



CALIFORNIA DEPARTMENT OF WATER RESOURCES

SUSTAINABLE GROUNDWATER MANAGEMENT OFFICE

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April 27, 2023

Matt Parker
Siskiyou County Natural Resources Department
Siskiyou County Department of Flood Control and Conservation District
1312 Fairlane Road
Yreka, CA, 96097
mparker@co.siskiyou.ca.us

RE: Approved Determination of the 2022 Groundwater Sustainability Plan Submitted for the Scott River Valley Basin


Dear Matt Parker,

The Department of Water Resources (Department) has evaluated the groundwater sustainability plan (GSP) submitted for the Scott River Valley Basin and has determined the GSP is approved. The approval is based on recommendations from the Staff Report, included as an exhibit to the attached Statement of Findings, which describes that the Scott River Valley Basin satisfies the objectives of the Sustainable Groundwater Management Act (SGMA) and substantially complies with the GSP Regulations. The Staff Report also proposes recommended corrective actions that the Department believes will enhance the GSP and facilitate future evaluation by the Department. The Department strongly encourages the recommended corrective actions be given due consideration and suggests incorporating all resulting changes to the GSP in future updates.

Recognizing SGMA sets a long-term horizon for groundwater sustainability agencies (GSAs) to achieve their basin sustainability goals, monitoring progress is fundamental for successful implementation. GSAs are required to evaluate their GSPs at least every five years and whenever the Plan is amended, and to provide a written assessment to the Department. Accordingly, the Department will evaluate approved GSPs and issue an assessment at least every five years. The Department will initiate the first five-year review of the Scott River Valley Basin no later than January 28, 2027.

Please contact Sustainable Groundwater Management staff by emailing sgmps@water.ca.gov if you have any questions related to the Department's assessment or implementation of your GSP.

Thank You,



Paul Gosselin
Deputy Director
Sustainable Groundwater Management

Attachment:

1. Statement of Findings Regarding the Approval of the Scott River Valley Basin Groundwater Sustainability Plan

**STATE OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES**

**STATEMENT OF FINDINGS REGARDING THE
APPROVAL OF THE
SCOTT RIVER VALLEY BASIN GROUNDWATER SUSTAINABILITY PLAN**

The Department of Water Resources (Department) is required to evaluate whether a submitted groundwater sustainability plan (GSP or Plan) conforms to specific requirements of the Sustainable Groundwater Management Act (SGMA or Act), is likely to achieve the sustainability goal for the basin covered by the Plan, and whether the Plan adversely affects the ability of an adjacent basin to implement its GSP or impedes achievement of sustainability goals in an adjacent basin. (Water Code § 10733.) The Department is directed to issue an assessment of the Plan within two years of its submission. (Water Code § 10733.4.) This Statement of Findings explains the Department’s decision regarding the Plan submitted by the Siskiyou County Flood Control and Water Conservation District Groundwater Sustainability Agency (GSA or Agency) for the Scott River Valley Basin (Basin No. 1-005).

Department management has discussed the Plan with staff and has reviewed the Department Staff Report, entitled Sustainable Groundwater Management Program Groundwater Sustainability Plan Assessment Staff Report, attached as Exhibit A, recommending approval of the GSP. Department management is satisfied that staff have conducted a thorough evaluation and assessment of the Plan and concurs with staff’s recommendation and all the recommended corrective actions. The Department therefore **APPROVES** the Plan and makes the following findings:

A. The Plan satisfies the required conditions as outlined in § 355.4(a) of the GSP Regulations (23 CCR § 350 et seq.):

1. The Plan was submitted within the statutory deadline of January 31, 2022. (Water Code § 10720.7(a); 23 CCR § 355.4(a)(1).)
2. The Plan was complete, meaning it generally appeared to include the information required by the Act and the GSP Regulations sufficient to warrant a thorough evaluation and issuance of an assessment by the Department. (23 CCR § 355.4(a)(2).)
3. The Plan, either on its own or in coordination with other Plans, covers the entire Basin (23 CCR § 355.4(a)(3).)

B. The general standards the Department applied in its evaluation and assessment of the Plan are: (1) “conformance” with the specified statutory requirements, (2) “substantial compliance” with the GSP Regulations, (3) whether the Plan is likely to achieve the sustainability goal for the Basin within 20 years of the

implementation of the Plan, and (4) whether the Plan adversely affects the ability of an adjacent basin to implement its GSP or impedes achievement of sustainability goals in an adjacent basin. (Water Code § 10733.) Application of these standards requires exercise of the Department's expertise, judgment, and discretion when making its determination of whether a Plan should be deemed "approved," "incomplete," or "inadequate."

The statutes and GSP Regulations require Plans to include and address a multitude and wide range of informational and technical components. The Department has observed a diverse array of approaches to addressing these technical and informational components being used by GSAs in different basins throughout the state. The Department does not apply a set formula or criterion that would require a particular outcome based on how a Plan addresses any one of SGMA's numerous informational and technical components. The Department finds that affording flexibility and discretion to local GSAs is consistent with the standards identified above; the state policy that sustainable groundwater management is best achieved locally through the development, implementation, and updating of local plans and programs (Water Code § 113); and the Legislature's express intent under SGMA that groundwater basins be managed through the actions of local governmental agencies to the greatest extent feasible, while minimizing state intervention to only when necessary to ensure that local agencies manage groundwater in a sustainable manner. (Water Code § 10720.1(h)) The Department's final determination of a Plan's status is made based on the entirety of the Plan's contents on a case-by-case basis, considering and weighing factors relevant to the particular Plan and Basin under review.

- C. In making these findings and Plan determination, the Department also recognized that: (1) it maintains continuing oversight and jurisdiction to ensure the Plan is adequately implemented; (2) the Legislature intended SGMA to be implemented over many years; (3) SGMA provides Plans 20 years of implementation to achieve the sustainability goal in a Basin (with the possibility that the Department may grant GSAs an additional five years upon request if the GSA has made satisfactory progress toward sustainability); and, (4) local agencies acting as GSAs are authorized, but not required, to address undesirable results that occurred prior to enactment of SGMA. (Water Code §§ 10721(r); 10727.2(b); 10733(a); 10733.8.)
- D. The Plan conforms with Water Code §§ 10727.2 and 10727.4, substantially complies with 23 CCR § 355.4, and appears likely to achieve the sustainability goal for the Basin. It does not appear at this time that the Plan will adversely affect the ability of adjacent basins to implement their GSPs or impede achievement of sustainability goals.

1. The sustainable management criteria and goal, which are to maintain groundwater levels within 10 feet of historical conditions and reduce depletions of surface water from historical averages, are reasonable and sufficiently explained. The plan relies on the best available information and science to quantify groundwater conditions and have identified plans to fill key data gaps. The GSP limits future extractions to the average of historical extractions, and has plans to improve the GSA's understanding of interconnected surface water (23 CCR § 355.4(b)(1).)
2. The Plan demonstrates an understanding of where data gaps exist and commits to fill those data gaps by the next GSP update. In particular, better understanding the hydrogeologic properties of the Basin's principal aquifer and the relationship between regional groundwater pumping and interconnected surface water depletions; expanding the groundwater level monitoring network with continuous monitoring and expanding stream gage locations. The GSP plans to incorporate new information into numerical models to improve water budget calculations and will be important in reducing uncertainty regarding the GSA's ability to evaluate potential significant and unreasonable effects related to interconnected surface water in the Subbasin. Filling these data gaps and others described in the Plan, should lead to the refinement of the GSA's monitoring networks and sustainable management criteria and help inform and guide adaptive management strategies. (23 CCR § 355.4(b)(2).)
3. The projects and management actions proposed are designed to limit pumping to historical averages and maintain groundwater conditions within 10 feet of historical lows levels. The projects and management actions are reasonable and commensurate with the level of understanding of the Basin setting. The projects and management actions described in the Plan provide a feasible approach to achieving the Basin's sustainability goal and should provide the GSA with greater versatility to adapt and respond to changing conditions and future challenges during GSP implementation. (23 CCR § 355.4(b)(3).)
4. The Plan provides a detailed explanation of how the varied interests of groundwater uses and users in the Basin were considered in developing the sustainable management criteria and how those interests, including... a comprehensive analysis of potential impacts to wells in the basin, to evaluate wells that would be impacted by the chosen minimum thresholds. (23 CCR § 355.4(b)(4).)
5. The Plan's projects and management actions appear feasible at this time and appear likely to prevent undesirable results and ensure that the Basin is operated within its sustainable yield within 20 years. The Department

will continue to monitor Plan implementation and reserves the right to change its determination if projects and management actions are not implemented or appear unlikely to prevent undesirable results or achieve sustainability within SGMA timeframes. (23 CCR § 355.4(b)(5).)

6. The Plan includes a reasonable assessment of overdraft conditions and includes reasonable means to mitigate overdraft, if present. (23 CCR § 355.4(b)(6).)
7. At this time, it does not appear that the Plan will adversely affect the ability of an adjacent basin to implement its GSP or impede achievement of sustainability goals in an adjacent basin. The Basin is not neighboring other groundwater basins. (23 CCR § 355.4(b)(7).)
8. If required, a satisfactory coordination agreement has been adopted by all relevant parties. (23 CCR § 355.4(b)(8).)
9. The GSA member agency the Siskiyou County Flood Control and Water Conservation District is governed by the Siskiyou County Board of Supervisors, and has had an active role in groundwater management in the Basin prior to becoming the GSA. Siskiyou County is currently issuing well drilling permits, limiting groundwater use for cannabis cultivation, requires a permit for use of groundwater outside of the parcel it was pumped on, and is studying Scott River side channel connectivity. The Siskiyou County Flood Control and Water Conservation District history of groundwater management provide a reasonable level of confidence that the GSA has the legal authority and financial resources necessary to implement the Plan. (23 CCR § 355.4(b)(9).)
10. Through review of the Plan and consideration of public comments, the Department determines that the GSA adequately responded to comments that raised credible technical or policy issues with the Plan, sufficient to warrant approval of the Plan at this time. The Department also notes that the recommended corrective actions included in the Staff Report are important to addressing certain technical or policy issues that were raised and, if not addressed before future, subsequent plan evaluations, may preclude approval of the Plan in those future evaluations. (23 CCR § 355.4(b)(10).)

E. In addition to the grounds listed above, DWR also finds that:

1. The Plan sets forth minimum thresholds for chronic lowering of groundwater levels that take into consideration shallow water supply wells (Shasta Valley GSP p. 266). The GSA sets minimum thresholds to maintain conditions within 10 feet of historical low levels to account for future drought conditions. The GSA has also identified a path forward to

fill data gaps and improve understanding of interconnected surface water. Department staff have requested through a recommended corrective action that the GSA evaluate the effects on interconnected surface water if groundwater levels were to reach minimum thresholds. The Plan's compliance with the requirements of SGMA and substantial compliance with the GSP Regulations supports the state policy regarding the human right to water (Water Code § 106.3). The Department developed its GSP Regulations consistent with, and intending to further, the policy through implementation of SGMA and the Regulations, primarily by achieving sustainable groundwater management in a basin. By ensuring substantial compliance with the GSP Regulations, the Department has considered the state policy regarding the human right to water in its evaluation of the Plan. (23 CCR § 350.4(g).)

2. The Plan acknowledges and identifies interconnected surface waters within the Basin. The GSA proposes initial sustainable management criteria to manage this sustainability indicator and measures to improve understanding and management of depletions of interconnected surface water. The GSA acknowledge, and the Department agrees, that many data gaps related to interconnected surface water exist. The GSA should continue filling data gaps, collecting additional monitoring data, and coordinating with resources agencies and interested parties to understand beneficial uses and users that may be impacted by depletions of interconnected surface water caused by groundwater pumping. Department Staff have requested through a recommended corrective action that the GSA select quantitative values for minimum thresholds for depletions of interconnected surface water, as part of the next update. Future updates to the Plan should aim to improve the initial sustainable management criteria as more information and improved methodologies become available.
3. The California Environmental Quality Act (Public Resources Code § 21000 *et seq.*) does not apply to the Department's evaluation and assessment of the Plan.

Statement of Findings
Scott River Valley Basin (No. 1-005)

April 27, 2023

Accordingly, the GSP submitted by the Agency for the Scott River Valley Basin is hereby **APPROVED**. The recommended corrective actions identified in the Staff Report will assist the Department's future review of the Plan's implementation for consistency with SGMA and the Department therefore recommends the Agency address them by the time of the Department's five-year review, which is set to begin on January 28, 2027, as required by Water Code § 10733.8. Failure to address the Department's Recommended Corrective Actions before future, subsequent plan evaluations, may lead to a Plan being determined incomplete or inadequate.

Signed:



Karla Nemeth, Director
Date: April 27, 2023

Exhibit A: Groundwater Sustainability Plan Assessment Staff Report – Scott River Valley Basin

State of California
Department of Water Resources
Sustainable Groundwater Management Program
Groundwater Sustainability Plan Assessment
Staff Report

Groundwater Basin Name: Scott River Valley Basin (No. 1-005)
Submitting Agency: Siskiyou County Flood Control and Water Conservation
District Groundwater Sustainability Agency
Submittal Type: Initial GSP Submission
Submittal Date: January 28, 2022
Recommendation: Approved
Date: April 27, 2023

The Siskiyou County Flood Control and Water Conservation District Groundwater Sustainability Agency (Agency or GSA) submitted the Scott River Valley Basin Groundwater Sustainability Plan (GSP or Plan) for the Scott River Valley Basin (Basin) to the Department of Water Resources (Department) for evaluation and assessment as required by the Sustainable Groundwater Management Act (SGMA)¹ and GSP Regulations.² The GSP covers the entire Basin for the implementation of SGMA.

After evaluation and assessment, Department staff conclude that the Plan includes the required components of a GSP, demonstrates a thorough understanding of the Basin based on what appears to be the best available science and information, sets well explained, supported, and reasonable sustainable management criteria to prevent undesirable results as defined in the Plan, and proposes a set of projects and management actions that will likely achieve the sustainability goal defined for the Basin.³ Department staff will continue to monitor and evaluate the Basin's progress toward achieving the sustainability goal through annual reporting and future periodic evaluations of the GSP and its implementation.

- ***Based on the current evaluation of the Plan, Department staff recommend the GSP be approved with the recommended corrective actions described herein.***

This assessment includes five sections:

- **Section 1 – Summary**: Provides an overview of Department staff's assessment and recommendations.

¹ Water Code § 10720 *et seq.*

² 23 CCR § 350 *et seq.*

³ 23 CCR § 350 *et seq.*

- [Section 2 – Evaluation Criteria](#): Describes the legislative requirements and the Department’s evaluation criteria.
- [Section 3 – Required Conditions](#): Describes the submission requirements, Plan completeness, and Basin coverage required for a GSP to be evaluated by the Department.
- [Section 4 – Plan Evaluation](#): Provides an assessment of the contents included in the GSP organized by each Subarticle outlined in the GSP Regulations.
- [Section 5 – Staff Recommendation](#): Includes the staff recommendation for the Plan and any recommended or required corrective actions, as applicable.

1 SUMMARY

Department staff recommend approval of the Scott River Valley Basin GSP. The GSA has identified areas for improvement of its Plan (e.g., quantification of sustainable management criteria for interconnected surface water). Department staff concur that those items are important and recommend the GSA address them as soon as possible. Department staff have also identified additional recommended corrective actions within this assessment that the GSA should consider addressing by the first periodic evaluation of the Plan. The recommended corrective actions generally focus on the following:

- (1) Provide a current water budget.
- (2) Describe the relationship between established minimum thresholds for the chronic lowering of groundwater levels and other sustainability indicators.
- (3) Refine the degraded water quality sustainable management criteria.
- (4) Revise the sustainable management criteria for depletions of interconnected surface water.
- (5) Continue to fill data gaps, collect additional monitoring data, coordinate with resources agencies and interested parties to understand beneficial uses and users that may be impacted by depletions of interconnected surface water caused by groundwater pumping, and potentially refine sustainable management criteria.

Addressing the recommended corrective actions identified in [Section 5](#) of this assessment will be important to demonstrate, on an ongoing basis, that implementation of the Plan is likely to achieve the sustainability goal.

2 EVALUATION CRITERIA

The GSA submitted a single GSP to the Department to evaluate whether the Plan conforms to specified SGMA requirements⁴ and is likely to achieve the sustainability goal for the Scott River Valley Basin.⁵ To achieve the sustainability goal for the Basin, the GSP must demonstrate that implementation of the Plan will lead to sustainable groundwater management, which means the management and use of groundwater in a manner that can be maintained during the planning and implementation horizon without causing undesirable results.⁶ Undesirable results must be defined quantitatively by the GSAs.⁷ The Department is also required to evaluate whether the GSP will adversely affect the ability of an adjacent basin to implement its GSP or achieve its sustainability goal.⁸

For the GSP to be evaluated by the Department, it must first be determined that the Plan was submitted by the statutory deadline,⁹ and that it is complete and covers the entire basin.¹⁰ If these conditions are satisfied, the Department evaluates the Plan to determine whether it complies with specific SGMA requirements and substantially complies with the GSP Regulations.¹¹ Substantial compliance means that the supporting information is sufficiently detailed and the analyses sufficiently thorough and reasonable, in the judgment of the Department, to evaluate the Plan, and the Department determines that any discrepancy would not materially affect the ability of the Agency to achieve the sustainability goal for the basin, or the ability of the Department to evaluate the likelihood of the Plan to attain that goal.¹²

When evaluating whether the Plan is likely to achieve the sustainability goal for the basin, Department staff reviewed the information provided and relied upon in the GSP for sufficiency, credibility, and consistency with scientific and engineering professional standards of practice.¹³ The Department's review considers whether there is a reasonable relationship between the information provided and the assumptions and conclusions made by the GSA, including whether the interests of the beneficial uses and users of groundwater in the basin have been considered; whether sustainable management criteria and projects and management actions described in the Plan are commensurate with the level of understanding of the basin setting; and whether those projects and management actions are feasible and likely to prevent undesirable results.¹⁴

⁴ Water Code §§ 10727.2, 10727.4.

⁵ Water Code § 10733(a).

⁶ Water Code § 10721(v).

⁷ 23 CCR § 354.26 *et seq.*

⁸ Water Code § 10733(c).

⁹ 23 CCR § 355.4(a)(1).

¹⁰ 23 CCR §§ 355.4(a)(2), 355.4(a)(3).

¹¹ 23 CCR § 350 *et seq.*

¹² 23 CCR § 355.4(b).

¹³ 23 CCR § 351(h).

¹⁴ 23 CCR §§ 355.4(b)(1), (3), (4), and (5).

The Department also considers whether the GSA has the legal authority and financial resources necessary to implement the Plan.¹⁵

To the extent overdraft is present in a basin, the Department evaluates whether the Plan provides a reasonable assessment of the overdraft and includes reasonable means to mitigate the overdraft.¹⁶ The Department also considers whether the Plan provides reasonable measures and schedules to eliminate identified data gaps.¹⁷ Lastly, the Department's review considers the comments submitted on the Plan and evaluates whether the GSA adequately responded to the comments that raise credible technical or policy issues with the Plan.¹⁸

The Department is required to evaluate the Plan within two years of its submittal date and issue a written assessment of the Plan.¹⁹ The assessment is required to include a determination of the Plan's status.²⁰ The GSP Regulations define the three options for determining the status of a Plan: Approved,²¹ Incomplete,²² or Inadequate.²³

Even when review indicates that the GSP satisfies the requirements of SGMA and is in substantial compliance with the GSP Regulations, the Department may recommend corrective actions.²⁴ Recommended corrective actions are intended to facilitate progress in achieving the sustainability goal within the basin and the Department's future evaluations, and to allow the Department to better evaluate whether the Plan adversely affects adjacent basins. While the issues addressed by the recommended corrective actions do not, at this time, preclude approval of the Plan, the Department recommends that the issues be addressed to ensure the Plan's implementation continues to be consistent with SGMA and the Department is able to assess progress in achieving the sustainability goal within the basin.²⁵ Unless otherwise noted, the Department proposes that recommended corrective actions be addressed by the submission date for the first five-year assessment.²⁶

The staff assessment of the GSP involves the review of information presented by the GSA, including models and assumptions, and an evaluation of that information based on scientific reasonableness, including standard or accepted professional and scientific methods and practices. The assessment does not require Department staff to recalculate or reevaluate technical information provided in the Plan or to perform its own geologic or

¹⁵ 23 CCR § 355.4(b)(9).

¹⁶ 23 CCR § 355.4(b)(6).

¹⁷ 23 CCR § 355.4(b)(2).

¹⁸ 23 CCR § 355.4(b)(10).

¹⁹ Water Code § 10733.4(d); 23 CCR § 355.2(e).

²⁰ Water Code § 10733.4(d); 23 CCR § 355.2(e).

²¹ 23 CCR § 355.2(e)(1).

²² 23 CCR § 355.2(e)(2).

²³ 23 CCR § 355.2(e)(3).

²⁴ Water Code § 10733.4(d).

²⁵ Water Code § 10733.8.

²⁶ 23 CCR § 356.4 *et seq.*

engineering analysis of that information. The staff recommendation to approve a Plan does not signify that Department staff, were they to exercise the professional judgment required to develop a GSP for the basin, would make the same assumptions and interpretations as those contained in the Plan, but simply that Department staff have determined that the assumptions and interpretations relied upon by the submitting GSA are supported by adequate, credible evidence, and are scientifically reasonable.

The Department's review and approval of the Plan is a continual process. Both SGMA and the GSP Regulations provide the Department with the ongoing authority and duty to review the implementation of the Plan.²⁷ GSAs have an ongoing duty to provide reports to the Department, periodically reassess their plans, and, when necessary, update or amend their plans.²⁸ The passage of time or new information may make what is reasonable and feasible at the time of this review to not be so in the future. The emphasis of the Department's periodic reviews will be to assess the progress toward achieving the sustainability goal for the basin and whether Plan implementation adversely affects the ability of adjacent basins to achieve their sustainability goals.

3 REQUIRED CONDITIONS

A GSP, to be evaluated by the Department, must be submitted within the applicable statutory deadline. The GSP must also be complete and must, either on its own or in coordination with other GSPs, cover the entire basin.

3.1 SUBMISSION DEADLINE

SGMA required basins categorized as high- or medium-priority and not subject to critical conditions of overdraft to submit a GSP no later than January 31, 2022.²⁹

The GSA submitted the Scott River Valley GSP on January 28, 2022.

3.2 COMPLETENESS

GSP Regulations specify that the Department shall evaluate a GSP if that GSP is complete and includes the information required by SGMA and the GSP Regulations.³⁰

The GSA submitted an adopted GSP for the entire Basin. After an initial, preliminary review, Department staff found the GSP to be complete and appearing to include the

²⁷ Water Code § 10733.8; 23 CCR § 355.6.

²⁸ Water Code §§ 10728 *et seq.*, 10728.2.

²⁹ Water Code § 10720.7(a)(2).

³⁰ 23 CCR § 355.4(a)(2).

required information, sufficient to warrant a thorough evaluation by the Department.³¹ The Department posted the GSP to its website on February 14, 2022.³²

3.3 BASIN COVERAGE

A GSP, either on its own or in coordination with other GSPs, must cover the entire basin.³³ A GSP that is intended to cover the entire Basin may be presumed to do so if the basin is fully contained within the jurisdictional boundaries of the submitting GSAs.

Within the Scott River Valley Basin boundaries exists the Quartz Valley Indian Reservation and the interconnected zone covered by the 1980 Scott River Adjudication Decree. These two areas are not subject to SGMA. The GSP intends to manage the remaining portion of the basin subject to SGMA.³⁴

4 PLAN EVALUATION

As stated in Section 355.4 of the GSP Regulations, a basin “shall be sustainably managed within 20 years of the applicable statutory deadline consistent with the objectives of the Act.” The Department’s assessment is based on a number of related factors including whether the elements of a GSP were developed in the manner required by the GSP Regulations, whether the GSP was developed using appropriate data and methodologies and whether its conclusions are scientifically reasonable, and whether the GSP, through the implementation of clearly defined and technically feasible projects and management actions, is likely to achieve a tenable sustainability goal for the basin. The Department staff’s evaluation of the likelihood of the Plan to attain the sustainability goal for the basin is provided below.

4.1 ADMINISTRATIVE INFORMATION

The GSP Regulations require each Plan to include administrative information identifying the submitting agency, demonstrating the legal authority, and describing the plan area, existing monitoring, and management programs, describing the ability of the GSA to develop and implement a plan for that area, and provided outreach.³⁵

The medium-priority Scott River Valley Basin is approximately 100 square miles (64,000 acres) and is not bordered by any other groundwater basins. Within the Scott River Valley Basin, exists the Quartz Valley Indian Reservation and an area covered by the 1980 Scott

³¹ The Department undertakes a preliminary completeness review of a submitted Plan under section 355.4(a) of the GSP Regulations to determine whether the elements of a Plan required by SGMA, and the Regulations have been provided, which is different from a determination, upon review, that a Plan is “incomplete” for purposes of section 355.2(e)(2) of the Regulations.

³² <https://sgma.water.ca.gov/portal/gsp/preview/89>.

³³ Water Code § 10727(b); 23 CCR § 355.4(a)(3).

³⁴ Scott River Valley GSP, Figure 3, p. 48.

³⁵ 23 CCR §§ 354.2 *et seq.*

River Adjudication Decree. These two areas are not subject to SGMA and the GSP intends to manage the remaining portion of the Basin subject to SGMA.³⁶ A vicinity map showing the Basin’s location, tribal areas, the adjudicated area and nearby basins is shown below as Figure 1.

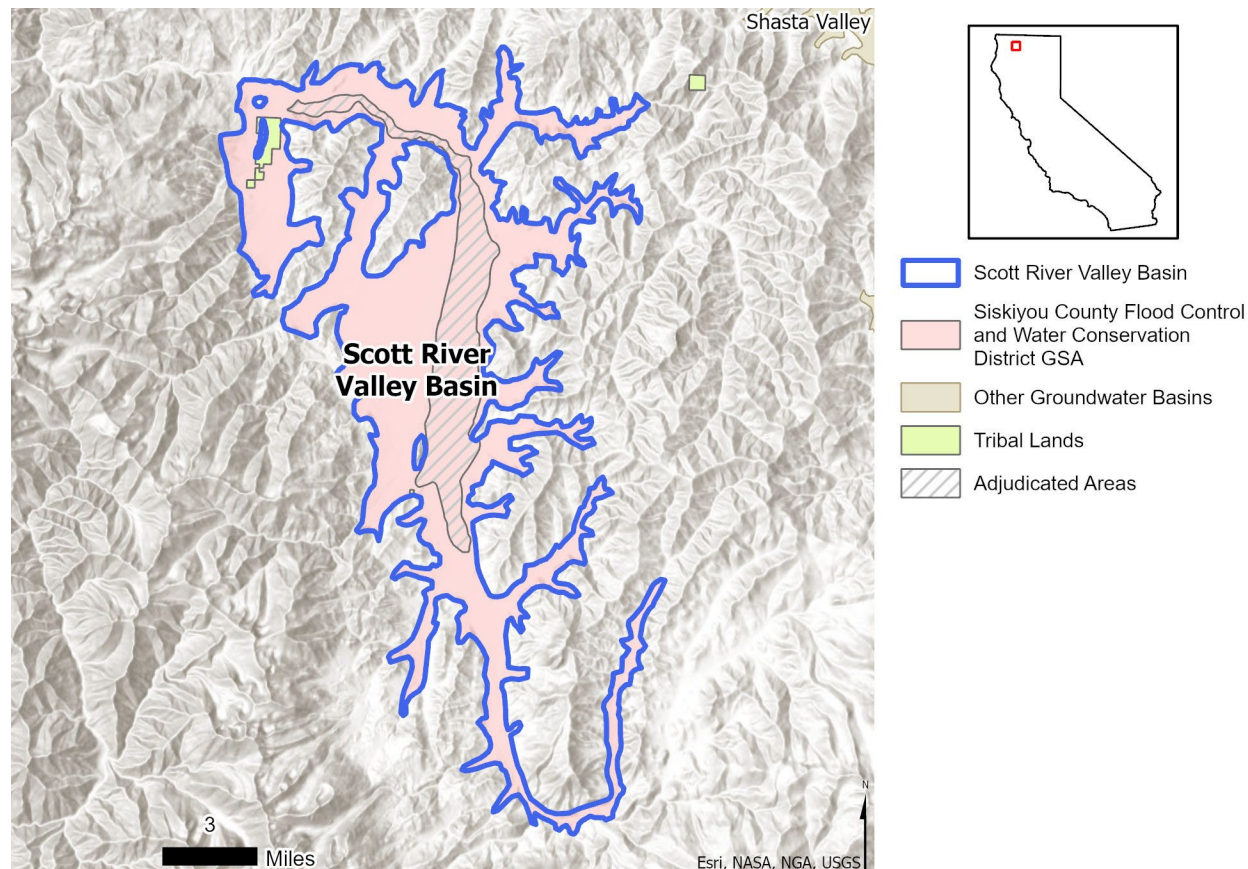


Figure 1: Vicinity Map of the Scott River Valley Basin

The Siskiyou County Flood Control and Water Conservation District GSA is the sole GSA for the Basin. The Siskiyou County Flood Control and Water Conservation District was adopted by the State Legislature in 1959. The Siskiyou County Flood Control and Water Conservation District is governed by a Board of Directors that is composed of the Board of Supervisors. Siskiyou County Resolution FLD17-01, approved by the District Board on April 4th, 2017, authorized the Siskiyou County Flood Control and Water Conservation District to act as the GSA.³⁷ Decisions of the District are completed pursuant to a majority vote. Actions of the Board are informed with input of the Scott Valley Advisory Committee,³⁸ which has members appointed by Board members. Department staff

³⁶ Scott River Valley GSP, Figure 3, p. 48.

³⁷ Scott River Valley GSP, Section 1.3.2, p. 38.

³⁸ Scott River Valley GSP, Section 1.4.2, p. 39.

conclude that the Plan describes in sufficient detail the GSA's authority to manage groundwater within the Basin and includes the organizational structure of the GSA.³⁹

According to the Plan, anthropogenic land within the Basin is primarily used for agriculture including pasture, alfalfa, and grain. Land use for pasture consists of 26.8% of the Basin, Alfalfa farming occurs on 21.1% of the Basin, Residential use covers 5.9% of the Basin, Grain is grown on 3.2% of the Basin, and urban uses account for 1.7% of Basin land use. The two incorporated communities of Etna and Fort Jones are in the Basin, as well as the unincorporated communities of Callahan, Greenview, and Quartz Valley/Mugginsville all of which are identified in the GSP as severely disadvantaged communities or disadvantaged communities.⁴⁰ The population of the Scott River Valley Basin was estimated at 8,000.⁴¹ The identified beneficial uses and users include: agriculture, drinking water, environmental and endangered species, recreation, surface water, tribal government, and disadvantaged community uses.⁴²

Multiple water resources monitoring and management programs are described in the GSP, as is the GSA's current understanding of how those programs will be incorporated into GSP implementation and how they may limit operational flexibility during GSP implementation.⁴³ Seven management programs, seven monitoring programs, five plans, and one tool were identified in Scott River Valley. Programs identified in the GSP with the potential to limit operational flexibility during GSP implementation include: (1) water rights allocations set forth in the 1980 Scott River Adjudication Decree;⁴⁴ (2) California Department of Fish and Wildlife operations;⁴⁵ (3) North Coast Region Water Quality Control Board operations;⁴⁶ (4) public trust doctrine;⁴⁷ and (5) Scott Valley Irrigation District.⁴⁸ Additional surface water rights for French and Wildcat Creeks, tributaries to Scott River, are discussed in the GSP.⁴⁹

Six key implementation elements are described in the GSP, which include: (1) GSA management, administration, and legal day-to-day operations; (2) Implementation of GSP monitoring activities; (3) Technical support; (4) Reporting (annuals and 5-years); (5) Project and management actions; (6) Outreach to stakeholders.⁵⁰ The cost of GSP implementation over a 20-year horizon is projected at \$120,000 to \$210,000 per year and provides a breakdown schedule.⁵¹ The GSP indicates that the GSA will pursue funding

³⁹ Scott River Valley GSP, Section 1.3, pp. 38-39.

⁴⁰ Scott River Valley GSP, ES Section 2.1.1, p. 27.

⁴¹ Scott River Valley GSP, Section 2.1.1, p. 49.

⁴² Scott River Valley GSP, Section 1.4.3.2, p. 42

⁴³ Scott River Valley GSP, Section 2.1.3, pp. 62-78.

⁴⁴ Scott River Valley GSP, Section 2.1.3, pp. 62, 69-70.

⁴⁵ Scott River Valley GSP, Section 2.1.3, pp. 63-64.

⁴⁶ Scott River Valley GSP, Section 2.1.3, pp. 66-67.

⁴⁷ Scott River Valley GSP, Section 2.1.3, pp. 70-71.

⁴⁸ Scott River Valley GSP, Section 2.1.3, p. 75.

⁴⁹ Scott River Valley GSP, Section 2.1.3, pp. 57-83.

⁵⁰ Scott River Valley GSP, Section ES-5, p. 34.

⁵¹ Scott River Valley GSP, Section 5.2, p. 297, Table 33, p 298.

from state and federal sources, may further evaluate funding mechanisms and fee criteria, and may perform a cost-benefit analysis of fee collection.⁵²

The GSA developed and implemented a communication and engagement plan. Communication included maintaining an interested parties list, holding GSA Board meetings, public workshops, working groups, coordination with local agencies and Tribes, and coordination with state and federal agencies.⁵³ The GSA provided public notifications announcing GSA Board Meetings and Stakeholder Workshops, and accepted public comments and provided a table indicating how public comments were addressed.⁵⁴

The GSP states the GSA considered the public trust in development of their Plan, especially with regard to interconnected surface waters, and that consideration of the public trust doctrine will be considered during implementation of the Plan.⁵⁵ The Department received multiple public comments regarding the Plan that refer to the public trust doctrine.⁵⁶ Although Department staff recognizes that the evaluation of impacts to certain interconnected surface water may touch on traditional elements of the public trust, it is beyond the scope of this assessment to evaluate the adequacy or necessity of any consideration of the public trust undertaken by the GSA.

Staff conclude that the administrative information section included in the GSP is substantially compliant with the requirements outlined in the GSP Regulations and that information related to the GSA's authority and financial ability to implement the Plan provides a reasonable level of confidence that the Agency can implement the Plan as described. Department staff consider the information presented in the Plan to satisfy the general requirements of the GSP Regulations for administrative information.⁵⁷

4.2 BASIN SETTING

GSP Regulations require information about the physical setting and characteristics of the basin and current conditions of the basin, including a hydrogeologic conceptual model; a description of historical and current groundwater conditions; and a water budget accounting for total annual volume of groundwater and surface water entering and leaving the basin, including historical, current, and projected water budget conditions.⁵⁸

4.2.1 Hydrogeologic Conceptual Model

The hydrogeologic conceptual model is a non-numerical model of the physical setting, characteristics, and processes that govern groundwater occurrence within a basin, and represents a local agency's understanding of the geology and hydrology of the basin that

⁵² Scott River Valley GSP, Section 5.2, p. 297

⁵³ Scott River Valley GSP, Section 1.4.3, pp. 40-44

⁵⁴ Scott River Valley GSP, Appendix 1-B, pp. 333-337.

⁵⁵ Scott River Valley GSP, Section 2.1.3, pp. 70-71.

⁵⁶ <https://sgma.water.ca.gov/portal/gsp/comments/89>.

⁵⁷ 23 CCR §§ 354.2 *et seq.*

⁵⁸ 23 CCR § 354.12.

support the geologic assumptions used in developing mathematical models, such as those that allow for quantification of the water budget.⁵⁹ The GSP Regulations require a descriptive hydrogeologic conceptual model that includes a written description of geologic conditions, supported by cross sections and maps,⁶⁰ and includes a description of basin boundaries and the bottom of the Basin,⁶¹ principal aquifers and aquitards.⁶²

The GSP describes the geology of the Basin and provides the geologic units in and around the Basin.⁶³ Groundwater-bearing units of the Scott River Valley Basin are a relatively thin (200 feet or less) unconsolidated and permeable assortment of stream channel, floodplain, and alluvial fan deposits that overlie relatively impermeable igneous and metamorphic basement rocks.⁶⁴ The GSP provides two scaled cross-sections⁶⁵ and maps providing geology, soils, topography, and hydrology,⁶⁶ which appear to be geologically reasonable and based on best available objective sources of information. Department staff are not aware of any technical shortcomings in the description of the basin setting. Department staff consider the Plan to contain sufficient information about geologic conditions in and around the Basin.

The Basin is bounded by the bedrock of the Klamath Mountains, both spatially at the Basin's lateral edges, and at the bottom of the Basin.⁶⁷ The GSP does not explicitly discuss the depth of the bottom of the Basin but provides a broad estimate in cross-sections. Based on the Plan's consistent water levels and high interconnectivity with surface water, Department staff do not conclude this lack of understanding to limit the Basin's ability to be managed sustainably. Department staff encourage the GSA to incorporate new information, as it is available, into the GSP to improve understanding of the bottom of the Basin.

The GSP does not identify a principal aquifer, but identifies stream channel, floodplain, and alluvial fan deposits as the predominate water-bearing units. Department staff infer that these formations comprise an undifferentiated "principal aquifer" for the Basin. Together, these units are in direct contact with the bedrock formations below and surrounding the Basin.⁶⁸ The Basin is bounded vertically and laterally by bedrock,⁶⁹ and

⁵⁹ DWR Best Management Practices for the Sustainable Management of Groundwater: Hydrogeologic Conceptual Model, December 2016: https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Sustainable-Groundwater-Management/Best-Management-Practices-and-Guidance-Documents/Files/BMP-3-Hydrogeologic-Conceptual-Model_ay_19.pdf.

⁶⁰ 23 CCR §§ 354.14 (a), 354.14 (c).

⁶¹ 23 CCR §§ 354.14 (b) (2-3).

⁶² 23 CCR § 354.14 (b)(4) *et seq.*

⁶³ Scott River Valley GSP, Sections 'Geologic History' and 'Geologic Units', pp. 92-96.

⁶⁴ Scott River Valley GSP, Section 2.2.1.3, p. 95.

⁶⁵ Scott River Valley GSP, Figures 16 and 17, pp. 99-100.

⁶⁶ Scott River Valley GSP, Figure 10, p. 85, Figure 14, p. 91, Figure 18, p. 103, Figure 19, p. 108.

⁶⁷ Scott River Valley GSP, Section 2.2.1.1, p. 92.

⁶⁸ Scott River Valley GSP, Section 2.2.1.3, p. 95.

⁶⁹ Scott River Valley GSP, Section 2.2.1.1, p. 92.

although the GSP identifies the thickness of the alluvium in several locations, the plan does not define the bottom of Basin.⁷⁰

Based on staff review, the hydrologic conceptual model presented in the Plan substantially complies with the requirements by providing information about the Basin's geologic structure, principal aquifer, and basin boundaries as outlined in the GSP Regulations.

4.2.2 Groundwater Conditions

The GSP Regulations require a written description of historical and current groundwater conditions for each of the applicable sustainability indicators and groundwater dependent ecosystems that includes the following: groundwater elevation contour maps and hydrographs,⁷¹ a graph depicting change in groundwater storage,⁷² maps and cross-sections of the seawater intrusion front,⁷³ maps of groundwater contamination sites and plumes,⁷⁴ maps depicting total subsidence,⁷⁵ identification of interconnected surface water systems and an estimate of the quantity and timing of depletions of those systems,⁷⁶ and identification of groundwater dependent ecosystems.⁷⁷

The GSP provides a description of current and historical groundwater elevations throughout the Basin.⁷⁸ Seasonal groundwater elevations fluctuate between highs in winter and lows in summer.⁷⁹ Groundwater hydrographs indicate that groundwater elevations have generally been stable over a monitored period from 2005 to 2020.⁸⁰ Groundwater elevation surface maps are provided for March 2015 and September 2015.⁸¹ Department staff's review of the provided materials do not reveal localized depressions within the Basin, and the interpolated horizontal groundwater level surface trend provided by the GSA is uniform with groundwater moving from the edges of the Basin towards the Scott River.

The GSP reports that the total groundwater storage is 400,000 acre-feet as estimated in a 1958 report by the USGS.⁸² The GSP does not provide estimates of the change in groundwater storage demonstrating the annual and cumulative change in volume of groundwater storage.⁸³ Based on the Basin's consistent water levels during different climate cycles, and having high interconnectivity with surface water, Department staff do not consider this lack of understanding to limit the Basin's ability to be managed

⁷⁰ Scott River Valley GSP, Section 2.2.1.3, pp. 94-95.

⁷¹ 23 CCR § 354.16 (a) (1-2).

⁷² 23 CCR § 354.16 (b).

⁷³ 23 CCR § 354.16 (c).

⁷⁴ 23 CCR § 354.16 (d).

⁷⁵ 23 CCR § 354.16 (e).

⁷⁶ 23 CCR § 354.16 (f).

⁷⁷ 23 CCR § 354.16 (g).

⁷⁸ Scott River Valley GSP, Section 2.2.2.1, p. 133-138.

⁷⁹ Scott River Valley GSP, Section 2.2.2.1, p. 134.

⁸⁰ Scott River Valley GSP, Figure 31, p. 138.

⁸¹ Scott River Valley GSP, Figure 29 & 30, pp. 136-137.

⁸² Scott River Valley GSP, Section 2.2.2.2, p. 135.

⁸³ 23 CCR § 354.16 (b).

sustainably. Department staff note that estimates of historic change in storage should be included as part of the next GSP update.

The Plan states seawater intrusion is not evident in the Basin. This is due to the Basin being not adjacent to the Pacific Ocean, bays, deltas, or inlets, and the GSA has determined that seawater intrusion is not an applicable sustainability indicator, because seawater intrusion does not exist and could not occur in the Basin.⁸⁴ Staff are satisfied that the GSA has demonstrated that undesirable results related to seawater intrusion are not present and are not likely to occur in the Basin.

The GSP includes a discussion on existing groundwater quality conditions in the Basin, stating the natural composition of groundwater in the Basin is characterized as calcium-magnesium bicarbonate water.⁸⁵ The GSA studied select constituent concentrations, including benzene, nitrate, and specific conductivity, using existing water quality data that was collected from municipal wells.⁸⁶ The GSP indicated that nitrate and specific conductivity were only measured below maximum contaminant levels in the Basin. Benzene was detected above the maximum contaminant level in Etna.

The Plan utilizes the TRE Altamira Interferometric Synthetic Aperture Radar (InSAR) data, currently provided by the Department, to determine total coverage of vertical displacement within the Basin.⁸⁷ The Scott River Valley has not experienced measurable subsidence.⁸⁸ The GSP states that the alluvial aquifers of the Basin do not include extensive clay layers that cause subsidence, and that the Basin is unlikely to experience inelastic subsidence.⁸⁹

The GSP identifies that groundwater throughout the Basin is interconnected with the Scott River stream network including its tributaries. The GSP includes a discussion on interconnected surface water conditions in the Basin and states that an undesirable result for interconnected surface water is present in the Basin and existed prior to 2015.⁹⁰ The GSP evaluated interconnected surface water in the Basin using the Scotts Valley Integrated Hydrologic Model (SVIHM).⁹¹ Stream depletion was computed by comparing simulation of measured 1990-2018 conditions, identified as base case conditions and comparing those conditions to hypothetical no-pumping conditions. The Scott River

⁸⁴https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Sustainable-Groundwater-Management/Best-Management-Practices-and-Guidance-Documents/Files/BMP-6-Sustainable-Management-Criteria-DRAFT_ay_19.pdf

⁸⁵ Scott River Valley GSP, Section 2.2.2.3, p. 141.

⁸⁶ Scott River Valley GSP, Appendix 3-D, pp. 1766-1788.

⁸⁷ Scott River Valley GSP, Section 2.2.2.4, p. 147.

⁸⁸ Scott River Valley GSP, Section 2.2.2.4, p. 147.

⁸⁹ Scott River Valley GSP, Section 2.2.2.4, p. 147.

⁹⁰ Scott River Valley GSP, Section 3.4.5.1, p. 233.

⁹¹ Scott River Valley GSP, Section 2.2.1.7, p. 118-119.

experiences net gains in wet years and net losses in dry years, as well as seasonal gains and losses.⁹²

The GSP provided estimates of the timing and direction of estimated water exchange between groundwater and surface water along the Scott River.⁹³ The SVIHM estimated stream depletion due to groundwater pumping between September to October using 30-day average for each month over the period of 1991 – 2018. Based on SVIHM model results, the GSP estimates that depletion due to pumping in the GSA are 28 cubic feet per second for the managed portion of the Basin and 26 cubic feet per second in the adjudicated area,⁹⁴ but the GSP did not quantify the volume, timing, or location of these depletions.

The GSP identifies Groundwater Dependent Ecosystems (GDEs) with the utilization of the Nature Conservancy GDE dataset⁹⁵ and the Natural Communities Commonly Associated Groundwater dataset,⁹⁶ with modifications to these datasets to edit or remove data upon the recommendation of a select committee with local knowledge of GDEs.⁹⁷ Four data gaps are identified by the GSP: mapping of groundwater-dependent vegetation, flow requirements for juvenile salmon outmigration, steelhead migration population counts, full extent of the interconnection of surface water, and satellite imagery review.⁹⁸ A summary of findings for GDEs that were selected or removed from the dataset were not included, and while Department staff conclude the GSP's description of GDEs to have sufficient detail, staff encourages the GSA to fill the data gaps to provide additional clarity about the analysis.

Department staff considers the information provided that comprises the Groundwater Conditions section substantially complies with the requirements outlined in the GSP Regulations.

4.2.3 Water Budget

GSP Regulations require a water budget for the basin that provides an accounting and assessment of the total annual volume of groundwater and surface water entering and leaving the basin, including historical; current; and projected water budget conditions,⁹⁹ and the sustainable yield.¹⁰⁰

The Scott River Valley GSP relies upon SVIHM to estimate historical and future water budgets.¹⁰¹ The GSP relies upon numerical groundwater modeling analyses in estimating

⁹² Scott River Valley GSP, Section 2.2.1.7, p. 115.

⁹³ Scott River Valley GSP, Figure 25, p. 117.

⁹⁴ Scott River Valley GSP, Table 13, p. 119.

⁹⁵ Scott River Valley GSP, Section 2.2.1.8, p. 121.

⁹⁶ Scott River Valley GSP, Section 2.2.1.8, p. 123.

⁹⁷ Scott River Valley GSP, Section 2.2.1.8, p. 123.

⁹⁸ Scott River Valley GSP, Section 2.2.1.8, p. 120.

⁹⁹ 23 CCR §§ 354.18 (a), 354.18 (c) *et seq.*

¹⁰⁰ 23 CCR § 354.18 (b)(7).

¹⁰¹ Scott River Valley GSP, Appendix 2-E, pp. 1531-1571.

the Basin's groundwater budget, to assess groundwater storage, and to evaluate the ability of projects and management actions to reduce depletions of surface water to guide implementation of the GSP to provide long-term sustainable groundwater management for the Basin.

The GSP provides a historical water budget for the period 1991-2018.¹⁰² The historical water budget included analysis on monthly time steps, which indicate that well pumping generally occurs in the months of May through September, and that groundwater storage increases in the months of October through February and declines in the months of March through September.¹⁰³ The GSP describes trends in the historical water budget as varying based on seasonal variability, which affect baseflow conditions on the Scott River, with changes in groundwater pumping causing an equal change in groundwater discharge to stream systems.¹⁰⁴

The water budgets provided in the GSP fluctuate considerably from year to year. Annual Basin inflows range from 115,000 acre-feet to 472,000 acre-feet. Outflow from streams averaged 320,000 acre-feet per year.¹⁰⁵ Evapotranspiration from the soil zone averaged 112,000 acre-feet per year.¹⁰⁶ Average groundwater pumping is estimated to be 42,000 acre-feet per year in the Basin.¹⁰⁷ Stream leakage to groundwater averages 13,000 acre-feet per year.¹⁰⁸

A current water budget was not provided in the GSP, as required by the GSP Regulations.¹⁰⁹ While this is a missing component of the Plan, because water levels and pumping have historically remained consistent within the Basin and the GSP's historical water budget includes recent water years, Department staff note that the lack of an identified current water budget does not appear to limit the understanding of the Basin. Department staff recommend the GSA provide a current water budget with future updates to the GSP (see [Recommended Corrective Action 1](#)).

The GSP provides a future water budget for the period 2022-2070.¹¹⁰ The GSP shows projected change in storage, indicating no long-term reduction in storage is projected.¹¹¹ The future water budget was developed using the 1991-2011 periods conditions multiple times to build a 50-year 'base case' climate record.¹¹² The GSP considered four climate

¹⁰² Scott River Valley GSP, Section 2.2.3.1, p. 152, Figure 35, p. 154.

¹⁰³ Scott River Valley GSP, Figure 36, p. 155.

¹⁰⁴ Scott River Valley GSP, Section 2.2.3.2, p. 166.

¹⁰⁵ Scott River Valley GSP, Appendix 2-E, p. 1545.

¹⁰⁶ Scott River Valley GSP, Appendix 2-E, p. 1546.

¹⁰⁷ Scott River Valley GSP, Appendix 2-E, p. 1547.

¹⁰⁸ Scott River Valley GSP, Appendix 2-E, p. 1547.

¹⁰⁹ 23 CCR § 354.18(c).

¹¹⁰ Scott River Valley GSP, Section 2.2.4, p. 167.

¹¹¹ Scott River Valley GSP, Figure 41, p. 171.

¹¹² Scott River Valley GSP, Section 2.2.4, p. 166.

scenarios (“Near,” “Far,” “Wet,” and “Dry”) for the projected water budgets.¹¹³ The GSP’s analysis found that interannual variability was a greater driver of change in storage than which climate scenario was selected.¹¹⁴ None of the climate scenarios were predicted to cause a reduction of water in storage over time. The GSP indicates that the GSA will work to update and revise water budget analysis including additional climate analysis in the future.¹¹⁵ Department staff conclude the historical water budget analysis includes sufficient detail to support sustainable management.

GSP Regulations require that the Water Budget component of a GSP include an estimate of the sustainable yield for the Basin.¹¹⁶ SGMA defines “sustainable yield” as the maximum quantity of water that can be withdrawn annually from a groundwater supply without causing an undesirable result.¹¹⁷ The GSP defines the sustainable yield as “the long-term average annual groundwater pumping rate ... that does not cause an undesirable result.” The GSP suggests that the sustainable yield for the Basin is 42,000 acre feet per year, which represents a 28-year average of groundwater extraction.¹¹⁸ The GSA suggests that pumping at this historical average would not cause undesirable results, although the Plan excludes impacts to interconnected surface water, for which the GSA asserts that undesirable results have been occurring since before 2015.

While Department staff have identified recommended corrective actions for the GSA to address prior to the periodic update, these recommendations do not preclude approval at this time as it does not appear to limit the understanding of the Basin or prevent the GSA from implementing the Plan. Department staff conclude the information provided in the GSP that comprises the water budget substantially complies with the requirements outlined in the GSP Regulations.

4.2.4 Management Areas

The GSP Regulations provide the option for one or more management areas to be defined within a basin if the GSA has determined that the creation of the management areas will facilitate implementation of the Plan. Management areas may define different minimum thresholds and be operated to different measurable objectives, provided that undesirable results are defined consistently throughout the basin.¹¹⁹

The GSP did not use management areas.

¹¹³ Far-future climate, representing central tendency of projected conditions in the year 2070, Section 2.2.4, p.167.

¹¹⁴ Scott River Valley GSP, Section 2.2.4, p. 168.

¹¹⁵ Scott River Valley GSP, Section 2.2.4, p. 168.

¹¹⁶ 23 CCR § 354.18(b)(7).

¹¹⁷ CWC § 10721(w).

¹¹⁸ Scott River Valley GSP, Section 2.2.5, p. 174.

¹¹⁹ 23 CCR § 354.20.

4.3 SUSTAINABLE MANAGEMENT CRITERIA

GSP Regulations require each Plan to include a sustainability goal for the basin and to characterize and establish undesirable results, minimum thresholds, and measurable objectives for each applicable sustainability indicator, as appropriate. The GSP Regulations require each Plan to define conditions that constitute sustainable groundwater management for the basin including the process by which the GSA characterizes undesirable results and establishes minimum thresholds and measurable objectives for each applicable sustainability indicator.¹²⁰

4.3.1 Sustainability Goal

GSP Regulations require that GSAs establish a sustainability goal for the basin. The sustainability goal should be based on information provided in the GSP's basin setting and should include an explanation of how the sustainability goal is likely to be achieved within 20 years of Plan implementation.¹²¹

The Plan defines the sustainability goal for the Basin as being “to maintain groundwater resources in ways that best support the continued and long-term health of the people, the environment, and the economy in Scott River Valley, for generations to come.”¹²² The Plan further states the GSP intends to manage groundwater conditions for each sustainability indicator so that: groundwater elevations do not significantly decline below their historically measured range, groundwater quality is suitable for beneficial uses, land subsidence is prevented, and groundwater will continue to provide river baseflow with no significant reduction in volume.¹²³ Staff consider the GSP's sustainability goal to reflect the interests of a wide range of beneficial uses and users of groundwater in the Basin.

4.3.2 Sustainability Indicators

Sustainability indicators are defined as any of the effects caused by groundwater conditions occurring throughout the basin that, when significant and unreasonable, cause undesirable results.¹²⁴ Sustainability indicators thus correspond with the six undesirable results – chronic lowering of groundwater levels indicating a significant and unreasonable depletion of supply if continued over the planning and implementation horizon, significant and unreasonable reduction of groundwater storage, significant and unreasonable seawater intrusion, significant and unreasonable degraded water quality, including the migration of contaminant plumes that impair water supplies, land subsidence that substantially interferes with surface land uses, and depletions of interconnected surface water that have significant and unreasonable adverse impacts on beneficial uses of the surface water¹²⁵ – but refer to groundwater conditions that are not, in and of themselves, significant and unreasonable. Rather, sustainability indicators refer to the effects caused

¹²⁰ 23 CCR § 354.22 *et seq.*

¹²¹ 23 CCR § 354.24.

¹²² Scott River Valley GSP Section 3.2, p. 179.

¹²³ Scott River Valley GSP Section 3.2, p. 179.

¹²⁴ 23 CCR § 351(ah).

¹²⁵ Water Code § 10721(x).

by changing groundwater conditions that are monitored, and for which criteria in the form of minimum thresholds are established by the agency to define when the effect becomes significant and unreasonable, producing an undesirable result.

GSP Regulations require that GSAs provide descriptions of undesirable results including defining what are significant and unreasonable potential effects to beneficial uses and users for each sustainability indicator.¹²⁶ GSP Regulations also require GSPs provide the criteria used to define when and where the effects of the groundwater conditions cause undesirable results for each applicable sustainability indicator. The criteria shall be based on a quantitative description of the combination of minimum threshold exceedances that cause significant and unreasonable effects in the basin.¹²⁷

GSP Regulations require that the description of minimum thresholds include the information and criteria relied upon to establish and justify the minimum threshold for each sustainability indicator.¹²⁸ GSAs are required to describe how conditions at minimum thresholds may affect beneficial uses and users,¹²⁹ and the relationship between the minimum thresholds for each sustainability indicator, including an explanation for how the GSA has determined conditions at each minimum threshold will avoid causing undesirable results for other sustainability indicators.¹³⁰

GSP Regulations require that GSPs include a description of the criteria used to select measurable objectives, including interim milestones, to achieve the sustainability goal within 20 years.¹³¹ GSP Regulations also require that the measurable objectives be established based on the same metrics and monitoring sites as those used to define minimum thresholds.¹³²

The following subsections thus consolidate three facets of sustainable management criteria: undesirable results, minimum thresholds, and measurable objectives. Information, as presented in the Plan, pertaining to the processes and criteria relied upon to define undesirable results applicable to the basin, as quantified through the establishment of minimum thresholds, are addressed for each applicable sustainability indicator. A submitting agency is not required to establish criteria for undesirable results that the agency can demonstrate are not present and are not likely to occur in a basin.¹³³

4.3.2.1 Chronic Lowering of Groundwater Levels

In addition to components identified in 23 CCR §§ 354.28 (a-b), for the chronic lowering of groundwater, the GSP Regulations require the minimum threshold for chronic lowering of groundwater levels to be the groundwater elevation indicating a depletion of supply at

¹²⁶ 23 CCR §§ 354.26 (a), 354.26 (b)(c).

¹²⁷ 23 CCR § 354.26 (b)(2).

¹²⁸ 23 CCR § 354.28 (b)(1).

¹²⁹ 23 CCR § 354.28 (b)(4).

¹³⁰ 23 CCR § 354.28 (b)(2).

¹³¹ 23 CCR § 354.30 (a).

¹³² 23 CCR § 354.30 (b).

¹³³ 23 CCR § 354.26 (d).

a given location that may lead to undesirable results that is supported by information about groundwater elevation conditions and potential effects on other sustainability indicators.¹³⁴

SGMA defines the undesirable result for chronic lowering of groundwater levels to be “a significant and unreasonable depletion of supply if continued over the planning and implementation horizon and that overdraft during a period of drought is not sufficient to establish a chronic lowering of groundwater levels if extractions and groundwater recharge are managed as necessary to ensure that reductions in groundwater levels or storage during a period of drought are offset by increases in groundwater levels or storage during other periods.”¹³⁵

The GSP describes significant and unreasonable groundwater level conditions as those that occur when “a significant number of private, agricultural, industrial, or municipal production wells can no longer pump enough groundwater to supply beneficial uses, or when lower groundwater levels adversely affect environmental uses and users of interconnected surface water and groundwater-dependent ecosystems.”¹³⁶ Department staff note that the GSP’s definition of significant and unreasonable conditions uses the word ‘significant’, which is recursive and not descriptive of conditions, and staff suggest that the GSA fully describe significant and unreasonable conditions as part of the next GSP update.

The GSP operationally defines an undesirable result for the chronic lowering of groundwater as being detected when the low groundwater level observation in the fall (i.e., the minimum elevation in any given water year) in any of the representative monitoring sites in the Basin drop below their respective minimum thresholds in two consecutive years.¹³⁷

The GSP defines the minimum threshold as the historic low measured at each representative monitoring point minus a buffer, which is either 10% of the historic maximum depth to water measured, or 10 feet, whichever is smaller.¹³⁸ The GSP indicates that it used a buffer to allow for operational flexibility under extreme climate conditions and to accommodate additional “action triggers” that the GSA will use to trigger an investigation of conditions and to consider implementing projects and management actions.¹³⁹

The GSP indicated that during the development of minimum thresholds, the GSA considered potential effects on beneficial uses and users, and the GSP provided a robust analysis of the potential effects reaching minimum thresholds would have on existing well

¹³⁴ 23 CCR § 354.28(c)(1) *et seq.*

¹³⁵ CWC § 10721(x)(1).

¹³⁶ Scott River Valley GSP, Section 3.4.1.1, p.207.

¹³⁷ Scott River Valley GSP, Section 3.4.1.1, p.210.

¹³⁸ Scott River Valley GSP, Section 3.4.1.2, p. 212.

¹³⁹ Scott River Valley GSP, Section 3.4.1.2, p. 212.

infrastructure.¹⁴⁰ This risk analysis concluded that less than 1% of wells (approximately 20 domestic wells and 2 agricultural wells) in the Basin are likely to be affected.¹⁴¹

The GSP Regulations require that the GSP include the relationship between the minimum thresholds for each sustainability indicator, including an explanation of how the GSA has determined that basin conditions at each minimum threshold will avoid undesirable results for each of the sustainability indicators.¹⁴² The GSP does not include this information, instead stating the GSA plans to evaluate this interaction in a future GSP update.¹⁴³ Department staff note that, aside from being a required component of a GSP, due to the Basin's high interconnectivity with surface water and potential for increased depletion of surface water from lowering groundwater levels, this analysis is vital to the sustainable management of the Basin. Department staff recommend the GSA provide a description of the relationship between established minimum thresholds for the chronic lowering of groundwater levels and how they avoid undesirable results for each of the other sustainability indicators as required by the GSP Regulations¹⁴⁴ (see [Recommended Corrective Action 2](#)).

Department staff consider that the minimum thresholds for the chronic lowering of groundwater levels as described in the GSP are sufficient for supporting sustainable management in the Basin, considered beneficial uses and users, and were developed with clearly stated criteria.

The GSP establishes the measurable objective as the 75th percentile of the fall measurement range at each individual representative monitoring point, using the same metrics and monitoring sites as minimum thresholds.¹⁴⁵ The plan states that the goal of the measurable objective is to keep groundwater levels above historical lows to provide a margin of operational flexibility for seasonal, annual, and drought variations in precipitation.¹⁴⁶ Department staff regard the measurable objectives for the chronic lowering of groundwater levels in the Scott River Valley GSP as providing a reasonable margin of operational flexibility under adverse conditions, and sufficient to support sustainable management of the Basin.

Overall, Department staff consider the sustainable management criteria for groundwater levels to be substantially compliant and are supported by the GSP's historical water budgets,¹⁴⁷ long-term groundwater elevation trends,¹⁴⁸ and consideration of periods of drought, commensurate with the level of understanding of the Basin.

¹⁴⁰ Scott River Valley GSP, Appendix 3-C, pp. 1752-1765.

¹⁴¹ Scott River Valley GSP, Appendix 3-C, pp. 1765, Section 3.4.1.2, p. 212.

¹⁴² 23 CCR § 354.28 (b).

¹⁴³ Scott River Valley GSP, Section 3.4.1.6, p. 215.

¹⁴⁴ 23 CCR § 354.28(c)(1)(B).

¹⁴⁵ Scott River Valley GSP, Section 3.4.1.3, p. 212.

¹⁴⁶ Scott River Valley GSP, Section 3.4.1.3, p. 212.

¹⁴⁷ Scott River Valley GSP, Section 2.2.3.1, pp. 152-165.

¹⁴⁸ Scott River Valley GSP, Appendix 2-A, pp. 1422-1507.

4.3.2.2 *Reduction of Groundwater Storage*

In addition to components identified in 23 CCR §§ 354.28 (a-b), for the reduction of groundwater storage, the GSP Regulations require the minimum threshold for the reduction of groundwater storage to be a total volume of groundwater that can be withdrawn from the basin without causing conditions that may lead to undesirable results. Minimum thresholds for reduction of groundwater storage shall be supported by the sustainable yield of the basin, calculated based on historical trends, water year type, and projected water use in the basin.¹⁴⁹ GSAs may also manage storage by using levels as a proxy, where a GSA provides evidence that the managing through proxy is appropriate.¹⁵⁰

The GSP selects groundwater levels as the proxy for groundwater storage. The GSP justifies using groundwater levels as a proxy by referencing a study conducted by the United States Geologic Survey (USGS) that indicates that direct measurements of groundwater levels can be used to estimate changes in groundwater storage.¹⁵¹ Department staff note the hydrogeologic conceptual model included in the GSP provided hydrogeologic properties of the aquifer which make utilizing this method reasonable.

Department staff note that minimum thresholds for groundwater levels were established to be within 10 feet of the historic low measured at each representative monitoring point, which is above the bottom of the Basin. Because the levels thresholds being used as a proxy for storage are near historical lows, and the Basin's degree of interconnectedness to surface water, the GSA being unable to identify the bottom of the Basin does not preclude the use of levels as a proxy.

Staff regard the GSP's justification for using groundwater levels as a proxy sufficient and supportive of sustainable management. Staff note that the minimum thresholds for levels that are used as a proxy are set in the upper portions of the aquifer, and that knowledge of the total storage of the Basin is not required to monitor using levels as a proxy.

4.3.2.3 *Seawater Intrusion*

In addition to components identified in 23 CCR §§ 354.28 (a-b), for seawater intrusion, the GSP Regulations require the minimum threshold for seawater intrusion to be defined by a chloride concentration isocontour for each principal aquifer where seawater intrusion may lead to undesirable results.¹⁵²

As explained described the groundwater conditions section, the Basin is an inland basin located at an elevation of over 2,600 feet above mean sea level, and is more than 100 miles from, and not hydraulically connected to a sea or ocean.¹⁵³ Based on this, Department staff conclude that seawater intrusion is not a factor in the Basin and the Plan does not describe undesirable results due to seawater intrusion or consider seawater

¹⁴⁹ 23 CCR § 354.28(c)(2).

¹⁵⁰ 23 CCR § 354.28(d).

¹⁵¹ Scott River Valley GSP, Section 3.4.2, p. 219.

¹⁵² 23 CCR § 354.28(c)(3).

¹⁵³ Scott River Valley GSP, Section 3.4.5, p. 268.

intrusion as a sustainability indicator requiring sustainable management criteria.¹⁵⁴ Given the physical setting of the Basin, Department staff regard the GSA's conclusion as reasonable.

4.3.2.4 *Degraded Water Quality*

In addition to components identified in 23 CCR §§ 354.28 (a-b), for degraded water quality, the GSP Regulations require the minimum threshold for degraded water quality to be the degradation of water quality, including the migration of contaminant plumes that impair water supplies or other indicator of water quality as determined by the Agency that may lead to undesirable results. The minimum threshold shall be based on the number of supply wells, a volume of water, or a location of an isocontour that exceeds concentrations of constituents determined by the Agency to be of concern for the basin. In setting minimum thresholds for degraded water quality, the Agency shall consider local, state, and federal water quality standards applicable to the basin.¹⁵⁵

The GSP established sustainable management criteria for nitrate (as N) and specific conductivity.¹⁵⁶ The GSP discusses benzene and indicates that its presence is the result of leaking underground storage tank cleanup sites and are not reflective of regional water quality; therefore, no sustainable management criteria is established. Department staff note the decision to not set sustainable management criteria for benzene to be reasonable at this time.

The GSP describes significant and unreasonable degraded water quality conditions as “those that occur when the degradation of water quality that would impair beneficial uses of groundwater within the Basin or result in failure to comply with groundwater regulatory thresholds.”¹⁵⁷

The GSP defines the undesirable result for degraded water quality to be when concentrations of nitrate or conductivity exceed defined minimum thresholds or if a significant trend of water quality degradation is observed for nitrate or conductivity.¹⁵⁸ The GSP plans to calculate when a trend in degradation is observed by tracking trends and comparing trends using weighted averages.¹⁵⁹ The GSP provides an equation to calculate the likelihood of conditions exceeding an anti-degradation policy, based on a combination of 10-year averages and 2-year averages.¹⁶⁰

While Department staff recognize the GSA's attempt to utilize an alternative method to define an undesirable result for degraded water quality, the GSP regulations require that the minimum threshold for degraded water quality be based on the number of supply

¹⁵⁴ Scott River Valley GSP, Section 2.2.2.5, p. 150.

¹⁵⁵ 23 CCR § 354.28(c)(4).

¹⁵⁶ Scott River Valley GSP, Section 2.2.2.3, p. 147.

¹⁵⁷ Scott River Valley GSP, Section 3.4.3.1, p. 220.

¹⁵⁸ Scott River Valley GSP, Section 3.4.3.1, pp. 220-221.

¹⁵⁹ Scott River Valley GSP, Section 3.4.3.1, p. 221.

¹⁶⁰ Scott River Valley GSP, Section 3.4.3.1, p. 221.

wells, a volume of water, or the location of an isocontour.¹⁶¹ Additionally, the GSP Regulations require that an undesirable result be based on a quantitative description of the combination of minimum threshold exceedances.¹⁶² Department staff recommend the GSA redefine their undesirable results for degraded water quality to be consistent with the GSP Regulations to be based on criteria used to define when and where the effects of the groundwater conditions cause undesirable results, based on a quantitative description of the combination of minimum threshold exceedances that cause significant and unreasonable effects in the Basin (see [Recommended Corrective Action 3a](#)).

Department staff additionally note that the GSP states “groundwater quality changes that occur independent of SGMA activities do not constitute an undesirable result.”¹⁶³ The GSP’s definition of undesirable results for degraded water quality, which solely focuses on water quality impacts caused directly by the GSA implementing an action, is incorrect. SGMA includes in its definition of undesirable results the “significant and unreasonable degraded water quality, including the migration of contaminant plumes that impair water supplies.”¹⁶⁴ SGMA specifies that the significant and unreasonable effects are those “caused by groundwater conditions occurring throughout the Basin,” but does not limit them to impacts caused by Basin management under the GSP. As currently defined, if for instance, a minimum threshold exceedance occurs because of mobilization of naturally occurring constituents or migration of a contaminant plume to supply wells caused by groundwater pumping, but the GSA has not implemented any pumping regulations, the GSA would not identify this as an undesirable result. Staff consider this to be inconsistent with the intent of SGMA, which requires GSAs to ensure management of groundwater conditions in the Basin, including any action taken by the GSA, will not significantly and unreasonably degrade water quality. Therefore, degraded water quality caused by groundwater pumping, whether the GSA has implemented pumping regulations or not, should be considered in the assessment of undesirable results in the Basin. Department staff recommend the GSA revise the definition of undesirable results such that groundwater pumping, whether due to action or inaction of the GSA with respect to basin management, is considered in the undesirable result definition (see [Recommended Corrective Action 3b](#)).

The GSP defined the minimum thresholds using existing groundwater quality data, consideration of groundwater beneficial uses designated in the Basin, existing regulations, including the Water Quality Control Plan for the North Coast Region as adopted by the North Coast Regional Water Quality Control Board, Title 22, and consultation with the GSA advisory committee and stakeholders.¹⁶⁵ The GSA establishes the minimum threshold for Nitrate as N as 10 milligrams per liter, and for specific

¹⁶¹ 23 CCR §354.28(c)(4).

¹⁶² 23 CCR §354.26(b)(2).

¹⁶³ Scott River Valley GSP, Section 3.4.3.1, p. 221.

¹⁶⁴ Water Code § 10721(x)

¹⁶⁵ Scott River Valley GSP, Section 3.4.3.2, p. 223.

conductivity as 900 micromhos.. The GSP further defines additional “action triggers” that the GSA will use to investigate conditions and consider implementing projects and management actions.¹⁶⁶ The GSP indicates that minimum thresholds also include a provision that allows a 15 percent average increase per year over ten years in no more than 25 percent of the wells.¹⁶⁷

Department staff note that GSP Regulations require minimum thresholds for degraded water quality to be based on the number of supply wells, a volume of water, or a location of an isocontour that exceeds concentrations of constituents determined by the Agency to be of concern for the Basin.¹⁶⁸ The proposed management of allowing an increasing average value does not appear to be allowable within the GSP Regulations. While the proposed minimum threshold value for degraded water quality is incorrect, the overall water quality in the Basin is generally not at risk of short-term degradation based on the information included in the GSP so this fault does not preclude plan approval. Department staff recommend the GSA refine its minimum thresholds for degraded water quality to be based on the number of supply wells, a volume of water, or a location of an isocontour that exceeds concentrations of constituents determined by the Agency to be of concern for the Basin (see [Recommended Corrective Action 3c](#)).

The GSP defined measurable objectives for degraded water quality using the same metrics as minimum thresholds — as milligrams per liter for nitrate as N, and as micromhos for specific conductivity. The GSP established measurable objectives as a range of water quality within 90% of measurements measured over the 1990-2020 period.¹⁶⁹ The GSP identified that the highest concentration for nitrate that is within the measurable objective is 4.28 milligrams per liter, and the highest specific conductivity is 500 micromhos.¹⁷⁰ Staff regard the measurable objectives for the chronic lowering of groundwater levels in the Scott River Valley GSP as providing a reasonable margin of operational flexibility under adverse conditions, and sufficient to support sustainable management of the Basin.

Department staff conclude that the Plan’s approach of using nitrate as N and specific conductivity for its water quality sustainable management criteria is generally reasonable and consistent with the GSP Regulations. Department staff recognize that GSAs are not responsible for improving existing degraded water quality conditions. GSAs are required; however, to manage future groundwater extraction to ensure that groundwater use subject to its jurisdiction does not significantly and unreasonably exacerbate existing degraded water quality conditions. Where natural and other human factors are contributing to water quality degradation, the GSA may have to confront complex technical and scientific issues regarding the causal role of groundwater extraction and

¹⁶⁶ Scott River Valley GSP, Section 3.4.3.2, p. 223.

¹⁶⁷ Scott River Valley GSP, Table 28, p. 223.

¹⁶⁸ 23 CCR § 354.28 (c)(4).

¹⁶⁹ Scott River Valley GSP, Section 3.4.3.3, pp. 224-225.

¹⁷⁰ Scott River Valley GSP, Figure 54, p. 224.

other groundwater management activities, as opposed to other factors, in any continued degradation; but the analysis should be on whether groundwater extraction is causing the degradation in contrast to only looking at whether a specific project or management activity results in water quality degradation. Department staff recommend that the GSA coordinate with the appropriate water quality regulatory programs and agencies in the Basin to understand and develop a process for determining when groundwater management and extraction is resulting in degraded water quality in the Basin (see [Recommended Corrective Action 3d](#)).

Overall, Department staff consider the sustainable management criteria for degraded water quality to be commensurate with the level of understanding of the Basin based on water quality information presented in the Plan's Basin settings.¹⁷¹ Staff note that groundwater quality in the Basin is generally not at risk of short term degradation, and the GSA should revise undesirable results and minimum thresholds according to GSP regulations (as indicated in the recommended corrective actions) by the next 5-year GSP update.

4.3.2.5 Land Subsidence

In addition to components identified in 23 CCR §§ 354.28 (a-b), the GSP Regulations require the minimum threshold for land subsidence to be the rate and extent of subsidence that substantially interferes with surface land uses and may lead to undesirable results.¹⁷² Minimum thresholds for land subsidence shall be supported by identification of land uses and property interests that have been affected or are likely to be affected by land subsidence in the basin, including an explanation of how the Agency has determined and considered those uses and interests, and the Agency's rationale for establishing minimum thresholds in light of those effects and maps and graphs showing the extent and rate of land subsidence in the basin that defines the minimum thresholds and measurable objectives.¹⁷³

The GSP claims that the Basin has not historically experienced subsidence and that the coarse-grained nature of aquifer materials make them unlikely to be compressed,¹⁷⁴ and concludes that groundwater extraction has not caused or is likely to cause land subsidence in the Basin.¹⁷⁵ Nevertheless, the Plan defined sustainable management criteria for land subsidence.

The GSP describes significant and unreasonable land subsidence as occurring "when subsidence substantially interferes with beneficial uses of groundwater and land uses."¹⁷⁶ The GSP defines an undesirable result for land subsidence as being detected as an

¹⁷¹ Scott River Valley GSP, Appendix 3-D, pp. 1766-1788.

¹⁷² 23 CCR § 354.28(c)(5).

¹⁷³ 23 CCR §§ 354.28(c)(5)(A-B).

¹⁷⁴ Scott River Valley GSP, Section 3.4.3.1, p. 230.

¹⁷⁵ Scott River Valley GSP, Section 3.4.3.1, p. 230.

¹⁷⁶ Scott River Valley GSP, Section 3.4.4.1, p. 230.

exceedance of the minimum threshold due to pumping in any one year, anywhere in the Basin.¹⁷⁷

The Plan sets the minimum threshold for land subsidence as 0.1 foot of subsidence in any one year, resulting in no long-term permanent subsidence. The GSP relies on the Department's annual InSAR dataset to monitor subsidence and has selected the minimum threshold to be the estimated measurement error in InSAR data.¹⁷⁸ Department staff note that the GSA is protecting land uses and property interests in the Basin by limiting subsidence by setting the minimum threshold at the smallest amount of subsidence measurable by InSAR.

The GSP establishes a measurable objective of maintaining zero long term subsidence throughout the GSP implementation period using the same metrics and monitoring sites as minimum thresholds.¹⁷⁹ The GSP states that the guiding principle of the measurable objective is the maintenance of current ground surface elevations.¹⁸⁰

Based on review of the GSP's justification of its selection of sustainable management criteria for land subsidence, staff consider that the GSP's discussion and presentation of information on land subsidence covers the specific items listed in the GSP regulations in an understandable format using appropriate data. Because of the lack of fine-grained materials interbedded within the aquifer materials, Department staff consider the assumptions and conclusions regarding the lack of past subsidence and improbability of future subsidence to be logical and scientifically reasonable.

4.3.2.6 Depletions of Interconnected Surface Water

SGMA defines undesirable results for the depletion of interconnected surface water as those that have significant and unreasonable adverse impacts on beneficial uses of surface water and are caused by groundwater conditions occurring throughout the basin.¹⁸¹ The GSP Regulations require that a Plan identify the presence of interconnected surface water systems in the basin and estimate the quantity and timing of depletions of those systems.¹⁸² The GSP Regulations further require that minimum thresholds be set based on the rate or volume of surface water depletions caused by groundwater use, supported by information including the location, quantity, and timing of depletions, that adversely impact beneficial uses of the surface water and may lead to undesirable results.¹⁸³

The Plan acknowledges the presence of interconnected surface waters in the Basin as the Scott River and its tributaries identifying their location by use of the SVIHM. Stream

¹⁷⁷ Scott River Valley GSP, Section 3.4.4.1, p. 230.

¹⁷⁸ Scott River Valley GSP, Section 3.4.3.2, p. 230.

¹⁷⁹ Scott River Valley GSP, Section 3.4.3.3, pp. 230-231.

¹⁸⁰ Scott River Valley GSP, Section 3.4.3.3, pp. 230-231.

¹⁸¹ Water Code § 10721(x)(6).

¹⁸² 23 CCR § 354.16 (f).

¹⁸³ 23 CCR § 354.28 (c)(6).

depletion was computed by comparing simulation of measured 1990-2018 conditions, identified as base case conditions and comparing those conditions to hypothetical no-pumping conditions. Department staff are satisfied that the GSA has adopted a reasonable approach to identify the location of interconnected surface waters in the Basin.

The GSP does quantify the rate or volume of depletions due to groundwater pumping; however, it does not use it as the sustainable management criteria for depletions of interconnected surface water as required by the GSP Regulations. Instead, the GSP establishes a minimum threshold as “any portfolio of projects and management actions that achieves an individual monthly stream depletion reversal similar to, but not necessarily identical to, the stream depletion reversal achieved by [Managed Aquifer Recharge/In-Lieu Recharge project].”¹⁸⁴ The GSP does not state what values of individual monthly stream depletion the GSA is managing to achieve. Department staff note the GSP does not demonstrate, with adequate evidence, that the use of this alternate method based on a portfolio of projects is sufficient to quantify the location, quantity, and timing of depletions.

The GSP describes significant and unreasonable interconnected surface water conditions as: “stream depletion that can be attributed to groundwater pumping outside of the adjudicated zone to the degree it leads to significant and unreasonable impacts on beneficial uses of surface water.”¹⁸⁵ The GSP does not describe when and where the effects of groundwater extraction on the depletion of interconnected surface water would lead to undesirable results. Furthermore, defining significant and unreasonable impacts as impacts that are significant and unreasonable is recursive and not descriptive of conditions the GSA seeks to avoid. Department staff suggest that the GSA fully describe significant and unreasonable conditions in a manner consistent with the GSP Regulations as part of the next GSP update.

Although the GSP has not identified specific conditions that would cause significant and unreasonable impacts, which is the foundation of SGMA’s definition of undesirable results, the GSP states that undesirable results have been occurring for interconnected surface waters in the Scotts River Valley Basin since the 1970’s because late summer base flows on the river have been insufficient for beneficial uses for decades prior to 2015.¹⁸⁶ The GSP does not describe the significant and unreasonable effects that would occur during an undesirable result, nor does it describe how an undesirable result would be detected by the GSA¹⁸⁷ (see [Recommended Corrective Action 4a](#)).

The GSP identifies several factors contributing to the depletion of interconnected surface water. Diversions of surface water are currently used throughout the year and irrigation

¹⁸⁴ Scott River Valley GSP, Section 3.4.5.2, p. 238.

¹⁸⁵ Scott River Valley GSP, Section 3.4.5.1, p. 234.

¹⁸⁶ Scott River Valley GSP, Section 3.4.5.1, p. 232.

¹⁸⁷ 23 CCR § 354.26 (a), 354.26 (b)(1)

diversions generally occur in periods that overlap the September to November months identified in the GSP as the low flow period. The GSP indicates that it has identified two points of diversion, with allocations of 43 cubic feet per second and 36 cubic feet per second, and notes that other diversions are not monitored.¹⁸⁸ The GSP estimates that stream depletion due to pumping in the adjudicated zone, which is outside the GSA's authority to manage, averages 26 cubic feet per second, and stream depletion due to pumping within the area managed by the GSA is 28 cubic feet per second.¹⁸⁹

The GSA has identified surface water depletion as an undesirable result, but the GSP does not define the significant and unreasonable adverse impacts on beneficial uses of interconnected surface water that constitute undesirable conditions. The GSP states that during implementation, the GSA will reduce depletions due to groundwater use in wells within the GSA's jurisdiction to limit undesirable results to those that were existing prior to 2015.¹⁹⁰

SGMA does not require a GSP to address undesirable results that occurred before, and have not been corrected prior to 2015,¹⁹¹ but GSAs are required to describe the cause of groundwater conditions occurring throughout the Basin that has led to undesirable results.¹⁹² The criteria used to define when and where the effects of groundwater conditions cause undesirable results is to be based on a combination of minimum threshold exceedances that cause significant and unreasonable effects in the Basin.¹⁹³

The GSP discusses minimum thresholds as "any portfolio of projects and management actions that achieves an individual monthly stream depletion reversal similar to, but not necessarily identical to, the stream depletion reversal achieved by [Managed Aquifer Recharge/In-Lieu Recharge project]."¹⁹⁴ The portfolio of projects is required to reach a 15% reduction in depletions due to groundwater pumping from September to November by 2042.¹⁹⁵ Additionally the GSP indicates the GSA will target a 5% reduction in depletions by 2027, 10% by 2032, 15% by 2037, and 15% in 2042, and states that the minimum threshold of 15% stream depletion reduction only becomes enforceable under SGMA in 2042.¹⁹⁶

The GSP does not quantify the rate or volume of surface water depletions due to groundwater pumping as required by the GSP Regulations.¹⁹⁷ Instead, the GSP proposes to limit depletions to those that occurred prior to 2015 without quantifying the amount of depletions that could occur. Staff infer the GSP's description of the criteria used to

¹⁸⁸ Scott River Valley GSP, Section 2.2.1.5, pp. 105-106.

¹⁸⁹ Scott River Valley GSP, Table 13, p. 119.

¹⁹⁰ Scott River Valley GSP, Section 3.4.5.1, p. 237.

¹⁹¹ § 10727.2.(b)(4).

¹⁹² 23 CCR § 354.26(b)(1).

¹⁹³ 23 CCR § 354.26(b)(2).

¹⁹⁴ Scott River Valley GSP, Section 3.4.5.2, p. 238.

¹⁹⁵ Scott River Valley GSP, Section 3.4.5.2, p. 238.

¹⁹⁶ Scott River Valley GSP, Section 3.4.5.2, p. 239.

¹⁹⁷ 23 CCR § 354.28 (c)(6), 23 CCR § 354.28(a).

establish a minimum threshold to mean that the GSP will identify the minimum threshold for depletions of interconnected surface water as an undisclosed portfolio of projects and management actions that creates a 15% reduction in monthly reports of depletion of surface water due to groundwater pumping from the non-adjudicated portion of the Basin that is only fully applicable after 2042, and that the GSA will use the interim reductions as optional non-prescriptive targets for management.¹⁹⁸

The GSP does not provide the numeric value of the rate or volume of surface water depletions caused by groundwater use as a minimum threshold, and instead provides a percent of planned reductions in depletions.¹⁹⁹ The GSP does not indicate what flows would be compared to this reduction in depletion to connect estimated depletions to the minimum threshold, identified as a percentage reduction in depletions. Department staff recommend the GSA provide quantitative values for the minimum thresholds for the depletion interconnected surface water to understand how the GSA plans to manage depletions in the future (see [Recommended Corrective Action 4b](#)).

Additionally, although the GSP states that cold-water accretion would be considered as part of its analysis of beneficial uses,²⁰⁰ the GSP did not include any analysis or evaluation of cold-water accretion or identify the importance of cold water to the habitat as a beneficial use or the effect of the depletion of interconnected surface water due to groundwater pumping on that beneficial use.²⁰¹ Department staff recommend that the GSA address this issue as part of the next 5 year update.

GSP regulations require measurable objectives for interconnected surface waters to be established based on quantitative values using the same metrics and monitoring sites as are used to define the minimum thresholds.²⁰² The GSP did not provide measurable objectives or interim milestones as the rate or volume of surface water depletions caused by groundwater, as is required for minimum thresholds. Department staff encourage the GSA to provide quantitative values for minimum thresholds and measurable objectives to evaluate the likelihood of the GSP's proposed projects and management actions to achieve sustainability.

The GSP establishes a measurable objective of “any portfolio of projects and management actions that achieves an individual monthly stream depletion reversal similar to, but not necessarily identical to, the stream depletion reversal achieved by [Managed Aquifer Recharge/In-Lieu Recharge project].”²⁰³ The portfolio of projects is required to reach a 15% reduction in depletions due to groundwater pumping from September to November by 2042.²⁰⁴ Interim milestones as a percentage of reduced

¹⁹⁸ Scott River Valley GSP, Section 3.4.5.2, p. 238.

¹⁹⁹ Scott River Valley GSP, Table 30, p. 241.

²⁰⁰ Scott River Valley GSP, Section 2.1.3, p. 68.

²⁰¹ Scott River Valley GSP, Section 2.1.3, p. 68.

²⁰² 23 CCR § 354.30(b).

²⁰³ Scott River Valley GSP, Section 3.4.5.2, p. 238.

²⁰⁴ Scott River Valley GSP, Section 3.4.5.2, p. 239.

depletions are provided.²⁰⁵ The measurable objective describes the buffer between the minimum threshold and the measurable objective as an aspirational integrated water management goal, which staff consider a sufficient consideration for operational flexibility.

Public comments submitted to the Department indicate there may be concern with the proposed management of depletions of interconnected surface water as proposed in the GSP. Department staff recognize that there can be disagreement regarding which scientific studies, reports, information, and biological, physical, or ecological factors are best suited to use when developing sustainable management criteria in the Basin for depletions of interconnected surface water under SGMA. Additionally, there appear to be other state and federal agencies that are or may act under other laws and authorities to address biological or ecological concerns regarding low instream flows within the Basin, which appear to be caused by numerous factors of which depletions of interconnected surface waters from groundwater extractions in the Basin is only one. Department staff conclude that at this time the GSA has considered this issue and explained and supported its choices adequately. It may be that alternative choices or methodology could also be supported by other studies or data, but it does not appear that there is a clear or convincing case that the GSA's choices or explanation are inappropriate.

Department staff understand that quantifying depletions of surface water from groundwater extractions is a complex task that likely requires developing new, specialized tools, models, and methods to understand local hydrogeologic conditions, interactions, and responses. During the initial review of GSPs, Department staff have observed that most GSAs have struggled with this new requirement of SGMA. However, staff believe that most GSAs will more fully comply with regulatory requirements after several years of Plan implementation that includes projects and management actions to address the data gaps and other issues necessary to understand, quantify, and manage depletions of interconnected surface waters. Accordingly, Department staff believes that affording GSAs adequate time to refine their Plans to address interconnected surface waters is appropriate and remains consistent with SGMA's timelines and local control preferences.

The Department will continue to support GSAs in this regard by providing, as appropriate, financial and technical assistance to GSAs, including the development of guidance describing appropriate methods and approaches to evaluate the rate, timing, and volume of depletions of interconnected surface water caused by groundwater extractions. Once the Department's guidance related to depletions of interconnected surface water is publicly available, the GSA, where applicable, should consider incorporating appropriate guidance approaches into their future periodic updates to the GSP ([See Recommended Corrective Action 4c](#)). GSAs should consider availing themselves of the Department's financial or technical assistance, but in any event must continue to fill data gaps, collect additional monitoring data, and implement strategies to better understand and manage depletions of interconnected surface water caused by groundwater extractions and define

²⁰⁵ Scott River Valley GSP, Table 30, p. 241.

segments of interconnectivity and timing within their jurisdictional area (See [Recommended Corrective Action 4d](#)). Furthermore, GSAs should coordinate with local, state, and federal resources agencies as well as interested parties to better understand the full suite of beneficial uses and users that may be impacted by pumping induced surface water depletion (See [Recommended Corrective Action 4e](#)).

4.4 MONITORING NETWORK

The GSP Regulations describe the monitoring network that must be developed for each sustainability indicator including monitoring objectives, monitoring protocols, and data reporting requirements. Collecting monitoring data of a sufficient quality and quantity is necessary for the successful implementation of a groundwater sustainability plan. The GSP Regulations require a monitoring network of sufficient quality, frequency, and distribution to characterize groundwater and related surface water conditions in the basin and evaluate changing conditions that occur through implementation of the Plan.²⁰⁶ Specifically, a monitoring network must be able to monitor impacts to beneficial uses and users,²⁰⁷ monitor changes in groundwater conditions relative to measurable objectives and minimum thresholds,²⁰⁸ capture seasonal low and high conditions,²⁰⁹ include required information such as location and well construction and include maps and tables clearly showing the monitoring site type, location, and frequency.²¹⁰ Department staff encourage GSAs to collect monitoring data as specified in the GSP, follow SGMA data and reporting standards,²¹¹ fill data gaps identified in the GSP prior to the first periodic update,²¹² update monitoring network information as needed, follow monitoring best management practices,²¹³ and submit all monitoring data to the Department's Monitoring Network Module immediately after collection including any additional groundwater monitoring data that is collected within the Plan area that is used for groundwater management decisions.

The Basin's monitoring network is comprised of four separate networks which monitor their respective sustainability indicators: (1) a groundwater level monitoring network for the lowering of groundwater levels, reduction of storage, and GDEs; (2) a degraded water quality monitoring network for the observation of constituents; (3) a land subsidence monitoring network utilizing remote sensing for the observation of vertical land displacement; and (4) an interconnected surface water network used to update the SVIHM for the estimation of stream depletion due to groundwater pumping.²¹⁴

²⁰⁶ 23 CCR § 354.32.

²⁰⁷ 23 CCR § 354.34(b)(2).

²⁰⁸ 23 CCR § 354.34(b)(3).

²⁰⁹ 23 CCR § 354.34(c)(1)(B).

²¹⁰ 23 CCR §§ 354.34(g-h).

²¹¹ 23 CCR § 352.4 *et seq.*

²¹² 23 CCR § 354.38(d).

²¹³ Department of Water Resources, 2016, [Best Management Practices and Guidance Documents](#).

²¹⁴ Scott River Valley GSP, Section 3.3, p. 181.

The GSP states that the groundwater level monitoring network is designed to capture spatial and temporal groundwater level conditions to assess trends, flow direction, and hydraulic gradients between the aquifer and surface water.²¹⁵ A total of 29 groundwater level monitoring wells are included in the monitoring network.²¹⁶ For the majority of groundwater monitoring wells, total well depths and coordinates are provided.²¹⁷ The distribution of groundwater level wells by their given well depths are located uniformly throughout the Basin.²¹⁸ Representative Monitoring Point (RMP) wells will be measured twice per year for groundwater elevation data collection.²¹⁹ Groundwater level monitoring wells will serve as a proxy for groundwater storage monitoring.²²⁰ Groundwater level monitoring wells will also be utilized to monitor non-riparian GDEs,²²¹ however it is not stated whether groundwater monitoring wells will serve as a direct proxy, and should be clarified by the GSA at the next GSP update. Department staff note that 29 Representative Monitoring Point wells have also been uploaded to the Department's Monitoring Network Module for the groundwater level monitoring network.

The GSP states that the groundwater elevation monitoring network will serve as a proxy for groundwater storage monitoring.²²² The GSP justifies using levels as a proxy by referencing a study by the United States Geologic Survey that indicates that direct measurements of groundwater levels can be used to estimate changes in groundwater storage.²²³

The groundwater quality network consists of three municipal and public water supply wells in the City of Fort Jones and Kidder Creek Orchard Camp that monitor constituents within the Basin.²²⁴ A map is provided for the location of the public water supply monitoring sites.²²⁵ A planned water quality monitoring network expansion, identified as a data gap, will include at least five wells to provide spatial coverage of the Basin.²²⁶ Two constituents of concern are monitored: Nitrate and Specific Conductivity.²²⁷ The monitoring frequency for constituents of concern is to be annually and "periodically," with specific conductivity on a monitoring schedule of 108 months for each of the two active wells in Fort Jones".²²⁸ Although the groundwater quality monitoring performed under Order No. R1-2019-0001, is scheduled at a frequency of once every three years after 2022,²²⁹ the GSA indicates

²¹⁵ Scott River Valley GSP, Section 3.3.1.1, p. 186.

²¹⁶ Scott River Valley GSP, Table 24, p. 194.

²¹⁷ Scott River Valley GSP, Table 24, p. 194.

²¹⁸ Scott River Valley GSP, Figure 44, p. 184.

²¹⁹ Scott River Valley GSP, Section 3.3.1.1, p. 187.

²²⁰ Scott River Valley GSP, Section 3.3.2, p. 187.

²²¹ Scott River Valley GSP, Section 3.3, p. 180.

²²² Scott River Valley GSP, Section 3.3.2, p. 187.

²²³ Scott River Valley GSP, Section 3.4.2, p. 219.

²²⁴ Scott River Valley GSP, Section 3.3.3.1, p. 188.

²²⁵ Scott River Valley GSP, Figure 46, p. 190.

²²⁶ Scott River Valley GSP, Section 3.3.3.1, p. 189.

²²⁷ Scott River Valley GSP, Section 2.2.2.3, pp. 144-146.

²²⁸ Scott River Valley GSP, Table 25, p. 195.

²²⁹ Scott River Valley GSP, Section 3.3.3.2, p. 191.

that it will ensure that any monitoring sites added to the network for water quality sampling "will be monitored at a minimum frequency of once every two years for the first two years followed by once every three years if there are no groundwater quality issues detected."²³⁰

The land subsidence monitoring network utilizes Interferometric Aperture Radar (InSAR) to collect measurement data of vertical ground surface displacement.²³¹ The remote sensing dataset provides spatial coverage of the Basin with data points every 100 by 100 meters and interpolated into raster surfaces. Datasets are available on a monthly basis. The GSP indicates that data from the subsidence monitoring network will be reviewed annually.²³² However, Table 32 states, "InSAR data analyzed as it becomes available from DWR, but no more frequently than once every two years."²³³ Thus, Department staff are unclear as to how frequently InSAR data will be reviewed by the GSA and request the GSA clarify the evaluation frequency.

The GSP discusses use of the SVIHM for monitoring interconnected surface water.²³⁴ The GSP provides discussion about why it selected the SVIHM over monitoring by proxy using groundwater levels²³⁵ or streamflow.²³⁶ Department staff regard the use of integrated hydrologic models such as SVIHM to quantify the depletion of interconnected surface waters due to groundwater extraction to be consistent with best scientific and management practices, and as such representing an approximate means of addressing this sustainability indicator. However, the GSP does not yet provide detailed information about the timing, location, and quantity of depletion of surface waters consistent with the regulatory requirements. The GSP identifies data gaps for interconnected surface water monitoring and describes means to fill those gaps, but the Plan only proposes surface water and biological monitoring. Department staff do not understand how data from such monitoring would provide the sort of information needed to characterize the spatial and temporal exchanges between surface water and groundwater as required by the Regulations, and the GSA does not explain how this information would be used to achieve that end.²³⁷ Department staff recommend that the GSA identify which monitoring sites will be monitored to provide data for model updates and explain how the GSA will use biological monitoring results (see [Recommended Corrective Action 5](#)).

Even with the identified recommended corrective actions, the description of the monitoring network included in the Plan sufficiently complies with the requirements outlined in the GSP Regulations. Overall, the Plan describes a monitoring network that promotes the collection of data of sufficient quality, frequency, and distribution to characterize groundwater and related surface water conditions in the Basin and evaluate

²³⁰ Scott River Valley GSP, Section 5.1.2, p. 290.

²³¹ Scott River Valley GSP, Section 3.3.4.1, pp. 191-192.

²³² Scott River Valley GSP, Section 3.3.4.1, p. 192.

²³³ Scott River Valley GSP, Table 32, p. 292.

²³⁴ Scott River Valley GSP, Section 3.3.5.1, pp. 198-201.

²³⁵ Scott River Valley GSP, Section 3.3.5.1, pp. 192-197.

²³⁶ Scott River Valley GSP, Section 3.3.5.1, p. 197.

²³⁷ Scott River Valley GSP, Section 3.3.5.1, pp. 198-201.

changing conditions that occur through Plan implementation. The GSP provides a good explanation for the conclusion that the monitoring network is supported by the best available information and data and is designed to ensure adequate coverage of sustainability indicators. The Plan also describes existing data gaps and the steps that will be taken to fill data gaps and improve the monitoring network prior to the next five-year assessment. Department staff note that the GSP hinges its ability to fill data gaps based on funding availability.²³⁸ Staff remind the GSA that data gaps are required by the GSP regulations to be filled.²³⁹

4.5 PROJECTS AND MANAGEMENT ACTIONS

The GSP Regulations require a description of the projects and management actions the submitting Agency has determined will achieve the sustainability goal for the basin, including projects and management actions to respond to changing conditions in the basin.²⁴⁰ Each Plan's description of projects and management actions must include details such as: how projects and management actions in the GSP will achieve sustainability, the implementation process and expected benefits, and prioritization and criteria used to initiate projects and management actions.²⁴¹

The GSP Regulations require a description of the projects and management actions the submitting agency has determined will achieve the sustainability goal for the Basin, including projects and management actions to respond to changing conditions in the Basin.²⁴² The GSP's projects and management actions must show that the GSA will be able to implement the projects and/or management actions that will maintain groundwater conditions that will not become undesirable.

The GSP's sustainable management criteria indicate that the GSA's management strategy is to maintain current conditions for groundwater levels, storage, groundwater quality, and subsidence. The GSP's sustainable management criteria for interconnected surface water indicate the GSA plans to manage to limit depletions of interconnected surface water to rates that are slightly less than historical depletions.

The GSP proposes 31 projects and management actions, three of which are described in detail and are designed to maintain current conditions:

- *Avoiding Significant Increase of Total Net Groundwater Use from the Basin* – This management action was established to ensure that the sustainable yield of the Basin is not exceeded, and sets a framework to develop a process to limit total Basin groundwater extraction to levels that have occurred over the most recent twenty year period. This management action will use evapotranspiration estimates

²³⁸ Scott River Valley GSP, Section 3.3, p. 181.

²³⁹ 23 CCR § 354.38 (c) *et seq.*, 23 CCR § 354.18 (e).

²⁴⁰ 23 CCR § 354.44 (a).

²⁴¹ 23 CCR § 354.44 (b) *et seq.*

²⁴² 23 CCR § 354.44 *et seq.*

in conjunction with the SVIHM to assess the effectiveness of this management action to avoid the expansion of total net groundwater use.²⁴³

- *Managed Aquifer Recharge and In-Lieu Recharge National Fish and Wildlife Foundation Scott Valley Managed Aquifer Recharge* – This project will divert water from the Scott River during periods where flows are above CDFW recommended instream flows to be applied to dormant agricultural fields for recharge. This project is a pilot project expected to benefit flows in the Scott River by reducing depletions by 9% (approximately 3 cubic feet per second), which is estimated to be 12,000 acre-feet.²⁴⁴
- *Managed Aquifer Recharge and In-Lieu Recharge* – This project is a larger scale version of the pilot project, which would divert Scott River water to be applied to agricultural fields for recharge in a greater area. This project is expected to benefit flows in the Scott River by reducing depletions by 19% (approximately 6 cubic feet per second), which is estimated to be 25,000 acre-feet.²⁴⁵

Department staff note that the success of the groundwater recharge projects relies on future groundwater and climatic conditions aligning with the modeled predictions. Because climatic conditions are unpredictable and a potential increase in surface water demand may reduce recharge project water availability in the future, alternative projects and/or management actions may need to be considered (in the future) if the proposed groundwater recharge projects are unable to produce the expected benefits.

While Department staff note the Plan's projects and management actions appear generally feasible and likely to prevent new undesirable results in the Basin, Department staff note that the lack of complete descriptions of 28 projects and management actions limit staff's ability to review the effectiveness of projects and management actions in the Basin. The GSP does not provide a clear strategy on how the Agency may prioritize the execution of the 31 identified projects and management actions provided in the GSP. Staff use the detailed descriptions of projects and management actions to understand the GSP's planned implementation to help the department's evaluation of projects and management actions the GSA plans to take to achieve sustainability and encourage the GSA to provide additional details in future updates to the GSP.

The projects and management actions in the GSP, if implemented, will allow the GSA to manage groundwater sustainably, achieve the sustainability goal, avoid causing new undesirable results, and avoid exacerbating existing undesirable results. Staff conclude the GSP proposes projects and management actions in a manner that substantially complies with the GSP Regulations.²⁴⁶

²⁴³ Scott River Valley GSP, Section 4.3, pp. 263-271.

²⁴⁴ Scott River Valley GSP, Appendix 4-A, p. 1791.

²⁴⁵ Scott River Valley GSP, Appendix 4-A, p. 1791.

²⁴⁶ 23 CCR §§ 354.44 (a-d).

4.6 CONSIDERATION OF ADJACENT BASINS/BASINS

SGMA requires the Department to "...evaluate whether a groundwater sustainability plan adversely affects the ability of an adjacent basin to implement their groundwater sustainability plan or impedes achievement of sustainability goals in an adjacent basin."²⁴⁷ Furthermore, the GSP Regulations state that minimum thresholds defined in each GSP be designed to avoid causing undesirable results in adjacent basins or affecting the ability of adjacent Basins to achieve sustainability goals.²⁴⁸

The Basin is not adjacent to other basins or subbasins.

4.7 CONSIDERATION OF CLIMATE CHANGE AND FUTURE CONDITIONS

The GSP Regulations require a GSA to consider future conditions and project how future water use may change due to multiple factors including climate change.²⁴⁹

Since the GSP was adopted and submitted, climate change conditions have advanced faster and more dramatically. It is anticipated that the hotter, drier conditions will result in a loss of 10% of California's water supply. As California adapts to a hotter, drier climate, GSAs should be preparing for these changing conditions as they work to sustainably manage groundwater within their jurisdictional areas. Specifically, the Department encourages GSAs to:

1. Explore how their proposed groundwater level thresholds have been established in consideration of groundwater level conditions in the Basin based on current and future drought conditions;
2. Explore how groundwater level data from the existing monitoring network will be used to make progress towards sustainable management of the Basin given increasing aridification and effects of climate change, such as prolonged drought;
3. Take into consideration changes to surface water reliability and that impact on groundwater conditions;
4. Evaluate updated watershed studies that may modify assumed frequency and magnitude of recharge projects, if applicable, and
5. Continually coordinate with the appropriate groundwater users, including but not limited to domestic well owners and state small water systems, and the appropriate overlying county jurisdictions developing drought plans and establishing local drought task forces²⁵⁰ to evaluate how their Plan's groundwater management strategy aligns with drought planning, response, and mitigation efforts within the Basin.

²⁴⁷ Water Code § 10733(c).

²⁴⁸ 23 CCR § 354.28(b)(3).

²⁴⁹ 23 CCR § 354.18.

²⁵⁰ Water Code § 10609.50.

5 STAFF RECOMMENDATION

Department staff recommend approval of the GSP with the recommended corrective actions listed below. The Scott River Valley GSP conforms with Water Code Sections 10727.2 and 10727.4 of SGMA and substantially complies with the GSP Regulations. Implementation of the GSP will likely achieve the sustainability goal for the Scott River Valley Basin. The GSA has identified several areas for improvement of its Plan and Department staff concur that those items are important and should be addressed as soon as possible. Department staff have also identified additional recommended corrective actions that staff believes should be addressed by the GSA before or during the first periodic assessment of its GSP. Addressing these recommended corrective actions will be important to demonstrate that implementation of the Plan is likely to achieve the sustainability goal.

The recommended corrective actions include:

RECOMMENDED CORRECTIVE ACTION 1

Provide a current water budget as required by the GSP regulations.²⁵¹

RECOMMENDED CORRECTIVE ACTION 2

Provide a description of the relationship between established minimum thresholds for the chronic lowering of groundwater levels and how they avoid undesirable results for each of the other sustainability indicators.

RECOMMENDED CORRECTIVE ACTION 3

The GSA should update its plan to include sustainable management criteria for degraded water quality as follows:

- a. The GSA should redefine the undesirable results for degraded water quality, to be consistent with the GSP Regulations, and should be based on criteria used to define when and where the effects of the groundwater conditions cause undesirable results, based on a quantitative description of the combination of minimum threshold exceedances that cause significant and unreasonable effects in the Basin.²⁵²
- b. Revise the definition of undesirable results for degraded groundwater quality so that exceedances of minimum thresholds caused by groundwater extraction, whether the GSA has implemented pumping regulations or not, are considered in the assessment of undesirable results in the Basin.
- c. The GSA should refine its minimum thresholds for degraded water quality to be based on the number of supply wells, a volume of water, or a location of an

²⁵¹ 23 CCR § 354.18(c)(1).

²⁵² 23 CCR § 354.26(b)(2).

isocontour that exceeds concentrations of constituents determined by the Agency to be of concern for the Basin.²⁵³

- d. The GSA should coordinate with the appropriate groundwater users, including drinking water, environmental, and irrigation users as identified in the Plan, and water quality regulatory agencies and programs in the Basin to understand and develop a process for monitoring and determining if groundwater management and extraction is resulting in migration of constituents of concern or degraded water quality in the Basin.²⁵⁴

RECOMMENDED CORRECTIVE ACTION 4

Department staff understand that estimating the location, quantity, and timing of stream depletion due to ongoing, basin-wide pumping is a complex task and that developing suitable tools may take additional time; however, it is critical for the Department's ongoing and future evaluations of whether GSP implementation is on track to achieve sustainable groundwater management. The Department plans to provide guidance on methods and approaches to evaluate the rate, timing, and volume of depletions of interconnected surface water and support for establishing specific sustainable management criteria in the near future. This guidance is intended to assist GSAs to sustainably manage depletions of interconnected surface water.

In addition, the GSA should work to address the following items by the first periodic update:

- a. Consider describing the conditions that are significantly and unreasonably undesirable for interconnected surface water in the Basin. Describe how the GSA will know an undesirable result has occurred using a quantitative combination of minimum threshold exceedances.
- b. Consider selecting quantitative numeric values to define minimum thresholds that represent a point in depletions of surface water flows that, if exceeded, may cause undesirable results.
- c. Consider utilizing the interconnected surface water guidance, as appropriate, when issued by the Department to establish quantifiable minimum thresholds, measurable objectives, and management actions.
- d. Continue to fill data gaps, collect additional monitoring data, and implement the current strategy to manage depletions of interconnected surface water and define segments of interconnectivity and timing.
- e. Prioritize collaborating and coordinating with local, state, and federal regulatory agencies as well as interested parties to better understand the full suite of

²⁵³ 23 CCR § 354.28 (c)(4).

²⁵⁴ 23 CCR § 354.28(c)(4).

beneficial uses and users that may be impacted by pumping induced surface water depletion within the GSA's jurisdictional area.

RECOMMENDED CORRECTIVE ACTION 5

The GSA should provide identification of the physical monitoring that will be used to support the SVIHM's estimates of depletions of surface water for the interconnected surface water monitoring network.²⁵⁵

²⁵⁵ 23 CCR § 354.34(c)(6) *et seq.*