



CALIFORNIA DEPARTMENT OF WATER RESOURCES

# SUSTAINABLE GROUNDWATER MANAGEMENT OFFICE

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January 18, 2024

Matt Parker  
Siskiyou County Flood Control and Water Conservation District GSA  
1312 Fairlane  
Yreka, CA 96097  
[mparker@co.siskiyou.ca.us](mailto:mparker@co.siskiyou.ca.us)

RE: Butte Valley Basin - 2022 Groundwater Sustainability Plan

Dear Matt Parker,

The Department of Water Resources (Department) has evaluated the groundwater sustainability plan (GSP or Plan) submitted for the Butte Valley Basin. The Department has determined that the Plan is “incomplete” pursuant to Section 355.2(e)(2) of the GSP Regulations.

The Department based its incomplete determination on recommendations from the Staff Report, included as an enclosure to the attached Statement of Findings, which describes that the Basin’s Plan does not satisfy the objectives of the Sustainable Groundwater Management Act (SGMA) nor substantially comply with the GSP Regulations. The Staff Report also provides corrective actions which the Department recommends the Basin’s groundwater sustainability agency (GSA) review while determining how to address the deficiencies.

The Basin’s GSA has 180 days, the maximum allowed by the GSP Regulations, to address the identified deficiencies. Where addressing the deficiencies requires modification of the Plan, the GSA must adopt those modifications into the GSP and all applicable coordination agreement materials, or otherwise demonstrate that those modifications are part of the Plan before resubmitting it to the Department for evaluation no later than July 16, 2024. The Department understands that much work has occurred to advance sustainable groundwater management since the GSA submitted the GSP in January 2022. To the extent to which those efforts are related or responsive to the Department’s identified deficiencies, we encourage you to document that as part of your Plan resubmittal. The Department prepared a [Frequently Asked Questions](#) document to provide general information and guidance on the process of addressing deficiencies in an “incomplete” determination.

Department staff will work expeditiously to review the revised components of your Plan resubmittal. If the revisions sufficiently address the identified deficiencies, the Department will determine that the Plan is “approved”. In that scenario, Department staff will identify additional recommended corrective actions that the GSA should address

early in implementing the GSP (i.e., no later than the first required periodic evaluation). Among other items, those corrective actions will recommend the GSA provide more detail on their plans and schedules to address data gaps. Those recommendations will call for significantly expanded documentation of the plans and schedules to implement specific projects and management actions. Regardless of those recommended corrective actions, the Department expects the first periodic evaluations, required no later than January 2027 – one-quarter of the way through the 20-year implementation period – to document significant progress toward achieving sustainable groundwater management.

If the Basin's GSA cannot address the deficiencies identified in this letter by July 16, 2024, then the Department, after consultation with the State Water Resources Control Board, will determine the GSP to be "inadequate". In that scenario, the State Water Resources Control Board may identify additional deficiencies that the GSA would need to address in the state intervention processes outlined in SGMA.

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

Thank You,

Paul Gosselin  
Paul Gosselin  
Deputy Director  
Sustainable Groundwater Management

Attachment:

1. Statement of Findings Regarding the Determination of Incomplete Status of the Butte Valley Basin Groundwater Sustainability Plan

**STATE OF CALIFORNIA  
DEPARTMENT OF WATER RESOURCES**

**STATEMENT OF FINDINGS REGARDING THE  
DETERMINATION OF INCOMPLETE STATUS OF THE  
BUTTE 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, and whether the GSP adversely affects the ability of an adjacent basin or subbasin to implement its GSP or impedes achievement of sustainability goals in an adjacent basin or subbasin. (Water Code § 10733.) The Department is directed to issue an assessment of the GSP within two years of its submission. (Water Code § 10733.4.) This Statement of Findings explains the Department's decision regarding the submitted Plan by the Siskiyou County Flood Control and Water Conservation District (GSA or Agency) for the Butte Valley Basin (Basin No. 1-003).

Department management has reviewed the enclosed Staff Report, which recommends that the identified deficiencies should preclude approval of the GSP. Based on its review of the Staff Report, Department management is satisfied that staff have conducted a thorough evaluation and assessment of the Plan and concurs with, and hereby adopts, staff's recommendation and all the corrective actions provided. The Department thus determines the Plan Incomplete based on the staff assessments and recommendations. In particular, the Department finds:

- A. The GSA should revise the GSP to provide a reasonable assessment of overdraft conditions using the best available information and describe a reasonable means to mitigate overdraft. Specifically, the Plan must be amended as follows:
  1. Reevaluate the assessment of overdraft conditions in the Basin. Specifically, the GSA should examine the assumptions that were used to develop the absence of historical and current overdraft and the projected overdraft estimates in the projected water budget considering the results vary greatly from the values reported in the recent annual report data. The assessment should include the latest information for the Basin to ensure the GSP includes the required projects and management actions to mitigate overdraft in the Basin.

2. Provide a reasonable means to mitigate the overdraft that is continuing to occur in the Basin. Specifically, the GSA should describe feasible proposed management actions that are commensurate with the level of understanding of groundwater conditions of the Basin and with sufficient details and consideration for Department staff to be able to clearly understand how the Plan's projects and management actions will mitigate overdraft in the Basin under different climate scenarios.
- B. The GSA must provide a more detailed explanation and justification regarding the selection of the sustainable management criteria for groundwater levels, particularly minimum thresholds and measurable objectives, and quantitatively describe the effects of those criteria on the interests of beneficial uses and users of groundwater. Department staff recommend the GSA consider and address the following:
1. The GSP should describe the specific, quantitative undesirable results they aim to avoid through implementing the Plan. This must include a quantitative description of the negative effects to beneficial uses and users that would be experienced at undesirable result conditions. The GSA should fully disclose and describe and explain its rationale for determining the number of wells that may be dewatered and the level of impacts to groundwater dependent ecosystems that may occur without rising to significant and unreasonable levels constituting undesirable results. Lastly, the GSA should explain how well mitigation will be considered by the GSA during its management of the Basin in a project or management action as part of the GSP. Department staff also encourage the GSA to review the Department's April 2023 guidance document titled Considerations for Identifying and Addressing Drinking Water Well Impacts.<sup>1</sup>
  2. Revise minimum thresholds to be set at the level where the depletion of supply across the Basin may lead to undesirable results.<sup>2</sup> Provide the criteria used to establish and justify minimum thresholds.<sup>3</sup> Consider and disclose how minimum thresholds may affect the interests of beneficial uses and users.<sup>4</sup> Fully document the analysis and justifications performed to establish the criteria used to establish minimum thresholds. Clearly

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<sup>1</sup> <https://water.ca.gov/Programs/Groundwater-Management/Drinking-Water-Well>

<sup>2</sup> 23 CCR 354.28 (c)(1).

<sup>3</sup> 23 CCR 354.28 (a).

<sup>4</sup> 23 CCR 354.28 (b)(4).

show each step of the analysis and provide supporting information used in the analysis.<sup>5</sup>

3. Provide an evaluation of how minimum thresholds may affect the interests of beneficial uses and users of groundwater or land uses and property interests.<sup>6</sup> Identify the number and location of wells that may be negatively affected when minimum thresholds are reached. Compare well infrastructure for all well types in the Basin with minimum thresholds at nearby suitably representative monitoring sites. Document all assumptions and steps clearly so that it will be understood by readers of the GSP. Include maps of potentially affected well locations, identify the number of potentially affected wells by well type, and provide a supporting discussion of the effects. Also, provide an evaluation of how the proposed management may impact environmental users such as GDEs.

Based on the above, the GSP submitted by the Agency for the Butte Valley Basin is determined to be incomplete because the GSP does not satisfy the requirements of SGMA, nor does it substantially comply with the GSP Regulations. The corrective actions provided in the Staff Report are intended to address the deficiencies that, at this time, preclude approval. The Agency has up to 180 days to address the deficiencies outlined above and detailed in the Staff Report. Once the Agency resubmits its Plan, the Department will review the revised GSP to evaluate whether the deficiencies were adequately addressed. Should the Agency fail to take sufficient actions to correct the deficiencies identified by the Department in this assessment, the Department shall disapprove the Plan if, after consultation with the State Water Resources Control Board, the Department determines the Plan inadequate pursuant to 23 CCR § 355.2(e)(3)(C).

Signed:

  
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Karla Nemeth, Director  
Date: January 18, 2024

Enclosure: Groundwater Sustainability Plan Assessment Staff Report – Butte Valley Basin

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<sup>5</sup> 23 CCR 354.28 (b)(1).

<sup>6</sup> 23 CCR 354.28 (b)(4).

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

Groundwater Basin Name: Butte Valley Basin (Basin No. 1-003)  
Submitting Agency: Siskiyou County Flood Control and Water Conservation  
District Groundwater Sustainability Agency  
Submittal Type: Initial GSP Submittal  
Submittal Date: January 28, 2022  
Recommendation: Incomplete  
Date: January 18, 2024

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The Siskiyou County Flood Control and Water Conservation District Groundwater Sustainability Agency (Butte Valley GSA or GSA) submitted the Butte Valley Groundwater Sustainability Plan (Butte Valley GSP, GSP, or Plan) to the Department for evaluation and assessment as required by SGMA and the GSP Regulations.<sup>1</sup> The GSP covers the entire Butte Valley Basin (Basin) for the implementation of SGMA.

Evaluation and assessment by the Department is based on whether an adopted and submitted GSP, either individually or in coordination with other adopted and submitted GSPs, complies with SGMA and substantially complies with the GSP Regulations. Department staff base their assessment on information submitted as part of an adopted GSP, public comments submitted to the Department, and other materials, data, and reports that are relevant to conducting a thorough assessment. Department staff have evaluated the GSP and have identified deficiencies that staff recommend should preclude its approval.<sup>2</sup> In addition, consistent with the GSP Regulations, Department staff have provided corrective actions<sup>3</sup> that the GSA should review while determining how and whether to address the deficiencies. The deficiencies and corrective actions are explained in greater detail in Section 3 of this staff report and are generally related to the need to define sustainable management criteria in the manner required by SGMA and the GSP Regulations.

This assessment includes four sections:

- **[Section 1 – Evaluation Criteria](#)**: Describes the legislative requirements and the Department’s evaluation criteria.

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<sup>1</sup> 23 CCR § 350 *et seq.*

<sup>2</sup> 23 CCR §355.2(e)(2).

<sup>3</sup> 23 CCR §355.2(e)(2)(B).

- **Section 2 – Required Conditions**: Describes the submission requirements, GSP completeness, and basin coverage required for a GSP to be evaluated by the Department.
- **Section 3 – Plan Evaluation**: Provides a detailed assessment of identified deficiencies in the GSP. Consistent with the GSP Regulations, Department staff have provided corrective actions for the GSA to address the deficiencies.
- **Section 4 – Staff Recommendation**: Provides staff's recommendation regarding the Department's determination.

# 1 EVALUATION CRITERIA

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The Department evaluates whether a Plan conforms to the statutory requirements of SGMA<sup>4</sup> and is likely to achieve the basin's sustainability goal.<sup>5</sup> To achieve the sustainability goal, the Plan must demonstrate that implementation 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.<sup>6</sup> Undesirable results are required to be defined quantitatively by the GSAs overlying a basin and occur when significant and unreasonable effects for any of the applicable sustainability indicators are caused by groundwater conditions occurring throughout the basin.<sup>7</sup> The Department is also required to evaluate whether the Plan will adversely affect the ability of an adjacent basin to implement its groundwater sustainability program or achieve its sustainability goal.<sup>8</sup>

For a Plan to be evaluated by the Department, it must first be determined that it was submitted by the statutory deadline<sup>9</sup> and that it is complete and covers the entire basin.<sup>10</sup> If these required conditions are satisfied, the Department evaluates the Plan to determine whether it complies with SGMA and substantially complies with the GSP Regulations.<sup>11</sup> As stated in the GSP Regulations, "[s]ubstantial 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."<sup>12</sup>

When evaluating whether the Plan is likely to achieve the sustainability goal for the basin, Department staff review the information provided for sufficiency, credibility, and consistency with scientific and engineering professional standards of practice.<sup>13</sup> The Department's review considers whether there is a reasonable relationship between the information provided by the GSAs and the assumptions and conclusions presented in the Plan, 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

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<sup>4</sup> Water Code §§ 10727.2, 10727.4, 10727.6.

<sup>5</sup> Water Code § 10733(a).

<sup>6</sup> Water Code § 10721(v).

<sup>7</sup> 23 CCR § 354.26.

<sup>8</sup> Water Code § 10733(c).

<sup>9</sup> 23 CCR § 355.4(a)(1).

<sup>10</sup> 23 CCR §§ 355.4(a)(2), 355.4(a)(3).

<sup>11</sup> 23 CCR § 350 *et seq.*

<sup>12</sup> 23 CCR § 355.4(b).

<sup>13</sup> 23 CCR § 351(h).



are feasible and likely to prevent undesirable results.<sup>14</sup> The Department also considers whether the GSAs have the legal authority and financial resources necessary to implement the Plan.<sup>15</sup>

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 it.<sup>16</sup> When applicable, the Department will assess whether coordination agreements have been adopted by all relevant parties and satisfy the requirements of SGMA and the GSP Regulations.<sup>17</sup> The Department also considers whether the Plan provides reasonable measures and schedules to eliminate identified data gaps.<sup>18</sup> Lastly, the Department's review considers the comments submitted on the Plan and evaluates whether the GSAs have adequately responded to the comments that raise credible technical or policy issues with the Plan.<sup>19</sup>

The Department is required to evaluate the Plan within two years of its submittal date and issue a written assessment.<sup>20</sup> The assessment is required to include a determination of the Plan's status.<sup>21</sup> The GSP Regulations provide three options for determining the status of a Plan: approved,<sup>22</sup> incomplete,<sup>23</sup> or inadequate.<sup>24</sup>

Even when the Department determines a Plan is approved, indicating that it satisfies the requirements of SGMA and is in substantial compliance with the GSP Regulations, the Department may still recommend corrective actions.<sup>25</sup> 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 implementation of the Plan adversely affects adjacent basins. While the issues addressed by the recommended corrective actions in an approved Plan do not, at the time the determination was made, preclude its approval, 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 basin's sustainability goal.<sup>26</sup> Unless otherwise noted, the Department proposes that recommended corrective actions be addressed by the submission date for the first periodic evaluation.<sup>27</sup>

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<sup>14</sup> 23 CCR §§ 355.4(b)(1), (3), (4) and (5).

<sup>15</sup> 23 CCR § 355.4(b)(9).

<sup>16</sup> 23 CCR § 355.4(b)(6).

<sup>17</sup> 23 CCR § 355.4(b)(8).

<sup>18</sup> 23 CCR § 355.4(b)(2).

<sup>19</sup> 23 CCR § 355.4(b)(10).

<sup>20</sup> Water Code § 10733.4(d); 23 CCR § 355.2(e).

<sup>21</sup> Water Code § 10733.4(d); 23 CCR § 355.2(e).

<sup>22</sup> 23 CCR § 355.2(e)(1).

<sup>23</sup> 23 CCR § 355.2(e)(2).

<sup>24</sup> 23 CCR § 355.2(e)(3).

<sup>25</sup> Water Code § 10733.4(d).

<sup>26</sup> Water Code § 10733.8.

<sup>27</sup> 23 CCR § 356.4.

After review of the Plan, Department staff may conclude that the information provided is not sufficiently detailed, or the analyses not sufficiently thorough and reasonable, to evaluate whether it is likely to achieve the sustainability goal for the basin. If the Department determines the deficiencies precluding approval may be capable of being corrected by the GSAs in a timely manner,<sup>28</sup> the Department will determine the status of the Plan to be incomplete. A Plan deemed incomplete may be revised and resubmitted to the Department for reevaluation of whether all deficiencies have been addressed and incorporated into the Plan within 180 days after the Department makes its incomplete determination. The Department will review the revised Plan to evaluate whether the identified deficiencies were sufficiently addressed. Depending on the outcome of that evaluation, the Department may determine the resubmitted Plan is approved. Alternatively, the Department may find a formerly deemed incomplete GSP is inadequate if, after consultation with the State Water Resources Control Board, it determines that the GSAs have not taken sufficient actions to correct any identified deficiencies.<sup>29</sup>

The staff assessment of the Plan involves the review of information presented by the GSAs, including models and assumptions, and an evaluation of that information based on scientific reasonableness. In conducting its assessment, the Department does not recalculate or reevaluate technical information provided in the Plan or perform its own geologic or engineering analysis of that information. The recommendation to approve a Plan does not signify that Department staff, were they to exercise the professional judgment required to develop a Plan 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 GSAs are supported by adequate, credible evidence, and are scientifically reasonable.

Lastly, the Department's review and assessment of an approved 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.<sup>30</sup> Also, GSAs have an ongoing duty to reassess their GSPs, provide annual reports to the Department, and, when necessary, update or amend their GSPs.<sup>31</sup> 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 GSA's progress toward achieving the basin's sustainability goal and whether implementation of the Plan adversely affects the ability of GSAs in adjacent basins to achieve their sustainability goals.

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<sup>28</sup> 23 CCR § 355.2(e)(2)(B)(i).

<sup>29</sup> 23 CCR § 355.2(e)(3)(C).

<sup>30</sup> Water Code § 10733.8; 23 CCR § 355.6.

<sup>31</sup> Water Code §§ 10728, 10728.2.

## 2 REQUIRED CONDITIONS

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A GSP, to be evaluated by the Department, must be submitted within the applicable statutory deadline.<sup>32</sup> The GSP must also be complete and must, either on its own or in coordination with other GSPs, cover the entire basin. If a GSP is determined to be incomplete, Department staff may require corrective actions that address minor or potentially significant deficiencies identified in the GSP. The GSAs in a basin, whether developing a single GSP covering the basin or multiple GSPs, must sufficiently address those required corrective actions within the time provided, not to exceed 180 days, for the GSP to be reevaluated by the Department and potentially approved.

### 2.1 SUBMISSION DEADLINE

SGMA required basins categorized as high- or medium-priority as of January 1, 2017 to submit a GSP no later than January 31, 2022.<sup>33</sup>

The Butte Valley GSA submitted the Butte Valley GSP to the Department on January 28, 2022, in compliance with the statutory deadline.

### 2.2 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.<sup>34</sup>

The Butte Valley GSA submitted an adopted GSP for the entire Basin. Department staff found the Butte Valley GSP to be complete and include the required information, sufficient to warrant an evaluation by the Department. Therefore, the Department posted the GSP to its website on February 07, 2022.

### 2.3 BASIN COVERAGE

A GSP, either on its own or in coordination with other GSPs, must cover the entire basin.<sup>35</sup> A GSP that intends 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.

The Butte Valley GSP intends to manage the entire Butte Valley Basin and the jurisdictional boundaries of the submitting GSA appears to cover the entire Basin.

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<sup>32</sup> Water Code § 10720.7.

<sup>33</sup> Water Code § 10720.7(a)(2).

<sup>34</sup> 23 CCR § 355.4(a)(2).

<sup>35</sup> Water Code § 10727(b); 23 CCR § 355.4(a)(3).

### 3 PLAN EVALUATION

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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.

Department staff have identified deficiencies in the Butte Valley GSP, the most serious of which preclude staff from recommending approval of the GSP at this time. Department staff believe the GSA may be able to correct the identified deficiencies within 180 days. Consistent with the GSP Regulations, Department staff are providing corrective actions related to the deficiencies, detailed below, including the general regulatory background, the specific deficiency identified in the GSP, and the specific actions to address the deficiency.

Additionally, Department staff note the GSP’s approach to not manage depletions of interconnected surface water due to existence of data gaps is problematic. The GSA should prepare to establish initial sustainable management criteria in future updates to the Plan as they have not provided sufficient evidence that undesirable results are not occurring and are unlikely to occur.

#### **3.1 DEFICIENCY 1. THE GSP DOES NOT INCLUDE A REASONABLE ASSESSMENT OF OVERDRAFT CONDITIONS AND REASONABLE MEANS TO MITIGATE OVERDRAFT.**

##### **3.1.1 Background**

For basins where overdraft conditions occur, the GSP Regulations require a Plan to quantify the overdraft over a period of years during which water year and water supply conditions approximate average conditions.<sup>36</sup> Furthermore, the Plan must describe projects or management actions, including quantification of demand reduction or other methods, for the mitigation of overdraft and achievement of the sustainability goal for the basin.<sup>37</sup>

As part of the Department’s evaluation, staff assess whether the Plan provides a reasonable assessment of overdraft conditions and includes reasonable means to mitigate overdraft, if present.<sup>38</sup> To substantially comply with the GSP Regulations,<sup>39</sup> the assessment provided in the Plan must be supported with sufficiently detailed information

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<sup>36</sup> 23 CCR § 354.18(b)(5).

<sup>37</sup> 23 CCR §§ 354.44(a) and 354.44(b)(2).

<sup>38</sup> 23 CCR § 355.4 (b)(6).

<sup>39</sup> 23 CCR § 355.4 (b).

and the analyses must be sufficiently thorough and reasonable. Discussion and analyses in a Plan must be detailed and thorough enough for Department staff to evaluate if any discrepancy in the information provided in the Plan may materially affect the ability of the Agency to achieve the sustainability goal for the basin.

### **3.1.2 Deficiency**

The GSP Regulations require the Department to evaluate whether the Plan includes a reasonable assessment of overdraft conditions and includes a reasonable means to mitigate overdraft.<sup>40</sup> The GSP presents information indicating the basin has experienced an overall net loss in storage and long-term declines in groundwater levels;<sup>41</sup> however, the GSP states the basin is not experiencing overdraft conditions. Furthermore, because the GSA does not believe the basin is in overdraft, the sustainable yield is set at the average pumping volume over the previous 10-year period and the modeled projected water budget concludes that water table conditions will remain stable into the future.<sup>42</sup> Projects and management actions as proposed in the GSP, were then developed based on this conclusion. Department staff conclude that reasonable evidence has not been provided to support the assumption that the sustainable yield and modeled water budgets accurately reflect basin conditions and that the proposed projects and management actions will reasonably mitigate continuing declining groundwater levels and loss of storage and achieve sustainability. Department staff have identified this as a deficiency that precludes plan approval at this time. The following section describes specific details about the deficiency and outlines one or more corrective actions the GSA must take to address to correct it.

### **3.1.3 Deficiency Details**

The GSP states in multiple places that the Basin is not in overdraft.<sup>43</sup> Based on the information presented in the GSP, Department staff conclude that there is insufficient evidence to support this statement. First, hydrographs show a declining trend in groundwater levels which the GSA acknowledges by stating in the Plan that groundwater levels have been declining in much of the Basin since record keeping began in the 1950s.<sup>44</sup> Second, while the GSP states the annual change in groundwater storage has fluctuated from -58,000 acre-feet per year (AFY) to 42,000 AFY, overall, there is a “significant long-term trend indicating some groundwater depletion.”<sup>45</sup> The GSP estimates the total loss of storage of -392,000 acre-feet has occurred in the Basin as of September 30, 2018.<sup>46</sup>

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<sup>40</sup> 23 CCR § 355.4(b)(6).

<sup>41</sup> Butte Valley GSP, Section 2.2.3.2, pp. 161-162.

<sup>42</sup> Butte Valley GSP, Section 2.2.4, p. 165.

<sup>43</sup> Butte Valley GSP, Section 2.2.3.2, 2.2.5, and 3.4.1.7, pp. 159, 165, and 199.

<sup>44</sup> Butte Valley GSP, Section 2.2.2.1, p. 109.

<sup>45</sup> Butte Valley GSP, Section 2.2.2.3, p. 161.

<sup>46</sup> Butte Valley GSP, Section 2.2.2.3, p. 162.

The GSP sets the sustainable yield as the most recent 10-year average annual groundwater pumping of 83-thousand acre-feet because “the basin is not in overdraft” and that “water levels and groundwater storage have been in a long-term dynamic equilibrium between inflows to and outflows from the aquifer system.”<sup>47</sup> This sustainable yield value and modeled values for inflow from and outflow to “the surrounding volcanic aquifer system” is then incorporated into the current and projected water budgets, which reflect relatively stable storage conditions.<sup>48</sup> The GSP concludes “under all climate change scenarios, water table conditions remain stable over the long-term.”<sup>49</sup>

Based on the review of the hydrographs and historic negative change in storage, Department staff conclude that there is not sufficient evidence that supports the sustainable yield value and water budget conclusions as being reasonable and representative of basin conditions. By using the average pumping value, which has historically led to long-term declining groundwater levels and a significant reduction in groundwater storage up to this point, it is unreasonable to assume that continuing this level of extraction into the future will result in stable water level conditions.

Since the GSP submittal, annual report data submitted to the Department demonstrates that the historic loss in groundwater storage within the Basin has dramatically increased, deviating from the values and trends determined for the historical, current, or projected water budgets. Specifically, the values of negative change in groundwater storage (i.e., overdraft) reported for water year (WY) 2021 (which represents change between October 1, 2020 and September 30, 2021) was -118,000 acre-feet and -11,334 acre-feet for WY 2022.<sup>50</sup> These values represent a change in storage of -129,334 acre-feet in the previous two-year period. Combined with estimated change in storage value presented in the GSP, the Butte Valley Basin has lost approximately 500,000 acre-feet in total storage, clearly indicating the Basin is in a state of overdraft. Based on a review of the information included in the GSP and annual reports, Department staff conclude the GSA has not included a reasonable assessment of overdraft conditions giving the proposed sustainable yield for the Basin (see [Corrective Action 1a](#)).

GSP Regulations also require the Department to evaluate whether the Plan includes a reasonable means to mitigate overdraft.<sup>51</sup> Because the GSP states that the Basin is not in overdraft, the projects and management actions presented in the GSP were developed under that premise. The GSP categorizes project and management actions by anticipated general timeframe of implementation and identifies data gaps and data collection as high priority.<sup>52</sup> General descriptions for projects and management actions were provided but details such as quantitative anticipated benefits, specific timelines, and costs for

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<sup>47</sup> Butte Valley GSP, Section 2.2.5, p. 165.

<sup>48</sup> Butte Valley GSP, Figure 2.33, p. 148.

<sup>49</sup> Butte Valley GSP, Section 2.2.4, p. 165.

<sup>50</sup> Department of Water Resources, SGMA Portal, Annual Report Module, WY 2021 and WY 2022 Data, Reported Overdraft, Butte Valley Basin.

<sup>51</sup> 23 CCR § 355.4(b)(6).

<sup>52</sup> Butte Valley GSP, Section 4.3, p.226.

implementation (i.e., expected initiation and completion dates) are not provided. Many projects will require additional evaluation and thorough feasibility studies to determine if they can be implemented, but the details of these studies and evaluations are absent.<sup>53</sup> The GSP states that potential near-term projects (projects to be initiated and implemented between 2022 to 2027 by individual agencies), will be ranked using criteria including effectiveness, completeness, complexity, cost, uncertainty, and level of support for the project and management action.<sup>54</sup> Rankings and scoring details are stated to be provided in Appendix 5-A of the GSP; however, when reviewing Appendix 5-A, ranking details for projects and management actions are provided for Shasta Valley, not Butte Valley.<sup>55</sup>

Department staff conclude that the projects and management actions presented in the GSP are underdeveloped and lack the details necessary to determine whether they will support the basin in achieving sustainability.

The GSA acknowledges projects and management actions included in the GSP “reflect a collection of potential options that may be employed to support the sustainability goals outlined in this plan.”<sup>56</sup> One management action related to groundwater use is included, titled “Avoiding Significant Increase of Total Net Groundwater Use from the Basin.”<sup>57</sup> This management action intends to allow total groundwater extraction to remain at levels that have occurred over the most recent ten-year period (2010 to 2020) and develop a process to avoid significant long-term increases in net groundwater use in the Basin. The GSP states that “this management is appropriate because the threat of declining water levels in Butte Valley is not due to over-draft conditions.”<sup>58</sup>

Given the recent reduction of groundwater storage of approximately 130,000 acre-feet in just the last two years, compounded with the long-term historical storage loss and lack of details and anticipated benefits of projects and management actions, Department staff conclude that it is unreasonable to assume that loss of storage and declining groundwater levels will not continue to occur at current pumping levels, and that the Basin’s sustainability goal will ultimately be achieved. While the SGMA states that overdraft during a period of drought is not sufficient to establish an undesirable result for the chronic lowering of groundwater levels, this is contingent on the GSA managing extractions and recharge as necessary to ensure that reductions in groundwater levels or storage are offset by increases in groundwater levels or storage during other periods.<sup>59</sup> Based on the information contained in the GSP, it does not appear the GSA has proposed a suite of projects and management actions that adequately addresses current conditions being experienced in the Basin and will achieve the Basin’s sustainability goal. Department staff are concerned that continued declining groundwater levels will exacerbate the current

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<sup>53</sup> Butte Valley GSP, Section 5.1.2, p. 254.

<sup>54</sup> Butte Valley GSP, Section 5.1.2, p. 254.

<sup>55</sup> Butte Valley GSP, Appendix 5-A, pp. 620-622.

<sup>56</sup> Butte Valley GSP, Section 5.1.2, p. 254.

<sup>57</sup> Butte Valley GSP, Section 4.3, pp.229-238.

<sup>58</sup> Butte Valley GSP, Section 4.3, p. 230.

<sup>59</sup> Water Code § 10721(x)(1).

problems the Basin is experiencing, including dry wells, and that the currently presented projects and management actions will not be effective in mitigating the magnitude of overdraft experienced in recent years if it continues. Accordingly, for the above reasons, Department staff conclude that the GSP has not presented a reasonable means to mitigate overdraft (see [Corrective Action 1b](#)).

### 3.1.4 Corrective Action 1

The GSA must revise the GSP to provide a reasonable assessment of overdraft conditions and include a reasonable means to mitigate overdraft. Specifically, the Plan must be amended as follows:

- a. Reevaluate the assessment of overdraft conditions in the Basin. Specifically, the GSA should examine the assumptions that were used to develop the absence of historical and current overdraft and the projected overdraft estimates in the projected water budget considering the results vary greatly from the values reported in the recent annual report data. The assessment should include the latest information for the Basin to ensure the GSP includes the required projects and management actions to mitigate overdraft in the Basin.
- b. Provide a reasonable means to mitigate the overdraft that is continuing to occur in the Basin. Specifically, the GSA should describe feasible proposed management actions that are commensurate with the level of understanding of groundwater conditions of the Basin and with sufficient details and consideration for Department staff to be able to clearly understand how the Plan's projects and management actions will mitigate overdraft in the Basin under different climate scenarios.

## 3.2 DEFICIENCY 2. THE GSP DOES NOT ESTABLISH SUSTAINABLE MANAGEMENT CRITERIA FOR CHRONIC LOWERING OF GROUNDWATER LEVELS IN A MANNER SUBSTANTIALLY COMPLIANT WITH THE GSP REGULATIONS.

### 3.2.1 Background

It is up to the GSA to define undesirable results and the GSA must describe the effect of undesirable results on the beneficial uses and users of groundwater.<sup>60</sup> From this definition, the GSA establishes minimum thresholds, which are quantitative values that represent groundwater conditions at representative monitoring sites that, when exceeded individually or in combination with minimum thresholds at other monitoring sites, may cause the basin to experience undesirable results.<sup>61</sup> Put another way, the minimum thresholds represent conditions that, if not exceeded, should prevent the basin from experiencing the undesirable results identified by the GSA. Minimum thresholds for chronic lowering of groundwater levels are the groundwater elevation indicating a

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<sup>60</sup> 23 CCR § 354.26 (b)(3), § 354.28 (b)(4).

<sup>61</sup> 23 CCR § 354.28, DWR Best Management Practices for the Sustainable Management of Groundwater: Sustainable Management Criteria (DRAFT), November 2017.



depletion of supply at a given location that may lead to undesirable results.<sup>62</sup> Quantitative values for minimum thresholds should be supported by information and criteria relied upon to establish and justify the minimum threshold,<sup>63</sup> and a quantitative description of how conditions at minimum thresholds may affect the interests of beneficial uses and users of groundwater.<sup>64</sup>

### 3.2.2 Deficiency

Based on its review, Department staff conclude the Plan has not defined sustainable management criteria for chronic lowering of groundwater levels in a manner required by SGMA and the GSP Regulations. Generally, descriptions of minimum thresholds are not provided with sufficient supporting information to allow Department staff to evaluate whether the criteria are reasonable or whether operating the Basin to avoid those thresholds is consistent with avoiding undesirable results, in part due to defined undesirable results in the Plan being insufficiently detailed.<sup>65</sup>

It is the responsibility of the Department to evaluate whether a GSA has considered the interests of beneficial uses and users of groundwater, including groundwater dependent ecosystems and any domestic users who may be impacted by lowering groundwater levels, as part of the planned management of the Basin.<sup>66</sup> Department staff conclude additional information is needed about how the GSP evaluated the interests of beneficial uses and users when establishing sustainable management criteria for groundwater levels.

### 3.2.3 Deficiency Details

GSP Regulations require that GSAs describe the processes and criteria relied upon to define undesirable results caused by the chronic lowering of groundwater levels. Undesirable results occur when significant and unreasonable effects due to chronic lowering of groundwater levels are caused by conditions occurring throughout the basin.<sup>67</sup>

The GSP states that “Chronic lowering of groundwater levels is considered significant and unreasonable when a significant number of private, agricultural, industrial, and municipal production wells can no longer provide enough groundwater to supply beneficial uses.”<sup>68</sup> It goes on to state that “potential impacts and extent to which they are considered significant and unreasonable” are identified as:

- Excessive number of domestic, public, or agricultural wells going dry.
- Excessive reduction in the pumping capacity of existing wells.
- Excessive increase in pumping costs due to greater lift.

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<sup>62</sup> 23 CCR § 354.28 (c)(1).

<sup>63</sup> 23 CCR § 354.28 (b)(1).

<sup>64</sup> 23 CCR § 354.28 (b)(4).

<sup>65</sup> 23 CCR §§ 354.28(b)(1), 354.28(b)(2), 354.28(b)(3), 354.28(b)(4), 354.28(c)(1).

<sup>66</sup> 23 CCR §§ 355.4(4).

<sup>67</sup> 23 CCR § 354.26 (a).

<sup>68</sup> Butte Valley GSP, Section 3.4.1.1, p. 188.

- Excessive need for deeper well installations or lowering of pumps.
- Excessive financial burden from the above undesirable results.
- Adverse impacts to environmental uses and users, including ISWs and GDEs.<sup>69</sup>

The GSP then provides a quantitative definition of undesirable results related to the chronic lowering of groundwater levels as occurring “if the fall low water level (i.e., the minimum elevation in any given water year) in any of the representative monitoring sites in the Basin fall below their respective minimum thresholds (MT) in two consecutive years.”<sup>70</sup>

Department staff have identified multiple problems with how the GSA has defined undesirable results. First, the Plan’s definition of undesirable results uses undefined qualifying language that renders the meaning indeterminate. The Plan does not describe the impacts that would be “excessive” or “adverse” if the undesirable results conditions were to occur. Because the Plan does not explain what would constitute “excessive” or “adverse” effects of declining groundwater elevations, it is not possible to objectively determine whether conditions have become significant and unreasonable. Even if the Plan had provided a precise description of significant and unreasonable conditions, the Plan does not explain the relationship between those conditions and the minimum thresholds that were presumably set to avoid them. Consequently, because the Plan does not identify when conditions are significant and unreasonable, it is not possible for Department staff to evaluate whether adherence to these minimum thresholds would avoid undesirable results, as discussed in further detail below.

The lack of specificity in what the GSA is managing the Basin to avoid (i.e., undesirable results) is especially problematic considering current and projected conditions. The Basin has experienced dry wells as reported in the Dry Well Reporting System.<sup>71</sup> Additionally, the GSP projects to have more dry wells in the future as it projects 9% to 24% of wells could be dewatered at minimum threshold levels.<sup>72</sup> The GSA has not explained how it determined the current and projected well outages in the Basin are not considered an undesirable result, even though those conditions appear to meet the definition of an undesirable result provided in the GSP (i.e., an excessive number of domestic, public, or agricultural wells going dry), as highlighted above. Department staff conclude the GSA must reevaluate and clearly define and provide its rationale for when undesirable results occur in the Basin based on the consideration of the interests of beneficial uses and users as required by the GSP Regulations (see [Corrective Action 2a](#)).

The GSP Regulations require GSAs to set their minimum thresholds for chronic lowering of groundwater levels at “the groundwater elevation indicating a depletion of supply at a

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<sup>69</sup> Butte Valley GSP, Section 3.4.1.1, p. 188.

<sup>70</sup> Butte Valley GSP, Section 3.4.1.1, p. 188.

<sup>71</sup> Department of Water Resources, Dry Well Reporting System, Accessed September 2023, <https://mydrywatersupply.water.ca.gov/report/>.

<sup>72</sup> Butte Valley GSP, Section 3.4.1.5, p.198.

given location that may lead to undesirable results.”<sup>73</sup> The Butte Valley GSP utilizes a trendline analysis from fall water level measurements between 1999 to 2014 to establish the sustainable management criteria for chronic lowering of groundwater levels. The trendline is described as corresponding with the “average rate of decline in fall water levels, over this 15-year period” and is used to project the average rate of decline to 2042.<sup>74</sup> The Plan then established a “soft landing trigger” value for groundwater elevations which represents 75 percent of the continued projected water level decline through Fall 2042.<sup>75</sup> These soft landing trigger values, developed for each representative monitoring point, range between 5 and 36 feet below the historical low groundwater levels.<sup>76</sup> Minimum thresholds are then established at an additional 15 feet below the soft landing trigger values at each representative monitoring point and are referred to as the “extended soft landing trigger” values. This sets groundwater level minimum thresholds at a range of 20 to 51 feet below the historical low groundwater levels.<sup>77</sup>

The GSP does not discuss or provide evidence for how this approach, by setting the minimum thresholds based on continued groundwater decline beyond the historic lows, is protective against continued depletion of supply that may lead to undesirable results. This ‘continued decline approach’, rather than an evaluation of at what value undesirable results may be experienced, is further exemplified by inconsistencies in the GSP’s evaluation of potential effects to beneficial uses and users. For example, the GSP states that minimum thresholds will prevent undesirable results in the form of significant numbers of private, agricultural, industrial, and/or municipal production well outages;<sup>78</sup> however, the GSP elsewhere states that “[e]ven above the minimum threshold, some wells may experience temporary or permanent outages, requiring drilling of deeper wells. This may constitute an undesirable result, as it would effectively increase the cost of using groundwater as a water source to a user, most commonly domestic well users.”<sup>79</sup>

Per the GSP Regulations, minimum thresholds should be selected as a value that, if exceeded, may cause undesirable results in the Basin.<sup>80</sup> Based on the lack of specificity in the definition for undesirable results (as described above), the use of a ‘continued decline approach’ for setting minimum thresholds, and inconsistent statements about when undesirable results may be experienced in the Basin, Department staff do not consider the Plan’s approach to setting undesirable results and minimum thresholds for groundwater levels as relating to, or based on, avoidance of significant and unreasonable depletion of supply that may lead to undesirable results. Department staff conclude that

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<sup>73</sup> 23 CCR § 354.28(c)(1).

<sup>74</sup> Butte Valley GSP, Section 3.4.1.2, pp. 190-191.

<sup>75</sup> Butte Valley GSP, Figures 3.7 and 3.8, p.192.

<sup>76</sup> Butte Valley GSP, Table 3.5, p. 196.

<sup>77</sup> Butte Valley GSP, Table 3.5, p. 196.

<sup>78</sup> Butte Valley GSP, Section 3.4.1.5, p. 198.

<sup>79</sup> Butte Valley GSP, Section 3.4.1.5, p. 198.

<sup>80</sup> 23 CCR § 354.28 (a).

the minimum thresholds must be revised by the GSA to be based upon the depletion of supply that would lead to undesirable results (see [Corrective Action 2b](#)).

GSP Regulations also require GSAs to consider how conditions at minimum thresholds may affect the interests of beneficial uses and users of groundwater.<sup>81</sup> The GSP generally discusses effects on beneficial well uses and users by including a well failure risk analysis to better understand potential impacts at the water level minimum thresholds.<sup>82</sup> This analysis appears to be performed using the best available information for well construction details and interpolated groundwater elevation data; however, it also describes several uncertainties with the well construction and estimated water column depth data.<sup>83</sup>

The analysis concluded that if water levels were to reach the minimum thresholds, approximately 9% to 24% of all wells may be at risk of well outage.<sup>84</sup> The GSP states that the number of wells affected by groundwater elevations at the minimum threshold is “insignificant”, partially because a well replacement management action may address well outage issues that occur above the minimum threshold.<sup>85</sup> While the GSP does provide a discussion of a well replacement management action that may address well outages, many of the details of this program are absent or not sufficiently described. For example, funding for this program is stated to be restricted, cost estimates have not been completed, and additional funding options have not been identified but will be explored during the first five years of implementation.<sup>86</sup>

Considering the Basin has historically experienced well outages and the sustainable management criteria for water levels allows for the continued decline of groundwater levels below historical lows, it is conceivable that the Basin could experience an unknown amount of well outages within the first five years of implementation – prior to the GSA establishing the processes and necessary funding to support the well replacement program. Without a better understanding of when and how the well replacement program may be implemented, including the total amount of wells that may go dry while the program is in development, Department staff cannot adequately evaluate its potential feasibility and effectiveness at this time. With this project being identified as a primary means to address the projected well outages, Department staff believe that the GSP did not provide sufficient justification for its determination that the projected well outages in the basin at minimum thresholds are insignificant, or that sufficient consideration was made for these beneficial users.

In addition to well outages, the GSP lacks an evaluation of impacts to environmental users at minimum thresholds, stating that groundwater dependent ecosystem locations are a

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<sup>81</sup> 23 CCR 354.28 (b)(4).

<sup>82</sup> Butte Valley GSP, Appendix 3-C, pp. 576-615.

<sup>83</sup> Butte Valley GSP, Appendix 3-C, p. 615.

<sup>84</sup> Butte Valley GSP, Appendix 3-C, p. 615.

<sup>85</sup> Butte Valley GSP, Appendix 3-C, p. 615.

<sup>86</sup> Butte Valley GSP, Section 4-3, p. 241.

data gap.<sup>87</sup> The GSP, however, includes an evaluation of groundwater dependent ecosystems in Section 2.2.2.7, using the best available information, and identifies 131 acres of “Assumed GDE” classification.<sup>88</sup> Multiple public comments also highlight the lack of consideration of environmental uses and users, as well as surface water users, in the proposed sustainable management criteria for groundwater elevations.<sup>89</sup>

While the GSP acknowledges the proposed thresholds could lead to impacts that include to beneficial uses and users, the Plan does not provide a clear description of the circumstances under which such impacts would become significant and unreasonable to particular beneficial uses and users. Department staff are unable to determine whether the interests of beneficial uses and users or groundwater, as well as the land uses and property interests potentially affected by the use of groundwater in the Basin, have been considered.<sup>90</sup> The GSA must identify the number, location, and percentage of wells that may be impacted at the proposed minimum thresholds that will not receive assistance through the well mitigation program, and clearly explain how the interests of beneficial uses and users were considered and why potential impacts to those users do not constitute an undesirable result. The GSA must also evaluate how the proposed management may impact environmental users such as GDEs (see [Corrective Action 2c](#)).

### 3.2.4 Corrective Action 2

The GSA must provide a more detailed explanation and justification regarding the selection of the sustainable management criteria for groundwater levels, particularly undesirable results and minimum thresholds, and the effects of those criteria on the interests of beneficial uses and users of groundwater. Department staff recommend the GSA consider and address the following:

- a. Describe the specific, quantitative undesirable results they aim to avoid through implementing the Plan. This must include a quantitative description of the negative effects to beneficial uses and users that would be experienced at undesirable result conditions.<sup>91</sup> The GSA should fully disclose and describe and explain its rationale for determining the number of wells that may be dewatered and the level of impacts to groundwater dependent ecosystems that may occur without rising to significant and unreasonable levels constituting undesirable results. Lastly, the GSA should explain how well mitigation will be considered by the GSA during its management of the Basin in a project or management action as part of the GSP. Department staff also encourage the GSA to review the Department’s April 2023

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<sup>87</sup> Butte Valley GSP, Section 3.4.1.5, p. 198.

<sup>88</sup> Butte Valley GSP, Section 2.2.2.7, pp. 129-146 and Table 2.12, p. 146.

<sup>89</sup> <https://sgma.water.ca.gov/portal/service/gspdocument/download/8402>, <https://sgma.water.ca.gov/portal/service/gspdocument/download/8388>, and <https://sgma.water.ca.gov/portal/service/gspdocument/download/8352>.

<sup>90</sup> 23 CCR § 355.4 (b)(4).

<sup>91</sup> 23 CCR § 354.28 (b)(3).

guidance document titled *Considerations for Identifying and Addressing Drinking Water Well Impacts*.<sup>92</sup>

- b. Revise minimum thresholds to be set at the level where the depletion of supply across the Basin may lead to undesirable results.<sup>93</sup> Provide the criteria used to establish and justify minimum thresholds.<sup>94</sup> Consider and disclose how minimum thresholds may affect the interests of beneficial uses and users.<sup>95</sup> Fully document the analysis and justifications performed to establish the criteria used to establish minimum thresholds. Clearly show each step of the analysis and provide supporting information used in the analysis.<sup>96</sup>
- c. Provide an evaluation of how minimum thresholds may affect the interests of beneficial uses and users of groundwater or land uses and property interests.<sup>97</sup> Identify the number and location of wells that may be negatively affected when minimum thresholds are reached. Compare well infrastructure for all well types in the Basin with minimum thresholds at nearby suitably representative monitoring sites. Document all assumptions and steps clearly so that it will be understood by readers of the GSP. Include maps of potentially affected well locations, identify the number of potentially affected wells by well type, and provide a supporting discussion of the effects. Also, provide an evaluation of how the proposed management may impact environmental users such as GDEs.

## 4 STAFF RECOMMENDATION

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Department staff believe that the deficiencies identified in this assessment should preclude approval of the GSP for the Butte Valley Basin. Department staff recommend that the GSP be determined incomplete.

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<sup>92</sup> <https://water.ca.gov/Programs/Groundwater-Management/Drinking-Water-Well>.

<sup>93</sup> 23 CCR 354.28 (c)(1).

<sup>94</sup> 23 CCR 354.28 (a).

<sup>95</sup> 23 CCR 354.28 (b)(4).

<sup>96</sup> 23 CCR 354.28 (b)(1).

<sup>97</sup> 23 CCR 354.28 (b)(4).