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MEMORANDUM

To: Vina Stakeholder Advisory Committee

From: Becky Fairbanks, GSA Project Manager and Christina Buck, Asst. Director Butte County Water and Resource Conservation

Date: March 25, 2026

Subject: Consideration of Approach to Project and Management Actions (PMAs) for the GSP Periodic Evaluation

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Background

California enacted the Sustainable Groundwater Management Act (SGMA) in 2014 to establish a statewide framework for the long-term sustainable management of groundwater resources. SGMA requires local agencies to form Groundwater Sustainability Agencies (GSAs) and develop Groundwater Sustainability Plans (GSPs) for medium- and high-priority groundwater basins.

The Vina GSA and Rock Creek Reclamation District GSA approved the Vina Groundwater Sustainability Plan (GSP) in December 2021 and submitted it to the California Department of Water Resources (DWR) in January 2022. The GSP was approved by DWR in July 2023. Under SGMA, GSAs are required to complete a Periodic Evaluation of their GSP every five years, with the first evaluation due in January 2027.

The Periodic Evaluation is intended to document groundwater conditions, evaluate progress toward achieving sustainability, and describe the status of Projects and Management Actions (PMAs) that support implementation of the GSP. To support preparation of the Periodic Evaluation, the Vina GSA contracted with Larry Walker Associates (LWA) and the work is funded by the DWR Sustainable Groundwater Management (SGM) grant program.

Summary

The purpose of today's agenda item is to support development of Section 4: Status of Projects and Management Actions of the Periodic Evaluation (see Attachment 1).

Specifically, the Stakeholder Advisory Committee (SHAC) is asked to:

- Review the PMAs identified in the 2022 Vina GSP, and
- Provide feedback on the categorization of PMAs for future annual tracking and reporting.

Projects and Management Actions included in a GSP describe the types of activities and projects that the GSAs or their partners may implement over time to help achieve and maintain groundwater sustainability in the subbasin.

The list of PMAs should reflect the level of effort that may be required to manage groundwater resources under expected water demands and changing hydrologic conditions. Not all PMAs will necessarily be implemented, but together they illustrate the range of actions that support sustainable groundwater management over the planning horizon.

This discussion will help ensure the PMA section of the Periodic Evaluation clearly reflects the projects that are actively supporting groundwater sustainability in the Vina Subbasin.

Summary of Grant Funded Studies/Pilots Associated with Projects in the GSP

The Vina GSA was awarded SGM grant funding to conduct feasibility studies and pilot projects/programs for a number of projects listed in the GSP. The components and tasks of the grant agreement, however, do not always use the same project names as listed or described in the GSP. The table below provides a summary of which GSP Project was advanced with the SGM funding and the grant "component" as it appears in the grant agreement. Since the grant funded work conducted the planning phase of these projects, it is a good time to reassess the GSP projects and categorize them as appropriate based progress that has been made. Other GSP projects that were previously identified as "planned" or "potential" in the GSP, have not yet been initiated or new information has been learned by the project lead. It is therefore a good time to reassess their status as well.

Table summarizing GSP Projects and the associated grant funded study. References the section of the GSP describing the GSP Project.

GSP Project Name	SGM Grant Component #	SGM Grant Component Name	Grant Project Name/Pilot
Agricultural Irrigation Efficiency (5.2.3.1)	3	Demand Reduction Strategies	Precision Irrigation Pilot Program
Extend Orchard Replacement (5.2.5.1)	3	Demand Reduction Strategies	Extend Orchard Replacement Pilot Program
Surface Water Supply and Recharge (5.2.4.8)	4	Feasibility of Enhanced Recharge in the Lindo Channel	Feasibility of Enhanced Recharge in the Lindo Channel
Scoping for Flood MAR/Surface Water Supply and Recharge (5.2.3.3)	5	Surface Water Supply and Recharge Feasibility Study	Two parts: 1. Surface Water Supplies Feasibility Analysis 2. Recharge Feasibility Analysis and Pilots
Agricultural Surface Water Supplies (5.2.4.2)	5	Surface Water Supply and Recharge Feasibility Study	Surface Water Supplies Feasibility Analysis (same as #1 above)
Rangeland Management and Water Retention (5.2.4.6)	5	Surface Water Supply and Recharge Feasibility Study	Recharge Feasibility Analysis - Recharge pilot #1: Resource Conservation District/Big Chico Ecological Reserve implementation of process-based restoration techniques in Big Chico Creek watershed.

Proposed PMA Categorization

In addition to progress made through the grant funded work, recent updates to SGMA Annual Reporting requirements require GSAs to provide annual status updates on PMAs through the SGMA Portal in a newly developed PMA Module. Maintaining a long list of conceptual or inactive projects can

make tracking and reporting more difficult and less meaningful. In addition, the PMA Module requires and includes a high level of detail for each project. See Attachment 3 for example of all attributes associated with each project.

To improve how PMAs are tracked and reported moving forward, staff is proposing to organize the GSP Project list into two primary categories, as described below. Initial categorization of GSP Projects has been done for discussion - see Attachment 4, Presentation Slides for proposed project categorization. The two primary categories are:

GSA Prioritized PMAs
Projects that the GSAs, Member Agencies (i.e. Butte County, City of Chico) or its partners are actively pursuing, or intend to pursue, to maintain or achieve groundwater sustainability in the subbasin. These projects represent the core implementation strategy of the GSP and would be further categorized as:

- Completed
- In-Progress
- Potential

Other Projects
Projects led by other agencies or entities that may provide ancillary benefits to groundwater conditions but are not currently critical to achieving sustainability in the subbasin. These projects would continue to be tracked by the GSAs, as feasible, but are not relied upon to meet sustainability objectives.

The proposed categorization is intended to focus annual report updates on projects that have already been completed, as well as those that are actively being pursued or considered by the GSAs and their partners.

Projects categorized as Other would remain part of the broader planning framework of the GSP, but would not be the primary focus of near-term tracking and reporting and therefore not included in the DWR PMA module. They would continue to be included in the Periodic Evaluation and evaluated every five years for SGMA applicability.

SHAC's and public input is requested to help review the PMA list through this lens and provide feedback on the categorization of projects. As further background, the Wyandotte Creek subbasin and Butte Subbasin are conducting a similar evaluation of their projects as part of their Periodic Evaluations and are discussing this same approach.

This approach is meant to:
- Reduce the burden of required annual tracking and reporting in the DWR PMA module
- Create more clarity around which projects are being pursued and/or implemented to achieve sustainability in the subbasin

Requested Action

Staff is requesting SHAC review and provide feedback on the proposed PMA classifications, including:
1. The projects proposed as **GSA Prioritized PMAs**, and
2. The projects proposed to be categorized as **Other Projects**, including whether any should be moved to other categories.

Attachments for Reference:
1. Section 4 of the Periodic Evaluation Annotated Outline
2. Vina GSP Chapter 5: Project and Management Actions
3. PMA Module Example Spreadsheet
4. Presentation slides (slides 7 and 8 show categorized GSP Projects for discussion)

4 STATUS OF PROJECTS AND MANAGEMENT ACTIONS

The purpose of this section is to summarize the GSA implementation activities related to projects and management actions that took place over the course of the evaluation cycle. The summary should include descriptions of ongoing projects that have carried over during the evaluation cycle and projects that broke ground but have not become operational. In addition, significant new information should be discussed, such as whether a GSP project was considered no longer necessary and was dropped, a new project was added, or a project has been delayed. New information that affects project development, such as hydrologic changes relative to a drought or wet year should be described. The description should include anticipated projects to be developed over the next evaluation cycle(s). The discussion of the projects should include evaluations and reporting on the quantified benefits of each project and anticipated benefits of the projects that broke ground or were completed during the evaluation cycle.

A GSA should summarize how it is tracking and administering the various projects and management actions within its basin. The summary should describe interactions with the project proponents and member agencies implementing the projects. Table 2 shows an example of this summary.

Table 2. Project and Management Action Summary Table

Project or Management Action Name	Project or Management Action Description	Targeted Sustainability Indicator	Project Status	Expected Schedule	Benefits Observed to Date or Anticipated Benefits	Estimated Accrued Benefits at Completion

A GSA should assess the projects and management actions outlined in the original GSP and explain whether those are still relevant and feasible, including estimates of cost and potential funding sources and whether permitting and CEQA requirements need to be met. The Periodic Evaluation should describe if there is a need to revisit or re-evaluate the priority of certain projects. Additionally, for the various projects and management actions outlined in the GSP, the GSA should describe the process for public notice and engagement of interested parties.

For projects and management actions that are currently ongoing or have already been completed, the Periodic Evaluation should provide an evaluation and status update including realized benefits, expected benefits, and benefits and impacts to beneficial uses and users. The description should include how these projects and management actions are helping the basin achieve sustainability through the assessment of the groundwater conditions in relation to the measurable objectives for the relevant sustainability indicators. A description of the monitoring network and data related to projects and management actions that are showing progress toward sustainability, and documentation that the project is not impacting nearby beneficial users, should be included.

For projects and management actions that have yet to begin or are still conceptual, assess the need for those based on the current conditions and expected outcomes of the existing projects and management actions. Describe the potential timeline to get those projects and management actions implemented or what may be needed to take them from the conceptual or as-needed phase to the “shovel ready” phase.

The GSA should describe the challenges or setbacks that have prevented or delayed implementation of projects and management actions. If a planned project is not going to be implemented, the GSA should consider re-evaluating projected water budgets and groundwater conditions without the project.

5. PROJECT AND MANAGEMENT ACTIONS

This section includes relevant projects and management actions information to satisfy CCR Title 23 § 354.42 and 354.44. The projects and management actions described in this section will help achieve the Vina Subbasin's sustainability goal.

5.1 Projects, Management Actions, and Adaptive Management Strategies

The objective and purpose of the GSP is to achieve groundwater sustainability in the Vina Subbasin. This will require projects and management actions aimed at avoiding undesirable results, achieving measurable objectives, and responding to changing conditions in the basin. The Vina GSA and the RCRD GSA have identified projects and management actions tailored to benefit the Vina Subbasin's groundwater supply and quality for the benefit of rural areas, communities, agricultural users and the environment. The approach targets both identifying and increasing alternative sources of supply and reducing groundwater demand. The GSP identifies groundwater monitoring programs to monitor groundwater conditions, investigation of additional water sources to supplement the use of groundwater, and conservation and educational programs to reduce groundwater demand.

5.2 Projects

5.2.1 Project Identification

Projects were identified through a lengthy outreach effort involving the SHAC and the GSAs. The process included soliciting input from governmental agencies, water purveyors, and local landowners. The Vina GSA's website allowed project proponents to input the available information on each project.

The majority of projects submitted were proposed by the Vina GSA, with some being a joint effort with the RCRD GSA. Some of the projects also include other proponents, such as CSUC, PG&E, Cal Water, local agricultural farmers, and others. The list of proponents and other entities involved in the projects is included in Table 5-1 below. The schedule to implement the projects is likely to vary depending upon Subbasin conditions, and the expected benefits of PMAs may also vary year to year.

The provided project information was compiled into an initial draft list with similar and overlapping projects combined as appropriate. The draft list was presented to the Vina GSA Stakeholder Advisory Committee in their July 15, 2021, meeting and to the GSA Boards at their August meetings. The projects were then evaluated based on the following criteria:

- Project addresses one or more of the Undesirable Results
- Project is implementable with respect to technical complexity, regulatory complexity, institutional consideration, and public acceptance
- Project is implementable within the SGMA timeframe
- Project benefits Underrepresented Communities (URCs)
- Project is in an area where water quality is suitable for use

5.2.2 Project Implementation

The purpose of planning and implementing projects is to ensure the Vina Subbasin achieves sustainability. Projects are categorized in three categories - Planned, Potential, and Conceptual – based on current stage of planning or implementation. This section includes Planned, Potential, and Conceptual projects. Additional projects may be added in the future once identified. The specific projects included in the GSP will be implemented, operated, and owned by the individual project proponent(s). Through annual reports, GSP updates, and the evaluation of IMs, MT, and MO, the GSAs will evaluate whether the implementation of projects is sufficient to achieve sustainability. Depending on how projects are achieving sustainability, or otherwise impacting the ability of the Vina Subbasin to achieve sustainability, the GSAs may prioritize the development of projects, seek funding for prioritized projects, or develop guidelines for existing projects.

5.2.2.1 List of Projects

Several projects to achieve the Vina Subbasin's sustainability goal were identified. The initial set of projects was reviewed by the SHAC. A final list of 15 possible projects is included in this GSP, and they are categorized into several project types, including direct and in-lieu recharge, intra-basin water transfers, water recycling, demand conservation, and monitoring. Projects are further classified into three categories based on project status: Planned, Potential, and Conceptual, as defined below. All projects, regardless of status, remain subject to available funding, any required CEQA compliance, and any required approvals. The list of possible projects identified in this GSP are an initial list that may be further expanded or modified as the GSAs work toward sustainability by 2042.

- Planned Projects – Currently, five Planned Projects have been identified. Projects in this category are anticipated to move forward to help achieve the region's sustainability before 2042.
- Potential Projects – Currently, eight Potential Projects have been identified. Projects in this category are currently in the initial planning stages and may move forward as feasibility and project requirements are determined. Potential Projects represent a "menu of options" for the Vina Subbasin to achieve long-term sustainability and offset the remaining imbalance above and beyond implementation of the Planned Projects.
- Conceptual Projects – Currently, two Conceptual Projects have been identified. Projects in this category are in the early conceptual planning states and would require significant additional work to move forward. Conceptual Projects represent potential future projects that could conceptually provide a benefit to the Vina Subbasin in the future, but that would need to be further developed.

This subsection of the GSP satisfies the requirements of CCR title 23 § 354.44. Consistent with SGMA requirements, the project descriptions for projects contain information regarding:

- The MO benefitted by the project
- Permitting and regulatory processes
- Timetable for initiation and completion

- Expected benefits
- How the project will be accomplished
- Legal authority
- Estimated costs and plans to meet costs
- Implementation circumstances
- Public noticing

Table 5-1 provides a summary of the 15 projects. Full descriptions are included below.

Table 5-1: List of Sustainable Groundwater Management Act Projects

Project Name	Project Type	Identified Project Proponent and Other Potential Participating Entities	Measurable Objective Expected to Benefit	Current Status	Timetable (initiation and completion)	Estimated Costs	Expected Groundwater Demand Reduction (Acre-Feet/year)
Planned Projects							
5.2.3.1 Agricultural Irrigation Efficiency	Conservation	Vina GSA; local landowners, other entities to be determined	Groundwater Levels, Groundwater Storage	Planning Stage	2024-2030	To be determined	Up to 4,000 (based on a reduction up to 2%)
5.2.3.2 Residential Conservation	Conservation	Cal Water Chico, Vina GSA, local landowners, other entities to be determined	Groundwater Levels	Planning Stage	2022-2025	To be determined	100
5.2.3.3 Scoping for Flood Managed Aquifer Recharge (FloodMAR)/Surface Water Supply and Recharge	Direct Recharge, In-lieu Recharge	Vina GSA, RCRCD GSA, local landowners, other entities to be determined	Groundwater Levels	Planning Stage	2022-2032	To be determined	Not applicable
5.2.3.4 Community Water Education Initiative	Education and Outreach	Vina GSA, CSUC, CWE, Chico State Enterprises, local landowners, other entities to be determined	Groundwater Levels, Groundwater Storage, Water Quality, Land Subsidence, Surface Water Depletion, Education and Outreach	Ready for Implementation	Currently ongoing, expansion by 2023 depending on funding	Component 1: $50-100K annually Component 2: $10,000-$200,000 annually Component 3: $10,000-$25,000 annually	To be determined
5.2.3.5 Fuels Management for Watershed Health	Conservation	Vina GSA, CSUC, Chico State Enterprises, local landowners, other entities to be determined	Groundwater Levels, Groundwater Storage, Water Quality, Surface Water Depletion	Part of project currently ongoing, rest in planning stage	450 acres ongoing; 4,000 acres 2021-2030; 6,000 to 10,000 acres 2025-2040	$8.0 million - $14.0 million	To be determined
Potential Projects							
5.2.4.1 Paradise Irrigation District Intertie	In-Lieu Recharge	Vina GSA; PID, Cal Water, local landowners, other entities to be determined	Groundwater Levels	Planning Stage	To be determined, after Spring 2022	To be determined	5,000
5.2.4.2 Agricultural Surface Water Supplies	Intra-Basin Water Transfer	Vina GSA, RCRD, local landowners, other entities to be determined	Groundwater Levels	Planning Stage	2025-2032	To be determined	2,000 – 3,000
5.2.4.3 Streamflow Augmentation	Direct Recharge, In-Lieu Recharge	Vina GSA, RCRD GSA, PID, PG&E, local landowners, other entities to be determined	Groundwater Levels, Surface Water Depletion	Initial Planning Stage	2022-2025	$50-$100 per acre-foot	1,000-5,000
5.2.4.4 Community Monitoring Program	Monitoring	Vina GSA, CSUC, Chico Ecological Reserves, local landowners, other entities To be determined	Groundwater Levels	Planning Stage	2022-2025	To be determined	Not applicable
5.2.4.5 Recycled Wastewater	Direct Recharge, Water Recycling	Vina GSA, City of Chico, local landowners, other entities to be determined	Groundwater Levels	Planning Stage	2030-2038	To be determined	5,000
5.2.4.6 Rangeland Management	Conservation	Vina GSA, CSUC, Chico State Enterprises, other entities to be determined	Groundwater Levels	Planning Stage	Baseline data collection (2021-2022) Development of Master Management Plan (2022-2024)	To be determined	To be determined

Project Name	Project Type	Identified Project Proponent and Other Potential Participating Entities	Measurable Objective Expected to Benefit	Current Status	Timetable (initiation and completion)	Estimated Costs	Expected Groundwater Demand Reduction (Acre-Feet/year)
5.2.4.7 Removal of Invasive Species	Conservation	Vina GSA, CSUC, Chico State Enterprises, other entities to be determined	Groundwater Levels, Groundwater Storage	Planning Stage	Inventory and mapping of properties: 2022-2023 Development of invasive management for water retention plan: 2023-2024 Identify and secure funding: 2022-2026 Implement projects and measure results: 2025 and beyond	To be determined	To be determined
5.2.4.8 Surface Water Supply and Recharge	Direct Recharge	Vina GSA, RCRD GSA, local landowners, other entities to be determined	Groundwater Levels	Planning Stage	Sand Creek / Lindo Channel – 2022-2032; Other projects – 2022 – 2042	To be determined	1,000 / project
Conceptual Projects							
5.2.5.1 Extend Orchard Replacement	Conservation	Vina GSA, local landowners, other entities to be determined	Groundwater Levels	Conceptual Planning Stage	To be determined	To be determined	4,000-8,000
5.2.5.2 Recharge from the Miocene Canal	Direct Recharge	Vina GSA PG&E, Butte County, local landowners, other entities to be determined	Groundwater Levels	Conceptual Planning Stage	After 2025	To be determined	2,000 based on 10,000 acre-feet available for recharge (20% efficiency)

5.2.3 Planned Projects

Projects categorized as Planned Projects are expected to move forward and be completed to achieve the Vina Subbasin's sustainability goal by 2042. The estimated groundwater supply from these projects is expected to offset the projected overdraft of 10,000 AFY.

5.2.3.1 Agricultural Irrigation Efficiency

A survey is currently being conducted in North and South Vina by the Vina GSA, Agricultural Groundwater Users of Butte County, and Butte County Farm Bureau in order to evaluate current irrigation methods and practices, identify opportunities and methods to improve irrigation efficiency, determine potential issues preventing the adoption of efficiency practices, and provide recommendations for increasing participation in these practices. The results of this survey are expected to be available in September 2022, with implementation of the project expected to be initiated between 2024 and 2030. Recommendations from the survey will be made available to the local agricultural community, and implementation of the practices will be voluntary. The Vina GSA along with participating partners will pursue grant funds to help implement these practices. It is estimated that the adoption of more efficient practices could reduce groundwater demand by up to 2%, which translates to a reduction in groundwater demand of up to 4,000 AFY.

Project Summary	
Identified project proponent(s) and other potential participating entities:	Vina GSA; local landowners, other entities to be determined
Project Type:	Conservation
Estimated Groundwater Offset and/or Recharge:	–Up to 4,000 acre-feet/year

Measurable Objective Expected to Benefit: This project will address declining water levels and the declining volume of groundwater stored in the aquifer. The main objective of the project is to reduce groundwater demand by modifying irrigation practices.

Project Status: This project is in the planning stages.

Required Permitting and Regulatory Process: None

Timetable for Initiation and Completion: Project will be initiated in 2024

Expected Benefits and Evaluation: A survey that consolidates data on the adoption of irrigation methods and practices by agricultural groundwater users will identify where more efficient practices can be implemented. This can help focus efforts and finances on areas where a reduction in overall groundwater demand is needed and feasible.

How Project Will Be Accomplished/Evaluation of Water Source: This project is a demand-side conservation project. No additional water source will be utilized for this project.

Legal Authority: The project would be under the authority of Vina GSA and potential future participating partners.

Estimated Costs and Plans to Meet Costs: To be determined, funding via Proposition 1, Proposition 68, USDA, Drought Resiliency Grants

Circumstances for Implementation: This project is a Planned Project that is anticipated to move forward.

Trigger for Implementation and Termination: The project will be initiated after the recommendations from the initial survey results are available.

Process for Determining Conditions Requiring the Project to Occur: As mentioned above, the survey is already underway and once analysis is complete, recommendations based off the results will be made available for voluntary implementation.

5.2.3.2 Project: Residential Conservation

Cal Water Chico, which provides water to the City of Chico via groundwater, proposed a series of conservation projects under their 2020 UWMP, including toilet replacement, urinal valve and bowl replacement, clothes washer replacement, residential conservation kits, smart controllers, high efficiency irrigation nozzles, and turf buy-back.

Project Summary	
Identified project proponent(s) and other potential participating entities:	Cal Water Chico, Vina GSA, local landowners, other entities to be determined
Project Type:	Conservation
Estimated Groundwater Offset and/or Recharge:	100 AFY

Measurable Objective Expected to Benefit: Groundwater Levels

Project Status: This project is in the planning stages.

Required Permitting and Regulatory Process: None

Timetable for Initiation and Completion: 2022-2025

Expected Benefits and Evaluation: The implementation of several different conservation projects for residential areas is expected to reduce groundwater demand by 100 AFY in Chico.

How Project Will Be Accomplished/Evaluation of Water Source: This project is a demand-side conservation project implemented by Cal Water in residential areas. No additional water source will be utilized for this project.

Legal Authority: The project would be under the authority of Vina GSA and Cal Water Chico. Cal Water Chico would initiate the conservation programs.

Estimated Costs and Plans to Meet Costs: To be determined, funding via Proposition 1, Proposition 68, Drought Resiliency Grants, Cal Water.

Circumstances for Implementation: This project is a Planned Project that is anticipated to move forward.

Trigger for Implementation and Termination: Increased groundwater demand due to an increasing number of planned residential developments in Chico (according to the City of Chico and Butte County General Plans).

Process for Determining Conditions Requiring the Project to Occur: This is a Planned Project that is anticipated to move forward.

5.2.3.3 Project: Scoping for Flood MAR/Surface Water Supply and Recharge

Under this project, Vina GSA and RCRD GSA will expand on the Flood MAR initiative, which was originally developed by DWR to promote recharge programs that use fields, recharge basins, and/or recharge ponds to divert high flows in creeks and streams. Individual recharge projects will eventually occur, but this particular project will focus on the initial scoping and identify specific recharge opportunities in the Vina Subbasin. At first, Vina GSA and RCRD GSA will focus their efforts on areas with the greatest need for recharge and seek grants and other funding sources to implement the projects. Interested landowners would be identified and participation in the program would be voluntary.

Project Summary	
Identified project proponent(s) and other potential participating entities:	Vina GSA, RCRCD GSA, local landowners, other entities to be determined
Project Type:	Direct Recharge, In-Lieu Recharge
Estimated Groundwater Offset and/or Recharge:	Not applicable

Estimated Groundwater Offset and/or Recharge: Not applicable. Future recharge projects are possible based on results of scoping.

Measurable Objective Expected to Benefit: Future increase of groundwater levels.

Project Status: This project is in the planning stages.

Required Permitting and Regulatory Process: Not applicable

Timetable for Initiation and Completion: 2022-2032

Expected Benefits and Evaluation: This project would develop the first steps of the Flood MAR initiative and recharge efforts for the Vina Subbasin region and identify specific groundwater recharge and management projects based on feasibility, need, and available funding. The initiation of this project would then lead to future recharge projects.

How Project Will Be Accomplished/Evaluation of Water Source: This project will help to identify and develop specific recharge projects in the region, which will then individually determine recharge sources.

Legal Authority: The project would be under the authority of the Vina GSA and RCRD GSA.

Estimated Costs and Plans to Meet Costs: To be determined, funding via Proposition 1 and Proposition 68.

Circumstances for Implementation: This project is a Planned Project that is anticipated to move forward.

Trigger for Implementation and Termination: None

e This is a Planned Project that is anticipated to move forward.

5.2.3.4 Project: Community Water Education Initiative

The Community Water Education Initiative, proposed by CSUC's CWE, would consist of two main components:

Community Water Education Project – The CWE would lead this component of the project to expand on community outreach and education associated with water-related topics and issues of the region. CWE would focus on topics such as regional groundwater issues, connectivity of surface and groundwater, decision-making during drought years, basic aquifer knowledge, and more, and target agricultural well users, domestic well users, and municipal customers. The scope would also include technical seminars and field trips, as well as creating educational materials such as fact sheets, printed materials, and website content.

Big Chico Creek Watershed Tour – CWE currently hosts a Big Chico Creek Watershed Tour every year that lasts for four days (2 weekends in March and April) and that takes participants from the watershed's headwaters to the Big Chico Creek Ecological Reserve, through CSUC campus, and to its confluence with the Sacramento River. During the program, participants learn about the watershed, explore various water issues, and help CSUC faculty research the health of the watershed. Under this project, CSUC proposes to expand the program to include community members and more groundwater education, with a focus on the Vina Subbasin, with the goal to help community members better understand their role in sustainable groundwater management.

Project Summary	
Identified project proponent(s) and other potential participating entities:	Vina GSA, CSUC, CWE, Chico State Enterprises, local landowners, other entities to be determined
Project Type:	Education and Outreach
Estimated Groundwater Offset and/or Recharge:	Not applicable

Measurable Objective Expected to Benefit: Groundwater Levels, Groundwater Storage, Water Quality, Land Subsidence, Surface Water Depletion, Education and Outreach

Project Status: This project is ready for implementation. Possible expansion by 2023 depending on funding.

Required Permitting and Regulatory Process: None

Timetable for Initiation and Completion: Currently measuring and providing community education with the possibility of expansion by 2023 depending on funding.

Expected Benefits and Evaluation: This project would expand the education and outreach on important watershed and groundwater issues in the region, helping community members better understand their role in sustainable water management.

How Project Will Be Accomplished/Evaluation of Water Source: This is an education and outreach project provided through CSUC that does not require a water source.

Legal Authority: The project would be under the authority of CSUC's CWE.

Estimated Costs and Plans to Meet Costs: $50-100K annually (Component 1); $10,000-$200,000 annually (Component 2); $10,000-$25,000 annually (Component 3). Funding via Proposition 1 and Proposition 68

Circumstances for Implementation: This project is a Planned Project that is anticipated to move forward.

As scenarios change, the Potential Projects can come online to bring additional resources for adaptive management. Implementation of Potential Projects will be based on long-term management or changing needs of the GSA or Subbasin. Trigger for Implementation and Termination: None

Process for Determining Conditions Requiring the Project to Occur: Implementation of Potential Projects will be based on long-term management or changing needs of the GSAs or Subbasin.

5.2.3.5 Project: Fuel Management for Watershed Health

This project would involve fuel management in the Upper Watershed, including multiple sites on the 3,950-acre Big Chico Creek Ecological Reserve, 1,500 acres above the Reserve in the Big Chico Creek Watershed, and on private land within the watershed. Fuel reduction projects are currently ongoing at 460 acres. Further fuel reduction is planned for an additional 4,000 acres between 2021 and 2030 and another 6,000 to 10,000 acres for 2025 through 2040 with the City of Chico Parks Department and other private landowners.

Project Summary	
Identified project proponent(s) and other potential participating entities:	Vina GSA, CSUC, Chico State Enterprises, local landowners, other entities to be determined
Project Type:	Conservation
Estimated Groundwater Offset and/or Recharge:	To be determined
Other Potential Participating Entities	CSUC, Chico State Enterprises

Measurable Objective Expected to Benefit: Groundwater Levels, Groundwater Storage, Water Quality, Surface Water Depletion

Project Status: Part of this project is currently ongoing, with other parts in the planning stages.

Required Permitting and Regulatory Process: CEQA

Timetable for Initiation and Completion: 450 acres have ongoing fuel reduction; 4,000 acres planned for 2021-2030; 6,000 to 10,000 acres planned for 2025-2040

Expected Benefits and Evaluation: Improved fuel management would prevent inadvertent spillage and the degradation of water quality.

How Project Will Be Accomplished/Evaluation of Water Source: This project is a demand-side conservation project conducted by CSUC. No additional water source will be utilized for this project.

Legal Authority: The project would be conducted by CSUC.

Estimated Costs and Plans to Meet Costs: $8.0 million -$14.0 million (based on $2,000 and $3,500 per acre with a target of 4,000 acres); funding via CAL FIRE, Sierra Nevada Conservancy, California Fire Safe Council, other state, and federal funding agencies

Circumstances for Implementation: This project is a Planned that is anticipated to move forward.

Trigger for Implementation and Termination: None

Process for Determining Conditions Requiring the Project to Occur: Implementation of Potential Projects will be based on long-term management or changing needs of the GSAs or Subbasin.

5.2.4 Potential Projects

Projects categorized as Potential Projects are currently in the initial planning stages and may move forward as feasibility and project requirements are determined. Potential Projects represent a "menu of options" for the Vina Subbasin to achieve long-term sustainability and offset the remaining imbalance above and beyond implementation of the Planned Projects.

5.2.4.1 Project: Paradise Irrigation District Intertie

After the devastation of the 2018 Camp Fire in Paradise, California, PID lost 95% of their customers. To help PID sustain their business, this project proposes that PID supply Cal Water, which serves the City of Chico, with water from one of their surface waters sources. Currently, Chico's only water source is groundwater, and their annual demand is 25,000 AF. The additional water source would help offset the groundwater demand and help groundwater levels stabilize in the Vina Subbasin. The SWRCB is currently conducting a study through Spring 2022 to help PID evaluate their options for long-term sustainability. This study will include the feasibility of the PID-Cal Water Intertie project.

Project Summary	
Identified project proponent(s) and other potential participating entities:	Vina GSA; PID, Cal Water, local landowners, other entities to be determined
Project Type:	In-Lieu Recharge
Estimated Groundwater Offset and/or Recharge:	5,000 AFY

Measurable Objective Expected to Benefit: Groundwater Levels

Project Status: This project is in the initial planning stages.

Required Permitting and Regulatory Process: County encroachment permit, CEQA.

Timetable for Initiation and Completion: To be determined, after Spring 2022

Expected Benefits and Evaluation: An additional source for Chico from surface water would help offset the demand on groundwater in the Vina Subbasin and allow groundwater levels to stabilize. In addition, this would help PID's business after they lost customers during the Camp Fire.

How Project Will Be Accomplished/Evaluation of Water Source: This project will allow PID to provide a surface water source to the City of Chico to help offset groundwater demand. Groundwater is currently the only source of water for Chico.

Legal Authority: The project would be under the authority of Vina GSA, PID, and Cal Water.

Estimated Costs and Plans to Meet Costs: To be determined, funding via Proposition 1, Proposition 68, State Revolving Fund, Federal Infrastructure Funds

Circumstances for Implementation: The decision to move forward with the project will based on discussions with PID.

Trigger for Implementation and Termination: PID's loss of customers from the Camp Fire, decreasing groundwater levels in the Vina Subbasin, increasing groundwater demand in Chico

Process for Determining Conditions Requiring the Project to Occur: Implementation of Potential Projects will be based on long-term management or changing needs of the GSA or Subbasin.

5.2.4.2 Project: Agricultural Surface Water Supplies

Under this project, surface water from water right holders in the neighboring Butte Subbasin and the upper watershed would provide water for the Vina North and South areas. Some of these surface water sources would include the Sacramento River and Lake Oroville. Surface water would help agricultural users reduce their groundwater usage. Agricultural users may need to install a dual irrigation system that allows them to switch between groundwater and surface water depending on the availability of the surface water. Implementation of some of the projects could also lead to recharge opportunities, as additional water may be available during the off-peak irrigation season.

Project Summary	
Identified project proponent(s) and other potential participating entities:	Vina GSA, RCRD, local landowners, other entities to be determined
Project Type:	Intra-Water Basin Transfer
Estimated Groundwater Offset and/or Recharge:	2,000 to 3,000 AFY

Measurable Objective Expected to Benefit: Groundwater Levels

Project Status: This project is in the initial planning stages.

Required Permitting and Regulatory Process: Projects with diversions of surface water will require a SWRCB Water Right Permit, CEQA, others to be determined.

Timetable for Initiation and Completion: 2025-2032

Expected Benefits and Evaluation: Surface water sources from neighboring basins would decrease the Vina Subbasin's dependence on groundwater and allow groundwater levels to stabilize.

How Project Will Be Accomplished/Evaluation of Water Source: The water sources for this project would include available surface water from the Butte Subbasin and upper watershed (Sacramento River, Lake Oroville, etc.).

Legal Authority: The project would be under the authority of Vina GSA, the RCRD GSA, local landowners or other entities to be determined.

Estimated Costs and Plans to Meet Costs: To be determined, funding via Proposition 1 and Proposition 68.

Circumstances for Implementation: This project is a Potential Project, meaning it is currently in the planning stages. Potential Projects represent a "menu of options" for the Vina Subbasin to achieve long-term sustainability and offset the remaining imbalance above and beyond implementation of the Planned Projects. As scenarios change, the Potential Projects can come online to bring additional resources for adaptive management.

Trigger for Implementation and Termination: None

Process for Determining Conditions Requiring the Project to Occur: Implementation of Potential Projects will be based on long-term management or changing needs of the GSAs or Vina Subbasin.

5.2.4.3 Project: Streamflow Augmentation

Under the management of the Vina GSA, this project would transport excess untreated surface water from PID, PG&E, and / or other water right holders in the upper watershed to various parts of the Vina Subbasin through creeks and streams. The goal of the project would be to provide additional water sources to riparian water holders such as Durham Mutual, Rancho Esquon, M&T Ranch, and Gorrill Ranches as well as increase stream flows and direct and in-lieu recharge. Prior to the start of the project, Vina GSA would conduct an investigation and feasibility study to ensure that enough surface water would be available. The project would primarily take place at Comanche Creek, Butte Creek, Little Chico Creek, and Big Chico Creek.

Project Summary	
Identified project proponent(s) and other potential participating entities:	Vina GSA, RCRD GSA, PID, PG&E, local landowners, other entities to be determined
Project Type:	Direct Recharge, In-Lieu Recharge
Estimated Groundwater Offset and/or Recharge:	1,000 – 5,000 acre-feet/year

Measurable Objective Expected to Benefit: Groundwater Levels, Surface Water Depletion

Project Status: This project is in the initial planning stages.

Required Permitting and Regulatory Process: SWRCB Water Right Permit, CEQA

Timetable for Initiation and Completion: 2022-2025

Expected Benefits and Evaluation: Additional sources of surface water would help to increase surface water levels in creeks and streams, groundwater levels via direct and in-lieu recharge, and overall water availability for riparian water holders.

How Project Will Be Accomplished/Evaluation of Water Source: The additional water sources would come from any available surface water from PID, PG&E, and other water right holders in the upper watershed.

Legal Authority: The project would be under the authority of Vina GSA.

Estimated Costs and Plans to Meet Costs: $50 - $100/acre-foot, funding via California Wildlife Conservation Board, Resource Renewal Institute, Proposition 1, Proposition 68, Vina fees

Circumstances for Implementation: This project is a Potential Project. As scenarios change, the Potential Projects can come online to bring additional resources for adaptive management. Implementation of Potential Projects will be based on long-term management or changing needs of the GSA or Subbasin.

Trigger for Implementation and Termination: None

Process for Determining Conditions Requiring the Project to Occur: Implementation of Potential Projects will be based on long-term management or changing needs of the GSA or Subbasin.

5.2.4.4 Community Monitoring Program

This project would create routine water table monitoring programs for approximately 8,000 acres of Ecological Reserves in the region between lower Forest Ranch and Cohasset Road near Chico Airport, including the Big Chico Creek, Sheep Hollow, and Cabin Hollow tributaries.

Project Summary	
Identified project proponent(s) and other potential participating entities:	Vina GSA, CSUC, Chico Ecological Reserves, local landowners, other entities to be determined
Project Type:	Monitoring
Estimated Groundwater Offset and/or Recharge:	Not applicable

Measurable Objective Expected to Benefit: Groundwater Levels

Project Status: This project is in the initial planning stages.

Required Permitting and Regulatory Process: None.

Timetable for Initiation and Completion: The establishment of these new monitoring programs is planned to take place between 2022 and 2025.

Expected Benefits and Evaluation: Routine water table monitoring programs will track overall water table trends in the region and provide important, up-to-date data for making decisions on water management.

How Project Will Be Accomplished/Evaluation of Water Source: CSUC and Chico Ecological Reserves will implement the monitoring programs on a routine basis through their university programs. No additional water source will be utilized for this project.

Legal Authority: The project would be under the authority of CSUC and Chico Ecological Reserves.

Estimated Costs and Plans to Meet Costs: To be determined, funding sources to be determined.

Circumstances for Implementation: This project is a Potential Project, meaning it is currently in the planning stages. Potential Projects represent a "menu of options" for the Vina Subbasin to achieve long-term sustainability and offset the remaining imbalance above and beyond implementation of the Planned Projects. As scenarios change, the Potential Projects can come online to bring additional resources for adaptive management.

Trigger for Implementation and Termination: None

Process for Determining Conditions Requiring the Project to Occur: Implementation of Potential Projects will be based on long-term management or changing needs of the GSAs or Vina Subbasin.

5.2.4.5 Project: Wastewater Recycling

The City of Chico currently operates a wastewater treatment plant with a treatment capacity of 12 million gallons (36 AF) per day and discharges 13,000 AFY of the treated wastewater into the Sacramento River (in accordance with their waste discharge permit from the California Water Resources Control Board). Under this project, the city would review the feasibility of diverting some of their recycled wastewater from the Sacramento River to recharge ponds and/or non-crop vegetation in Chico. Existing regulations will be reviewed for the use of the recycled water for crop production.

Project Summary	
Identified project proponent(s) and other potential participating entities:	Vina GSA, City of Chico, local landowners, other entities to be determined
Project Type:	Direct Recharge, Water Recycling
Estimated Groundwater Offset and/or Recharge:	5,000 AFY

Measurable Objective Expected to Benefit: Groundwater Levels

Project Status: This project is in the initial planning stages.

Required Permitting and Regulatory Process: SWRCB Water Right permit, CEQA, National Pollutant Discharge Elimination System permit, others to be determined.

Timetable for Initiation and Completion: 2030-2038

Expected Benefits and Evaluation: This project would divert treated wastewater, that would otherwise be pumped into the Sacramento River, towards recharge ponds and non-crop vegetation. This would increase groundwater recharge, decrease groundwater demand for farming, and help groundwater levels stabilize in the region.

How Project Will Be Accomplished/Evaluation of Water Source: This project would be initiated by the Vina GSA and the City of Chico, and the water source for this project would be the treated wastewater from the City of Chico's wastewater treatment plant.

Legal Authority: The project would be under the authority of Vina GSA and the City of Chico.

Estimated Costs and Plans to Meet Costs: To be determined, funding via Proposition 1, Proposition 68, and SWRCB, and other sources to be determined.

Circumstances for Implementation: This project is a Potential Project, meaning it is currently in the planning stages. Potential Projects represent a "menu of options" for the Vina Subbasin to achieve long-term sustainability and offset the remaining imbalance above and beyond implementation of the Planned Projects. As scenarios change, the Potential Projects can come online to bring additional resources for adaptive management.

Trigger for Implementation and Termination: None

Process for Determining Conditions Requiring the Project to Occur: Implementation of Potential Projects will be based on long-term management or changing needs of the GSAs or Vina Subbasin.

5.2.4.6 Project: Rangeland Management and Water Retention

Under this project, CSUC and Chico State Enterprises would initiate a study of adaptive/ regenerative grazing practices on 2,000 or more acres in the region. The study, which would take place between 2021 and 2022, would measure soil compaction, erosion, groundwater retention, and biological diversity. If this study finds that water retention engineering projects would be feasible in the region, based on the collected data on local soil, then CSUC would create a master management plan and take necessary steps to complete the water retention projects.

This project would take place in two locations across 3,850 acres of historical rangeland between Musty Buck Ridge and Cohasset Road.

Project Summary	
Identified project proponent(s) and other potential participating entities:	Vina GSA, CSUC, Chico State Enterprises, other entities to be determined
Project Type:	Conservation
Estimated Groundwater Offset and/or Recharge:	To be determined

Measurable Objective Expected to Benefit: Groundwater Levels

Project Status: This project is currently in the initial planning stages.

Required Permitting and Regulatory Process: CEQA and/or National Environmental Policy Act (NEPA), depending on project impact.

Timetable for Initiation and Completion: Baseline data collection (2021-2022); Development of Master Management Plan (2022-2024).

Expected Benefits and Evaluation: This project would evaluate characteristics of local soil and the feasibility to initiate water retention projects. Water retention would help increase the overall water supply for the region.

How Project Will Be Accomplished/Evaluation of Water Source: This project is a demand-side conservation project through CSUC. No additional water source will be utilized for this project.

Legal Authority: The project would be conducted by CSUC.

Estimated Costs and Plans to Meet Costs: To be determined, funding via state funding through watershed health grants, federal funding through USDA, private funding sources to be determined.

Circumstances for Implementation: This project is a Potential Project, meaning it is currently in the planning stages. Potential Projects represent a "menu of options" for the Vina Subbasin to achieve long-term sustainability and offset the remaining imbalance above and beyond implementation of the Planned Projects. As scenarios change, the Potential Projects can come online to bring additional resources for adaptive management.

Trigger for Implementation and Termination: Once the study is complete on soil compaction, erosion, groundwater retention, and biological diversity, and it shows that water retention is feasible, then a master management plan will be developed.

Process for Determining Conditions Requiring the Project to Occur: Implementation of Potential Projects will be based on long-term management or changing needs of the GSAs or Vina Subbasin.

5.2.4.7 Project: Removal of Invasive Species

Invasive species negatively impact the natural ecosystem in several ways, including consuming water and hampering recharge. Under this project, invasive species and native grasses in meadows and oak savannahs would be mapped between 2022 and 2023. This would then be followed by the development of an invasive management for water retention plan between 2023 and 2024, the acquisition of funding between 2022 and 2026, and the implementation of invasive species removal projects after 2025. This project would take place in the Upper Watershed at approximately 8,000 acres between lower Forest Ranch and the Chico Airport, including the Big Chico Creek, Sheep Hollow, and Cabin Hollow drainages.

Project Summary	
Identified project proponent(s) and other potential participating entities:	Vina GSA, CSUC, Chico State Enterprises, other entities to be determined
Project Type:	Conservation
Estimated Groundwater Offset and/or Recharge:	To be determined

Measurable Objective Expected to Benefit: The project will address declining water levels and the declining volume of groundwater stored in the aquifer.

Project Status: This project is currently in the initial planning stages.

Required Permitting and Regulatory Process: CEQA and/or NEPA, depending on project location and impact.

Timetable for Initiation and Completion:

- Inventory and mapping of properties: 2022-2023
- Development of invasive management for water retention plan: 2023-2024
- Identify and secure funding: 2022-2026
- Implement projects and measure results**:** 2025 and beyond.

Expected Benefits and Evaluation: The removal of invasive species would benefit the natural ecosystem and prevent them from negatively affecting the amount of available water and the ability for water to recharge.

How Project Will Be Accomplished/Evaluation of Water Source: This project is a demand-side conservation project conducted through CSUC. No additional water source will be utilized for this project.

Legal Authority: The project would be conducted by CSUC.

Estimated Costs and Plans to Meet Costs: To be determined, funding via state and federal wildfire resiliency grants.

Circumstances for Implementation: This project is a Potential Project, meaning it is currently in the planning stages. Potential Projects represent a "menu of options" for the Vina Subbasin to achieve long-term sustainability and offset the remaining imbalance above and beyond implementation of the Planned Projects. As scenarios change, the Potential Projects can come online to bring additional resources for adaptive management.

Trigger for Implementation and Termination: None

Process for Determining Conditions Requiring the Project to Occur: Implementation of Potential Projects will be based on long-term management or changing needs of the GSAs or Vina Subbasin.

5.2.4.8 Project: Surface Water Supply and Recharge

Projects under this category would involve activities that increase the surface water supply to the Vina Subbasin through: 1) direct application of surface water to crops along the lines of the Agricultural Surface Water Supplies Project described above; 2) application of surface water and/or flood water to land surface (i.e. existing orchards) for recharge purposes, sometimes referred to as Flood MAR projects; 3) surface water and/or flood water application to recharge basins and/or recharge ponds; or 4) other applications.

The following are examples of potential projects in the Vina Subbasin:

Sand Creek Project – This project would take place in the North Chico and Nord areas and would involve obtaining data that would later be used to develop mitigation measures for flooding and recharge. The data may also be used to decide future actions towards habitat

restoration and runoff management to sustain groundwater. This project is currently developing a Decision Support Tool to determine future construction scope and feasibility.

Lindo Channel – This project would divert water from Big Chico Creek when flow exceeds 75 cfs and store the water in the Lindo Channel. The Lindo Channel can then be used as a recharge source for other areas and potentially provide 2,000 AF.

Other additional recharge projects would be developed by the Vina GSA, the RCRD GSA, local landowners, and/or entities to be determined.

Estimated Groundwater Offset and/or Recharge:1,000 AFY per project.

Measurable Objective Expected to Benefit: increase of groundwater levels by enhancing in-lieu recharge opportunities.

Project Status: The Sand Creek project and Lindo Channel project are in the initial planning stages. Other projects to be developed in the future.

Required Permitting and Regulatory Process: Projects with diversions of surface water will require a SWRCB permit; CEQA and others to be determined.

Timetable for Initiation and Completion: Sand Creek and Lindo Channel – 2022-2032; Other projects – 2022 – 2042.

Expected Benefits and Evaluation: This project would reduce reliance on native groundwater supply.

How Project Will Be Accomplished/Evaluation of Water Source: Evaluate and analyze results of scoping project for potential locations of recharge activity. The Sand Creek project and Lindo Channel project are in the planning stages. The Lindo Channel project is anticipated to divert water from Big Chico Creek to the Lindo Channel, which can then be used as a recharge source on-site or at other locations. The Sand Creek project is anticipated to divert water from the creek to a recharge basin.

Legal Authority: The projects would be under the authority of the Vina GSA, the RCRD GSA, local landowners and / or other entities to be determined.

Estimated Costs and Plans to Meet Costs: To be determined, potential funding via Proposition 1 and Proposition 68.

Circumstances for Implementation: These projects are Potential Projects to bring additional resources for adaptive management. Potential Projects represent a “menu of options” for the Vina Subbasin to achieve long-term sustainability and offset the remaining imbalance above and beyond implementation of the Planned Projects. As scenarios change, the Potential Projects can come online to bring additional resources for adaptive management.

Trigger for Implementation and Termination: None

Process for Determining Conditions Requiring the Project to Occur: The Sand Creek project and Lindo Channel project are in the planning stages and will be implemented, assuming that

feasibility is determined. Implementation of Potential Projects will be based on long-term management or changing needs of the GSAs or Vina Subbasin.

Project Summary	
Identified project proponent(s) and other potential participating entities:	Vina GSA, RCRD GSA, local landowners, other entities to be determined
Project Type:	Direct Recharge, In-Lieu Recharge
Estimated Groundwater Offset and/or Recharge:	1,000 acre-feet/project

5.2.5 Conceptual Projects

Projects categorized as Conceptual Projects are in the early conceptual stages and would require significant additional work to move forward. Conceptual Projects represent potential future projects that could conceptually provide a benefit to the Vina Subbasin in the future, but that would need to be further developed.

5.2.5.1 Extend Orchard Replacement

Under this project, various funding sources would incentivize local growers to increase the duration of their current fallowing practice between orchard removal and replanting by one growing season. The extra time would allow the soil to fallow and decrease the overall demand on groundwater and other water sources. Additionally, this program may also reduce the need for soil treatments such as fumigation and expand recycling options for the previous orchard. This project has the potential to fallow between 1,600 and 3,200 acres per year in North and South Vina. As envisioned, this project would be dependent on the availability of financial incentives and willingness of landowners to participate. Participation in the program would be voluntary.

Project Summary	
Identified project proponent(s) and other potential participating entities:	Vina GSA, local landowners, other entities to be determined
Project Type:	Conservation
Estimated Groundwater Offset and/or Recharge:	4,000 – 8,000 acre-feet/year

Measurable Objective Expected to Benefit: Groundwater Levels

Project Status: This project is still in the early conceptual planning stages.

Required Permitting and Regulatory Process: None

Timetable for Initiation and Completion: To be determined. The timetable would be dependent on the availability of financial incentives and willingness of farmers to participate.

Expected Benefits and Evaluation: By increasing the time between orchard removal and replanting, the soil may be allowed to fallow, restoring its fertility, and decreasing its water demand. This would decrease the overall use of groundwater in the Subbasin.

How Project Will Be Accomplished/Evaluation of Water Source: This project is a demand-side conservation project. No additional water source will be utilized for this project.

Legal Authority: The project would be under the Vina GSA, local landowners and other entities to be determined.

Estimated Costs and Plans to Meet Costs: To be determined; funding via Proposition 1, Proposition 68, USDA, National Resource Conservation Service (NRCS)

Circumstances for Implementation: This project is a Conceptual project in the early conceptual planning stages and would require significant additional work to move forward.

Trigger for Implementation and Termination: None

Process for Determining Conditions Requiring the Project to Occur: The project proponents are in the process of determining the feasibility of this project including the possibility of securing the necessary finances to move forward.

5.2.5.2 Recharge from the Miocene Canal

During the 2018 Camp Fire, the upper Miocene Canal, which is operated by PG&E, was destroyed. Under this project, the upper canal would be rebuilt and re-watered. Additionally, PG&E would sell the Miocene Canal system by mid-2022 and modify the system to increase water supply reliability. One such modification might include establishing recharge ponds along the west side of the Miocene Canal in areas conductive to recharging the Vina South Subbasin.

Project Summary	
Identified project proponent(s) and other potential participating entities:	Vina GSA PG&E, Butte County, local landowners, other entities to be determined
Project Type:	Direct Recharge
Estimated Groundwater Offset and/or Recharge:	2,000 acre-feet/year based on 10,000 acre-feet available for recharge (assuming a 20% efficiency)

Measurable Objective Expected to Benefit: Groundwater Levels

Project Status: This project is still in the early conceptual planning stages.

Required Permitting and Regulatory Process: CEQA, SWRCB Water Rights Permit

Timetable for Initiation and Completion: After 2025

Expected Benefits and Evaluation: Rebuilding the upper Miocene Canal and making improvements to the overall system would increase recharge into the Vina South Subbasin and surface water availability for other uses.

How Project Will Be Accomplished/Evaluation of Water Source: This project would be initiated by PG&E, who would obtain water from the same water sources that currently supply the Miocene Canal.

Legal Authority: The project would be under the authority of Vina GSA and PG&E.

Estimated Costs and Plans to Meet Costs: To be determined, funding via state and federal grants

Circumstances for Implementation: This project is a Conceptual Project, meaning it is in the early conceptual planning stages and would require significant additional work to move forward. Conceptual Projects represent potential future projects that could conceptually provide a benefit to the Subbasin in the future. As scenarios change, Conceptual Projects can come online to bring additional resources for adaptive management. The project proponents are in the process of determining the feasibility of this project including the possibility of securing the necessary finances to move forward.

Trigger for Implementation and Termination: None

Process for Determining Conditions Requiring the Project to Occur: Implementation of Conceptual Projects will be based on long-term management or changing needs of the GSA or Subbasin.

5.2.6 Notification Process

The GSAs will continue to conduct public outreach and will be responsible for notification of the projects. Regular updates will be provided to the GSA Boards and presented on the websites www.vinagsa.org and rockcreekreclamation.com as projects are implemented. Outreach is likely to include public notices, meetings, website, social media, and email lists.

5.3 Management Actions

To achieve sustainable groundwater management, management actions can be implemented to focus on reduction of groundwater demand. The management actions can include increased data collection, education and outreach, regulatory policies, incentive programs, and enforcement actions.

An evaluation of potential GSA actions (projects or management actions) will occur on an annual basis relying on information reported in the annual report. The following sections will present a suite of management action options that the GSA may consider during GSP implementation. The schedule to implement the management actions is likely to vary depending upon Vina Subbasin conditions and the expected benefits of PMAs may also vary year to year.

5.3.1 General Plan Updates

The GSA(s) will cooperate with Butte County and the City of Chico with updates to their General Plans. The GSA(s) will participate and collaborate as appropriate with land use agencies during general plan updates to ensure that land use planning recognizes the Vina GSP. The GSAs will collaborate to ensure that the important components of the GSP are addressed in the general plans. The recognition and use of groundwater sustainability practices would remain consistent.

5.3.2 Domestic Well Mitigation

If an increasing number of domestic groundwater wells go dry in the Vina Subbasin, the GSAs could propose a series of steps to help mitigate this issue. The following steps are proposed under this management action:

1. Establish a voluntary registry of domestic wells.
2. Compile domestic well logs, screen depths, and locations.

3. Secure financial resources to improve, deepen or replace select domestic wells.
4. Provide emergency response to homes with dry domestic wells, including supplying bottled water and potable water for sanitation. Priority would be given to disadvantaged communities dependent on groundwater as a drinking water resource.

Creating a registry of domestic wells in the region, with information on well location and screen depths, would help the GSAs compile important data into a centralized location. This would allow the GSAs to determine which wells need to be updated to the current standards and which may need to be deepened, as well as to help them prioritize certain communities for emergency response.

5.3.3 Well Permitting Ordinance

According to the current Butte County code, domestic wells are required to be screened below the groundwater levels measured during the 1989 to 1994 drought. This management action proposes that the GSAs will work with Butte County to amend the well ordinance as it relates to small and large diameter wells to take into consideration the HCM based on best available data (i.e. AES data), adopted SMC, historical groundwater conditions, and impacts of new wells on existing wells. The code could be amended with requirements for well screens to account for MT established for the Vina Subbasin. This would improve water supply reliability of future agricultural and domestic wells.

5.3.4 Landscape Ordinance

Butte County and/or the City of Chico would enact an ordinance requiring new residential, commercial, and industrial development to use drought-resistant species for landscaping and to limit the size of grass lawns that require regular irrigation. The ordinance would focus efforts and money on reducing the amount of water used for landscape irrigation and swimming pools while promoting xeriscaping. The reduction in irrigation for landscaping and swimming pools would allow groundwater use for other purposes in the Vina Subbasin.

5.3.5 Prohibition of Groundwater Use for Ski (Recreational) Lakes

In the Vina Subbasin, there are several ski lakes that are currently supplied with groundwater. The Vina GSA would encourage Butte County to amend the zoning ordinance to prohibit the use of groundwater for future ski lakes.

5.3.6 Expansion of Water Purveyors' Service Area

The Vina GSA would encourage the expansion of water purveyors' service area to areas across the Vina Subbasin that are reliant on private groundwater wells. This would require action by individual water purveyors, support of residents, and governmental approval. By expanding the service area of water purveyors, areas that rely solely on groundwater would have another source of water and would reduce groundwater extraction.

5.3.7 Groundwater Allocation

SGMA requires that GSPs describe the projects and management actions to be implemented as part of bringing the Vina Subbasin into sustainability. As a last resort, in the event that the proposed projects fail to achieve IMs and the Vina Subbasin is projected to not be able to

achieve sustainability goals by 2042, the GSAs may need to consider implementation of groundwater allocations to manage groundwater demand. The implementation of this management action would be based on an evaluation by the Joint Management Committee. The consideration of groundwater allocation would be based on the groundwater budgets and updated monitoring data throughout the Vina Subbasin, as presented in annual reports.

Groundwater allocation management actions could include, but are not limited to, targeted maximum extraction levels to address specific MT violations or Vina Subbasin-wide adjustments to extractions to address overall chronic lowering of groundwater levels. Should the GSAs determine that groundwater allocation management actions are necessary, the GSAs will consider such management actions through a public process ultimately decided by the GSA Boards.

5.4 Data Collection

5.4.1 County Contour Mapping

As part of the efforts to collect the information necessary to fill the information needs and data gaps identified in Section 3, this project proposes to expand the existing monitoring program to include Butte, Glenn, Colusa, and Tehama counties and conduct these groundwater elevation surveys in the spring, summer, and fall. The monitoring program would gather data used to produce groundwater contours and estimates of lateral and vertical flow direction and volume. Producing these data for the four counties will help to identify interbasin flow patterns and influences on surface water flows and replenishment locations, thereby improving coordination between counties and water management decision-making.

Routine water table monitoring programs will track overall water table trends in the region and provide important, up-to-date data for making decisions on water management. Establishing these programs amongst the four counties will aid in the exchange of data and improve regional coordination on various water projects. The expanded water monitoring programs will be established by the Vina and RCRD GSAs, with assistance from the four counties.

5.4.2 Update the Butte Basin Groundwater Model

The existing BBGM covers the Vina, Butte, and Wyandotte Creek Subbasins. This project will help fill the identified data gaps by 1) updating the BBGM with newly acquired data; and 2) using the updated version of the model to run simulations to support evaluation of projects or GSP updates as appropriate and warranted. Some of the new data to be incorporated is the AEM data and data on the different hydraulic conductivities of each layer of the aquifer. The AEM data will be used, among other things, to adjust the various surfaces in the model to better represent the aquifer's hydrogeologic layers.

Once the model has been updated with the new data, it will be better suited for running simulations of different water or land use management scenarios as well as predictions for climate and precipitation fluctuations. Lateral and vertical connectivity between aquifer layers and connections to surface water features will be more accurate and help identify areas of the basin where groundwater recharge may be needed. Overall, this will help shape management actions by focusing efforts on those particular areas. Ongoing updates to the model will emphasize the importance of accurate and up-to-date data and help continue monitoring efforts

such as measuring water levels and stream flows. It is expected that at least two updates to the model will be prepared as the GSP is implemented and additional data is collected.

An updated groundwater model is vital for running accurate simulations that may be used to make important decisions regarding groundwater allocation, pumping, recharge, and other activities. The model should contain the most up-to-date data to represent the basin realistically and accurately.

5.4.3 Community Monitoring Program

As discussed in Section 4.10, the MT for groundwater levels is based on the depths of domestic wells. The dataset used for this assessment is limited and likely includes wells no longer in use or poorly maintained wells. To resolve this data gap, the GSAs will conduct surveys of domestic wells within the Vina Subbasin to assess if the wells are still active and collect the well construction details. As domestic well construction information may be limited, selected wells may be video logged to obtain additional information.

The GSAs will also maintain a record of verifiable domestic wells that go dry during the implementation period that will include depth of these wells, screen intervals, and available maintenance records. These data will be used to modify the MO and MT over the implementation period, as appropriate.

5.4.4 Interconnected Surface Water/Associated Impacts on Groundwater Dependent Ecosystems

Also discussed in Section 4.10 and in Section 3.8 is the lack of sufficient data to analyze the interaction of streams and groundwater pumping within the primary aquifer system. Additional wells and other monitoring networks will be installed, as appropriate, following the framework discussed in Section 3.8.

5.5 Adaptive Management Strategies

The GSAs will be requesting annual reports from the project proponents to evaluate progress on implementation. If the projects are not progressing or if monitoring efforts demonstrate that those projects are not achieving their targets, the GSAs will evaluate the need for additional or modified projects and to begin implementation of management actions.

5.6 Potential Available Funding Mechanisms

As listed above in the individual project descriptions, several funding mechanisms have been identified to help with the planning and implementation of the GSP projects. The following is an abbreviated list of some of the funding mechanisms proposed:

Project Type	Funding Type	Program	Dates
IRWM (projects included in an adopted IRWM Plan)	Implementation Grant	Proposition 1, Water Quality, Supply, and Infrastructure Improvement Act of 2014	Round 2 solicitation expected in late 2021
Recharge Projects	Planning and construction grants	Proposition 68, California Drought, Water, Parks, Climate, Coastal Protection, and Outdoor Access for All Act of 2018	Round 2 solicitation to be released early 2022
Wastewater treatment for underrepresented communities projects	Planning and construction grants	Small Community Grant Fund	Applications accepted continuously
Public water systems improvement	Planning and construction grants	Drinking water grants	Applications accepted continuously
Land Conservation	USDA Farm Service Agency	Conservation Reserve Program	Applications accepted continuously

EXAMPLE of Project Attributes included in the PMA Module (only two GSP Projects shown, for example only)

Project DB ID	279	281
PMA ID	5-021.57_PMA_1	5-021.57_PMA_3
Basin / Subbasin	5-021.57 VINA	5-021.57 VINA
GSP(s)	5-021.57 VINA	5-021.57 VINA
A.1 - Project or Management Action? *	Project	Project
A.2 - Project or Management Action Name *	Agricultural Irrigation Efficiency	Project: Scoping for Flood MAR/Surface Water Supply and Recharge
A.3 - Subcategory	Planned Projects	Planned Projects
A.4 - Brief Description *	Adoption of more efficient irrigation practices.	Initial scoping and identify recharge opportunities
A.5 - Project or Management Action Type(s) *	Water Conservation/Efficiency	Other;Study or Investigation;Administrative Activities
A.5(a) - Type - Other Description **		Scoping and identifying recharge opportunities
A.5(b) - PMA Subtype(s) ** (Direct Aquifer Recharge, Demand Management, Coordination PMA Type Only)		
A.6 - Lead Implementing GSA(s) *	Vina GSA	Vina GSA;Rock Creek Reclamation District GSA
A.7 - Other Implementing GSA(s)		
A.8 - PMA Point of Contact Name		
A.8(a) - PMA Point of Contact Agency Name		
A.8(b) - PMA Point of Contact Email		
A.8(c) - Point of Contact Phone		
B.1 - Is the location known? *	No	No
B.1(a) - Explain why the location is unknown **	The project is in the planning stages	Project efforts on areas with the greatest need for recharge, but no specific location is available at the moment.
B.2 - Location(s) Description **		
B.3 - Covers Entire Basin? **		
B.5 - Location Name 1		
B.5 - Latitude 1		
B.5 - Longitude 1		
B.5 - Location Name 2		
B.5 - Latitude 2		
B.5 - Longitude 2		
C.1 - Describe the circumstances under which the project or management action shall be implemented *	Project is anticipated to move forward with implementation	Project is anticipated to move forward with implementation
C.2 - Does the PMA have an expected initiation and completion date? *	Yes	Yes
C.2(a) - If no expected initiation and/or completion date is provided, describe the conditions that would trigger implementation and/or termination of the PMA, and provide how the GSA will determine when these conditions become present. **		
C.3 - Expected initiation year **	2024	2022
C.4 - Expected completion year **	2030	2032
D.1 - Are estimated costs known? *	No	No
D.1(a) - Describe why estimated costs are not known. **	To be determined	To be determined

D.2 - Provide an Estimated Cost **		
D.3 - Describe the estimated costs and how these costs will be met **		
D.4 - Select potential funding sources. **	State Funding (Grant);Federal Funding (Grant)	State Funding (Grant)
D.4(a) - Describe potential funding sources **	Proposition 1, Proposition 68, USDA, and Drought Resiliency Grants	Proposition 1 and Proposition 68
D.5 - Select confirmed funding sources **	State Funding (Grant)	State Funding (Grant)
D.5(a) - Describe confirmed funding sources **	SGM Grant Program, SWEEP	SGM Grant Program
E.1 - Select applicable benefited sustainability indicators *	Groundwater Levels;Groundwater Storage	Groundwater Levels
E.1(a) - If no sustainability indicators are selected, please provide an explanation **		
E.2 - PMA Benefit(s) *	Reduction in Groundwater Demand/Reduced Pumping	Reduction in Groundwater Demand/Reduced Pumping;Increased Groundwater Supply;In lieu Use
E.3 - Does the PMA provide water supply benefits? *	Yes	No
E.3(a) - Provide the estimated projected benefits in acre-feet per year (AFY)	4,000	
E.3(b) - Provide a description of the water supply benefits **	The project will address declining water levels and the declining volume of groundwater stored in the aquifer. The main objective of the project is to reduce groundwater demand by modifying irrigation practices.	
E.4 - Describe any other non-water supply related benefits. **		Initiating first stages of FloodMAR efforts in Vina.
E.5 - Explain how benefits will be evaluated *	A survey that consolidates data on the adoption of irrigation methods and practices by agricultural groundwater users will identify where more efficient practices can be implemented. This can help focus efforts and finances on areas where a reduction in overall groundwater demand is needed and feasible.	Not provided in GSP.
E.6 - Is the PMA dependent on a water supply source? *	No	No
E.7 - Select all applicable water source(s). **		
E.7(a) - "Other" water source description **		
E.8 - Explain the water source(s) and the reliability of each source. **		
Status	Planning	Planning
Last Updated	2/25/2026 12:52 PM	2/25/2026 12:52 PM

March 25, 2026

Vina Subbasin: Projects and Management Actions (PMAs)

Prepared by:

The LWA Team in coordination with the Vina GSA

Funding provided by the California Department of Water Resources

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Vina GSA

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Agenda

- Discussion of Projects and Management Actions (PMAs)
- **Request for Feedback**

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Topics for SHAC Consideration

1. Provide feedback on proposed PMA classifications:
    I. GSA Prioritized PMAs – projects to be included in the SGM Portal PMA Module
        I. Completed
        II. In-Progress
        III. Potential

    II. Other Projects – projects that provide other ancillary benefits to groundwater or are not currently part of the GSAs' active strategy to achieve/maintain sustainability

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2022 GSP Projects and Management Action (PMA) Categorization

- PMAs aim to address overdraft within the Subbasin by (1) decreasing pumping or (2) increasing groundwater storage via recharge
- The scale and number of PMAs in the GSP should be aligned with the level of effort anticipated to maintain/achieve sustainability in the subbasin
- In the 2022 GSP, PMAs are categorized into four groups:
    - **Planned Projects**: Projects in this category are anticipated to move forward to help achieve the region's sustainability before 2042.
    - **Potential Projects**: Projects in this category are currently in the initial planning stages and may move forward as feasibility and project requirements are determined.
    - **Conceptual Projects**: Projects in this category are in the early conceptual planning states and would require significant additional work to move forward.
    - **Management Actions**: Actions that can be implemented to focus on reduction of groundwater demand including increased data collection, education and outreach, regulatory policies, incentive programs, and enforcement actions.

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2022 GSP Projects and Management Action (PMA) Categorization

Table 1. PMA Summary from the 2022 GSP.

Planned Projects	Potential Projects	Conceptual Projects	Management Actions
1. Agricultural Irrigation Efficiency	1. Paradise Irrigation District Intertie	1. Extend Orchard Replacement	1. General Plan Updates
2. Residential Conservation	2. Agricultural Surface Water Supplies	2. Recharge from the Miocene Canal	2. Domestic Well Mitigation
3. Scoping for Flood MAR, Surface Water Supply, and Recharge	3. Streamflow Augmentation		3. Well Permitting Ordinance
4. Community Water Education Initiative	4. Community Monitoring Program		4. Landscape Ordinance
5. Fuel Management for Watershed Health	5. Wastewater Recycling		5. Prohibition of Groundwater Use for Ski (Recreational) Lakes
	6. Rangeland Management and Water Retention		6. Expansion of Water Purveyors' Service Area
	7. Removal of Invasive Species		7. Groundwater Allocation
	8. Surface Water Supply and Recharge		

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Proposed PMA Categorization

Goal: clarify which Projects are needed to achieve / maintain sustainability.

- **GSA Prioritized PMAs:**
  - **Completed:** a finished project and benefits have been reported
  - **In-progress:** a project in planning, design, or implementation phase – may require funding to proceed
  - **Potential:** a project that has been developed – to be implemented as needed/funded
- **Other Projects:** Potentially led by other agencies and not critical to achieving sustainability. Status will be tracked by the GSA as feasible (not to be included in the PMA Module of the SGM Portal for annual tracking).

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GSA Prioritized PMAs – initial categorization for discussion

Projects the GSAs are or will pursue to maintain / achieve sustainability in the subbasin. These projects would be actively tracked in Annual Reports and updates reported on in the PMA Module.

Completed Projects
N/A

In-Progress Projects	Potential Projects
1. Agricultural Irrigation Efficiency (5.2.3.1) 2. Residential Conservation (Cal Water) (5.2.3.2) 3. Scoping for Flood MAR/Surface Water Supply and Recharge (5.2.3.3) 4. Extend Orchard Replacement (5.2.5.1) 5. Rangeland Management and Water Retention (BCCER) (5.2.4.6)	1. Agricultural Surface Water Supplies Project (5.2.4.2) 2. Surface Water Supply and Recharge (includes Lindo Channel)* (5.2.4.8)

* This is non-specific project that describes various types of activities related to utilizing surface water in the subbasin (includes description of Sand Creek Project and Lindo Channel as examples).

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Other Projects

For Consideration: The following projects are listed as "Other Projects."

They may have benefits to groundwater conditions but are not part of the GSAs' active strategy to maintain / achieve sustainability. Projects will be tracked, as feasible.

Should any of these be elevated/moved to one of the other project categories (previous slide)?

Other Projects
1. Wastewater Recycling (City of Chico) (5.2.4.5) 2. Paradise Irrigation District Intertie (5.2.4.1) 3. Community Water Education Initiative (5.2.3.4) 4. Fuel Management for Watershed Health (5.2.3.5) 5. Removal of Invasive Species (5.2.4.7) 6. Streamflow Augmentation (5.2.4.3) 7. Recharge from the Miocene Canal (5.2.5.2) 8. Community Monitoring Program (CSUC) (5.2.4.4)

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Management Actions

All Management Actions are currently in the PMA Module and could be reported on annually.

Management Actions
1. General Plan Updates
2. Domestic Well Mitigation
3. Well Permitting Ordinance
4. Landscape Ordinance
5. Prohibition of Groundwater Use for Ski (Recreational) Lakes
6. Expansion of Water Purveyors' Service Area
7. Groundwater Allocation

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Summary and Questions for Discussion

1. Provide feedback on proposed PMA classifications:
    I. GSA Prioritized PMAs – projects to be included in the SGM Portal
        I. Completed
        II. In-Progress
        III. Potential
    II. Other Projects

Q1. Scoping for Flood MAR/Surface Water Supply and Recharge – should we consider this project complete based on the completion of the grant funded Surface Water Supply and Recharge Feasibility Study, to be completed mid-2026? Or not?

Q2. Should any of the projects in the **Other Projects** category be moved to the GSA Prioritized categories?

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