

5070 **6. PLAN IMPLEMENTATION**

5071 SGMA requires the GSAs to partner with groundwater users to develop and implement GSPs to
5072 achieve groundwater sustainability. SGMA requires the Subbasin to be sustainable by 2042. The
5073 GSP includes provisions to evaluate current conditions in the Subbasin (Section 2), establish
5074 SMC (Section 3), gather and analyze groundwater data (Section 4), and report findings. The
5075 provisions in the GSP will be evaluated every 5 years and updated as necessary. The Vina
5076 Subbasin GSAs are required to submit the GSP to the DWR by January 31, 2022. DWR will
5077 evaluate the GSP within 24 months of submittal. Upon submittal of this GSP to DWR, GSP
5078 implementation will begin in the Vina Subbasin. The GSAs will continue their efforts with
5079 public engagement and to secure funding to monitor and manage groundwater resources. This
5080 Section presents the manner in which the GSAs will execute the GSP consistent with the
5081 requirements in CCR Title 23 § 354.6(e).

5082 The GSP includes provisions for:

- 5083 • Gathering data at RMS locations
- 5084 • Evaluation of SMCs
- 5085 • Report of findings and analysis
- 5086 • Implementation of PMAs

5087 Each of these will require funding and schedule coordination to help achieve Vina Subbasin
5088 sustainability goals. The following sections describe the funding mechanisms and timetable for
5089 the GSP implementation.

5090 **6.1 Estimate of Groundwater Sustainability Plan Implementation Costs**

5091 Where feasible, the GSAs will use existing funding and/or programs for use in the GSP
5092 implementation. The GSAs, member agencies, and water purveyors will coordinate to implement
5093 the actions outlined in this GSP. The GSAs will fund the implementation of the GSP where other
5094 sources are not available. The cost of implementation of the GSP by activity is presented below.

5095 **6.1.1 Administrative Costs**

5096 These include the cost of annually operating the GSAs, including staff expenses, audit, outreach,
5097 legal and other administrative costs. This does not include agency specific project
5098 implementation costs. Costs are estimated to be in the range of approximately \$200,000 to
5099 \$400,000 annually.

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5101 **Table 6-1: Estimated Administrative Costs**

GSP Implementation	Estimated Annual Costs
Public Outreach	\$25,000
Staff	\$150,00
Legal	\$30,000
Other	\$20,000
Total Estimate	\$225,000

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5103 Public outreach efforts will continue during GSP implementation with a focus on progress
 5104 updates particularly regarding the PMAs. Staff time will likely be in-kind contribution from
 5105 member agencies and Butte County. Outside counsel will continue to provide legal advice to the
 5106 GSAs Boards. The budget also includes other miscellaneous costs such as printing and
 5107 insurance.

5108 **6.1.2 Monitoring**

5109 Monitoring for compliance with SGMA regulations will include semi-annual collection of
 5110 groundwater levels at 17 RMS locations and annual collection of groundwater quality at 8 RMS
 5111 locations. Monitoring activity costs will include labor (field data collection, surveying,
 5112 laboratory analysis, project management) and equipment (vehicles, meters, pumps, field
 5113 tools/supplies).

5114 **Table 6-2: Monitoring Activities and Estimated Cost**

Monitoring Activity	Frequency	Estimated Annual Cost
Groundwater Levels	Semi-Annual, 2 events	\$20,000
Groundwater Quality	Annual, 1 event	\$8,000

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5116 Some RMS locations include wells that are monitored and funded under existing programs.

5117 **6.1.3 Data Analysis**

5118 The data gathered from the ongoing monitoring program will be analyzed to assess trends for
 5119 determination of undesirable results. Analysis of the data may lead to modifications in the RMS
 5120 network, the hydrogeological conceptual model, and the priority of PMAs. Data gaps that arise
 5121 from analysis may require installation of new RMS locations.

5122 **Table 6-3: Data Analysis Activities and Estimated Cost**

Data Analysis Activity	Frequency	Estimated Annual Cost
Data Management System	Annual	\$5,000
Review of Groundwater Data	Annual	\$5,000

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5124 **6.1.4 Reporting and Evaluation**

5125 Annual reports are required after GSP adoption to provide updates to general GSP information,
 5126 basin conditions, and plan implementation progress. Section 6.3 discusses the annual reporting

5127 plan in more detail. GSAs are required to conduct an evaluation of the GSP and prepare a report
 5128 every 5 years or whenever the GSP is amended. Section 6.4 discusses the evaluation report in
 5129 more detail.

5130 **Table 6-4: Reporting and Evaluation Activities and Estimated Cost**

Reporting Activity	Frequency	Estimated Cost
Annual Report	Annual	\$30,000
5-year Evaluation Report	5 Years	\$100,000

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5132 **6.1.5 Data Gaps**

5133 A discussion of the data gaps is presented in Section 6 and the estimated costs are presented
 5134 below.

5135 **Table 6-5: Estimated Costs for Implementing Data Gaps**

Data Gaps	Estimated Costs
Interconnected Stream Monitoring	\$100,000 – \$250,000
Contour Mapping	\$20,000 - \$50,000
Community Monitoring	\$50,000 - \$150,000
Butte Basin Model Update 1	\$50,000 - \$100,000
Butte Basin Model Update 2	\$50,000 - \$100,000

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5137 **6.1.6 Project and Management Actions**

5138 The PMAs and anticipated costs are presented in Section 6. The PMAs with a planned initiation
 5139 date in or before 2032 are presented below.

5140

5141 **Table 6-6: Estimated Project Costs**

Project Name	Capital Costs	Expected Groundwater Demand Reduction (AFY)
Agricultural Irrigation Efficiency	TBD	Up to 4,000
Flood MAR	TBD	1,000 per project
Residential Conservation	TBD	100
Streamflow Augmentation	\$50-\$100 per acre-foot	1,000-5,000
Agricultural Surface Water Supplies	TBD	2,000 – 3,000
Paradise Irrigation District Intertie	TBD	5,000
Extend Orchard Redevelopment	TBD	4,000 – 8,000
Recharge from the Miocene Canal	TBD	2,000
Recycled Wastewater	TBD	5,000
Community Water Education Initiative	Component 1: \$50-100K annually Component 2: \$10,000-\$200,000 annually Component 3: \$10,000-\$25,000 annually	TBD
Community Monitoring Program	TBD	TBD
Rangeland Management	TBD	TBD
Fuel Management for Watershed Health	TBD	TBD
Removal of Invasive Species	TBD	TBD
Surface Water Supply and Recharge	TBD	1,000 per project

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5143 **6.2 Identify Funding Alternatives**

5144 The GSAs will seek to capitalize on existing funding and programs that overlap with GSP
 5145 requirements. For example, Butte County, DWR and other entities currently fund groundwater
 5146 data collection programs at locations within the Subbasin. The GSAs will ensure that the existing
 5147 programs meet the technical requirements of the monitoring and reporting as outlined in the
 5148 GSP.

5149 In cases where no funding or programs are established, the GSAs will be responsible for securing
 5150 funding for the GSP implementation. The GSAs will coordinate funding with their respective
 5151 constituent members within the Subbasin. GSAs may fund the GSP through a cost-sharing
 5152 collaboration to be determined after adoption of GSP.

5153 Funding is anticipated to be met from one or a combination of the following sources: direct
 5154 contributions from the GSAs constituent members, State and Federal grant funding, and taxes or
 5155 assessments levied on landowners and groundwater users in accordance with local and State law.

5156 The GSAs are evaluating a variety of funding mechanisms including Proposition 218 or
 5157 Proposition 26 to support ongoing operational costs and to fund agency operations. These costs
 5158 include retaining consulting firms and legal counsel to provide oversight and assist with SGMA

5159 compliance. Expenses consist of administrative support, GSP development, and GSP
5160 implementation.

5161 **6.3 Schedule for Implementation**

5162 Figure 6-1 presents the estimated schedule for GSP implementation for the Vina Subbasin GSP
5163 starting in 2022 through 2042. Project schedules may shift or be altered by the GSAs Board of
5164 Directors based on funding opportunities and circumstances. Some activities such as monitoring,
5165 data analysis, and reporting will begin upon submittal of the GSP and will continue through GSP
5166 implementation. Other activities such as the PMAs will be completed by priority as funding and
5167 resources become available.

5168 **6.4 Data Management Systems**

5169 In development of this GSP, the GSAs developed a groundwater model that was calibrated to
5170 estimate future scenarios. The data management system plans to build on existing data inputs in
5171 the groundwater model and develop a more formalized approach to collecting and capturing data.
5172 As stated in Section 4, Monitoring Network, future data will be gathered to develop annual
5173 reports as well as provide necessary information for future and ongoing update to the
5174 groundwater models at five-year intervals upon GSP implementation. The DMS that will be used
5175 is a geographical relational database that will include information on water levels, land elevation
5176 measurements, and water quality testing. The DMS will allow the GSAs to share data and store
5177 the necessary information for annual reporting.

5178 The DMS will be on local servers and data will be transmitted annually to form a single
5179 repository for data analysis for the Subbasin's groundwater, as well as to allow for preparation of
5180 annual reports. GSAs representatives have access to data and will be able to ask for a copy of the
5181 regional DMS. The DMS currently includes the necessary elements required by the regulations,
5182 including:

- 5183 • Well location and construction information for the representative monitoring points
5184 (where available)
- 5185 • Water level readings and hydrographs including water year type
- 5186 • Land based measurements
- 5187 • Water quality testing results
- 5188 • Estimate of groundwater storage change, including map and tables of estimation
- 5189 • Graph with Water Year type, Groundwater Use, Annual Cumulative Storage Change

5190 Reporting generated from data from the GSAs will include but is not limited to:

- 5191 • Seasonal groundwater elevation contours
- 5192 • Estimated groundwater extraction by category
- 5193 • Total water uses by source

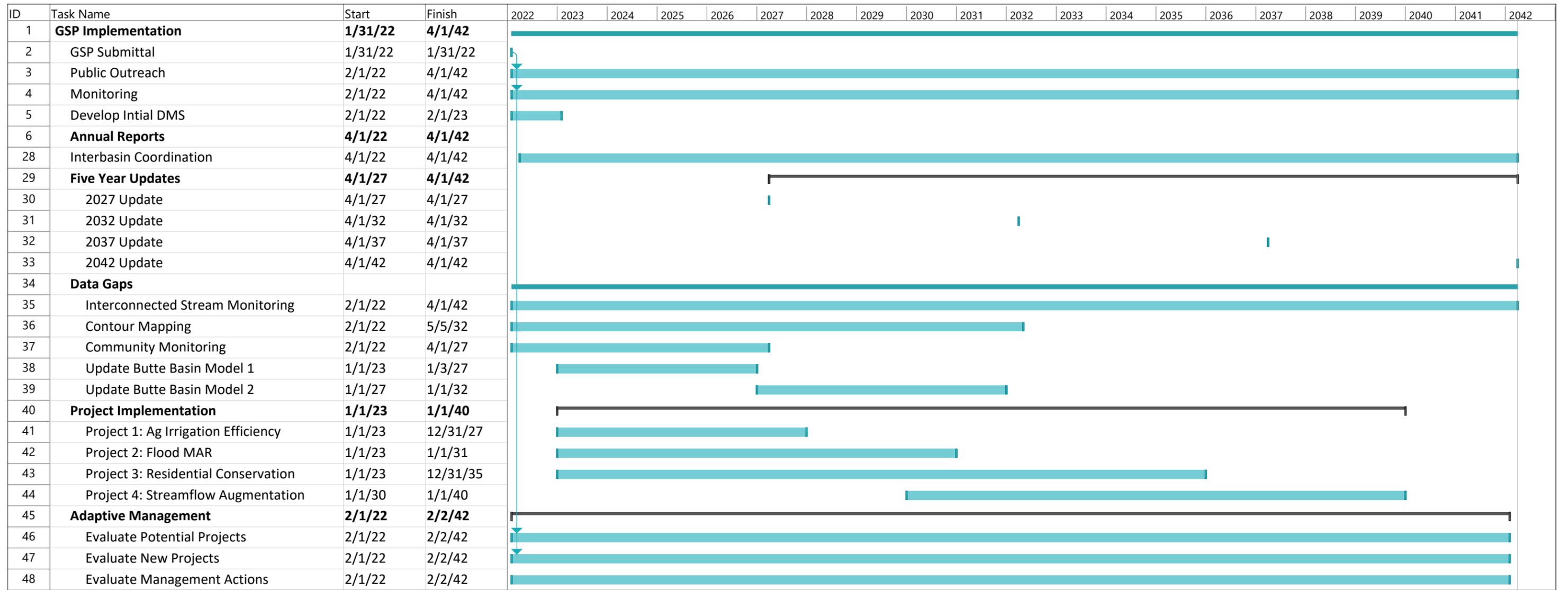


Figure 6-1
Vina Subbasin
Implementation Schedule



5194 Additional items may be added to the DMS in the future as required. Data will be entered into
 5195 the DMS by each GSA. The majority of the data will then be aggregated to the entity that is
 5196 responsible for the regional DMS and summarized for reporting to DWR. Groundwater contours
 5197 will be prepared outside of the DMS because of the need to evaluate the integrity of the data
 5198 collected and generate a static contour set that has been reviewed and will not change once
 5199 approved. Groundwater storage calculations will be calculated in accordance with the method
 5200 described in Section 2, outside of the DMS. Results are uploaded to the DMS for annual
 5201 reporting and trend monitoring. Since most of the pumping in the Subbasin is not currently
 5202 measured, the groundwater pumping estimates are also calculated outside of the DMS using the
 5203 methods developed by GSAs and uploaded to the DMS for annual reporting and trend analysis.
 5204 The GSAs may choose to have their own separate system for additional analysis.

5205 The one-time cost of expanding the existing data systems is estimated between \$50,000 to
 5206 \$2000,000 as the system is still being evaluated. The Board has indicated a desire to make the
 5207 data transparent and available to the public while respecting the privacy of individual
 5208 landowners.

5209 **6.5 Annual Reporting**

5210 Annual reports will be submitted by April 1 for the prior year's activities. The report will include
 5211 a general update in the form of an executive summary with accompanying map of the Subbasin.
 5212 The body of the report will include a detailed discussion and graphical representation of the
 5213 following:

- 5214 • Groundwater elevation data, including contour maps at seasonal high and low conditions
 5215 and hydrographs using water year type and historical data from at least 2015.
- 5216 • Groundwater extraction data divided into volume by water usage sectors with
 5217 accompanying map, including a description of the methodology and accuracy of the
 5218 groundwater extraction estimation.
- 5219 • Surface water volume used or available for use for groundwater recharge or in-lieu use,
 5220 including a description of the water sources.
- 5221 • Total water volume use divided into water use sector and water source type, including a
 5222 description of the methodology and accuracy of the water use estimation.
- 5223 • Changes in groundwater storage with accompanying map, including a graph with water
 5224 year type, groundwater use, annual change in groundwater storage, and cumulative
 5225 change in groundwater storage using historical data from at least 2015.
- 5226 • The annual report will also include a discussion and update on the plan implementation
 5227 including the status of interim milestones and the execution of PMAs.

5228 **6.6 Evaluation Report**

5229 The GSAs will evaluate the GSP and provide an evaluation report every 5 years or whenever the
 5230 GSP is amended for submittal to DWR.

5231 The assessment will include a detailed discussion of the following:

- 5232 • Significant new information and whether the information warrants changes to the basin
5233 setting, measurable objectives, minimum thresholds, and sustainability indicators,
5234 including completed or planned GSP amendments.
- 5235 • Current groundwater conditions relating to each measurable objective, minimum
5236 threshold and interim milestone.
- 5237 • Implementation of any project and management actions and the resulting effects on
5238 groundwater conditions.
- 5239 • Assessment of the basin setting, Management Areas, undesirable results, measurable
5240 objectives and minimum thresholds.
- 5241 • Evaluation of the basin setting and overdraft conditions to include changes in water use,
5242 along with overdraft mitigation measures (if applicable).
- 5243 • Assessment of the monitoring network with analysis of data collected to date, including
5244 identification of data gaps and suggested improvements of the network
- 5245 • Program to address data gaps, including timing and incorporation of data into the GSP,
5246 with prioritization on the installation of new data collection sites and analysis of new data
5247 based on the needs of the basin
- 5248 • Relevant actions taken by the GSAs including a summary of regulations, ordinances,
5249 legal enforcement or action related to the implementation of the GSP and sustainability
5250 goals.

5251 Summary of coordination by GSAs within the basin or within hydrogeologically connected
5252 basins and land use agencies.

5253 **6.7 Interbasin Coordination**

5254 The Vina Subbasin understands that in the Sacramento Valley inter-basin coordination is critical
5255 due to the interconnectedness of groundwater as each subbasin prepares and implements its GSP.
5256 As such, the Vina Subbasin participated with the surrounding 10 subbasins (Antelope, Bowman,
5257 Butte, Colusa, Corning, Los Molinos, Red Bluff, Sutter, Wyandotte Creek, and Yolo). Inter-
5258 basin coordination efforts were focused on establishing a foundation and guidelines for sustained
5259 inter-basin coordination by identifying priorities and resources. The main objective of the
5260 coordination efforts is to identify any significant discrepancies in the GSPs, understand why
5261 those differences exist, and evaluate to the extent they need to be reconciled.

5262 As part of the coordination efforts, the Northern Sacramento Valley Inter-basin Coordination
5263 Report was prepared (Appendix 6-A). The report outlined a framework for inter-basin
5264 coordination for sustainable groundwater management in the Northern Sacramento Valley. It
5265 described a menu of options for ongoing communication and collaboration between and among
5266 groundwater subbasins over the twenty-year implementation of SGMA. The framework is
5267 intended to be used by the GSAs to support GSP development and implementation.

5268 The Vina Subbasin intends to coordinate in the following ways with its neighboring subbasins
5269 and with subbasins in the North Sacramento River Corridor group (Antelope, Los Molinos, Red
5270 Bluff, Corning, Vina, Butte, and Colusa Subbasins):

5271 **1. Information Sharing**

5272 Vina Subbasin will work with GSAs staff of neighboring subbasins to identify lines of
5273 communication and methods for information sharing that would be agreed upon by the
5274 respective GSAs Boards. This will continue throughout GSP implementation and may include:

- 5275 1. Inform each other on changing conditions (i.e., surface water cutbacks, land use
5276 changes, policy changes that inform groundwater management)
- 5277 2. Share annual reports and interim progress reports
- 5278 3. Share data and technical information and work towards building shared data across
5279 and/or along basin boundaries (e.g., monitoring data, water budgets, modeling inputs
5280 and outputs, and Groundwater Dependent Ecosystems)

5281 **2. Conduct Joint Analysis and Evaluation of GSPs**

5282 In the near term, the Vina Subbasin intends to pursue grant funding and collaboratively work
5283 with subbasins in the North Sac River Corridor group to:

- 5284 1. Contract with a consultant to conduct this work
- 5285 2. Evaluate and compare contents of GSPs with a focus on establishing a common
5286 understanding of basin conditions at boundaries
- 5287 3. Identify significant differences, uncertainties, and potential issues of concern related
5288 to groundwater interaction at the boundaries
- 5289 4. Engage in analysis and evaluation of SMCs between GSPs to assess impacts and
5290 identify significant differences and possible impacts between subbasins that could
5291 potentially lead to undesirable results

5292 The North Sac River Corridor is the appropriate scale of coordination for these activities due to
5293 the shared boundary of the Sacramento River, shared data gaps, and the interconnectedness of
5294 the subbasins.

5295 **3. Coordinate on mutually beneficial activities**

5296 The Vina subbasin will work collaboratively with North Sac River Corridor subbasins to identify
5297 items in our GSPs that are ripe for a coordinated project and pursuit of funding such as Projects
5298 and Management Actions, Data Gaps (new monitoring wells, stream gaging etc.)

- 5299 1. GSAs Boards will jointly identify projects/programs to coordinate on
- 5300 2. Vina Subbasin will pursue partnerships to obtain grant funding to support a consultant
5301 to conduct this work

5302 3. Vina Subbasin will work collaboratively with entities such as the Northern California
5303 Water Association (NCWA) and others in their efforts to pursue funding and support
5304 local and state agency activities to identify and fill regional data gaps

5305 **4. Coordinated Communication and Outreach**

5306 Vina Subbasin GSAs staff will continue to participate in regional public engagement activities
5307 and efforts related to implementation of SGMA in the Northern Sacramento Valley. These
5308 efforts will include GSAs Board members and will foster transparency of communications.

5309 This may include:

5310 1. Coordinate and collaborate on regional-scale public engagement and communication
5311 strategies that promote awareness on groundwater sustainability, enhance public trust,
5312 and maintain institutional knowledge

5313 2. Maintain list of GSP/subbasin staff contacts and websites

5314 **5. Issue Resolution Process**

5315 Vina Subbasin will pursue development of an issue-resolution process with neighboring
5316 subbasins in the North Sac River Corridor group.

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