard mitigation measures to reduce the long-term risk of loss of life and property from future natural hazards and disasters.

Types of projects include:

- Hazard mitigation planning.
- Hazardous fuels reduction.
- Ignition resistant construction.
- Defensible space.
- Post-disaster code enforcement.
- Soil stabilization.
- Erosion control.
- Localized and non-localized flood risk reduction.
- Structure elevation.
- Critical facility generators.
- Dry flood proofing.
- Mitigation reconstruction.
- Structural and non-structural retrofitting of existing buildings.
- Property acquisition.

Funding Availability

HMGP funding is available following a presidential major disaster declaration. The amount of HMGP funding available to the applicant is based on the estimated total federal assistance that FEMA provides for disaster recovery under presidential major disaster declarations.

Terms/Dates

The application process begins approximately one month after the date of the major disaster declaration. Selected projects have a 36-month period of performance (POP).

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Building Resilient Infrastructure and Communities (BRICs)

Purpose

BRIC implements a sustained pre-disaster natural hazard mitigation program to reduce overall risk to the population and structures from future hazard events, while also reducing reliance on federal funding in future disasters. Eligible subapplicants with projects that mitigate risk to public infrastructure, include innovative partnerships, mitigate risk to one or more lifelines, incorporate nature-based solutions, or incentivize adoption and enforcement of modern building codes are especially encouraged to apply.

Types of projects include:

- Hazard mitigation planning.
- Hazardous fuels reduction.
- Ignition resistant construction.
- Defensible space.
- Post-disaster code enforcement.
- Soil stabilization.
- Erosion control.
- Localized and non-localized flood risk reduction.
- Structure elevation.
- Critical facility generators.
- Dry flood proofing.
- Mitigation reconstruction.
- Structural and non-structural retrofitting of existing buildings.
- Property acquisition.

Funding Availability

BRIC provides funding on an annual basis.

Terms/Dates

The funding cycle for PDM begins with FEMA's release of the notice of funding opportunity (NOFO), typically mid-to-late summer, and subapplications are due to Cal OES in November. Please note that the application due date provided in the NOFO is for the State (Cal OES) to submit the overall funding request to FEMA. Selected projects have a 36-month POP, with potential for longer periods, if justified.

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Flood Mitigation Assistance Program (FMA)

Purpose

FMA provides funding to reduce or eliminate the risk of flood damage to buildings insured under the National Flood Insurance Program.

Types of projects include:

- Mitigate severe repetitive loss and repetitive loss properties.
- Acquisition and demolition or relocation.
- Structure elevation.
- Localized flood control.
- Infrastructure protective measures.
- Floodwater storage and diversion.
- Stormwater management.
- Utility protective measures.

Funding Availability

FMA provides funding on an annual basis.

Terms/Dates

The funding cycle for PDM begins with FEMA's release of the NOFO, typically mid-to-late summer, and subapplications are due to OES in November. Selected projects have a 36-month POP.

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Workshop Notes

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California Department of Forestry and
Fire Prevention (CAL FIRE) Grant Program



The California Department of Forestry and Fire Prevention (CAL FIRE) offers several grant opportunities, each with its own scope and funding priorities.

For detailed information on eligibility criteria, visit the CAL FIRE Grant Program website at <https://www.fire.ca.gov/grants/>. Assistance guidance is available.

Fire Prevention

Through the California Climate Investments (CCI) Fire Prevention Grant Program, CAL FIRE provides funding for local projects and activities that address the risk of wildfire and reduce wildfire potential to forested and forest adjacent communities. Funded activities include hazardous fuel reduction, fire prevention planning, and fire prevention education with an emphasis on improving public health and safety while reducing greenhouse gas emissions.

For more information on this program, email an inquiry to FPGrants@fire.ca.gov.

Forest Health

Through the CCI Forest Health Grant Program, CAL FIRE funds projects that proactively restore forest health to reduce greenhouse gases, protect upper watersheds where the state's water supply originates, promote the long-term storage of carbon in forest trees and soils, minimize the loss of forest carbon from large, intense wildfires, and further the goals of the California Global Warming Solutions Act of 2006 (Assembly Bill 32).

The emphasis of the Forest Health Program is to increase the carbon stored in living trees and protect forests, fish and wildlife habitats, native plant species, and water. This effort requires preventing epidemic tree mortality, protecting water quality in upper watersheds, and creating forests consisting of optimally spaced trees that are resilient to disturbances such as wildfire and tree mortality. Forests with these attributes will be able to store carbon for long time periods with a lower risk of loss to wildfire or insects and disease.

For more information about this program, email an inquiry to ForestHealth@fire.ca.gov.

Urban and Community Forestry

Through the Urban & Community Forestry Grant Program, CAL FIRE utilizes CCI funds to optimize the benefits of trees and related vegetation through multiple-objective projects as specified in the California Urban Forestry Act of 1978 (Public Resources Code 4799.06-4799.12). These projects further the goals of the California Global Warming Solutions Act of 2006 (Assembly Bill 32), result in a significant greenhouse gas benefit, and provide environmental services and cost-effective solutions to the needs of urban communities and local agencies. Co-benefits of the projects include increased water supply, clean air and water, reduced energy use, flood and storm water management, recreation, urban revitalization, improved public health, improved urban forest management, and producing useful products such as bio-fuel, clean energy, and high-quality wood.

For further information about this program, email john.melvin@fire.ca.gov.

2021 California Financing Coordinating Committee Funding Fair

Workshop Notes

[illegible]

California Department of Resources, Recycling, and Recovery (CalRecycle)

California Department of Resources,
Recycling, and Recovery
1001 I Street
Sacramento, California 95814
Email: loans@calrecycle.ca.gov
GHGReductions@calrecycle.ca.gov



Program Contacts

Chris Houlemard
CalRecycle Loan Programs
Loans Unit
(916) 341-6375
Chris.Houlemard@calrecycle.ca.gov
loans@calrecycle.ca.gov

Shirley Hom
CalRecycle Grant Programs
Grants and Payments Unit
(916) 341-6751
Shirley.Hom@calrecycle.ca.gov
GHGReductions@calrecycle.ca.gov

The California Department of Resources Recycling and Recovery (CalRecycle) offers funding opportunities authorized by legislation to assist public and private entities in the safe and effective management of the waste stream.

Visit Us

CalRecycle website: <https://www.calrecycle.ca.gov/>
CalRecycle funding programs: <https://www.calrecycle.ca.gov/funding>

CalRecycle on Social Media



CalRecycle



@calrecycle



calrecycle



CalRecycle

How to Apply for Funding at CalRecycle

Visit <https://www.calrecycle.ca.gov/Funding/> to learn more about loan programs, open grant solicitations, public comment opportunities, program contacts, and application timing.

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California Department of Resources, Recycling, and Recovery

Funding Programs

CalRecycle Loan Programs

Recycling Market Development Revolving Loan Program

Purpose

CalRecycle administers a Recycling Market Development Zone (RMDZ) Loan Program to encourage California-based recycling businesses located within California financing businesses that prevent, reduce, or recycle recovered waste materials through value-added processing or manufacturing. Facilities must be located within a CalRecycle-designated RMDZ and use postconsumer or secondary recovered waste feedstock generated in California.

- Available Funds: \$6,250,000 as of March 2, 2020.
- Interest Rate: 4.0 percent.
- For updates, email an inquiry to Loans@Calrecycle.ca.gov.

Eligible Applicants

All projects must be located in a CalRecycle-designated RMDZ, which can be determined by entering the project physical address into the [RMDZ Zone Search, Map, and Profiles](#) website. In the case of mobile operations, the primary business location for the project must be located within the RMDZ.

Eligible applicants include:

- Private, for-profit entities.
- Nonprofit organizations (except private schools).
- Local government entities:
 - Cities, counties, and cities and counties combined.
 - Regional or local sanitation agencies, waste agencies, and joint powers authority.

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Funding

For more information about the RMDZ Loan Program, including eligible/ineligible project types, download the [RMDZ Eligibility Criteria](#).

- Eligibility criteria includes:
- \$2,000,000 or 75 percent of total project cost, whichever is less.
 - A borrower and its related entities may receive more than one RMDZ loan but may not have more than \$3,000,000 principal outstanding on all RMDZ loans.
 - Term is up to 10 years when secured by business assets or up to 15 years when secured by real estate.
 - Matching funds of at least 25 percent of the total project are required.
 - Collateral is required.

Application

To view the application materials, visit the program's [Forms and Documents](#) webpage. Before applying for a loan contact CalRecycle (see the "Questions" section below).

Questions

To learn more about the RMDZ program or apply for a loan, complete and submit the [contact form](#) or contact your local zone administrator, or CalRecycle's zone liaison for that area.

General information can also be obtained by calling (916) 341-6199 or emailing LAMD@CalRecycle.ca.gov

For answers to loan program-specific questions, email an inquiry to Loans@CalRecycle.ca.gov.

Greenhouse Gas Reduction (GHG) Loan Program

Purpose

The GHG Reduction Loan Program provides funds to support new or expanded organics infrastructure, such as composting and anaerobic digestion facilities, as well as for facilities that manufacture fiber, plastic, or glass waste materials into beneficial products. The purpose of this investment is to further the purposes of the California Global Warming Solutions Act (Assembly Bill 32), reduce methane

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emissions from landfills and further GHG reductions in upstream resource management and manufacturing processes; benefit disadvantaged communities (DACs) by upgrading existing facilities and, where warranted, establishing new facilities that reduce GHG emissions; result in air and water quality improvements; and create jobs.

- Available Funds: \$2,500,000 as of March 2, 2020.
- Interest Rate: 4.0 percent.
- For updates, email an inquiry to Loans@CalRecycle.ca.gov.

Funding

- \$2,000,000 or 75 percent of total project cost, whichever is less.
- A borrower and its related entities may receive more than one GHG loan but may not have more than \$3,000,000 principal outstanding on all GHG loans.
- Term is up to 10 years when secured by business assets or up to 15 years when secured by real estate.
- Matching funds of at least 25 percent of the total project are required.
- Collateral is required.

Application

To view the application materials, visit the program's [Forms and Documents](#) webpage. Before applying for a loan, contact CalRecycle (see the "Questions" section below).

Questions

For answers to program-specific questions, complete and submit the [contact form](#) or send an email to Loans@CalRecycle.ca.gov.

Greenhouse Gas Reduction Grant Programs

CalRecycle established the Greenhouse Gas Reduction Grant Programs (listed below with web links) to provide financial incentives for capital investments in infrastructure for aerobic composting, anaerobic digestion, and recycling and manufacturing facilities that will reduce greenhouse gas emissions. A priority is to realize environmental and economic benefits in disadvantaged and low-income communities. These grants promote California infrastructure developments that

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achieve greenhouse gas emission reductions by diverting more materials from landfills and producing beneficial products such as soil amendments, renewable fuels or recycled-content products.

Greenhouse Gas Reduction Grant Programs

- Food Waste Prevention and Rescue Grant Program
- Organics Grant Program
- Recycled Fiber, Plastic, and Glass Grant Program
- Greenhouse Gas Reduction Loan Program
- Pilot Reuse Grant Program (new)
- Community Composting Grant Program (new)

Listserv

Join the [Greenhouse Gas Reduction Programs Listserv](#) to be notified by email about program updates and when funding becomes available.

2021 California Financing Coordinating Committee Funding Fair

Workshop Notes

[illegible]

California Strategic Growth Council (SGC)

California Strategic Growth Council
1400 10th Street
Sacramento, California 95814
Email: info@sgc.ca.gov



Program Contacts

Coral Abbott
Program Analyst
Regional Climate Collaboratives
(916) 322-6072
Coral.Abbott@sgc.ca.gov

Ena Lupine
Community Assistance Program
Manager
(916) 651-9251
Ena.Lupine@sgc.ca.gov

The California Strategic Growth Council (SGC) works collaboratively with public agencies, communities, and stakeholders to achieve sustainability, equity, economic prosperity, and quality of life for all. SGC administers a suite of grant programs funded through California Climate Investments — a statewide initiative that puts billions of cap-and-trade dollars to work reducing greenhouse gas (GHG) emissions while providing a variety of other benefits. SGC's programs fund affordable housing and transportation investments, agricultural land easements, community-led development and infrastructure projects, climate-related research investments, and technical assistance to increase capacity of local communities to compete for climate funding.

Visit Us

SGC website: <http://www.sgc.ca.gov>
SGC Listserv sign-up: <http://sgc.ca.gov/e-lists.html>

SGC on Social Media



@CalISGC



California Strategic
Growth Council



California Strategic
Growth Council

California Strategic Growth Council

SGC Funding Sources

CCI Grant Programs

Affordable Housing and Sustainable Communities Program

This program builds healthier communities and protects the environment by increasing the supply of affordable places to live near jobs, stores, transit, and other daily needs.

Transformative Climate Communities Program

This program empowers the communities most impacted by pollution to choose their own goals, strategies, and projects to reduce GHG emissions and local air pollution.

Sustainable Agricultural Lands Conservation Program

This program protects agricultural lands on the outskirts of cities and near residential neighborhoods from development.

Climate Change Research Program

This program invests in cross-cutting research investments that build community resilience, integrate land use and development considerations, and facilitate the transformation of California communities.

Climate Change Research Program

This program invests in cross-cutting research investments that build community resilience, integrate land use and development considerations, and facilitate the transformation of California communities.

Capacity Building and Technical Assistance Programs

These programs help create a more equitable playing field by increasing capacity in under-resourced communities to advance climate change mitigation, adaptation, and resilience.

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SGC Eligibility Requirements

Inquire with one of the program contacts directly to determine applicant eligibility requirements. The following entities are eligible for one or more SGC funding program.

- Public agencies (including city, county, transit agency, school district).
- Nonprofit organizations.
- Joint powers authorities.
- Housing developers.
- Land trusts.
- Universities within California (private and public).
- Federally recognized Tribes.
- California State Indian Tribes listed on the Native American Heritage Commission's California Tribal Consultation List.

Funding Programs

Affordable Housing and Sustainable Communities (AHSC)

Purpose

Increasing the supply of affordable homes and transportation options near jobs, stores, schools, and other daily needs. AHSC reduces emissions from personal vehicle use by funding projects that make it easier for residents to get out of their cars and walk, bike, or take public transit. Funded by auction proceeds from California's cap-and-trade emissions-reduction program, AHSC is administered by the Strategic Growth Council and implemented by the California Department of Housing and Community Development.

Eligible Applicants

Usual applicants include housing developers, local jurisdictions, and transit agencies. See program guidelines for the full list of applicant types.

Eligible Projects

Projects typically include a combination of the following costs, with a requirement that at least 50 percent go to housing-related expenses:

- Affordable Housing Development: Loan funding for construction of affordable housing.
- Housing-Related Infrastructure: Grant funding for infrastructure required as a condition of approval for the affordable housing development (e.g. sewer, water, streets, electric).
- Sustainable Transportation Infrastructure: Grant funding for infrastructure that enables mode-shift (e.g., new transit vehicles, sidewalks, bike lanes).
- Transportation-Related Amenities: Grant funding for improvements that are publicly accessible and provide supportive amenities to pedestrians, cyclists and transit riders (i.e., bike parking, bus shelter, benches, street trees).
- Programs: Grant funding for programs that encourage residents to walk, bike, and use public transit.

Funding Availability

Varies round to round, depending on cap-and-trade auction proceeds. For the most recent round, \$550 million was available for AHSC projects.

Terms/Dates

Continuously appropriated through cap-and-trade, with funding until 2030. Annually, a notice of funding availability is released in November. Applications are due in February, and awards are made in June.

Program Contact

Ryan Silber
ahsc@sgc.ca.gov

Transformative Climate Communities (TCC)

Purpose

TCC empowers the communities most impacted by pollution to choose their own goals, strategies, and projects to enact transformational change. TCC projects catalyze collective impact through a combination of community-driven climate projects in a single neighborhood. Projects must reduce GHG emissions significantly over time, leverage additional funding sources, and provide additional health, environmental, and economic benefits.

Eligible Applicants

A diverse range of community, business, and local government stakeholders must form a collaborative stakeholder structure to develop a shared vision of transformation for their community. This may include community-based organizations, local governments, nonprofit organizations, philanthropic organizations and foundations, faith-based organizations, coalitions or associations of nonprofits, community development finance institutions, community development corporations, joint powers authorities, and Tribal governments.

Eligible Projects

Project examples include:

- Affordable and sustainable housing developments.
- Transit stations and facilities.
- Bicycle and car share programs.
- Residential weatherization and solar projects.
- Water-energy efficiency installations.
- Urban greening projects.
- Bicycle and pedestrian facilities.
- Low-carbon transit vehicles and clean vehicle rebates.
- Health and well-being projects.

Funding Availability

Annually appropriated by the legislature, historically from the GHG Reduction Fund.

Terms/Dates

Schedule for applications and awards are dependent on the annual appropriation.

Program Contact

Saharnaz Mirzazad
tccpubliccomments@sgc.ca.gov

Sustainable Agricultural Lands Conservation (SALC)

Purpose

The protect agricultural lands that are at risk of conversion to other uses. Studies show that farmland produces 70 times less GHG emissions than urbanized land, and protecting farmland provides an opportunity to capture carbon in the land base. SALC grants simultaneously support California’s need for agricultural conservation, economic growth, and sustainable development. Both planning grants and implementation grants are available through the program.

Eligible Applicants

Planning Grants

- Cities.
- Counties.
- Resource conservation districts.
- Special districts.
- Local agency formation commissions.

Agricultural Conservation Easement Grants

- Cities.
- Counties.
- Resource conservation districts.
- Nonprofit organizations.
- Regional park or open-space Districts or authorities.

Eligible Projects

Planning grants support the development of local and regional land use policies and economic development strategies to protect critical agricultural land. The program funds strategies related to establishing and implementing goals, policies, and objectives to support the economic viability of the local agricultural sector. It also supports planning processes to identify and designate priority lands for conservation and development.

Agricultural Conservation Easement grants are used to permanently protect croplands and rangelands that are at-risk of conversion to sprawl development. Agricultural conservation easements are deed restrictions that landowners voluntarily place on their property to preserve the land’s agricultural uses.

Funding Availability

Varies round to round, depending on cap-and-trade auction proceeds.

Terms/Dates

Continuously appropriated through cap-and-trade, with funding until 2030.

Program Contact

Virginia Jameson
salcp@conservation.ca.gov

Climate Change Research (CCR)

Purpose

To invest in actionable, partnership-based research to inform climate actions that directly benefit California communities for all. CCR makes grants to research projects focused on advancing tangible outcomes and filling critical research gaps to address the State’s climate change goals — including both reducing GHGs and building resilience to the impacts of climate change. CCR requires funded research projects to incorporate meaningful engagement with communities and stakeholders in order to successfully translate research into action.

Eligible Applicants

- University of California.
- California State University.
- Federally funded national laboratories (in California).
- Private colleges and universities
- Nonprofit research institutions.

Eligible Projects

CCR funds research projects that provide information, tools, and resources to support climate action in vulnerable communities and ecosystems in cross-cutting and holistic ways. This novel research approach often involves projects that aim to reduce greenhouse gas emissions while also addressing community needs and improving ecosystem and economic outcomes around California. Successful CCR-funded projects fill knowledge gaps that inform effective and equitable interventions that both advance the implementation of California’s climate policies and result in real benefits to disadvantaged and climate-vulnerable California communities.

Funding Availability

Annually appropriated by the legislature, historically from the Greenhouse Gas Reduction Fund.

Terms/Dates

Schedule for applications and awards are dependent on the annual appropriation.

Program Contact

Elizabeth Grassi
research@sgc.ca.gov

2021 California Financing Coordinating Committee Funding Fair

Workshop Notes

[illegible]

California Department of
Water Resources (DWR)

California Department of Water Resources
P.O. Box 942836
Sacramento, California 95814
Email: funding@water.ca.gov

Program Contacts

Samuel Miller
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Division of Planning
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Leslie Pierce
Chief, Grant and Bond Services Section
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Carmel Brown
Chief, Financial Assistance Branch
Division of Regional Assistance
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DWR_IRWM@water.ca.gov
Carmel.Brown@water.ca.gov

Robert Crane
Chief, Local Assistance Projects Branch
Division of Flood Management
Flood Projects Office
(916) 574-0912
Robert.Crane@water.ca.gov

The California Department of Water Resources (DWR) financial assistance programs support integrated water management activities that address public safety, environmental stewardship, water supply reliability, and economic stability. Funded projects include ecosystem restoration, groundwater sustainability, stormwater capture and reuse, flood risk reduction, water supply and quality management, water recycling, water conservation, coastal, alluvial, decision support tools, and operational efficiency.

Visit Us

DWR website: <https://water.ca.gov>
Financial Assistance: <https://water.ca.gov/Work-with-us/Grants-and-loans>
Bond Accountability website: <http://www.bondaccountability.ca.gov>

DWR on Social Media



CADWR



@CA_DWR



cadepartmentofwaterresources

DWR Funding Sources

General Obligation Bonds

Proposition 1 – The Water Quality, Supply, and Infrastructure Improvement Act of 2014.	Proposition 50 – The Water Security, Clean Drinking Water, Coastal and Beach Protection Act of 2002
Proposition 84 – Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006.	Proposition 68 – California Drought, Water, Parks, Climate, Coastal Protection, and Outdoor Access for All Act of 2018.
General Fund – Budget enacted State fund.	

DWR Eligibility Requirements

Contact the programs to determine applicant eligibility requirements. For most programs, the following applicants are eligible:

- Groundwater sustainability agencies (GSAs), member agencies of a GSA, and those entities with an approved alternative to a groundwater sustainability plan.
- Public agencies (e.g., city, county, water/drainage district).
- Disadvantaged communities (DACs)/underrepresented communities.
- Nonprofit organizations.
- Joint powers authorities.
- Public utilities.
- Federally recognized Indian Tribes.
- California State Indian Tribes listed on the Native American Heritage Commission’s California Tribal Consultation List.
- Mutual water companies.
- Universities (some programs).

How to Apply for Funding at DWR

Visit <https://water.ca.gov/Work-with-us/Grants-and-loans> to learn more about open solicitations, public comment opportunities, program contacts, and application timing. **Contact the program representative directly to learn more about how to apply.**

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To submit applications for some programs, use the Grants Review and Tracking System at <https://water.ca.gov/Work-With-Us/Grants-And-Loans/GRanTS>.

Integrated Regional Water Management (IRWM)

To apply for IRWM grants, applicants must contact their IRWM region contact person listed in the IRWM Region Contact List at <https://water.ca.gov/Work-With-Us/Grants-And-Loans/IRWM-Grant-Programs>.

Purpose

The IRWM Proposition 1 Grant Program provides funds for development and update of IRWM plan, ensuring involvement of DACs, and implementation of projects in IRWM plans. Goals of the program include (a) help build/update water infrastructure systems that adapt to climate change, including sea level rise; (b) provide incentives for water agencies throughout each watershed to collaborate in managing the region’s water resources and setting regional priorities for water infrastructure; and (c) improve regional water self-reliance — thereby reducing reliance on the Sacramento-San Joaquin Delta.

IRWM Implementation Grant Program

The IRWM Implementation Grant Program provides funding for implementation projects that meet the intent of Proposition 1, Chapter 7.

Approximately \$459 million in grant funding was made available for grant solicitations with at least \$102 million being made available for DAC and Tribal involvement (DACTI) activities and implementation projects that provide direct benefits to DACs. To date, approximately \$267 million has been awarded for grant awards: \$4.2 million for IRWM plan developments and updates, \$51.7 million for DACTI activities, and \$211.1 million in Round 1 grant solicitation for project implementations, leaving approximately \$192 million to be awarded in Round 2 Implementation grant solicitation.

Here is a status of recent grants:

- IRWM Planning Grants – Program closed and completed February 2020.
- DACTI Program – In 2016–2017, \$51.7 million was awarded to 12 funding areas for the purpose of ensuring involvement of DACs, economically distressed areas, or underrepresented communities; and the program is currently underway.

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- IRWM Implementation Grants – Round 1 Solicitation: Completed and \$211 million has been awarded to 42 IRWM regions. Agreement Execution will be completed by spring 2021.

Potential applicants are highly encouraged to contact their respective IRWM region contact person listed in the IRWM Region Contact List at the bottom of the following link (under the “+IRWM Region Contacts” accordion)
<https://water.ca.gov/Work-With-Us/Grants-And-Loans/IRWM-Grant-Programs>.

Types of Projects

Eligible projects must be included in an adopted IRWM plan (Water Code Section 79740) that is consistent with the most recent IRWM plan standards. Eligible project types are dependent on the proposition language and can be variable in different solicitations. For Proposition 1 – Round 1 solicitation, specific details on eligible project types are provided in Section II.C of the 2019 IRWM Guidelines.

Funding Availability

Approximately \$192 million will be made available in grants for IRWM projects in Round 2. Cost share of 50 percent is required, unless waived or reduced for a project that benefits a disadvantaged community.

Details are available at <https://water.ca.gov/Work-With-Us/Grants-And-Loans/IRWM-Grant-Programs/Proposition-1/Implementation-Grants>.

Terms/Dates

IRWM Implementation Grants – Round 2 Solicitation (Tentative Schedule): Round 2 Implementation grant solicitation is tentatively scheduled to be open in late 2021 and awards to be announced in 2022–2023. Only one application is accepted per IRWM Region. Funding is awarded by “Funding Area” as defined in Proposition 1.

Program Contacts

Zaffar Eusuff
(916) 651-9266 (office)
(916) 247-9984 (cell)
Muzaffar.Eusuff@water.ca.gov

IRWM Website

<https://water.ca.gov/Work-With-Us/Grants-And-Loans/IRWM-Grant-Programs>

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Sustainable Groundwater Management Implementation Grant Program

Purpose

Competitive grants to support implementation of local and regional groundwater projects required to support sustainable groundwater management.

Eligible applicants will be GSAs; member agencies of GSAs; an entity that represents a GSA(s) which can include public agencies, nonprofit organizations, public utilities, federally recognized Indian Tribes, State Indian Tribes listed on the Native American Heritage Commission’s Tribal Consultation list, or mutual water companies; and agencies with an approved alternative plan.

Types of Projects

Details of project eligibility and preferences are listed in the Sustainable Groundwater Management (SGM) Grant Program’s Proposition 68 2019 Guidelines (2019 Guidelines) and the SGM Grant Program’s Proposition 68 Implementation Proposal Solicitation Package (2020 PSP). However, as a general guidance, eligible projects may include activities or tasks that include the development of groundwater recharge projects with surface water, stormwater, recycled water, and other conjunctive use projects, or projects that prevent or clean up contamination of groundwater that serves as a source of drinking water (Public Resources Code Section 80146[a]). Other eligible project types are projects and programs that support water supply reliability, water conservation, and water use efficiency and water banking, exchange, and reclamation.

Funding Availability

Proposition 68: \$88 million.

- \$26 million planned in Round 1 for critically overdrafted basins.
- \$62 million in Round 2 for medium- or high-priority basins.

Cost Share: 25 percent.

Minimum Award: \$2 million.

Terms/Dates

Round 1 Solicitation closed in January 2021, final awards expected to be \$26 million in May 2021 with grant terms summer 2021 through June 2024. Round 2 is expected to be advertised in spring/summer 2022 and awarded fall 2022.

Program Contact

Kelley List
(916) 651-9222
Kelley.List@water.ca.gov

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Flood Control Subventions Program (FCSP)

Purpose

DWR and the Central Valley Flood Protection Board (CVFPB) provide financial assistance to local agencies cooperating in the construction of federally authorized flood control projects. The CVFPB is responsible for the State's financial assistance share for major U.S. Army Corps of Engineers' State Plan of Flood Control projects in the Central Valley, and DWR is responsible for disbursing funds for all other projects authorized by the State.

Types of Projects

Federally authorized projects that are not part of the State Plan of Flood Control are eligible for FCSP financial assistance. Projects are typically approved by the State Legislature and specifically cited in the California Water Code.

Funding Availability

Proposition 84: \$21 million.

Dependent on the project-specific authorization in the California Water Code.

Terms/Dates

Commitments are restricted to legislatively approved projects. Projects receive reimbursement of State cost share as approved by the Legislature for the specific project.

Claim submittals accepted on a continuous basis and are generally paid on a first-come, first-served basis, based on available State funding.

Program Contact

Mehdi Mizani
(916) 480-5351
Mehdi.Mizani@water.ca.gov

FCSP Website

<https://water.ca.gov/Work-With-Us/Grants-And-Loans/Flood-Control-Subventions-Program>

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Central Valley Tributaries Program

Purpose

To help fund flood management projects that enhance water quality and ecosystems of rivers and streams tributary to the Sacramento-San Joaquin Delta.

Types of Projects

Projects must be in the Central Valley and within or adjacent to the systemwide planning area. Projects in the Sacramento-San Joaquin Delta are excluded.

Funding Availability

Proposition 1: \$25 million left to award.

Unless reduced or waived for a DAC, 50 percent cost share required.

No maximum award. Award amounts are determined on a case-by-case basis.

Terms/Dates

Guidelines and proposal solicitation package will be announced when offered. New solicitation in fall 2021.

Program Contact

Robert Crane
(916) 574-0932
Robert.Crane@water.ca.gov
CVT@water.ca.gov

Central Valley Tributaries Program Website

<https://water.ca.gov/Work-With-Us/Grants-And-Loans/Central-Valley-Tributaries-Program>

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Floodplain Management, Protection, and Risk Awareness Program

Purpose

The Floodplain Management, Protection and Risk Awareness (FMPRA) Grant Program supports local agency efforts to prepare for flooding by providing financial assistance for flood risk reduction activities related to stormwater flooding, mudslides, and flash floods. The program supports both the Public Safety Initiative announced by Governor Brown's Administration in February 2017 and the Headwaters to Floodplains Flood Safety Partnership Program.

Types of Projects

Details of the project eligibility and preferences are available in the Program Draft Guidelines and Proposal Solicitation Package on the [Program webpage](#). As general guidance, funding will be available to support both implementation projects, as well as planning and monitoring projects that will lead to the future implementation of projects that will reduce flash flooding, mudslides, or stormwater flooding.

Funding Availability

Proposition 68: \$25 million

- \$22.5 million planned for implementation projects
- \$2.5 million planned for planning and monitoring projects

Cost Share: 25 percent.

Minimum Award: Dependent upon the number of applications received.

Terms/Dates

The Draft Program Guidelines and PSP 60-day public comment period closed on February 22, 2021. The program is scheduled to release the final Guidelines and PSP in spring 2021. The solicitation period will be opened following the release of these documents. Project selection and award is scheduled for winter 2021. The Proposition 68 funding is available and must be used in awarded contracts through June 2024.

Program Contact

Mehdi Mizani
(916) 480-5351
Mehdi.Mizani@water.ca.gov

FMPRA Website

<https://water.ca.gov/Work-With-Us/Grants-And-Loans/Flood-Management-Protection-Risk-Awareness-Program>

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Water Use Efficiency CalConserve Revolving Fund Loan Program

Purpose

This program provides loans to local agencies to provide low-interest loans to customers for water use efficiency upgrades and for on-site improvements to repair or replace leaking pipes. Loan recipient agencies would then offer customer low-interest or no-interest, on-bill financing. On-bill financing would remove first-cost barriers to efficiency upgrades.

Types of Projects

On-site improvements for water use efficiency or to repair or replace leaky pipes.

Funding Availability

Proposition 1: \$7 million in funds remaining.

- \$2 million total for water-use efficiency upgrades.
- \$5 million total for leak detection and repairs.
- A loan cap of \$3 million per agency.

Unless reduced or waived for a DAC, 50 percent cost share required.

Terms/Dates

Loan awards on a continuous first-come, first-served basis, based on available State funding.

Program Contact

Daya Muralidharan
(916) 653-6604
Daya.Muralidharan@water.ca.gov
wuegrants@water.ca.gov

Water Use Efficiency CalConserve Revolving Fund Loan Program Website

<https://water.ca.gov/Work-With-Us/Grants-And-Loans/CalConserve-Water-Use-Efficiency-Loan-Program>

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Safe Drinking Water – Contaminant Removal Technologies – Ultraviolet and Ozone Treatment

Purpose

Proposition 50 Chapter 6c to provide grant funds for projects using ultra-violet (UV) or ozone disinfection technologies.

Types of Projects

Drinking water disinfecting projects using UV technology and ozone treatment. Eligible applicants are public water systems under the regulatory jurisdiction of the State Water Resource Control Board.

Funding Availability

Proposition 50: \$5 million in funds remaining in program, up to \$2 million in funds for 2021 activities.

Minimum grant is \$50,000. Up to \$5 million per grant, reimbursement format.

Terms/Dates

Concept presented to DWR prior to full application.

Grant awards on a continuous first-come, first-served basis, based on available State funding.

Program Contact

Jeremy Callihan
(916) 653-4763
Jeremy.Callihan@water.ca.gov

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Safe Drinking Water – Contaminant Removal Technologies – Pilot and Demonstration Projects

Purpose

Proposition 50 Chapter 6b to provide grant funds to test new technologies in California for the removal of specific categories of contaminants.

Types of Projects

Contaminant treatment or removal technology pilot and demonstration studies. Eligible applicants are public water systems under the regulatory jurisdiction of the State Water Resource Control Board.

Funding Availability

Proposition 50: \$5 million in funds remaining in program, up to \$3 million in funds for 2021 activities

Minimum grant is \$50,000. Up to \$5 million per grant, reimbursement format

Terms/Dates

Concept presented to DWR prior to full application.

Grant awards on a continuous first-come, first-served basis, based on available State funding.

Program Contact

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Workshop Notes

[illegible]

California State Water Resources Control Board (State Water Board)

California State Water Resources Control Board
1001 I Street
Sacramento, California 95814
(916) 327-9978



Program Contacts

Francine Fua, P.E.	Pardeep (Eric) Uppal, P.E.
Water Resource Control Engineer	Water Resource Control Engineer
Division of Financial Assistance	Division of Financial Assistance
Office of Sustainable Water Solutions	Office of Sustainable Water Solutions
Small Community Water Unit	Small Community Water Unit
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State Water Board website: <http://www.waterboards.ca.gov>

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Clean Water State Revolving Fund (CWSRF) Program

Type

Loan/Principal Forgiveness

Purpose

This program provides financing for eligible projects to restore and maintain water quality in the state.

Eligibility Requirements

Eligible applicants include cities, counties, districts, joint power authorities, State agencies, nonprofit organizations, private entities (select categories and sources), and Tribes.

CEQA Plus

CEQA documents must meet all State and federal environmental review requirements.

CEQA documents must have been adopted less than five years before the accepted date of the financing agreement. If the CEQA documents is more than five years old, the applicant must re-evaluate the project's environmental conditions in an updated environmental document.

Eligible Uses

Funding for (a) wastewater and water recycling projects: wastewater treatment, local sewers, sewer interceptors, water reclamation facilities; and (b) nonpoint source (NPS) projects identified in California's NPS plan, estuary projects, stormwater reduction, and treatment facilities.

Ineligible Uses

Operation and maintenance costs.

Funding Limits

No minimum or maximum per project funding limits. The Program has established a yearly loan funding target. Yearly funding will range between 90 and 125 percent of the \$586 million target. A project must be on the fundable list to receive financing. Placement of an application on the fundable list does not

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guarantee financing. A financing agreement will be executed for a project on the fundable list only if the application meets all applicable eligibility requirements. The State Water Board will sort and rank projects from highest priority score to lowest priority score for potential placement on the fundable list.

Given the ongoing high demand on the CWSRF though, the State Water Board will not be able to fund all the projects currently requesting funding in State fiscal year 2020–2021. Applicants whose projects are not on the fundable list are encouraged to evaluate the CWSRF's finances and competing demands on the program as described in this intended use plan (IUP) and any updates during the year and evaluate all viable, alternative financing options for their projects considering any deadlines they must meet.

Terms/Dates

Applications accepted continuously. The application for readiness scoring ended on December 31, 2020. The schedule for intended use plan development for fiscal year 2021–2022 is:

- June 15, 2021, State Water Board adoption of fiscal year 2021–2022 IUP including fundable project list.
- IUP Implementation July 1, 2021.

Program Contact

Robert Pontureri
(916) 341-5828
Robert.Pontureri@waterboards.ca.gov

Website

http://www.waterboards.ca.gov/water_issues/programs/grants_loans/srf/index.shtml

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Small Community Wastewater: Small Community Grant (SCG) Fund

Type

Grant/Loan

Purpose

The SCG fund helps finance communities with the most need, helping those that cannot afford a loan or similar financing to move forward with water quality improvements.

Eligibility Requirements

Eligible applicants include public agencies, Section 501(c)(3) nonprofit organizations, federally recognized Tribes and State Tribes that are small DACs: population less than 20,000, and median household income (MHI) is less than 80 percent of the Statewide MHI based on latest U.S. Census data.

CEQA Plus

CEQA documents must meet all State and federal environmental review requirements.

CEQA documents must have been adopted less than five years before the accepted date of the financing agreement. If the CEQA documents are more than five years old, the applicant must re-evaluate the project's environmental conditions in an updated environmental document.

Eligible Uses

For Planning projects, the maximum grant amount is \$500,000. The planning project can cover costs for engineering reports, public outreach, environmental documents, design, rate studies/Proposition 218-related work, income surveys, and sewer system evaluations.

For construction projects, the maximum grant amount is \$6,000,000. Severely DACs (MHI is less than 60 percent of the Statewide MHI based on latest U.S. Census data) are eligible for 100 percent grant. DACs (MHI less than 80 percent of the Statewide MHI based on latest U.S. Census data) are eligible for 75 percent grants and 25 percent loans. For DACs, wastewater rates need to be greater than or equal to 1.5 percent of their MHI. If the community's wastewater rates are greater than or equal to 4 percent of their MHI and their MHI is less than 100 percent of the Statewide MHI based on latest U.S. Census data, they are eligible for 50 percent grants and 50 percent loans. The maximum cost per household per project is \$30,000.

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For septic-to-sewer and regionalization projects, the maximum grant amount is \$8,000,000. Severely disadvantaged communities (SDACs) (MHI is less than 60 percent of the Statewide MHI based on latest U.S. Census data) are eligible for 100 percent grants. DACs (MHI less than 80 percent of the Statewide MHI based on latest U.S. Census data) are eligible for 75 percent grants and 25 percent loans. For DACs, wastewater rates need to be greater than or equal to 1.5 percent of their MHI. If the community's wastewater rates are greater than or equal to 4 percent of their MHI and their MHI is less than 100 percent of the Statewide MHI based on latest U.S. Census data, they are eligible for 50 percent grants and 50 percent loans. The maximum cost per household per project is \$75,000.

Ineligible Uses

Operation and maintenance costs.

Funding Limits

For fiscal year 2020–2021, approximately \$55 million is available. Applications are not scored and ranked. All new SDAC and DAC applicants will be added automatically to the fundable list. Projects may be funded at any time provided they submit a complete application and meet eligibility requirements.

Terms/Dates

Because of limited grant/principal forgiveness (PF) availability, the State Water Resources Control Board will prioritize grant/PF for small community wastewater projects. Public health projects, projects that address violations of waste discharge requirements and National Pollutant Discharge Elimination System (NPDES) permits, projects that connect previously unsewered areas or join communities to regionalize wastewater treatment works, and other projects identified as priority by the Regional Water Quality Control Boards are considered priority for grant/PF funding (priority projects).

Program Contacts

Jennifer Toney

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James Garcia

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James.Garcia@waterboards.ca.gov

Website

https://www.waterboards.ca.gov/water_issues/programs/grants_loans/sustainable_water_solutions/scwww.html

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Water Recycling Funding Program (WRFP)

Type

Grant/Loan

Purpose

This program promotes use of treated municipal wastewater to augment or offset State/local fresh water supplies.

Eligibility Requirements

Eligible applicants include public agencies, Section 501(c)(3) nonprofit organizations, federally recognized Tribes and State Tribes that, mutual water companies.

CEQA Plus

CEQA documents must meet all State and federal environmental review requirements.

CEQA documents must have been adopted less than five years before the accepted date of the financing agreement. If the CEQA documents are more than five years old, the applicant must re-evaluate the project's environmental conditions in an updated environmental document.

Eligible Uses

Eligible projects include recycled water treatment; recycled water storage, distribution, and pumping; groundwater recharge; indirect potable reuse; and surface water augmentation.

Ineligible Uses

Operation and maintenance costs.

Funding Limits

For fiscal year 2021–2022, approximately \$22 million in grant funds and approximately \$3 million in loan funds is available for WRFP construction projects. The State Water Board also has authority to commit approximately \$20.1 million in planning grants. The projects on the fundable list that appear to be eligible for these funds are requesting in excess of \$66 million.

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Therefore, DFA anticipates that all available WRFP grant and loan funds can and will be committed by June 30, 2022, with a combination of eligible water recycling projects on the fundable list.

- A planning grant can cover 50 percent of the eligible planning costs up to a maximum grant amount of \$150,000.
- A construction grant can cover 35 percent of construction costs up to a maximum grant amount of \$5,000,000.
- A construction loan will cover 50 percent of the total eligible project cost.

A project must be on the fundable list to receive financing. Placement of an application on the fundable list does not guarantee financing. A financing agreement will be executed for a project on the fundable list only if the application meets all applicable eligibility requirements. The State Water Board will sort and rank projects from highest priority score to lowest priority score for potential placement on the fundable list.

Terms/Dates

Applications accepted continuously. The application for readiness scoring ended on December 31, 2020. The schedule for IUP development for fiscal year 2021–2022 is:

- June 16, 2021, State Water Board adoption of fiscal year 2021–2022 IUP including fundable project list.
- IUP Implementation July 1, 2021.

Program Contact

Sunny Kals
(916) 341-5415

Sandeep.Kals@waterboards.ca.gov

Website

http://www.waterboards.ca.gov/water_issues/programs/grants_loans/water_recycling/

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Groundwater: Site Cleanup Subaccount Program (SCAP)

Type

Grant

Purpose

SCAP issues grants for projects that remediate the harm or threat of harm to human health, safety, or the environment caused by existing or threatened surface water or groundwater contamination.

Eligibility Requirements

Applicants with eligible projects.

Eligible Uses

Eligible projects include remediating the harm or threat of harm to human health, safety, and the environment from surface water or groundwater contamination; human-made contaminants (i.e., nitrates, PCE, TCE, DCE, DCA, pesticides, perchlorate, MTBE, hexavalent chromium.); a regulatory agency that issues a directive (unless this is infeasible); a responsible party that lacks financial resources. Projects may include site characterization, source identification, or implementation of cleanup.

Priorities

The priorities are significant threat to human health or the environment; disadvantaged or small community impact; cost and environmental benefit of project; lack of availability of other sources of funds; other State Water Board considerations.

Funding Limits

Annual appropriation of \$19.5 million.

Terms/Dates

No deadlines; continuous pre-application process.

Program Contact

Email: gwquality.funding@waterboards.ca.gov

Subject Line: SCAP

Website

https://www.waterboards.ca.gov/water_issues/programs/grants_loans/scap/

California State Water Resources Control Board	California State Water Resources Control Board
Proposition 1: Groundwater Grant Program	Drinking Water State Revolving Fund (DWSRF) or CWSRF programs, or other State or federally sponsored loan program, may be used for match. The match requirement for a DAC or economically distressed area may be reduced or waived.
Type Grant	
Purpose	
	This program provides planning and implementation grants to prevent and cleanup contamination of groundwater that serves or has served as a source of drinking water.
Eligibility Requirements	
	Eligible applicants include public agencies, Section 501(c)(3) nonprofit organizations, federally recognized Tribes and State Tribes, and mutual water companies.
CEQA	
	CEQA documents must have been adopted less than five years before the excepted date of the financing agreement. If the CEQA documents is more than five years old, the applicant must re-evaluate the project's environmental conditions in an updated environmental document.
Eligible Uses	
	Eligible projects must prevent or clean-up contamination of groundwater that serves or has a source of drinking water including wellhead treatment, installation of extraction wells combined with treatment systems, centralized groundwater treatment systems, groundwater recharge to prevent/reduce contamination of wells, and groundwater injection to prevent seawater intrusion.
Funding Limits	
	Approximately \$170 million will be available to fund projects through the Groundwater Grant Program for the Third Round solicitation. Approximately \$99 million of these funds remain for projects benefiting DACs/economically distressed areas.
	The applicant is required to provide a minimum local cost share "match funds" of 50 percent of the total project cost. Other State funds cannot be used for the required match funds. Match funds may include federal grant and loans, local and private funding, donated or "in-kind" services. Repayable financing through the

Proposition 68: Groundwater Treatment and Remediation Grant Program

Type
Grant

Purpose

This program provides grants for treatment and remediation activities that prevent or reduce the contamination of groundwater that serves as a source of drinking water.

Eligibility Requirements

Eligible applicants include public agencies, nonprofit organizations, public utilities, federally recognized Indian Tribes, California Native American Tribes, and mutual water companies.

Eligible Uses

Project must address contamination in groundwater that serves as a source of drinking water. Only projects addressing contaminants from a discharge of waste and causing contamination will be eligible.

Costs eligible for funding generally include required operations and maintenance (O&M) costs for existing treatment and remediation systems that prevent or reduce contamination of groundwater that serves as a source of drinking water, but are not limited to permitting, monitoring, reporting, utility bills, chemicals, replacement or changeout of equipment, or plant operator. The types of treatment systems that must qualify for O&M funding include wellhead treatment, extraction and treatment systems, centralized treatment systems, and source area cleanup.

It is expected that proposals will consist primarily of requests to fund O&M at existing facilities. New infrastructure projects will generally be directed to the Proposition 1 Groundwater Grant Program, with one potential exception: project proposals that include relatively small-scale capital improvements that will reduce long-term O&M costs. These capital improvements will be considered for funding if an applicant can demonstrate that the resulting reduction in O&M costs over the useful life of the improvement exceeds the proposed capital cost.

Ineligible Uses

Funds cannot be used for projects not resulting from a discharge of waste; acquisition of land through eminent domain; to pay any share of the costs of remediation recovered from parties responsible for the contamination of groundwater storage aquifer (funds may be used to pay costs that cannot be recovered from responsible parties); overhead or costs not directly to the project; or State or federal taxes.

Funding Limits

After completing two solicitations, approximately \$35 million remains uncommitted for funding for DAC drinking water projects. These funds may be utilized for noncapital expenditures, including ongoing O&M of existing facilities.

There is a minimum grant amount of \$500,000 and a maximum grant amount of \$5 million per project and a maximum grant amount of \$20 million per applicant for O&M projects, but additional funding for capital improvements to existing facilities will reduce long-term O&M costs may be provided as part of an award. Funding for such improvements has a maximum grant amount of \$2 million per project and \$5 million per applicant, which may be in addition to any funding provided for O&M activities.

The applicant is required to provide a minimum local cost share “match funds” of 50 percent of the total project cost. Match funds may include federal grant and loans, local and private funding, donated or in-kind services. Repayable financing through the DWSRF or CWSRF programs, or other State or federally sponsored loan program, may be used for match. The match requirement for a DAC or economically distressed area may be reduced or waived.

Terms/Dates

Another solicitation is not planned, but eligible projects that serve a SDAC can be funded on a continuous basis.

Program Contact

Email: gwquality.funding@waterboards.ca.gov

Subject Line: Proposition 68 Groundwater Treatment and Remediation Grant Program

Website

https://www.waterboards.ca.gov/water_issues/programs/grants_loans/propositions/prop68.html

Proposition 1: Storm Water Grant Program (SWGP)

Type

Grant

Purpose

This program provides grants for multi-benefit stormwater management projects.

Eligibility Requirements

Eligible applicants include public agencies, nonprofit organizations, public utilities, federally recognized Indian Tribes, California Native American Tribes, and mutual water companies.

Eligible Uses

Implementation grants will only be awarded to projects that are included and implemented in an adopted IRWM plan, are included in a stormwater resource plan, respond to climate change, and contribute to regional water security. Multi-benefit stormwater management projects may include green infrastructure, rainwater and stormwater capture projects, and stormwater treatment facilities.

Ineligible Uses

Ineligible projects include projects that must seek eminent domain as part of their project implementation timeline; projects that do not meet the requirements of Proposition 1 SWGP guidelines, the Storm Water Resource Plan Guidelines, Water Code, and Proposition 1, or projects that consist of only education and outreach activities.

Funding Limits

No funding is available at this time.

The minimum grant amount is \$250,000 and the maximum grant amount is \$10,000,000. The grant maximum will be applied on a per applicant basis across both Round 1 and Round 2 combined.

The applicant is required to provide a minimum local funding match of 50 percent of the total project cost. Other State funds cannot be used for the required match. The funding match may include federal grants and loans, local and private funding, donated or in-kind services. Repayable financing through the DWSRF or CWSRF

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programs, or other State or federally sponsored loan program, may be used for match. The match requirement for a DAC or economically distressed area may be reduced.

Terms/Dates

No solicitations at this time.

Program Contact

Daman Badyal

(916) 319-9436

Damanvir.Badyal@waterboards.ca.gov

Website

https://www.waterboards.ca.gov/water_issues/programs/grants_loans/swgp/prop1/

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Drinking Water State Revolving Fund (DWSRF)

Type

Low-Interest Loans and Grants

Purpose

This program provides low-interest loans and grants for planning and construction projects that support public water systems in meeting compliance with drinking water standards.

Eligibility Requirements

Eligible applicants include community water systems, nonprofit, and noncommunity water systems.

The following types of facilities may be determined to be a small SDAC with financial hardship: on-transient noncommunity water systems serving facilities such as a public school, a not-for profit private school, a daycare, a labor camp, and elder care facility or a health care facility, that are owned by a public agency or not-for profit water company.

Eligible Uses

Eligible projects include planning/design and construction of drinking water infrastructure projects including: consolidation; water meters; water storage; treatment systems; replacement of aged water transmission or distribution mains; groundwater wells, or other infrastructure; private laterals; interconnections; pipeline extensions.

Funding Limits

The maximum grant for a community is based on all funding the community receives in a five-year period. This includes planning, technical assistance, and construction funding for all DWSRF projects for the community. DACs (MHI is less than 80 percent of the Statewide MHI based on latest U.S. Census data) can receive up to 100 percent PT for eligible Category A-C projects.

The maximum amount of principal forgiveness, grant, or a combination thereof will not exceed \$60,000 per service connection for Category A-C projects and \$45,000 per service connection for Category D-F projects.

A consolidation incentive is available to public water systems who consolidate a small disadvantage community. A consolidation project will receive terms based on small DAC eligibility. The remaining public water system can receive up to \$10 million on zero-percent interest financing.

Terms/Dates

No deadlines; continuous pre-application process.

Program Contacts

Small DAC Contacts

North	South	South
Noel Gordon	Matthew Freese	Jennifer Toney
(916) 449-5630	(916) 341-5460	(916) 319-8246

Larger Systems Contact

Uyen Trinh Le
(916) 323-4719

Email: DrinkingWaterSRF@waterboards.ca.gov

Website

https://www.waterboards.ca.gov/drinking_water/services/funding/SRF.shtml

California State Water Resources Control Board	California State Water Resources Control Board
<p>Safe and Affordable Funding for Equity and Resilience Funding Program and Safe and Affordable Drinking Water Fund (Senate Bill 200)</p> <p>Type Grant</p> <p>Purpose This program provides a set of tools, funding sources, and regulatory authorities designed to ensure that one million Californians who currently lack safe drinking water receive safe and affordable drinking water as quickly as possible. The fund will provide \$130 million per year.</p> <p>Eligibility Requirements Eligible recipients include public agencies, nonprofit organizations, public utilities, mutual water companies, California Native American Tribes, administrators, and groundwater sustainability agencies.</p> <p>Eligible Uses Eligible projects may be used for various types of assistance for DACs, voluntary participants, and public water systems with demonstrated failure or risk of failure, including projects that:</p> <ul style="list-style-type: none"> • Provide interim access to safe water sources. • Contract or provide a grant to an administrator to address or percent failure to provide safe and affordable drinking water. • Improve water delivery infrastructure. • Provide technical assistance to DACs. • Consolidate systems. • Fund operation and maintenance for disadvantaged and low-income communities. <p>Terms / Dates No deadlines; continuous application process.</p>	<p>Program Contacts Jeff Wetzel (916) 323-9390 Jeff.Wetzel@waterboards.ca.gov</p> <p>James Garrett (916) 445-4218 James.Garrett@waterboards.ca.gov</p> <p>Jasmine Oaxaca (916) 341-5957 Jasmine.Oaxaca@waterboards.ca.gov</p> <p>Website https://www.waterboards.ca.gov/drinking_water/programs/safer_drinking_water/</p>
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Drinking Water for Schools Grant Program (DWFS)

Type

Grant

Purpose

This program was initially allocated and has awarded \$9.5 million in grants funds to school districts to improve access to, and the quality of, drinking water in public schools (Round 1). An additional \$6.8 million has been authorized for the DWFS Grant Program (Round 2). Grant funds were awarded to Self-Help Enterprises and Rural Community Assistance Corporation and they will act as program administrators. These administrators will work directly with eligible school districts to develop and fund projects for DAC schools. Program administrators will reach out to those schools meeting priority criteria in the next several months.

Eligibility Requirements

Eligible applicants include local educational agencies serving kindergarten or any of grades 1-12, inclusive, and preschools and child day care facilities, located on public school property. Additionally, all projects must be located at schools within, or serving, a DAC.

Eligible Uses

Eligible projects include:

- Installation or replacement of water bottle refilling stations or drinking water fountains with or without treatment devices capable of removing contaminants present in the school's water supply.
- Installation of point-of-entry, or point-of-use treatment devices for water bottle filling stations, drinking fountains, and other fixtures that provide water for human consumption.
- Installation, replacement, or repairs of drinking water fixtures and associated plumbing appurtenances that are necessary to address lead contamination identified by a school's public water system pursuant to the Lead Sampling of Drinking Water in California Schools Program and that requires a corrective action.
- Provision of interim alternative water supplies for applicants in process of implementing a permanent solution, including purchases of temporary transfer water, hauled water, and bottled water.

Funding can also be used for interim solutions. Program administrators can utilize funds to provide the following types of assistance:

- Grants to local education agencies (LEAs) for project implementation.
- Direct project implementation on behalf of LEAs, which may include reimbursement for work implemented by contractors, including Public Water Systems.
- Technical assistance with completing funding applications, overseeing and inspecting project installations, monitoring, as well as planning and conducting operations and maintenance.

Ineligible Uses

Ineligible projects include:

- Major repairs or replacement of internal building plumbing systems.
- Replacement, repairs, or rehabilitation of wells.
- Establishing connections(s) to an adjacent public water system.
- Projects that are solely demonstration or pilot studies.
- Projects that are solely education and outreach.

Funding Limits

The maximum grant amount will be \$100,000 per individual school.

Terms/Dates

Round 1. Applicants have been notified of their approved project. The DWFS Program will soon post deadlines for Round 2 projects.

Program Contact

Matt Pavelchik
(916) 323-0624
Matthew.Pavelchik@waterboards.ca.gov

Website

https://www.waterboards.ca.gov/water_issues/programs/grants_loans/schools/

Emergency Drinking Water/Cleanup and Abatement Account (CAA)

Type

Grant

Purpose

The CAA may be utilized to fund projects that clean up or abate the effects of a waste on waters of the State, or projects that address urgent drinking water needs.

Eligibility Requirements

The following entities are eligible to apply for funding to clean up a waste or abate the effect of waste on waters of the State, provided the entity has the authority to undertake the cleanup or abatement activity for which it seeks funding:

- A public agency serving a DAC.
- A Tribal government that is on the California Tribal Consultation List maintained by the Native American Heritage Commission and is a DAC, that agrees to waive tribal sovereign immunity for the explicit purpose of regulation by the State Water Board pursuant to Division 7 of the Water Code.
- A not-for-profit organization serving a DAC.
- A community water system serving a DAC.

Eligible Uses

The CAA may be used to fund projects for the cleanup or abatement where there are no viable responsible parties available to undertake the work. Eligible projects also include:

- Bottled water.
- Well repair, rehabilitation, and replacement.
- Vending machines.
- Point-of-Use devices.
- Hauled water.
- Emergency interties.
- Treatment systems.

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The CAA may be also used to fund projects for the cleanup or abatement where there are no viable responsible parties available to undertake the work. Eligible projects also include:

- Cleanup of oil, diesel, or petroleum spill, mining waste leachate drainage, or other discharges.
- Removal or contaminated sediment, illegally dumped material, or other debris.
- Remediation of contaminated groundwater.
- Watershed restoration, including habitat restoration, erosion control, algae abatement.

Ineligible Uses

Ineligible projects include projects with a responsible party that has legal obligation and financial capacity to address the waste.

Funding Limits

\$500,000 per project, for routine noncontroversial projects.

Terms/Dates

No deadlines; continuous application process.

Program Contact

Matt Pavelchik
(916) 323-0624

Matthew.Pavelchik@waterboards.ca.gov

Website

https://www.waterboards.ca.gov/water_issues/programs/grants_loans/caa/

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Orphan Site Cleanup Fund (OSCF)

Type

Grant

Purpose

This fund is a grant program that provides financial assistance for the cleanup of a site contaminated by leaking petroleum underground storage tanks (USTs) where there is no financially responsible party and the applicant is not an eligible claimant to the UST cleanup fund.

Eligibility Requirements

Eligible applicants include any entity type, except State and federal that also:

- Own or have access to the property.
- Are not eligible for UST Cleanup Fund.
- Are not responsible for the UST petroleum release.
- Are not affiliated with any person who caused or contributed to UST petroleum release.

Eligible Uses

Eligible projects include those that involve the cleanup of sites where the principal source of contamination is from an on-site UST and where there is no financially viable responsible party for the contamination.

Funding Limits

The maximum amount of grant available for an eligible occurrence is \$1 million for a grant application filed on or after January 1, 2015.

Terms/Dates

No deadlines; continuous application process.

Program Contacts

For questions regarding the OSCF electronic application submission:

- Bridget Freeborn: Bridget.Freeborn@waterboards.ca.gov
- General info: ustcleanupfund@waterboards.ca.gov (Subject line: OSCF)

Website

https://www.waterboards.ca.gov/water_issues/programs/ustcf/oscf.html

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Nonpoint Source (NPS) Grant Program

Type

Grant

Purpose

This program aims to minimize NPS pollution from land use activities in agriculture, urban development, forestry, recreational boating and marinas, hydromodification, and wetlands. The program's goal is to achieve water quality goals and maintain beneficial uses.

Eligibility Requirements

Eligible applicants include a public agency, nonprofit Section 501 (c)(3) organization, federally recognized Tribe, State agency, public college, or a federal agency. Federally recognized Tribes must provide a limited waiver of sovereign immunity for the purpose of grant enforceability.

Project must address NPS Grant Program preferences. Project must meet funding match requirements. Project must be completed in three years or less. Project must demonstrate climate change resilience.

Eligible Uses

The majority of NPS program funding is awarded to implementation proposals for impaired waters, or projects that implement practices to improve impaired waters. However, funding may be awarded to planning proposals if sufficient funding is available. In addition, some funding may be awarded to proposals for post-fire recovery and for protection of high-quality waters.

Ineligible Uses

- Private entities other than 501 (c)(3) organizations.
- Projects necessary to satisfy an enforcement or civil settlement or judicial order.
- Projects that directly support the production of cannabis.
- Projects or activities that are required by or that implement a NPDES permit or an order applicable to regulated stormwater discharges under CWA section 402(p).

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- Projects that convert or upgrade individual septic systems are ineligible. However, large-scale upgrades or conversion of an entire community, or portion of a community, that address a common impairment to the same waterbody and are part of one grant project, may be supported as long as the project meets all other eligibility requirements.
- Projects that are entirely or primarily education and outreach
- Research studies and pilot projects.

Funding Limits

Project Type	Minimum Award	Maximum Award
Implementation of practices to improve impaired waters	\$250,000	\$800,000
Implementation of practices to protect or improve high-quality waters	\$250,000	\$800,000
Implementation of practices for post-fire recovery	\$250,000	\$800,000
Planning	\$80,000	\$200,000

Terms /Dates

The 2020 solicitation period closed on December 18, 2020. State Water Board staff will assess the proposals for minimum eligibility requirements and notify applicants of their status. The 2021 NPS fundable list will be available online.

Program Contact

Jodi Pontureri
(916) 341-5306
Jodi.Pontureri@waterboards.ca.gov

Website

http://www.waterboards.ca.gov/water_issues/programs/nps/319grants.shtml

Proposition 1: Technical Assistance

Type

Grant through technical assistance providers (nonprofit organizations and/or public universities).

Purpose

TA is intended to provide technical assistance to small DACs such that they can pursue funding for drinking water, wastewater, groundwater remediation, and stormwater capital improvement projects.

Eligibility Requirements

Eligible applicants include small (is less than 3,300 service connections or less than 10,000 population) DACs (median household income is less than 80 percent statewide median household income), and on a case-by-case basis, expanded small (less than 6,600 service connections or less than 20,000 population) DACs.

Eligible Uses

TA efforts are primarily focused on development of projects for the following funding programs:

- Drinking Water – Infrastructure improvements to correct system deficiencies and improve drinking water quality.
- Wastewater – Infrastructure improvements to correct system deficiencies and prevent pollution.
- Groundwater – Projects that prevent or cleanup the contamination of groundwater that serves or has served as a source of drinking water.
- Stormwater – Multiple benefit projects designed to infiltrate, filter, store, evaporate, treat, or retain stormwater or dry weather runoff.

Assistance types:

- Coordination and development of capital improvement projects.
- Facilitation of operation and maintenance.
- Engineering and environmental analysis.
- Legal assistance.
- Leak detection/water audits.

- Compliance audits.
- Financial analysis.
- Technical managerial and financial assessments.
- Board or operator training.

Funding Limits

There are no maximum or minimum funding request amounts. Each TA project is allocated funds on a case-by-case, needs-based, basis.

Demand for drinking water/wastewater TA is extremely high. Not all eligible request can be accommodated through the TA Funding Program. Requests relating to one or more of the following will generally be given priority: systems that are out of compliance or experiencing insufficient water delivery capabilities, extension of service for drought/contamination impacted communities, consolidation projects, systems serving less than 200 connections, and applicants with small or relatively low cost needs that will enable an otherwise complete funding application to move forward.

Stormwater TA resources are limited. We are not currently accepting new communities for stormwater TA.

Terms / Dates

No deadlines; continuous application process.

Technical Assistance Request Form

To apply for technical assistance, please complete the Technical Assistance

Request Form:

https://www.waterboards.ca.gov/water_issues/programs/grants_loans/proposition1/docs/ta_request_form.pdf.

Program Contacts

Kim Dinh
(916) 341-5729

Kim.Dinh@waterboards.ca.gov

James Garrett
(916) 445-4218

James.Garrett@waterboards.ca.gov

Website

https://www.waterboards.ca.gov/water_issues/programs/grants_loans/tech_asst_funding.html

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Workshop Notes

California Financing Coordinating Committee

Federal Agencies

U.S. Department of Agriculture Rural Development

U.S. Bureau of Reclamation

U.S. Economic Development Administration

USDA Rural Development

California State Office
430 G Street, Agency 4169
Davis, California 95616
www.rd.usda.gov/ca



**United States
Department of
Agriculture**

Rural Development

Program Contacts

Lisa Butler
Community Facilities Programs Director
(559) 754-3146
Lisa.Butler@usda.gov

Daniel Cardona
Water and Environmental Programs Director
(760) 397-5949
Daniel.Cardona@usda.gov

The U.S. Department of Agriculture (USDA) Rural Development has more than 40 programs to support investments in infrastructure, housing, and economic and community development projects throughout rural California. USDA's loan, grant, and loan guarantee programs work in partnership with State and local sources to help build stronger rural communities.

Visit Us

USDA Rural Development website: <http://www.rd.usda.gov/ca>

USDA Rural Development on Social Media



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@RDCalifornia



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USDA

Programs

Water & Waste Disposal Loan & Grant Program

Type

Loan and Grant

Purpose

This program provides funding for clean and reliable drinking water systems, sanitary sewage disposal, sanitary solid waste disposal, and stormwater drainage to households and businesses in eligible rural areas.

Eligibility Requirements

This program assists qualified applicants who are not otherwise able to obtain commercial credit on reasonable terms. Eligible applicants include most State and local governmental entities, private nonprofits, and federally recognized Tribes.

CEQA/NEPA

A NEPA environment impact statement must be completed for each project.

Eligible Uses

Funds can be used to finance the acquisition, construction, or improvement of drinking water sourcing, treatment, storage and distribution; sewer collection, transmission, treatment and disposal; solid waste collection, disposal and closure; stormwater collection, transmission, and disposal.

In some case, funding also may be available for related activities such as legal and engineering fees; land acquisition, water and land rights, permits and equipment; start-up operations and maintenance; interest incurred during construction; purchase facilities to improve service or prevent loss of service; other costs determined to be necessary for completion of the project.

Ineligible Uses

Projects not modest in size, design, and cost; loan or grant finder fees; rental for use of equipment or machinery owned by applicant; projects serving non-rural areas.

Funding Limits

There is no minimum or maximum loan amount. Grants limited to 45 percent and 75 percent of project cost based on alleviating health and sanitary violations and keeping rates affordable.

Terms/Dates

The loan term is up to a 40-year payback period, based on the useful life of the facilities, and financed with a fixed interest rate. The interest rate is based on the need for the project and the median household income of the area to be served.

Program Contact

Daniel Cardona
Water and Environmental Programs Director
(760) 397-5949
Daniel.Cardona@usda.gov

For more information, visit the Water & Waste Disposal Loan & Grant Program website: <https://www.rd.usda.gov/programs-services/water-waste-disposal-loan-grant-program/ca>

Emergency Community Water Assistance Grants

Type

Grant

Purpose

This program helps eligible communities prepare, or recover from, an emergency that threatens the availability of safe, reliable drinking water. Emergency events include a variety of disasters such as drought or flood; earthquake; tornado or hurricane; disease outbreak; chemical spill, leak, or seepage; and other disasters. A federal disaster declaration is not required under this program.

Eligibility Requirements

Eligible applicants include most State and local governmental entities, nonprofit organizations, and federally recognized Tribes.

Projects must be in rural areas and towns with populations of 10,000 or less. The area to be served must also have a median household income of less than the State’s median household income for non-metropolitan areas based on latest U.S. Census data.

CEQA/NEPA

A streamlined NEPA environment impact statement is required for each project.

Eligible Uses

Water transmission line grants are available to construct waterline extensions, repair breaks or leaks in existing water distributions lines, and addresses related maintenance necessary to replenish the water supply.

Water source grants available to construct a water source, intake, or treatment facility.

Ineligible Uses

Privately owned wells are not eligible.

Funding Limits

The maximum award is \$1 million for water source grants. For water transmission grants, the maximum award is \$150,000.

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Terms/Dates

Applications are accepted year-round.

Program Contact

Daniel Cardona
Water and Environmental Programs Director
(760) 397-5949
Daniel.Cardona@usda.gov

For more information, visit the Emergency Community Water Assistance Grants website: <https://www.rd.usda.gov/programs-services/emergency-community-water-assistance-grants/ca>

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USDA Rural Development

Water & Waste Disposal Grants to Alleviate Health Risks on Tribal Lands and Colonias

Type
Grant

Purpose

This program provides low-income communities, that face significant health risks, access to safe, reliable drinking water and water disposal facilities and service.

Eligibility Requirements

Eligible applicants include State and local governmental entities serving eligible areas, nonprofit organizations, utility districts serving Colonias, federally recognized tribes.

Eligible areas are federally recognized Tribal lands; areas recognized as Colonias before October 1, 1989; rural areas and towns with a population on 10,000 or less. Residents of the area to be served must face significant health risks resulting from a lack of access to, or use of adequate, affordable water or waste disposal. Areas not located in a Colonia must meet per capita income and unemployment rate requirements.

CEQA/NEPA

A NEPA environment impact statement must be completed as part of the grant application.

Eligible Uses

Construction of basic drinking water and waste disposal systems including storm drainage. Utility districts may also be able to provide grants to individual households to install indoor plumbing and connect to the system.

Ineligible Uses

Projects that are not modest in size, design, and cost; loan or grant finder fees; rental for use of equipment or machinery owned by applicant; and projects serving non-rural areas.

Funding Limits

No maximum or minimum grant amount but limited to funding availability.

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USDA Rural Development

Terms/Dates

Applications accepted year-round.

Program Contact

Daniel Cardona
Water and Environmental Programs Director
(760) 397-5949
Daniel.Cardona@usda.gov

For more information, visit the website for Water & Waste Disposal Grants to Alleviate Health Risks on Tribal Lands and Colonias: <https://www.rd.usda.gov/programs-services/water-waste-disposal-grants-alleviate-health-risks-tribal-lands-and-colonias/ca>

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Special Evaluation Assistance for Rural Communities and Households (SEARCH)

Type
Grant

Purpose

This program helps very small, financially distressed rural communities with predevelopment feasibility studies, design, and technical assistance on proposed water and water disposal projects.

Eligibility Requirements

Eligible applicants include most State and local governmental entities, nonprofits, federally recognized Tribes.

Eligible areas are those with a population of 2,500 or less and a median household income below the poverty line or less than 80 percent of the statewide non-metropolitan median household income based on latest U.S. Census data.

CEQA/NEPA

A NEPA environment impact statement must be completed as part of grant application.

Eligible Uses

To pay predevelopment planning cost, including:

- Feasibility studies to support applications for funding water or waste disposal projects.
- Preliminary design and engineering analysis.
- Technical assistance for the development of an application for financial assistance.

The predevelopment planning cost must be related to a proposed project that meets the following requirements:

- Construct, enlarge, extend, or improve rural water sanitary sewage, solid waste disposal, and storm wastewater disposal facilities.

- Construct or relocate public buildings, roads, bridges, fences, or utilities and to make other public improvements necessary for the successful operation or protection of facilities.
- Relocate private buildings, roads bridges, or utilities, and other private improvements necessary for the successful operation or protection of facilities.

Ineligible Uses

Construction activities.

Funding Limits

There is a maximum of \$30,000 per application.

Terms/Dates

Applications are accepted year-round.

Program Contacts

Daniel Cardona
Water and Environmental Programs Director
(760) 397-5949
Daniel.Cardona@usda.gov

For more information, visit the SEARCH website:
<https://www.rd.usda.gov/programs-services/search-special-evaluation-assistance-rural-communities-and-households/ca>

Community Facilities Direct Loan & Grant

Type

Loan and Grant

Purpose

This program provides affordable funding to develop essential community facilities in rural areas. An essential community facility is defined as a facility that provides an essential service to the local community for the orderly development of the community in a primarily rural area, and does not include private, commercial, or business undertakings.

Eligibility Requirements

Eligible applicants include most State and local governmental entities, nonprofits, federally recognized Tribes.

Rural areas including cities, villages, townships, and towns including federally recognized tribal lands with no more than 20,000 residents according to the latest U.S. Census Data are eligible for this program.

CEQA/NEPA

A NEPA environment impact statement must be completed as part of the loan/grant application.

Eligible Uses

Funds can be used to purchase, construct, and/or improve essential community facilities, purchase equipment and pay related project expenses.

Examples of essential community facilities include:

- Health care facilities such as hospitals, medical clinics, dental clinics, nursing homes or assisted living facilities.
- Public facilities such as town halls, courthouses, airport hangars, or street improvements.
- Community support services such as child care centers, community centers, fairgrounds or transitional housing.

- Public safety services such as fire departments, police stations, prisons, police vehicles, fire trucks, public works vehicles or equipment.
- Educational services such as museums, libraries or private schools.
- Utility services such as telemedicine or distance learning equipment.
- Local food systems such as community gardens, food pantries, community kitchens, food banks, food hubs or greenhouses.

Ineligible Uses

Operating and working capital.

Funding Limits

There is a maximum of \$50,000 Grant per application. There is not a maximum for loan.

Terms/Dates

Applications are accepted year-round.

Program Contact

Lisa Butler
Community Facilities Programs Director
(559) 754-3146
Lisa.Butler@usda.gov

For more information, visit the Community Facilities Programs website:
<https://www.rd.usda.gov/programs-services/all-programs/community-facilities-programs>

2021 California Financing Coordinating Committee Funding Fair

Workshop Notes

[illegible]

U.S. Department of the Interior, Bureau of Reclamation (Reclamation)

Interior Region 10 California Great-Basin
CGB-410
2800 Cottage Way
Sacramento, California 95825



Website

<https://www.usbr.gov/mp/watershare/index.html>

Contact information

The U.S. Bureau of Reclamation (Reclamation) is divided into five regions. Two regions cover California: the California Great-Basin Region (CGB) (based in Sacramento, California) and the Lower Colorado Basin Region (based in Boulder City, Nevada).

Contact information for CGB Water Conservation Team is listed below. Any of the team members can answer questions about a potential project within the CGB region.

CGB Water Conservation Team Members

Angela Anderson (916) 978-5215 AAnderson@usbr.gov	Anna Sutton (916) 978-5214 ASutton@usbr.gov	Gene Lee (916) 978-5219 Glee@usbr.gov
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Thomas Hawes
(916) 978-5271
THawes@usbr.gov

David T. White
(916) 978-5208
DWhite@usbr.gov

Southern California Area Office Program Contact

Deb Whittney
(951) 201-6282 (cell)
DWhitney@usbr.gov

If you have questions about a project outside of the CBG region, contact one of the CGB team members, who will then find a Reclamation team member in the applicable region to assist you.

Reclamation Notices of Funding Opportunity

Throughout the year, Reclamation posts to www.grants.gov notices of funding opportunity (NOFOs) for various activities and projects that promote water savings. Usually, the financial assistance document is a Grant, but it instead may be a cooperative agreement.

Each NOFO describes or lists eligibility requirements, eligible uses, ineligible uses, funding limits, and terms and dates.

A NEPA compliance determination is required prior to a successful applicant using federal funds to conduct any ground-disturbing activity. If an application is successful, Reclamation will work with the applicant during the NEPA analysis process.

Below are the names, descriptions, contact information, and website for many of the NOFOs Reclamation has posted online recently.

CALFED Water Use Efficiency Grants

Purpose

These projects conserve and use water more efficiently in an agricultural or urban setting.

Program Contact

Anna Sutton
(916) 978-5214
ASutton@usbr.gov

Website

<https://www.usbr.gov/mp/watershare/index.html>

Agricultural Water Use Efficiency Grants

Purpose

These agricultural projects conserve and use water more efficiently and have on-farm benefits.

Program Contact

Thomas Hawes
(916) 978-5271
THawes@usbr.gov

Website

<https://www.usbr.gov/mp/watershare/index.html>

Sustain and Manage America's Resources for Tomorrow (WaterSMART): Basin Study Program

- Applied Science Tools
- Water Management Options Pilots

Purpose

These projects foster collaborative planning within a basin.

Program Contact

Avra Morgan
(303) 445-2906
AOMorgan@usbr.gov

Website

<https://www.usbr.gov/watersmart/>

U.S. Bureau of Reclamation

WaterSMART: Cooperative Watershed Management Program

Purpose

These projects provide a variety of benefits throughout a watershed.

Program Contact

Avra Morgan
(303) 445-2906
AOMorgan@usbr.gov

Website

<https://www.usbr.gov/watersmart/>

WaterSMART: Desalination Construction

Purpose

Funding for planning, design, and constructions of WIIN brackish groundwater and ocean desalination projects.

Program Contact

Amanda Erath
(303) 445-2766
AErath@usbr.gov

Website

<https://www.usbr.gov/watersmart/>

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U.S. Bureau of Reclamation

WaterSMART: Drought Response Program

- Drought Contingency Plans
- Drought Resiliency Projects
- Emergency Response Actions

Purpose

These projects increase water supply reliability and improve water management.

Program Contact

Sheryl Looper
(303) 445-2232
SLooper@usbr.gov

Website

<https://www.usbr.gov/watersmart/>

WaterSMART: Title XVI Program

Purpose

These projects reclaim and recycle water.

Program Contact

Amanda Erath
(303) 445-2766
AErath@usbr.gov

Website

<https://www.usbr.gov/watersmart/>

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WaterSMART: Water Conservation Field Services Program

Purpose

These projects promote water conservation planning and design.

Program Contact

Angela Anderson
(916) 978-5215
AAnderson@usbr.gov

Website

<https://www.usbr.gov/watersmart/>

WaterSMART: Water Marketing Strategy Grants

Purpose

These projects develop and implement a water marketing strategy.

Program Contact

Avra Morgan
(303) 445-2906
AOMorgan@usbr.gov

Website

<https://www.usbr.gov/watersmart/>

WaterSMART: Small-Scale Water Efficiency Projects

Purpose

These projects conserve and use water more efficiently; mitigate conflict risk in areas at a high risk of future water conflict; and accomplish other benefits that contribute to water supply reliability in the western United States.

Program Contact

Robin Graber
(303) 445-2764
RGraber@usbr.gov

Website

<https://www.usbr.gov/watersmart/>

WaterSMART: Water and Energy Efficiency Grants

Purpose

These projects conserve and use water more efficiently, increase the use of renewable energy and improve energy efficiency, benefit endangered and threatened species, facilitate water markets, or carry out other beneficial activities.

Program Contact

Josh German
(303) 445-2839
JGerman@usbr.gov

Website

<https://www.usbr.gov/watersmart/>

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Workshop Notes

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U.S. Economic Development
Administration (EDA)



U. S. Economic Development Administration
915 Second Avenue
Room 1890
Seattle, Washington 98174
Email: mmatson1@eda.gov, aking2@eda.gov

Program Contacts

Ms. Malinda Matson
Economic Development Rep.
Northern and Coastal California
(916) 235-0088
mmatson1@eda.gov

Mr. Wilfred Marshall
Economic Development Rep.
Southern and Central California
(310) 348-5386
wmmarshall@eda.gov

Ms. Asia King
Economic Development Rep.
Central Coast and Central
Valley California
(206) 247-0991
aking2@eda.gov

The U. S. Economic Development Administration (EDA) is a small, nimble agency within the U.S. Department of Commerce that provides a big impact by helping to make it easier for businesses to start and grow in the United States. We do this by working hand-in-hand with local economic development partners to advance their locally developed projects: projects that are tied to their region's long-term sustainable economic development strategy.

Visit Us

EDA website: www.eda.gov

EDA on Social Media



eda.commerce



US_EDA



U.S. Department of
Commerce, Economic
Development Administration

+EDA Eligibility Requirements

Eligible Applicants:

- Local and State governments.
- Native American Tribal governments.
- Nonprofit organizations.
- Institutions of higher education.

Economic Distress Criteria

A proposed project must be located in a region that meets EDA’s economic distress criteria. The region must be subject to one (or more) of the following economic distress criteria:

- A 24-month unemployment rate that is one percentage point greater than the national average unemployment rate.
- Per capita income that is 80 percent or less of the national average per capita income.
- Special Need: Natural disasters, plant closures, persistent poverty (see current notice of funding opportunity for complete list).

How to Apply for Funding at EDA

Visit www.grants.gov (search for keyword “EDA”) to find open solicitations, notices of funding opportunity, and get application packages.

Funding Programs

Public Works

Purpose

EDA’s Public Works Program helps distressed communities revitalize and expand and upgrade their physical infrastructure. This program enables communities to attract new industry, encourage business expansion, diversify local economies, and generate or retain long-term private sector jobs and investment through the acquisition or development of land and infrastructure improvements needed for the successful establishment or expansion of industrial or commercial enterprises.

Types of Projects

EDA Public Works Program investments help facilitate the transition of communities from being distressed to becoming competitive by developing key public infrastructure, including water and sewer systems improvements, industrial parks, business incubator facilities, expansion of port and harbor facilities, skill-training facilities, and brownfields redevelopment.

Funding Availability

EDA receives annual appropriations from Congress for the Public Works Program.

Terms/Dates

Applications are accepted on a rolling basis.

Program Contacts

Malinda Matson (916) 235-0088 mmatson1@eda.gov	Wilfred Marshall (310) 648-5386 wmarshall@eda.gov	Asia King (206) 247-0991 aking@eda.gov
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Website

<https://www.eda.gov>

Economic Adjustment Assistance

Purpose

The Economic Adjustment Assistance (EAA) Program provides a wide range of technical, planning, and public works and infrastructure assistance in regions experiencing adverse economic changes that may occur suddenly or over time. These adverse economic impacts may result from a steep decline in manufacturing employment following a plant closure, changing trade patterns, catastrophic natural disaster, a military base closure, or environmental changes and regulations.

Types of Projects

The EAA program can assist state and local entities in responding to a wide range of economic challenges. As EDA’s most flexible program, EAA can fund market and environmental studies, planning and construction grants, and capitalize or recapitalize revolving loan funds to help provide small businesses with the capital they need to grow.

Funding Availability

EDA receives annual appropriations from Congress for the Economic Adjustment Program and from time-to-time receives disaster supplemental appropriations for the Economic Adjustment Program.

Terms / Dates

Applications are accepted on a rolling basis.

Program Contacts

Malinda Matson (916) 235-0088 mmatson1@eda.gov	Wilfred Marshall (310) 648-5386 wmarshall@eda.gov	Asia King (206) 247-0991 aking2@eda.gov
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Website

<https://www.eda.gov>

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California Financing Coordinating Committee

Technical and Other Assistance

California Conservation Corps
California Rural Water Association
Rural Community Assistance Corporation
California State Library – Grants Portal

California Conservation Corps (CCC)

California Conservation Corps Headquarters
1719 24th Street
Sacramento, California 95816
(916) 341-4430



The California Conservation Corps (CCC) is a department within the California Natural Resources Agency and is the oldest and largest conservation corps in the nation.

Founded in 1976, the CCC was modeled after the original Civilian Conservation Corps of the 1930s. The CCC's mission is to protect and enhance California's natural resources and communities while empowering and developing young adults through hard work and education.

All crews are supervised and trained in safety and tool use. CCC Corpsmembers can work on a variety of projects, including site preparation, levee work, erosion control, trail building and rehabilitation, planting native trees and plants, removal of non-native or invasive plant species, and management of fire fuels.

Proposition 1

The CCC is available to partner with organizations applying to Proposition 1 grant programs to provide affordable labor for projects focused on rivers, lakes, streams, coastal waters and watersheds.

Learn more about CCC Proposition 1 work at <https://ccc.ca.gov/proposition-1>.

Proposition 68

The CCC also received direct Proposition 68 funding to complete climate adaptation and resiliency projects. Organizations may collaborate with a CCC Center to develop a project and apply for CCC Proposition 68 funds.

Learn more about CCC Proposition 68 work at <https://ccc.ca.gov/proposition-68>.

Learn more about the CCC at <https://ccc.ca.gov/>.

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California Rural Water Association (CRWA)



California Rural Water Association
Toll Free: (800) 833-0322

1234 North Market Boulevard
Phone: (916) 553-4900

Sacramento, California 95834 Fax: (916) 553-4904

www.calruralwater.org
Email: info@calruralwater.org

About CRWA

Incorporated in 1990, California Rural Water Association (CRWA) has emerged as the State's leading association dedicated to providing on-site technical assistance and specialized training for rural water and wastewater systems. Tapping into the expertise of experienced water and wastewater professionals, CRWA's governing Board of Directors, administrative staff, and technical field specialists work in concert to offer CRWA members an expansive range of essential programs and member services.

Whether a system needs help developing a new rate schedule, setting up proper testing methods, understanding those ever-changing and complex government regulations, preparing a Consumer Confidence Report, or updating operator certification requirements, CRWA is ready with assistance.

State Revolving Fund (SRF) Program

CRWA SRF Specialist Program provides State Water Board-approved utilities statewide including technical assistance; technical, managerial, and financial assessment assistance; capacity development building assistance; as well as planning and construction application assistance to the State revolving fund loan and grant funding program.

USDA Circuit Rider Program (Rural Development)

CRWA Circuit Rider programs provide a variety of hands-on and management technical assistance. They will specifically assist eligible utilities with the RD Apply application process for the USDA Rural Development Infrastructure Loan and Grant Program.

National Rural Water Association (NRWA)

CRWA staff also assist rural communities in accessing the Revolving Loan Program featured by NRW. This is a simple program with a \$100,000 maximum loan amount is typically used for preliminary engineering and funding application costs.

Visit Us

CRWA website: <https://www.calruralwater.org>

CRWA on Social Media



[@calrural](#)

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Workshop Notes

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Rural Community Assistance Corporation
(RCAC)

Rural Community Assistance Corporation
3120 Freeboard Drive
West Sacramento, California 95691
(916) 447-2854



The Rural Community Assistance Corporation (RCAC) envisions vibrant, healthy, and enduring rural communities throughout the West.

Founded in 1978, RCAC provides training, technical, and financial resources and advocacy to help rural communities achieve their goals and visions. RCAC provides a wide range of community development services for rural and Native communities, and community-based organizations in 13 western states and Pacific Islands.

Loans

RCAC was certified as a Community Development Financial Institution (CDFI) in 1996 and finances affordable housing, community facilities, utility infrastructure, and small businesses in rural communities. As a certified CDFI, RCAC fills financing gaps and serves unconventional markets.

For more information, contact your local loan officer at:
<https://www.rcac.org/lending/loan-fund-contacts/>

Environmental

RCAC works with rural water, wastewater, and solid waste systems to make them sustainable. Our environmental services are directed to small, low-income communities in rural areas and Indian country to ensure that they comply with State and federal regulations. RCAC is a Rural Community Assistance Partnership member.

Request technical assistance at:
<https://www.rcac.org/contact-us/request-for-assistance/>

Learn more about RCAC at: <https://www.rcac.org/>

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Rural Community Assistance Corporation

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As part of the Grant Information Act of 2018 (Assembly Bill 2252, Stats. 2018, Chapter 318), the California State Library has created a website (grants.ca.gov/) that provides a centralized location to find State grant opportunities. Grant seekers are now able to see all current grant and loan opportunities that are offered on a competitive or first-come basis and can search and filter their results.

State grantmaking agencies input and update their information into prescribed data fields to make all state grant opportunities searchable on grants.ca.gov. The Grant Information Act requires state agencies to provide summaries of each of their grant or loan opportunities, including, among other items, information about how to apply and links that grant seekers can follow for more details.

The California State Library worked with State agencies and various grant seekers to develop the final site but is also currently looking for feedback and suggestions. To give feedback or suggestions for improving the site, please visit grants.ca.gov/contact-us/.

Acronyms and Abbreviations

ADA	Americans With Disability Act
AHSC	Affordable Housing and Sustainable Communities Program
BRIC	Building Resilient Infrastructure and Community
CAA	Emergency Drinking Water/Cleanup and Abatement Account
CAL FIRE	California Department of Forestry and Fire Prevention
Cal OES	California Governor's Office of Emergency Services
CalRecycle	California Department of Resources, Recycling, and Recovery
CCC	California Conservation Corps
CCI	California Climate Investments
CCR	climate change research
CDBG	Community Development Block Grant
CDFI	Community Development Financial Institution
CEQA	California Environmental Quality Act
CFCC	California Financing Coordination Committee
CGB	California Great-Basin Region
CLEEN	California Lending for Energy and Environmental Needs
CRWA	California Rural Water Association
CWSRF	Clean Water State Revolving Fund
CVFPB	Central Valley Flood Protection Board
DAC	disadvantaged community
DACTI	disadvantage community and tribal involvement
DCA	dichloroacetic acid
DCE	1,2-dichloroethane
DWFS	Drinking Water for Schools Grant Program
DWSRF	Drinking Water States Revolving Fund
DWR	California Department of Water Resources
EDA	U.S. Economic Development Administration
EAA	economic adjustment assistance

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Acronyms and Abbreviations

FEMA	Federal Emergency Management Agency
FCSP	Flood Control Subventions Program
FMA	flood mitigation assistance
FMPRA	floodplain management, protection and risk awareness
GHG	greenhouse gas
GSA	groundwater sustainability agency
HCD	California Department of Housing and Community Development
HMA	Hazard Mitigation Assistance
HMGP	Hazard Mitigation Grant Program
HUD	Department of Housing and Urban Development
IBank	California Infrastructure and Economic Development Bank
IRWM	integrated regional water management
ISRF	Infrastructure State Revolving Fund
IUP	intended use plan
LEA	local education agencies
LED	light emitting diode
LHMP	local hazard mitigation plan
MHI	median household income
MTBE	methyl tere-butyl ether
MUSH	municipalities, universities, schools, and hospitals
NOFA	notice of funding availability
NOFO	notice of funding opportunity
NPDES	National Pollutant Discharge Elimination System
NPS	nonpoint source
NRWA	National Rural Water Association
O&M	operations and maintenance
OSCF	Orphan Site Cleanup Fund

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Acronyms and Abbreviations

PCE	perchloroethylene
PF	principal forgiveness
PDM	pre-disaster mitigation
PNP	private nonprofit
POP	period of performance
PSP	proposal solicitation package
Reclamation	U.S. Bureau of Reclamation
RCAC	Rural Community Assistance Corporation
RMDZ	recycling market development assistance
SALC	Sustainable Agricultural Lands Conservation
SBFC	Small Business Finance Center
SCAP	Site Cleanup Subaccount Program
SCG	small community grant
SDAC	severely disadvantaged community
SEARCH	Special Evaluation Assistance for Rural Communities and Household
SGC	California Strategic Growth Council
SGM	sustainable groundwater management
SRF	State revolving fund
SWEEP	Statewide Energy Efficiency Program
SWGP	Stormwater Grant Program
State Water Board	State Water Resources Control Board
TCC	transformative climate communities
TCE	trichloroethene
USDA	U.S. Department of Agriculture
UST	underground storage tank
UV	ultra-violet
WaterSMART	Sustain and Manage America's Resources for Tomorrow
WRFP	Water Recycling Funding Program

CALIFORNIA FINANCING COORDINATING COMMITTEE (CFCC)
COMMON FUNDING INQUIRY FORM

Instructions: An electronic copy of this form can be obtained at: www.cfcc.ca.gov Please provide the information below and e-mail the completed form to: ibank@bank.ca.gov If completing a hard copy of this form, attach responses where applicable and fax to (916) 322-6314.			
Name of Applicant or Official System Name:		County:	
<input type="checkbox"/> Municipal entity <input type="checkbox"/> Private entity, for profit		<input type="checkbox"/> Private entity, nonprofit	
Project OR problem description. Describe the problem or the need for the project, the purpose of the project, the basic design features of the project and what the project will accomplish. (Attach documentation, if available)			
Estimated Project Schedule. Provide a timeline that illustrates the estimated start and completion dates for each major phase or milestone of project development, construction and/or acquisition (including, for example, feasibility study, land acquisition, preliminary engineering, environmental review, final design and construction commencement and completion).			
Financing is needed for (check all that apply):			
<input type="checkbox"/> Feasibility Study <input type="checkbox"/> Land Acquisition <input type="checkbox"/> Other, specify: _____ <input type="checkbox"/> Rate Study <input type="checkbox"/> Project Construction and Administration <input type="checkbox"/> Engineering/Architectural			
Estimated Total Project Costs \$		Estimated amount of funding requested \$	
Multiple funding sources anticipated:		<input type="checkbox"/> Yes <input type="checkbox"/> No	
For water/sewer projects only:		Service Area Population: _____ Number of Service Connections: _____ Estimated Median Household Income of service area: \$ _____	
System ID No.:		How did you hear about the California Financing Coordinating Committee?	
All correspondence regarding this inquiry will be sent to the individual named below. You will receive a written acknowledgement of the receipt of this inquiry form and be contacted by staff of the appropriate CFCC member agencies to pursue additional assistance.			
Printed Name of Inquirer		Title	
Mailing Address (street)		City/State	
Phone Number		Zip code	
FAX Number		Email	
For CFCC Use Only:		Date of Referral to CFCC Member Agencies:	
Date of Referral to CFCC Member Agencies:		Date Responded to Applicant Inquiry:	

California Financing Coordinating Committee Federal, State, and Local Agencies



www.cfcc.ca.gov

Big Valley GSP Comment Matrix Chapter 10

Document	Page & Line Number	Comment	Date	Notes and Responses
Chap 10 Public Draft 5/26/21	10-2, 45-56	Why do we have to download, repackage, and send data back to state	6/2/2021	The GSP Regulations require this to be done as per §356 et. seq. Unlike most other basins in California, all Big Valley data is being collected by outside agencies, including DWR taking water level measurements in the Basin. Therefore, the GSAs are downloading the data from the collecting agencies (e.g. DWR) to include in the annual report. The GSAs and their consultants are working to ensure that the data and figures that need to be submitted in the annual reports are able to be generated and submitted as easily as possible with little effort from GSA staff and/or consultants. Text has been added to point out the fact that the GSAs are regurgitating data.
Chap 10 Public Draft 5/26/21	10-3, 91-92	Groundwater extractions should also include water used for fire, wildlife, logging, and construction.	6/2/2021	A note has been made for future updates to Chapter 6 (Water Budget) to include these items. For water budgeting purposes these will fit under the umbrella of industrial uses. A footnote was added to this portion of Chapter 10 referring to these uses
Chap 10 Public Draft 5/26/21	10-3, 93-94	Surface water supply is 100% allocated	6/2/2021	A footnote was added to emphasize this point.
Chap 10 Public Draft 5/26/21	10-3, 95-96	Add industrial uses	6/2/2021	Industrial was added, with a footnote detailing the various users.
Chap 10 Public Draft 5/26/21	10-3, 101	"Progress toward achieving measurable objectives". Change wording to reflect that already sustainable.	6/2/2021	Wording changed
Chap 10 Public Draft 5/26/21	10-7, 138	Why do we need to manage water quality when it is already good.	6/2/2021	The discussion and approach to water quality data was changed to reflect that the GSAs will rely on the SWRCB to store and provide water quality data via their GAMA Groundwater Information System.
Chap 10 Public Draft 5/26/21	10-2, 40	The water year is difficult to apply to Big Valley	6/2/2021	Sentence added, pointing this out. "While the WY as defined by DWR isn't ideal for use in Big Valley, the GSAs will assemble data based on DWR's definition as per SGMA statute and regulations. The discussion and approach to water quality data was changed to reflect that the GSAs will rely on the SWRCB to store and provide water quality data via their GAMA Groundwater Information System.
Chap 10 Public Draft 5/26/21	10-13, 234	Poor wording	6/2/2021	Wording changed
Chap 10 Public Draft 5/26/21	10-15, 270	Poor wording. Rewrite to emphasize that basin is economically disadvantaged and residents can't afford new taxes or fees	6/2/2021	Wording changed
Chap 10 Public Draft 5/26/21	Appendix 10A	Don't like grant funding	6/2/2021	Wording changed



CONDUCT AIRBORNE ELECTROMAGNETIC SURVEYS

Airborne Electromagnetic (AEM) surveys will be conducted in California's High and Medium Priority Groundwater Basins, including areas with disadvantaged communities (DACs). The project will generate coarse-grid subsurface maps that will provide fundamental information about aquifer structures that supports the development and implementation of groundwater sustainability plans (GSPs). The coarse-grid AEM data may serve as the basis for the collection of fine-grid AEM data by local stakeholders in the future.

What is Proposition 68?

The California Drought, Water, Parks, Climate, Coastal Protection and Outdoor for all Fund (Senate Bill 5, Proposition 68) authorized \$4 billion in general obligation bonds for state and local parks, environmental protection and restoration projects, water infrastructure projects, and flood protection projects. The AEM survey will utilize \$12 million on data, tools, and analysis efforts for drought and groundwater investments to achieve regional sustainability in support of the Sustainable Groundwater Management Act (SGMA).

How Does This Project Support SGMA?

This project will provide state and federal agencies, groundwater sustainability agencies, related stakeholders, and the public with basin-specific and cross-basin geophysical data, tools, and analysis aligned to the technical requirements of the groundwater sustainability plan (GSP) regulations and SGMA. The resulting information will provide a standardized, statewide dataset that supports the implementation of SGMA by improving the understanding of large-scale aquifer structures, which aids in the development or refinement of a hydrogeologic conceptual model and identification of possible recharge areas.

This project builds on the knowledge and successful track record of DWR's Regional and Statewide Integrated Water Management technical assistance programs and aligns with the Governor's Water Resilience Portfolio (Executive Order N-10-19) and the Open and Transparent Data Act (AB 1755).

What is the Value of this Information?

The AEM data will provide supporting information about subsurface hydrogeologic characteristics of aquifer systems in groundwater basins. AEM data support the development and refinement of groundwater models, improve the potential for the successful development and implementation of GSPs, and reduce uncertainty in identifying locations for groundwater recharge projects. The collection of AEM data supports multi-benefit projects and has been successfully implemented in basins in California through a recent pilot project. The AEM surveys will benefit DACs by providing data to enhance understanding and management of their basins.

What is New?

In 2020, DWR plans to award a contract to collect AEM data throughout California's High and Medium Priority Groundwater Basins. The AEM data will be collected in a grid or set of parallel lines with the survey lines oriented to collect data in areas with known data gaps, adjacent to critical water delivery infrastructure, and where GSAs are considering implementation of SGMA related project, like aquifer recharge.

What are the Next Steps?

A technical advisory committee will be formed in early 2021 to provide input on project activities, such as survey design, data management, guidance documents, and AEM data use.

DWR will coordinate with local governments in the survey areas before surveys are conducted to inform the local community about the safety of the AEM method and why surveys are being conducted

What is AEM and How is a Survey Conducted?

AEM is a geophysical method that measures the electrical properties of subsurface materials from helicopter mounted equipment. The AEM equipment is housed in a large hoop frame that is securely hung from the helicopter. The helicopter carries the equipment approximately 100 feet above the ground surface and collects data along a defined flight path. Flight paths are designed to collect data over open spaces and avoid residential areas and structures containing people or confined livestock. The helicopter is flown by experienced pilots who follow all Federal Aviation Administration (FAA) regulations. The collected AEM data is interpreted to show the distribution of coarse-grained and fine-grained materials in the subsurface, which improves the understanding of aquifer structures. Below, is an example of the helicopter and AEM equipment (hoop), flight paths, and AEM data that have been interpreted to characterize subsurface hydrogeology.

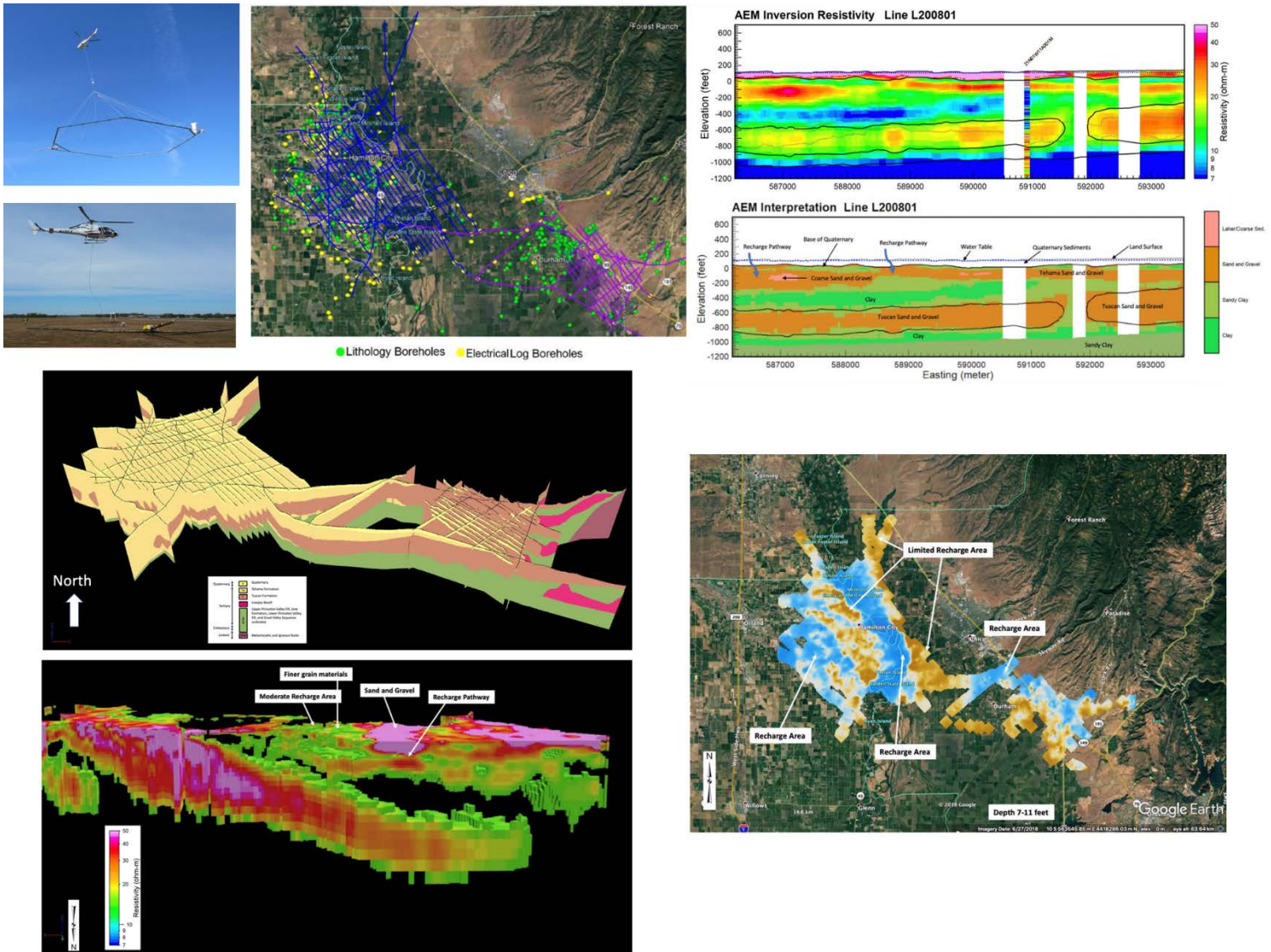


Figure 1: Airborne Electromagnetic Survey and Resulting Data

Contact and Additional Information

For more information or questions, contact
Katherine.Dlubac@water.ca.gov

DWR SGMA Data and Tools webpage

<https://water.ca.gov/Programs/Groundwater-Management/Data-and-Tools>

DWR Statewide AEM Survey webpage

Coming soon