

A PUBLIC INTEREST REVIEW OF THE PROPOSED  
DIAMOND VALLEY GROUNDWATER MANAGEMENT PLAN

PREPARED FOR  
GREAT BASIN RESOURCE WATCH

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## **PREFACE**

Great Basin Resource Watch commissioned this Report because we believe an independent public review of the strengths, weaknesses, and implications of the proposed Diamond Valley Groundwater Management Plan from a public interest perspective is necessary. This groundwater management plan will be the first of its kind in Nevada, and it has the potential to set an influential precedent for other groundwater management plans in Nevada and elsewhere in the western United States. GBRW appreciates the initiative taken by the State Engineer in designating Diamond Valley as a Critical Management Area and the work of the developers of this draft Plan in taking this important step toward correcting the historic overdrafting of Diamond Valley's groundwater system and establishing a sustainable approach to future groundwater management and use in Diamond Valley. Nonetheless, as this Report explains, we believe there are some parts of the Plan that are not yet adequate to ensure a sound, sustainable, and equitable future for the groundwater system and residents of Diamond Valley, and that should be improved or made more complete.

As a non-profit public interest charitable organization dedicated to the sustainable, environmentally sound, and socially just management of natural resources in Nevada and the Great Basin, GBRW seeks to ensure that the decisionmakers and concerned public are as fully informed as possible about the merits and implications of the proposed Diamond Valley Groundwater Management Plan before it is adopted. Through constructive analysis and criticism, we hope to encourage the development and adoption of a holistic plan that comprehensively provides for the achievement of a sustainably healthy and equitably governed groundwater system, economy, community, and environment in Diamond Valley, Eureka County, the State of Nevada, and throughout the arid and semi-arid West. We hope that the public interest review and analysis of the proposed Diamond Valley Groundwater Management Plan presented in this Report helps Diamond Valley stakeholders, the Nevada State Engineer, and the broader concerned public achieve that outcome.

## **EXECUTIVE SUMMARY**

This Report was prepared by Advocates for Community and Environment (“ACE”) for Great Basin Research Watch (“GBRW”) and is intended to provide a neutral policy-oriented legal analysis of the proposed Diamond Valley Groundwater Management Plan (“DVGMP” or “Plan”) from a public interest perspective. The Report identifies the DVGMP’s strengths and weaknesses, and suggests modifications as appropriate, which can be used to assist the State Engineer and stakeholders in ensuring that the best plan possible is adopted and that the broader implications of the Plan for Nevada and other jurisdictions are fully understood. ACE and GBRW appreciate and respect the extensive efforts of the Diamond Valley community, Eureka County, and State Engineer to develop a plan to rectify the chronic overdraft of the Diamond Valley groundwater basin. We are supportive of stakeholders’ efforts to move forward in a manner that best ensures the most socially, economically, and environmentally sound allocation of water in Diamond Valley. In that vein we believe that an outside public interest perspective can be useful in gauging the soundness and efficacy of the Draft DVGMP’s provisions. This report is intended to provide a constructive and helpful tool that can be used to inform decision making about whether to adopt the Draft DVGMP in its present form and, where appropriate, how to strengthen the current proposed DVGMP to ensure that the Plan achieves its stated goals and the public interest is best served.

The proposed Diamond Valley Groundwater Management Plan employs a market-based approach to correcting the severe overdraft of the Diamond Valley groundwater basin in Eureka County, Nevada. Although the scope of the analysis in this Report has largely been limited to an evaluation of the strengths and weaknesses of the proposed plan itself, as opposed to an analysis of the soundness of water marketing as an approach to addressing groundwater overdraft more generally, we recommend that stakeholders and the State Engineer seriously consider the broader criticisms that have been levelled at the sufficiency of water marketing as a means of addressing water allocation challenges. We also urge the stakeholders and State Engineer to carefully consider potential alternatives to water marketing for comparative purposes to ensure that the best possible approach is taken in Diamond Valley. It does not appear that such alternatives were considered either during scoping or in the early stages of the development of the DVGMP. Consideration and evaluation of alternative approaches is advisable, in part, because water marketing as an approach to rectifying overallocation of a basin carries with it inherent concerns such as the potential sacrifice of the greater public interest in favor of an economically efficient allocation of the resource. This and other concerns should be considered and addressed prior to adopting a groundwater management plan. Because a water marketing approach represents a significant departure from current Nevada law and the protections it provides to the public, including future generations, as well as senior water rights owners, and because the approach taken to address Diamond Valley’s groundwater overdraft could have a significant impact on the future of groundwater management in Nevada, the consequences and implications of adopting such an approach should be carefully evaluated, with the intended social, economic, and environmental goals at the center of and guiding the debate, prior to the adoption of a groundwater management plan.

Comparative analyses aside, we understand that the stakeholders in Diamond Valley have chosen a water marketing approach to rectifying the overdraft problem in the groundwater basin, and this analysis is designed to help stakeholders ensure that such an approach is adequately protective of existing water rights and uses and of the public interest, including the interests of local Diamond Valley communities, the environment, and the broader public. In general, we think the DVGMP presents a well thought-out approach to promoting efficient marketing of groundwater through a system of shares and progressively reduced allocations

based on existing water rights. However, this Report identifies a number of concerns and weaknesses with the Draft Plan that should be considered by the State Engineer and stakeholders as the process moves forward. We believe that rectifying the weaknesses and resolving the concerns identified in this Report would better ensure that the Plan is genuinely protective of Diamond Valley's agricultural character and the public interest values which are of concern to GBRW and other members of the interested public. A summary of the most significant of those concerns is as follows:

- 1. Scope:** The decision to limit the DVGMP's scope to groundwater irrigation rights and mining rights with irrigation base rights means that mining rights without irrigation base rights, along with commercial rights and municipal rights, which otherwise would be completely curtailed under strict priority administration, would not be subject to the significant reductions over time that are incorporated into the Plan. While excluding non-irrigation uses may be appropriate in the specific circumstances pertaining to Diamond Valley, this limited approach should not be taken as a general precedent for other groundwater basin management plans, as the default starting point should be to seek as comprehensive a scope as possible.
- 2. Governance:** The composition of the Advisory Board (AB), which will make recommendations to the State Engineer regarding administration of the DVGMP, presents a concern for both agricultural users and the interested public. Specifically, the AB does not include a position to represent environmental concerns or a position to represent public interest concerns, including local community interests. Both of these potential positions should be considered by stakeholders as a means by which the social and economic character of Diamond Valley, and the broader public interest, might best be protected under the DVGMP. Additionally, the Plan provides for a transition away from its initial agriculture-dominated composition over the first eight years of the GMP's implementation. The result will be to create five "at-large" positions which will be open to representatives of any type of user (mining, industrial, municipal, commercial, agricultural, or domestic). One apparent implication of these provisions is that the DVGMP assumes a shift away from agricultural water use in the Valley and is not intended to provide any guarantee that agricultural uses or interests will continue to prevail or have any control over the character of water use in Diamond Valley. Stakeholders should consider how representational seats on the AB might be allocated differently, in a way that would ensure that agricultural water and land uses and the public interest are adequately represented. This would better ensure that AB decisions best reflect the goals that are stated in the Plan, the priorities of the Diamond Valley community, and the public interest.
- 3. Diminished State Engineer and Public Scrutiny and Review of Changes in Purpose and Place of Use:** The DVGMP's approach to the annual trading of allocations facilitates, and thereby encourages, temporary transfers that may be repeated over many years, which in effect may amount to permanent transfers. Under the procedure established by the Plan those temporary transfers would be subject to a significantly reduced level of scrutiny by the State Engineer and the concerned public, as compared with what would be required for an openly permanent or long-term transfer, including an exemption from the protest and hearing process. Stakeholders should strongly consider incorporating environmental and public interest considerations, along with a meaningful opportunity for public participation, into the review process for all transfer applications likely to be repeated, or actually being repeated after a first year, in order to ensure adequate protections for the environment and other aspects of the public interest.
- 4. Character of Diamond Valley:** Although it may be an unintended consequence of the water marketing approach employed by the DVGMP, the Plan appears to anticipate and

facilitate the conversion of water use away from irrigated agriculture to other purposes of use, including mining, despite the stated goal of preserving the socio-economic structure of Diamond Valley, which currently is based on irrigated agriculture. The Plan does not include proactive measures designed to maintain irrigated agriculture in Diamond Valley and provides that yearly allocations are freely transferrable for any beneficial use recognized under Nevada law. Without protective measures designed to serve the stated goals of the Plan, the purpose of use of traded allocations will be left to the market to determine. If stakeholders and the State Engineer are concerned about the implications of converting water use in Diamond Valley away from irrigated agriculture, which appears to have been a major concern during scoping, an express limitation in the Plan on changes in purpose of use when allocations are purchased should be considered. An example of how such an approach might look can be found in the Groundwater Sustainability Plan currently being implemented in Ventura County, California, which limits trades of existing agricultural groundwater rights to trades among irrigators.<sup>1</sup>

5. **Environmental Protection:** The DVGMP does not adequately address, let alone protect, environmental resources or values in Diamond Valley, or any provisions for allocations of water to environmental uses. We believe that stakeholders should consider incentivizing environmentally friendly uses and trades under the Plan.
6. **Out of Basin Transfers:** While the DVGMP expressly prohibits out-of-basin transfers for the time being, it also unbundles water from the land to which the underlying water right is appurtenant through the creation of shares and more easily tradeable yearly allocations, which could facilitate such out-of-basin transfers in the future should the Plan be amended to allow such transfers. If stakeholders wish to prevent such out of basin transfers, it would be advisable to include standards in the Plan that are applicable to all transfers and that ensure adequate protections for the local economy and environment of Diamond Valley.

Overall the DVGMP appears to be a laudable, but not fully adequate, water marketing plan that needs some revision and, in places, completion in order to: (1) ensure that the complete range of values and goals related to groundwater in the basin are addressed and protected; (2) ensure adequate representation of agricultural water uses on the Advisory Board over the long-term; (3) provide for transparency of the terms and procedures under which the proposed Water Manager will make decisions regarding proposed transfers and other matters affecting groundwater use in the Valley; and (4) ensure that Diamond Valley water users and residents, and the concerned public in Nevada more generally, have an adequate opportunity to be heard and a meaningful role in decisionmaking processes affecting groundwater use in the Valley. A more comprehensive analysis of the plan's strengths and weaknesses is presented below.

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<sup>1</sup> See *Preliminary Draft Groundwater Sustainability Plan for the Oxnard Subbasin, at 1-18 (Nov. 2017)*, available at [http://fcgma.org/images/Oxnard\\_GSP\\_OPT.pdf](http://fcgma.org/images/Oxnard_GSP_OPT.pdf); see also *Fox Canyon Water Groundwater Management Agency, Advanced Metering Infrastructure (AMI) & Water Market*, <http://www.fcgma.org/component/content/article/2-uncategorised/121-advanced-metering-infrastructure-ami-water-market>.

## **REVIEW AND ANALYSIS**

### **A. Background of the Diamond Valley Groundwater Management Plan:**

Diamond Valley, located in Eureka County is a major agricultural area in Nevada which relies on groundwater for irrigation. “With few exceptions, most irrigation occurs in the southern half of the basin, with limited irrigation west of the playa in the northern half of the basin.”<sup>2</sup> Most of the pumped groundwater in the Valley is used for irrigation of alfalfa and grass hay, but groundwater also supplies domestic wells, stockwatering wells, mining, and commercial and industrial users in the Valley.<sup>3</sup> “Very little agricultural land in Diamond Valley was irrigated using groundwater prior to 1960.”<sup>4</sup> However, over the past half century, Diamond Valley has become severely overappropriated, with groundwater levels declining at roughly two feet per year since 1960 resulting in over 100 feet of water level decline in the Valley.<sup>5</sup> The perennial yield of the Valley is 30,000 acre-feet per year (“afa”), but about 126,000 afa of irrigation groundwater rights are permitted.<sup>6</sup> As of 2016, about 76,000 afa of those permitted rights were pumped per year, resulting in withdrawals from the basin that exceed the perennial yield by a factor of roughly two and a half.<sup>7</sup> This imbalance between available water and pumped water has resulted in severe overdraft and continuously declining water levels.

On August 25, 2015, the State Engineer issued Order 1264, which formally designated Diamond Valley as Nevada’s first and only Critical Management Area (“CMA”) pursuant to his authority under NRS 534.110.<sup>8</sup> As described below, this designation gave groundwater rights holders in Diamond Valley 10 years to develop a Groundwater Management Plan (“GMP”) that would work to remove the basin from CMA designation. In the absence of the adoption of a GMP for Diamond Valley, the State Engineer by law must administer the basin by strict priority starting in 2025, which would result in the complete curtailment of all groundwater rights with the priority date of about May 1960 or later.<sup>9</sup> Such curtailment would result in full curtailment of a significant number of irrigation rights, all mining rights, and some municipal rights.

Groundwater rights for irrigation and stockwatering have priority dates both before and after 1960, many of which would be curtailed under priority administration.<sup>10</sup> While mining rights currently do not represent a significant withdrawal of groundwater from Diamond Valley, the vast majority of groundwater rights for mining have priority dates of 1970 or later and would be

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<sup>2</sup> Diamond Valley Groundwater Management Plan (“DVGMP” or “GMP”) app. D.

<sup>3</sup> DVGMP § 2.

<sup>4</sup> *Id.* at app. D.

<sup>5</sup> *Id.*; Nevada State Engineer Order 1264 (1985).

<sup>6</sup> DVGMP § 2.

<sup>7</sup> *Id.*

<sup>8</sup> Just prior to formally designating Diamond Valley a CMA, on August 21, 2015, the Nevada State Engineer issued Order 1263, reinitiating adjudication proceedings for Diamond Valley.

<sup>9</sup> DVGMP, at ES. Pressure for priority administration and curtailment of junior water rights probably was inevitable, but arose specifically from litigation initiated by the Sadler Ranch which claims that it owns vested senior spring water rights that have been impacted by the excessive pumping of groundwater in Diamond Valley. See *Eureka County v. Seventh Judicial District Court*, No. 72371, 133 Nev. Adv. Op. 111, at 4-5 (Dec. 28, 2017).

<sup>10</sup> See Nevada State Engineer Hydrographic Abstract for Diamond Valley.

curtailed.<sup>11</sup> All Commercial and industrial groundwater rights post-date 1960 and would be curtailed.<sup>12</sup> All municipal and quasi-municipal groundwater rights also post-date 1960.<sup>13</sup>

In 2014, prior to the designation of Diamond Valley as a Critical Management Area by the State Engineer, but in anticipation of such a designation, a group of groundwater users, primarily irrigators, requested that the Eureka Conservation District (ECD) take the lead role in facilitating development of a GMP.<sup>14</sup> Subsequently, ECD contracted with Walker and Associates to conduct scoping for the development of a potential solution for the chronic over-pumping of groundwater in Diamond Valley.<sup>15</sup> After notifying all groundwater rights owners and all known domestic well owners by mail, the firm conducted three facilitated scoping meetings with Diamond Valley irrigators as well as interviews with ten Diamond Valley irrigators and two mining firms to develop input related to issues associated with and solutions addressing over-pumping.<sup>16</sup> During this scoping process, participants, mostly irrigators, identified 72 issues related to a groundwater management plan and 67 potential solutions for reducing groundwater pumping.<sup>17</sup>

Following the scoping process, Walker and Associates summarized the issues identified in those meetings is as follows:

1. Governance. How would a GMP be implemented and by whom? The State Engineer's role was important to participants. Additionally, would water rights owners buy in to the plan and in a timely way given the urgency?
2. Flexibility in the law of prior appropriation. How would a plan address the junior/senior water right issues that currently exists? Most participants were concerned that strict adherence to first in time first in right would have a devastating impact on existing agricultural economy. Additionally, flexibility in the use it or lose it provision of Nevada law was consistently mentioned. Finally, there was a concern that irrigation water rights owners should be treated equally, regardless of seniority.
3. Funding. Funding for a water right buyout program. Where would funds come from and how would water rights be valued?
4. Education. Education on best management practices to reduce water use, combined with information and participation in the development of a GMP is an important issue.

A summary of the potential solutions to over-pumping identified in those meetings is as follows:

1. Water rights buyouts
2. Mechanical and operation irrigation efficiency improvements coupled with metering
3. Transition to alternative low water use crops
4. Modify state water law to allow non-use without losing water right<sup>18</sup>

Following the scoping process, Walker and Associates determined that the majority of the participants in the process were in favor of developing a groundwater management plan for

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<sup>11</sup> *Id.*

<sup>12</sup> *Id.*

<sup>13</sup> *Id.*

<sup>14</sup> DVGMP § 4.

<sup>15</sup> *Id.*

<sup>16</sup> *See id.*; *see also id.* at app. B.

<sup>17</sup> *Id.* at app. B.

<sup>18</sup> *Id.*

Diamond Valley in order to avoid priority administration by the State Engineer and to give water rights owners in Diamond Valley local control over and flexibility with regard to water management in order to minimize negative impact of reductions in pumping.<sup>19</sup> On October 14, 2014, Eureka Conservation District sent a request for feedback to owners of all groundwater rights and all known domestic well owners in Diamond Valley about whether they thought Diamond Valley should be designated a critical management area and a groundwater management plan pursued.<sup>20</sup> Roughly 74% of the 20% of domestic, irrigation, and municipal users who responded to the mailing supported the development of a GMP for Diamond Valley.<sup>21</sup> Subsequently numerous workshops were held during which the DVGMP was developed.<sup>22</sup> At subsequent meetings during 2015, meeting participants made the decision to pursue, and eventually developed, the DVGMP.<sup>23</sup> During the plan development process, notifications and requests for participation were published in the local paper and mailed to groundwater rights holders.<sup>24</sup> Early in the development process, at a plan development workshop hosted by Eureka Conservation District, Professor Mike Young made a presentation on unbundling of water rights as a potential approach, and the first outline for the plan that came out of that workshop indicates that plan drafters were “influenced significantly” by Young’s presentation and work.<sup>25</sup> It appears that no alternative approach or methodology for bringing the Diamond Valley groundwater basin into the required state of equilibrium and sustainably managing the basin’s groundwater was considered, and that the focus was exclusively on the water marketing program presented by Professor Young. Over the course of the next two years, many meetings were held and the DVGMP was developed.<sup>26,27</sup>

On August 16, 2018, a petition signed by the majority of groundwater rights holders in Diamond Valley was submitted to the State Engineer for consideration. According to the State Engineer’s October 1, 2018, Hearing Notice, “[t]he public hearing will be held 10:00 a.m., Tuesday, October 30, 2018, at the Eureka Opera House Auditorium, 31 South Main Street, Eureka, Nevada. Written comments will also be accepted until the conclusion of the hearing.”<sup>28</sup> After the hearing, the State Engineer will make a decision about whether to approve the plan. That decision may be reviewed by the district court pursuant to NRS 534.037(4) and NRS 533.450, which provides for petitions for judicial review, or appeals, of State Engineer decisions.

## **B. Groundwater Management Plans Generally:**

Broadly speaking, whenever a groundwater basin is in danger of being problematically depleted, or already is being problematically depleted, an overarching goal of any sound groundwater management plan should be to achieve a sustainable approach to the use of the groundwater

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<sup>19</sup> *Id.*

<sup>20</sup> *Id.*

<sup>21</sup> *Id.*

<sup>22</sup> *Id.* at app. C.

<sup>23</sup> *Id.*

<sup>24</sup> *Id.*

<sup>25</sup> *Id.*

<sup>26</sup> *Id.*

<sup>27</sup> While the DVGMP was being developed, the State Engineer was moving forward with an adjudication of Diamond Valley, which is not yet complete. According to the State Engineer’s Diamond Valley Informational Statement, the office hopes to complete the order of determination by January 31, 2020.

<sup>28</sup> Nevada State Engineer, Diamond Valley Groundwater Management Plan, Notice of Hearing (Oct. 1, 2018).

resource in question. This goal necessarily would involve halting declines in the water table and bringing the groundwater system into an equilibrium that supports prioritized goals and values. But sustainability here also would include maximizing conservation of the groundwater resource, ensuring that groundwater is put to its best uses as defined by the affected communities, and adopting management techniques that promote good stewardship of groundwater so that future generations have the same access to and opportunity to use the groundwater resource as current users. A sustainable approach to groundwater management also should balance economic, environmental, and social or cultural needs for the available water to provide for varying groundwater uses.

A groundwater management plan should address the varied objectives or goals of water users and residents in the basin, and should consider the linkages between the basin's hydrology and both the environmental and socio-economic components of groundwater management. A GMP should consider how best to reach and adhere to an optimal amount or rate of groundwater extraction and how that extracted groundwater should be allocated among different uses. A GMP also should consider whether pumping rules should vary within the basin by time and location to reflect differing potential impacts. Newman, Howitt and MacEwan, *How Are Western Water Districts Managing Groundwater Basins?*, 72 *California Agriculture* 28 (2018); Patterson, Doyle and Monsma, *The Aspen Institute, The Future of Groundwater: A Report from the 2017 Aspen-Nicholas Water Forum* (2017).

In acknowledgment of the adage that you cannot manage what you cannot measure, it generally is essential for a GMP to incorporate and require metering of groundwater pumping where possible. Additionally, the existence and rigor of a monitoring regime in the basin will increase incentives for improved water use technology and for more efficient water use.

A worthwhile consideration in a GMP is whether the approach being taken is properly structured to promote bottom-up collaboration between small and large stakeholders to promote broad buy-in from affected individuals and to provide flexibility in decision-making. Ideally a GMP also will include a component to provide for meaningful public education and effective communication about groundwater problems, issues, objectives, and related actions in the basin, as well as any related changing conditions. The purpose of this is twofold. One purpose is to provide adequate readily accessible information to stakeholders so that they can participate effectively in decisions that may affect their interests. An equally important purpose is to educate stakeholders so that they understand the nature of the issues or problems that they collectively face and the reason for the provisions of the GMP, which hopefully will enhance the level of support for the Plan within the affected community.

To ensure the integrity of decisions regarding groundwater use and management, and to ensure that the affected communities accept and support the management regime, a groundwater management plan must provide for a transparent system of groundwater governance (or management) and for readily accessible means by which interested water users and basin residents can meaningfully participate in the making of decisions regarding groundwater management in the basin. Along the same lines, to ensure that the goals and values which affected water users and residents have prioritized are properly served, a groundwater management plan should create an institutionalized structure for decisionmaking and governance that is fairly representative of stakeholders connected with those groundwater use goals and values.

As a general matter, a groundwater management plan should address the hydrology of the basin in question, including any hydrologic variations within the basin, such as between sub-

basins, and the implications of such difference for the potential benefits or detriments of increased or decreased pumping in particular areas in the basin.<sup>29</sup>

A groundwater management plan also should expressly recognize and address the full range of values and goals that different water users and residents in the basin have for groundwater in the basin. For example, some residents may chiefly value the continued viability of irrigated agriculture, such as ranching and/or farming, and the local communities that depend on that activity. Others may want to prioritize different forms of industrial or commercial development that require groundwater. Still others may put a high value on protecting the environmental resources that depend on groundwater directly or the traditional patterns of groundwater use in the basin, such as wildlife habitat created by irrigated agricultural uses of groundwater. By recognizing and promoting dialogue about how these varying values and objectives can be balanced, a groundwater management plan can achieve a broadly accepted approach to managing groundwater uses in the basin so as to ensure that the resource is managed sustainably in the future.

In addition, to be comprehensive or complete, a groundwater management plan should address and reflect as full a range as possible of alternative strategies or techniques for achieving the goals of the plan. As has generally been recognized, such strategies broadly break into supply side and demand side approaches to management. The creation of more formal and facilitated water markets, as is done in the DVGMP, is increasingly recognized as a potentially useful approach to enhancing efficiency and conservation. However, the general view seems to be that markets are not the whole solution, and that there remains a need and role for proactive oversight and direction from the appropriate regulator, which would be the State Engineer in Nevada. Consideration of rules that require or promote such techniques as water banking, water rights carryovers, crop conversion, and incentives for proactive groundwater recharging can play a key role in promoting the recovery of the groundwater table and supporting the continued viability of agricultural uses in the basin.

Finally, to provide a means of assessing a groundwater management plan's effectiveness a plan should provide for measurement of water use and monitoring of the groundwater system's response to the measures called for in the plan. Metering of wells is a good method for measuring rates of levels of groundwater use in a basin. Monitoring the response of the groundwater system seems to be a straightforward matter of measuring the groundwater table at various representative locations in the basin, with an emphasis on communities and/or environmental resources of particular concern.

So, a comprehensive groundwater management plan should adopt an integrated approach to water resource management that holistically addresses water quality and quantity issues and goals, available strategies for achieving desired outcomes, and opportunities and methods for enhancing water conservation, water marketing, and the provision of funds for proactive water management.

It may not be sound to rely on water marketing alone to achieve groundwater sustainability along with prioritized social, economic, and environmental goals.<sup>30</sup> This is so, in part, because water marketing approaches often fail to properly account for various transaction costs associated with the trading of water rights or shares and other costs necessary to ensure

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<sup>29</sup> Newman, Howitt and MacEwan, How Are Western Water Districts Managing Groundwater Basins?, 72 California Agriculture 28 (2018).

<sup>30</sup> Newman, Howitt, and MacEwan (2018); Patterson, Doyle, and Monsma (2017).

competent adaptive governance capacity. Water marketing approaches in isolation also pose the risk of unintentionally incentivizing undesirable results, such as a shift in the pattern of water usage that serves the interests of rent, or profit, seeking market participants but that undermines socioeconomic, environmental, and other public interest goals. For instance, the simple introduction of freed water marketing, or trading, has been criticized for its potentially harmful impact on lower-income agricultural producers and its potential to increase inequitable distribution of available water between the poor and the higher income interests. In order to protect against undesirable outcomes that may result from allowing purely profit-motivated reallocation, a water market with relatively free trading must be bounded by carefully crafted regulatory controls that will ensure that water remains in the hands of the local communities that always have depended on its availability.

### **C. Nevada Water Law Background:**

#### **1. Background Principles:**

Because the adoption of a groundwater management plan for Diamond Valley would represent a significant change in the way water is managed, it is useful to engage in a brief review of Nevada water law which has governed appropriations of water and changes in its point of diversion, place of use, and purpose of use for much of the State's history. This review can inform an evaluation of the strengths and weaknesses of the Diamond Valley Groundwater Management Plan. In Nevada, as in the other western states, both ground and surface water belong to the public, and are subject to appropriation for beneficial use under the prior appropriation doctrine.<sup>31</sup> Under Nevada law, an appropriator of water does not obtain title to the water itself, but obtains a usufructuary right to divert water for beneficial use.<sup>32</sup> NRS 533.035 provides that "[b]eneficial use shall be the basis, the measure and the limit of the right to use water,"<sup>33</sup> and thus, if a water right goes unused or there is no longer a necessity for its use, the right to divert ceases and it may be deemed forfeited or abandoned by the State Engineer.<sup>34</sup> Additionally, the beneficial use requirement prevents speculative appropriations for which there is no identified intended use.<sup>35</sup> The right to divert water for beneficial use is granted subject to existing rights,<sup>36</sup> and carries with it a date of priority, which gives the appropriator the right to use water *vis a vis* other users.<sup>37</sup> The priority date gives the owner of an appropriative water right the right to the entire amount of water diverted, and is equivalent to either: (1) the date on which the water was put to beneficial use in the case of a vested right perfected prior to the enactment of Nevada Water law;<sup>38</sup> or (2) the date on which the applicant applied for a water right with the State Engineer in the case of a water right obtained after enactment of the relevant statute that governs it.<sup>39</sup> The prior appropriation doctrine does not contemplate the sharing of shortages, and so if there is insufficient water in the system to satisfy all permitted rights, juniors

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<sup>31</sup> NRS 533.025; NRS 533.030; NRS 534.020.

<sup>32</sup> *Application of Filippini*, 66 Nev. 17, 21-22 (1949).

<sup>33</sup> See NRS 533.070(1).

<sup>34</sup> NRS 533.045; NRS 533.060; NRS 534.090; see also NRS 533.410.

<sup>35</sup> *Bacher v. State Engineer*, 122 Nev. 1110, 1120-21 (2006); see also NRS 533,070; NRS 533.370(c)(1).

<sup>36</sup> NRS 533.030; NRS 533.430; NRS 534.020.

<sup>37</sup> See NRS 533.030; NRS 534.020; NRS 534.030.

<sup>38</sup> See NRS 533.085.

<sup>39</sup> See NRS 533.030; NRS 533.355; NRS 534.080(3).

with later priority dates will be curtailed so that seniors with earlier priority dates may receive their full allocations.<sup>40</sup>

## 2. Priority Administration and Groundwater Management Plans under Nevada Law:

NRS 534.110 governs the curtailment of junior groundwater rights in basins which are overappropriated, or in other words, for which permitted water rights generally exceed available water. NRS 534.110(7)(a) provides that the State Engineer “[m]ay designate as a critical management area any basin in which withdrawals of groundwater consistently exceed the perennial yield of the basin,” and further that (b) “[t]he State Engineer . . . [s]hall designate as a critical management area any basin in which withdrawals of groundwater consistently exceed the perennial yield of the basin upon receipt of a petition for such a designation which is signed by a majority of the holders of certificates or permits to appropriate water in the basin that are on file in the Office of the State Engineer . . . If a basin has been designated as a critical management area for at least 10 consecutive years, the State Engineer shall order that withdrawals, including, without limitation, withdrawals from domestic wells, be restricted in that basin to conform to priority rights, unless a groundwater management plan has been approved for the basin pursuant to NRS 534.037.” In other words, after ten years, the State Engineer shall administer a designated basin by priority, cutting off junior rights as necessary to reach a balance between recharge and discharge, unless a groundwater management plan has been approved in that basin.

NRS 534.037(1), governing groundwater management plans, provides that “[i]n a basin that has been designated as a critical management area by the State Engineer . . . , a petition for the approval of a groundwater management plan for the basin may be submitted to the State Engineer. The petition must be signed by a majority of the holders of permits or certificates to appropriate water in the basin that are on file in the Office of the State Engineer and must be accompanied by a groundwater management plan which must set forth the necessary steps for removal of the basin’s designation as a critical management area.” Further, NRS 534.037(5) provides that “[a]n amendment to a groundwater management plan must be proposed and approved in the same manner as an original groundwater management plan is proposed and approved pursuant to this section.”

NRS 534.037(2) provides that “[i]n determining whether to approve a groundwater management plan submitted pursuant to subsection 1, the State Engineer shall consider, without limitation:

- (a) The hydrology of the basin;
- (b) The physical characteristics of the basin;
- (c) The geographic spacing and location of the withdrawals of groundwater in the basin;
- (d) The quality of the water in the basin;
- (e) The wells located in the basin, including, without limitation, domestic wells;
- (f) Whether a groundwater management plan already exists for the basin; and
- (g) Any other factor deemed relevant by the State Engineer.”

The State Engineer must hold a public hearing on the GMP prior to its adoption.<sup>41</sup> Any amendment to the GMP following adoption by the State Engineer “must be proposed and

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<sup>40</sup> See NRS 534.110(7); *Application of Filippini*, 66 Nev. at 21.

<sup>41</sup> NRS 534.037(3).

approved in the same manner as an original groundwater management plan is proposed and approved” by the State Engineer.<sup>42</sup>

3. Change Application Procedures and Standards under Nevada Law:

NRS 533.040(1) provides that “[e]xcept as otherwise provided in this section, any water used in this State for beneficial purposes shall be deemed to remain appurtenant to the place of use.” NRS § 533.040(2) further states that “[i]f at any time it is impracticable to use water beneficially or economically at the place to which it is appurtenant, the right may be severed from the place of use and be simultaneously transferred and become appurtenant to another place of use, in the manner provided in this chapter, without losing priority of right.” Further, the Nevada Supreme Court has held that water rights may be transferred separately from the property to which they are appurtenant.<sup>43</sup> The standards applicable to changes in place of use are laid out in NRS 533.370, which provides, in relevant part, that:

(1) “...the State Engineer shall approve an application submitted in proper form which contemplates the application of water to beneficial use if:

(a) The application is accompanied by the prescribed fees;

(b) The proposed use or change, if within an irrigation district, does not adversely affect the cost of water for other holders of water rights in the district or lessen the efficiency of the district in its delivery or use of water; and

(c) The applicant provides proof satisfactory to the State Engineer of the applicant’s:

(1) Intention in good faith to construct any work necessary to apply the water to the intended beneficial use with reasonable diligence; and

(2) Financial ability and reasonable expectation actually to construct the work and apply the water to the intended beneficial use with reasonable diligence.

2. Except as otherwise provided in subsection 10, where there is no unappropriated water in the proposed source of supply, or where its proposed use or change conflicts with existing rights or with protectable interests in existing domestic wells as set forth in NRS 533.024, or threatens to prove detrimental to the public interest, the State Engineer shall reject the application and refuse to issue the requested permit. If a previous application for a similar use of water within the same basin has been rejected on those grounds, the new application may be denied without publication.

3. In addition to the criteria set forth in subsections 1 and 2, in determining whether an application for an interbasin transfer of groundwater must be rejected pursuant to this section, the State Engineer shall consider:

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<sup>42</sup> NRS 534.037(5).

<sup>43</sup> *Adaven Management, Inc. v. Mountain Falls Acquisition Corp.*, 124 Nev. 770 (2008).

(a) Whether the applicant has justified the need to import the water from another basin;

(b) If the State Engineer determines that a plan for conservation of water is advisable for the basin into which the water is to be imported, whether the applicant has demonstrated that such a plan has been adopted and is being effectively carried out;

(c) Whether the proposed action is environmentally sound as it relates to the basin from which the water is exported;

(d) Whether the proposed action is an appropriate long-term use which will not unduly limit the future growth and development in the basin from which the water is exported; and

(e) Any other factor the State Engineer determines to be relevant.

...

8. If a hearing is held regarding an application, the decision of the State Engineer must be in writing and include findings of fact, conclusions of law and a statement of the underlying facts supporting the findings of fact.”

Finally, NRS 533.365, governing protest and hearing procedures, provides the mechanism by which the interested public or a water rights owner may participate in State Engineer decisionmaking processes. NRS 533.365(1) provides that: “[a]ny person interested may, within 30 days after the date of last publication of the notice of application, file with the State Engineer a written protest against the granting of the application, setting forth with reasonable certainty the grounds of such protest....” Further, NRS 533.365(4) provides that “[t]he State Engineer shall consider the protest, and may, in his or her discretion, hold hearings and require the filing of such evidence as the State Engineer may deem necessary to a full understanding of the rights involved. The State Engineer shall give notice of the hearing by certified mail to both the applicant and the protestant. The notice must state the time and place at which the hearing is to be held and must be mailed at least 15 days before the date set for the hearing.” Finally, NRS 533.450 provides for judicial review of State Engineer decisions.

The DVGMP represents a departure from the principles of prior appropriation that for most of Nevada’s history have governed and underpinned its water law. The Plan also would loosen the law’s protections for existing rights, the public interest, and the environment reviewed in this section of the Report. The potential consequences of such a departure, intended or otherwise, should be evaluated in order to make an informed decision regarding whether such a departure is acceptable or desirable, and represents a sound policy choice. Any departure from longstanding law and policy should only be made with the utmost caution and only after considered and careful analysis of potential impacts or consequences. The below analysis of the DVGMP is presented in that context and in reference to existing law with the intent of helping to inform the decision about whether to approve the Plan in its present form or require some modifications to be made first.

#### **D. Overview and Broad Review of Diamond Valley Groundwater Management Plan:**

According to the DVGMP, “[t]he GMP provides an alternative approach to ensure that over time groundwater levels stabilize. Existing water users may continue to use water in proportion to their water rights and seniority. The GMP requires reductions in pumping over time. This is accomplished by a system of shares with annual allocations (acre-feet of water per share) of water being available based on a formula...Using the formula, shares are set for each water right and do not change. However, annual allocations (acre-feet of water per share) are reduced each year under the GMP to meet the required pumping reductions...The Plan creates a system to track water allocations and use. The State Engineer will administer and manage the Plan while being advised by a locally elected Advisory Board. The State Engineer is authorized to hire a Water Manager to assist.”<sup>44</sup>

Further, “[t]he Diamond Valley Groundwater Management Plan applies to groundwater rights that serve an irrigation purpose and mining or milling rights that have an irrigation base water right. Priority (seniority) is factored into these rights using a formula which converts the rights to a set amount of shares. The shares are used on a year-to-year basis for calculating the volume of water (annual allocation in acre-feet of water per share) allowed to be used, sold, traded and banked. The GMP does not apply to vested water rights (including mitigation rights), municipal, industrial, stockwater, or existing domestic wells.”<sup>45</sup>

In general, the DVGMP seems to present a reasonably well thought-out approach to promoting easier marketing of groundwater through a system of shares and progressively reduced allocations based on existing water rights. The basic hydrology of Diamond Valley, the magnitude of overpumping, and the rate of drawdown of the water table are well-known and appear to be addressed in some detail in the Plan’s appendices, as is the anticipated approach to reducing the amount allocated to the shares based on each water right. Nonetheless, it is fair to point out that the Plan does not provide a comprehensive or holistic program for addressing the problems that have been created by historical overpumping of groundwater or for achieving the prioritized goals for Diamond Valley, particularly the goal of preserving the agricultural base and character of the Valley.

The Plan does not appear to address or reflect consideration of alternative strategies for reducing the depletion of the groundwater system in Diamond Valley. It also does not include alternative strategies for supporting the continued viability of traditional irrigated agriculture in the Valley and does not reflect consideration of any environmental resources or values. These values may be of considerably lesser significance in a basin such as Diamond Valley where the water table already is far too low to support phreatophytic plant life. However, existing irrigated agriculture may well have created wildlife habitat and environmental conditions that Diamond Valley residents value. Additionally, both the structure of the Advisory Board and the procedural rules pertaining to trades/transfers of water shares and allocations under the DVGMP should be reexamined to ensure adequate long-term representation of agricultural users and adequate opportunities for stakeholders of limited means to stay informed and participate meaningfully in the decision-making processes of the Water Manager. In addition, the DVGMP does not appear to have taken account of potential water quality issues or problems that may arise in connection with the transfer of shares from agricultural uses to use in mining and milling operations. Whether or not separate permitting processes are expected to address water quality issues

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<sup>44</sup> DVGMP, at ES.

<sup>45</sup> *Id.*

adequately, some consideration and discussion of such potential implications of a shift to increased use of groundwater in mining and milling operations should be included in the Plan.

Overall the DV GMP appears to be a laudable, but not fully adequate, plan that needs some modest revision and, in places, completion in order to: (1) ensure that the complete range of values and goals related to groundwater in the basin are addressed; (2) ensure adequate representation of agricultural water uses and the public interest on the Advisory Board over the long-term; (3) provide for transparency of the terms and procedures under which the proposed Water Manager will make decisions regarding proposed transfers and other matters affecting groundwater use in the Valley; and (4) ensure that Diamond Valley water users and residents have an adequate opportunity to be heard and a meaningful role in decisionmaking processes affecting groundwater use in the Valley.

**E. Section-by-Section Analysis of the GMP:**

1. Stakeholder Involvement in Development of the GMP (GMP § 4):

Stakeholder participation, while extensive and the result of significant outreach efforts, appears to have been limited to water rights holders within Diamond Valley. Because the DVGMP could have broad implications for the future of groundwater management in Nevada, the State Engineer and the local stakeholders should consider providing a meaningful opportunity for members of the concerned public to participate in the development of the DVGMP in order to ensure that the broader public interest is represented.

2. Goals of the GMP (GMP § 6):

It is important to evaluate the adequacy of the DVGMP's stated goals in order to determine whether they are designed to move Diamond Valley towards the conditions (economic, environmental, and cultural) that stakeholders hope to see in the future. The DVGMP lists the following goals:

- A. Remove the basin's CMA designation within 35 years by stabilizing groundwater levels in Diamond Valley
- B. Reduce consumptive use to not exceed perennial yield
- C. Increase groundwater supply
- D. Maximize the number of groundwater users committed to achieving GMP goals
- E. Preserve economic outputs from Diamond Valley
- F. Maximize viable land-uses of private land
- G. Avoid impairment of vested groundwater rights
- H. Preserve the socio-economic structure of Diamond Valley and southern Eureka County<sup>46</sup>

The goals listed in Section 6 appear to be designed to restore groundwater levels in Diamond Valley while protecting local communities, and as a general matter they appear to provide an adequate foundation on which to build a plan. It is not clear, however, whether the "economic

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<sup>46</sup> DVGMP § 6.

outputs,” “land uses” and “socio-economic structure” referenced in the DVGMP’s goals are meant to reflect the socio-economic priorities and goals of local communities, or whether they are being envisioned from more of a Statewide or overall societal perspective on economic and social priorities. Section 6 subsections E, F, and H could be clarified to more specifically provide for the preservation of local communities and their ways of life, specifically the continuation of irrigated agriculture if that is the desire of the community.

Stakeholders and the interested public should also evaluate the potential ramifications of failure to include protection of environmental values as a plan goal under Section 6. The plan does not provide water for the environment, but at the same time appears to contemplate conversion of water used for agriculture to other uses. The resulting fallowed land could mean a significant decrease in wildlife habitat in Diamond Valley. Stakeholders should consider what environmental goals could or should be incorporated into the DVGMP.

3. Scope of the GMP (GMP §§ 7 & 8):

a. Limit on Out-of-Basin Transfers (GMP § 7):

The DVGMP prohibits out-of-basin transfers of groundwater with the caveat that the plan may be amended in the future to allow such transfers.<sup>47</sup> Specifically, the DVGMP contemplates the amendment and addition of an out-of-basin transfer provision to the plan in the future if groundwater levels in the basin “have reached some threshold of stabilization, as determined under the provisions of this GMP.”<sup>48</sup> If stakeholders are concerned about the possibility of future out-of-basin transfers under an amended plan, fn.11 could be strengthened to include the requirement that any future out-of-basin transfer provision in an amended Plan could not result in a downward trajectory towards or below the threshold of stabilization.

While the DVGMP expressly prohibits out-of-basin transfers, it also unbundles water from the land the underlying water right is appurtenant to with the creation of shares and more easily tradeable yearly allocations, which could have the unintended consequence of undermining traditional patterns of water use and weakening the socioeconomic structure in Diamond Valley, and thereby make such out-of-basin transfers more likely in the future should the Plan be amended to allow those transfers. Therefore, if stakeholders want to prevent such transfers, it would be advisable to include standards in the current plan which would apply to all transfers and which would ensure that transfers occur only if they are consistent with the goal of protecting local community values and priorities within Diamond Valley.

b. Groundwater Rights Included and Excluded from the GMP (GMP § 8):

“The Diamond Valley Groundwater Management Plan applies to groundwater rights that serve an irrigation purpose and mining or milling rights that have an irrigation base water right.”<sup>49</sup> Excluded from the plan are vested water rights, municipal, mining rights that do not have an irrigation base right, industrial, stock water, or existing domestic wells which are regulated directly by the State Engineer. According to the DVGMP, all of these uses combined, not including vested rights, account for less than 5% of the total groundwater appropriations and less than 3% of the total groundwater pumped in Diamond Valley at the time of the GMP

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<sup>47</sup> *Id.* §§ 6, 7 n.11.

<sup>48</sup> *Id.*

<sup>49</sup> DVGMP, at ES.

submission to the State Engineer.<sup>50</sup> With the exception of vested and some stock water rights, most if not all of these exempted rights would be curtailed under strict priority administration by the State Engineer.<sup>51</sup> The effect of excluding those junior rights appears to be protecting them from any curtailment while subjecting the water rights covered by the plan to progressively reduced water allocations over time.

Committed groundwater rights are as follows, according to the DVGMP:

**Table 1a**  
**Committed Groundwater Rights in the Diamond Valley Hydrographic Area (HA 153)**

<b>Manner of Use</b>	<b>Committed Groundwater Rights</b>  (af/yr)
Commercial	3.79
Domestic	33.60
Irrigation (including DLE)	125,284.24
Mining and Milling	2148.45
Municipal	1592.06
Quasi-municipal	570.16
Stockwater	904.19
<b>Total</b>	<b>130,536.49</b>
Source: <a href="http://water.nv.gov">http://water.nv.gov</a> , accessed 5/4/2018 <sup>52</sup>	

According to the DVGMP, “[a]t present, water use by the mining industry in Diamond Valley is limited to Ruby Hill Mine located on the outskirts of the Town of Eureka ... The mine’s water rights allow for pumping up to 1,000 acre-feet per year. The pumping rate varies, but has

<sup>50</sup> *Id.* § 18.1 n.26.

<sup>51</sup> See Nevada State Engineer Hydrographic Abstract for Diamond Valley.

<sup>52</sup> DVGMP, at app. D.

averaged between about 600 to 800 af/yr. Of this amount, approximately half is currently infiltrated into the alluvial aquifer via rapid infiltration basins (RIBs) located west of the mine after the water has been treated to reduce the concentration of arsenic. The remainder is consumed in the milling process and incidental uses such as dust suppression. Mine usage is currently less than one percent of the total amount of water rights permitted in the basin. Operations at Ruby Hill have been suspended for the foreseeable future, but mine dewatering and some limited water use will continue for the foreseeable future. Other potential mining use includes the Mount Hope Project located approximately 28 miles northwest of Eureka. A portion of the proposed pit is situated in Eureka County and some of the groundwater proposed to be pumped to dewater the pit is expected to originate from the Diamond Valley HA. This water, potentially amounting to only a few hundred acre-feet per year, would be consumed by ancillary uses at the mine, assuming, of course the project ever becomes operational. Water not consumed within the Diamond Valley portion of the mine area would need to be infiltrated or otherwise returned to the Diamond Valley aquifer(s).<sup>53</sup>

The decision to limit the plan's scope to groundwater irrigation rights and mining rights with irrigation base rights means that mining rights without irrigation base rights, commercial rights, and municipal rights, which otherwise would be completely curtailed under strict priority administration, would not be subject to the significant reductions over time. The result is that reductions to irrigators under the Plan would need to be equivalent to all necessary system-wide reductions, some of which, under priority administration, would have been born by other users not covered by the Plan. The significance of that burden should be evaluated by the stakeholders in order to make a determination about whether it is acceptable to them.

It may be that mining, municipal, and commercial rights do not lend themselves to inclusion in the DVGMP, and are not significant enough in quantity to be a necessary component of the Plan's reductions. However, there may also be alternative approaches that would impose reductions more equitably across all uses, including increasing the scope of the GMP to include all users, all of whom would face reductions, while limiting unbundling and trading to irrigation rights, which could be traded among all users under the Plan. Additionally, stakeholders should evaluate the acceptability of limiting the Plan's pumping reductions to irrigation rights while permitting sales of those allocations to users that are not covered by the Plan, such as mining, commercial, and municipal users.

We recognize that it may well be reasonable to exclude non-agricultural uses, and senior vested uses, from the progressive reductions to groundwater pumping that will occur under the DVGMP due to the specific history and circumstances of groundwater usage in Diamond Valley. However, we also note that this limitation to the scope of application for the DVGMP should not be taken as a precedent to be applied generally to other groundwater basins. The soundest approach would be to start from a default position that all groundwater uses in an overdrawn basin should be subject to a groundwater management plan in order to equitably provide for a return to equilibrium and sustainability while achieving goals that have been prioritized by stakeholders. From that starting point, particular uses or classes of use might be excluded as justified by the basin's particular circumstances.

#### 4. Authority of State Engineer to Analyze Potential for Conflicts (GMP § 9):

Section 9 provides that the GMP shall not "supersede the authority of the State Engineer to analyze or take appropriate actions regarding groundwater withdrawals that may conflict with

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<sup>53</sup> *Id.*

existing rights or domestic wells or impacts to vested rights (or claims).” However, Section 9.1 fails to mention the public interest criterion contained in NRS 533.370. If the intent of the Plan is, as stated, to protect certain local community values and priorities, then Section 9.1 should expressly include the public interest criterion so as not to weaken the level of scrutiny from that called for under NRS 533.370. Section 9 also should be revised to make it clear that the DVGMP does not relieve the State Engineer of his duty to enforce Nevada water law to protect existing water rights and the public interest. Section 14, analyzed below, addresses the way in which the State Engineer evaluates changes in pumping under the GMP.<sup>54</sup>

5. Administration and Enforcement (GMP § 10):

The DVGMP would be administered and enforced by the State Engineer, who would consider the recommendations of the Advisory Board, discussed below.<sup>55</sup> The DVGMP would be administered pursuant to a “to-be-drafted” Memorandum of Understanding (“MOU”) between the Advisory Board (“AB”) and the Nevada Division of Water Resources (“DWR” or “NSE”).<sup>56</sup> To avoid procedures being put in place that fail to adequately protect the goals of the Plan or that do not provide adequate opportunities for affected water rights holders and the concerned public to participate in decisions under the Plan, we believe that stakeholders should have an opportunity to review and have input on this MOU prior to it being executed and possibly before the DVGMP is adopted by the State Engineer.

The DVGMP further provides for the State Engineer to contract with a Water Manager who would manage the terms and conditions of the DVGMP.<sup>57</sup> According to the DVGMP, the Water Manager must possess a bachelor’s degree in hydrology, Civil Engineering, Geology, Natural Resource Management or equivalent, as well as three years of professionally verified experience in the areas of water flow measurement, collecting, and reporting hydrologic data.<sup>58</sup> The Manager must also have knowledge of Nevada Water Law, hydrologic groundwater flow systems, pumping and irrigation systems.<sup>59</sup> According to the job description included in the DVGMP, the Water Manager would work with “limited supervision.”<sup>60</sup> The Water Manager would manage water under the GMP and would respond to complaints, compile and analyze data, prepare budgets, and implement water management programs in Diamond Valley.<sup>61</sup> Stakeholders should be cautious about proceeding on the assumption that a water manager with a simple bachelor’s degree would be qualified to perform the required functions, and should strongly consider requiring that automatic review by the State Engineer’s Office be built in to ensure proper administration of the GMP.

The State Engineer and stakeholders should carefully consider whether the Plan’s provision for appeals of Water Manager decisions to the State Engineer within 30 days of a Water Manager decision truly is an adequate safeguard against improper decisions by the Water Master that may harm water rights holders or other members of the concerned public. The requirement to initiate such an appeal process, which would follow a decision made under guidelines less protective than those contained in NRS 533.370, could amount to a significant additional burden

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<sup>54</sup> *Id.* § 9.2.

<sup>55</sup> *Id.* § 10.1.

<sup>56</sup> *Id.* § 10.2.

<sup>57</sup> *Id.*

<sup>58</sup> *Id.* at app. E.

<sup>59</sup> *Id.*

<sup>60</sup> *Id.*

<sup>61</sup> *Id.*

on complainants, which stakeholders may consider unreasonable. The State Engineer and stakeholders should consider an alternative which would provide for a simple automatic State Engineer review of a Water Manager decision at the request of an affected water rights owner or aggrieved person.

6. Structure of GMP Advisory Board (GMP § 11):

Section 11 of the DVGMP provides for a seven member Advisory Board (“AB”), which initially would include one position representing mining interests, two for ranching interests with vested spring rights, four for farming interests with mixed seniority groundwater rights, and two for farming interests with senior-most groundwater rights (one of which, an initial eighth AB position, expires as soon as the GMP is approved). A seven member board seems numerous enough, and the initial breakdown of that board appears to be sufficiently protective of agricultural interests and uses at the present time. However, the AB does not include any position for environmental or sustainability concerns or the public interest. It appears that during the Plan’s development process, the potential for an elected position representing basin-wide concerns was raised. Such a position would be desirable to represent local community interests. One or two additional positions should be considered for the AB to ensure that local community and broader public interests are adequately represented and protected under the DVGMP.

We are concerned by the speed and extent to which the DVGMP provides for a transition away from this structured representation over the first eight years of the Plan’s implementation. Eight years is a relatively short time in the context of Diamond Valley’s historic challenges with groundwater management, its designation as a CMA, and the 35-year period during which the DVGMP is intended to result in removal of the CMA designation. Under the Plan as currently drafted, over this short period of time the Advisory Board would shift from having six of seven seats reserved for agricultural interests (one for ranching and five for farming interests of varying seniority) to having only two seats reserved for any type of agricultural interest (ranching or farming). The result would be to create five “at-large” positions which will be open to representatives of any type of user (mining, industrial, municipal, commercial, agricultural, or domestic). This creates a substantial possibility, if not likelihood, that financially powerful interests could quickly acquire a majority of water shares through the relatively free trading of water shares permitted under the Plan, and could then use their voting power to skew the membership of the AB in a direction that would no longer be protective of local irrigated agriculture, other local community priorities, or the public interest.

Additionally, according to the DVGMP, votes in elections of Advisory Board members will be “weighted according to number of Shares held by a voting rights holder.”<sup>62</sup> Such weighting will facilitate the concentration of power to control the AB’s membership and decisions in the hands of one or a few dominant water shareholders. This element of the Plan is troubling because it too would allow for a significant reduction in the representativeness of the AB, possibly resulting in ineffective representation of important community values and priorities (as well as the broader public interest) in decisions about how Diamond Valley’s groundwater will be managed in the future.

One apparent implication of these provisions is that it is anticipated that the GMP will, in short order, remove any guarantee that agricultural uses or interests will continue to prevail or have any kind of controlling voice or veto power over the character of water use in Diamond Valley. By structuring the eventual membership of the AB as described above, the Plan almost

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<sup>62</sup> *Id.* § 11.6.

assumes that the prevailing purpose of use in the Valley will shift from agriculture to a different use, which use would be represented by the at-large AB members. As we have described, this raises serious concerns about both the AB's representativeness and its reliability as an authoritative body meant to protect local community values and the public interest. We believe that the State Engineer and stakeholders should consider a modified number and system for allocating positions and votes on the Advisory Board to better ensure that local community values and the public interest are adequately represented and protected in AB decisions.

A final concern arises from the DVGMP's procedural provision for only three days' public notice of AB meetings. Such short notice raises concerns about the transparency of the decisionmaking process under the GMP and about the adequacy of opportunity for input from affected water users and the concerned public before decisions are made. While three days is the minimum notice allowed under the Nevada Open Meetings Law, since decisions made at AB meetings may have a direct and profoundly significant impact on vital property interests of water rights holders, we recommend that this provision be revised to provide more notice – at least one week in advance of AB meetings.

#### 7. The Conversion of Groundwater Rights to Shares (GMP § 12):

Sections 12 and 13 of the DVGMP outline the process that would be required to unbundle water from the land it is associated with to both impose phased reductions in pumping and create readily transferrable annual groundwater allocations.<sup>63</sup> Section 12 governs the process by which shares would be created to account for seniority of each water right, thereby facilitating the unbundling of water from the right it is attached to. According to the DVGMP, shares would be allocated to each base water right covered by the plan. These shares would be tied to and unseverable from the land and well or wells described in the permit or certificate held at the time the GMP is approved.<sup>64</sup> "The formula used to calculate the number of Shares for each groundwater permit or certificate under the GMP shall take into account the priority date (i.e., seniority) of the permit or certificate."<sup>65</sup> Under the Plan, these shares are set and do not change. The State Engineer will develop a share register which is accessible by the water right owner and which is updated whenever base rights change hands.<sup>66</sup>

The DVGMP uses a range of priority factors from 1.0 to 0.8 to adjust the amount of shares to be assigned to groundwater rights of differing seniority. This seems to be a somewhat narrow range, when considering the historic intent and practical effect of the prior appropriation doctrine. The use of such a narrow range of differentiation in setting the value of senior versus junior water rights could be seen as, in effect, penalizing senior water rights holders for the DWR's historic series of errors in permitting the over-appropriation of groundwater in Diamond Valley.

The DVGMP provides for the calculation of the number of shares for mining groundwater rights that are based on an irrigation permit by reference to the volume of the underlying (or base) irrigation permit, not the volume of the mining permit. It is unclear to us whether this will increase, decrease, or be neutral in terms of the practical amount of water made available for use or trade on the basis of such water rights. If it will increase the practical amount of water

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<sup>63</sup> *Id.* § 12.

<sup>64</sup> *Id.* § 12.2.

<sup>65</sup> *Id.* § 12.4.

<sup>66</sup> *Id.* § 12.10, 12.11.

available for mining uses or for trade, then the implications of doing so should be clearly identified and evaluated.

#### 8. The Creation of Tradeable Yearly Allocations (GMP § 13):

Section 13 of the DVGMP sets up a system of yearly allocations of water which can be traded freely traded on an annual basis. An annual allocation is defined in the GMP as the amount of groundwater allocated to each share each year measured in acre-feet per share.<sup>67</sup> Each allocation is placed into a groundwater account and linked to the share register.<sup>68</sup> Allocations may be used for any beneficial purpose under Nevada law consistent with the GMP as long as the groundwater use is linked to and withdrawn from a Groundwater Account with a positive balance.<sup>69</sup> Water Allocations can be used, traded or sold, or banked for future use.<sup>70</sup> While there is no restriction on the amount of water that can be banked from year to year, banked water carried over to the next year will be reduced to account for natural losses based on location within the basin.<sup>71</sup> Annual allocations are reduced each year under the GMP to meet the pumping reductions required by the Plan in order to achieve the level of equilibrium necessary for removal of the CMA designation by the State Engineer.<sup>72</sup> Those reductions in allocations (or acre-feet per share) are laid out in Appendix G of the GMP.<sup>73</sup>

As noted above, the DVGMP appears to prevent the severability of groundwater rights from the land and well(s) that served as the basis for their permits or certificates by tying shares to the water right they are associated with.<sup>74</sup> However, these shares are the basis for annual allocations of groundwater which may be easily sold, traded, or leased.<sup>75</sup> By setting up a system under which allocations are traded on a yearly basis,<sup>76</sup> the GMP facilitates and encourages temporary transfers that may be readily repeated and which, therefore, in effect may amount to permanent transfers. The implications of this likely result or trend are examined below.

The DVGMP also does not limit the ability to convert groundwater from existing uses to different use in the future.<sup>77</sup> According to the Plan, once a water right has been redefined as shares and allocations, those allocations become more or less freely transferrable to any beneficial use recognized under Nevada law.<sup>78</sup> However, it is unclear whether a change in the purpose of use can be accomplished via purchase of allocations alone as suggested in Section 13.8, or whether purchase of the base right and shares associated with that allocation also is required. Currently the plan appears to address the procedure for changes in purpose of use only by way of example in footnote 29, which describes the requirement that a developer purchase not only an allocation but also the associated base water rights and shares and subsequently apply to the State Engineer for a change permit under the procedures provided for in 533.370. We

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<sup>67</sup> *Id.* § 13.1.

<sup>68</sup> *Id.* § 13.2.

<sup>69</sup> *Id.* § 13.8.

<sup>70</sup> *Id.* §§ 13.8, 13.9, 13.10.

<sup>71</sup> *Id.* § 13.9.

<sup>72</sup> *Id.* § 13.12.

<sup>73</sup> *Id.*

<sup>74</sup> *Id.* § 12.2.

<sup>75</sup> *Id.* §§ 13.8, 13.10, 14.8, 14.9.

<sup>76</sup> *Id.* § 13.

<sup>77</sup> *Id.* § 13.8.

<sup>78</sup> *Id.* § 13.8, 13.10.

recommend that a section be added to the Plan that clearly lays out the procedures and standards for changes in purpose of use for traded water allocations under the Plan's market mechanism so that they are clear and their implications can be evaluated at the outset.

Further, absent some limitation on changes in the purpose of use, it is likely that allocations will be purchased by those most easily able to afford them, which may not be irrigated agriculture operations. Once those allocations are purchased and lands are fallowed, it could be more likely that the underlying water right will be sold either to other irrigators or to different uses previously excluded from the GMP. The resulting re-allocation of water use in Diamond Valley has been left to the market to determine with little guidance in the Plan to ensure any particular desired character of the Valley that may be envisioned by stakeholders. If the a goal of the Plan is, as stated, to protect the existing socioeconomic structure of Diamond Valley, which is based on irrigated agriculture, then a restriction should be added to the Plan to limit or prevent changes in purpose of use from agriculture when allocations are purchased. A useful example of this kind of approach currently is being implemented in Ventura County, California, in which trading under the groundwater management plan is limited to trades among irrigators.<sup>79</sup> Such a limitation could be lifted by way of an amended plan if conditions change in the future, and at that point stakeholders envision an accepted or planned transition away from irrigated agriculture.

In relation to mining uses of groundwater, Section 13.15 of the DVGMP requires that all pit lakes "which did not possess a state or federally approved Plan of Operations by the date the GMP was approved by the State Engineer will be required to dedicate groundwater rights (with associated Shares and Allocations) to account for estimated evaporative losses" from the pit lake. "Groundwater rights dedicated for pit lake groundwater evaporation will be placed into [a] special category of the Share Register and will continue to receive annual groundwater allocations...The total number of groundwater rights dedicated must have an estimated Allocation at Year 30 of the projected reduction table in Appendix F equal to or greater than the calculated evaporation rate. The dedication of groundwater rights (and associated Allocations) to account for pit lake evaporative losses must be in place when water is first present in the pit bottom after the cessation of mine dewatering activities."<sup>80</sup> While accounting for evaporative loss from a pit lake is necessary and sound, this section appears to anticipate a future pit lake (perhaps associated with the Mount Hope Mine), which will require the owner or operator of the mine to buy groundwater rights and dedicate the shares and allocations based on those rights to satisfying this ET requirement. Those re-allocations will result in the conversion of some amount of irrigation water rights or allocations to mining uses. It is unclear whether the amount of water rights or allocations likely to be changed from irrigation use to a mining use to compensate for evaporative loss from a Mount Hope Mine pit lake is significant enough to raise serious concern among stakeholders. However, we believe that stakeholders and the State Engineer should seek to have that question answered before the DVGMP is adopted.

Finally, the streamlined review procedure created by the DVGMP for the review and approval of repeatable annual sales, trades, or leases of water shares does not appear to be readily accessible to the public and does not provide for input from the concerned public or

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<sup>79</sup> See *Preliminary Draft Groundwater Sustainability Plan for the Oxnard Subbasin*, at 1-18 (Nov. 2017), available at [http://fcgma.org/images/Oxnard\\_GSP\\_OPT.pdf](http://fcgma.org/images/Oxnard_GSP_OPT.pdf); see also *Fox Canyon Water Groundwater Management Agency, Advanced Metering Infrastructure (AMI) & Water Market*, <http://www.fcgma.org/component/content/article/2-uncategorised/121-advanced-metering-infrastructure-ami-water-market>.

<sup>80</sup> *Id.* § 13.15.

conservation community. This lack of openness or access raises significant concerns regarding the transparency of decisions concerning groundwater usage in Diamond Valley under the Plan. We believe that stakeholders should consider whether a greater degree of public access and input to such decisions, and greater public availability of information, should be required or whether it is preferable to allow anonymity to encourage water transfers.

9. GMP Approach to Well Use and Management (GMP § 14):

While allocations themselves appear to be freely tradable under the plan with little or no scrutiny, increases in pumping that result from those trades are subject to evaluation and approval by the State Engineer. According to the DVGMP, “[t]he well-use approval process in Section 14 of this GMP is the mechanism for the State Engineer to complete conflict analyses for new wells or increases in diversion rate in existing wells higher than permitted under the base right.”<sup>81</sup> While permanent transfers will continue to be reviewed by the State Engineer under the protest procedures and standards contained in NRS 533.345, NRS 533.365, and NRS 533.370, consistent with the goal of increasing flexibility and efficiency, and consistent with the encouragement of temporary yearly transfers, Section 14 of the DVGMP replaces the regular change application review requirements and protest procedure for permanent transfers under NRS 533.345(1), NRS 533.365, and NRS 533.370 with a less thorough and less transparent process for reviewing and approving the increases in pumping associated with the transfer of groundwater allocations on a yearly basis, which is consistent with NRS 533.345’s provision governing temporary transfers.<sup>82</sup>

This reduced level of scrutiny for pumping increases associated with transfers encouraged by the DVGMP raises some concern over the potential for inadequate protection of other water rights and the public interest. On the one hand, subjecting such pumping increases to the lesser level of scrutiny for temporary transfers makes sense because the transfers of the underlying allocations are only for one year. On the other hand, since the Plan effectively creates incentives for repetitive one-year transfers of allocations, this reduced level of scrutiny could result in the ready, casual approval of what effectively are permanent or long-term transfers without the level of scrutiny considered appropriate to safeguard other existing water rights and the public interest from the potential harmful effects of such transfers. The State Engineer and stakeholders should carefully consider the implications of establishing a system that shelters such transfers and the pumping increases that they could result in to a substantially diminished level of administrative review and public scrutiny.

As noted above, by setting up a system under which allocations are traded on a yearly basis,<sup>83</sup> the DVGMP facilitates and encourages temporary transfers that easily may be repeated and which therefore may effectively amount to permanent transfers. Under the Plan, these temporary transfers of one year or less could, in effect, be exempt from the State Engineer’s change application standards or process, including the protest and hearing process.<sup>84</sup> This is because the GMP gives the State Engineer authority to determine, prior to compliance with NRS 533.365 and NRS 533.370’s protest procedures and associated evidentiary submissions, whether an application to transfer water for less than one year is in the public interest and does not conflict with existing rights.<sup>85</sup> While this authority is consistent with Nevada law, the

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<sup>81</sup> *Id.* § 9.2.

<sup>82</sup> *Id.* §§ 9.2, 13, 14.8, 14.9 n.20.

<sup>83</sup> *Id.* § 13.

<sup>84</sup> *Id.* §§ 14.8, 14.9.

<sup>85</sup> *Id.*

encouragement of a pattern of temporary transfers which cumulatively amount to permanent transfers would circumvent the procedures and standards contained in NRS 533.365 and NRS 533.370 that otherwise would govern permanent transfers. We are concerned that effectively exempting such transfers from rigorous consideration of potential conflicts and harms to the public interest, as well as from participation in water allocation decisions by the interested public, may subvert the legislative intent of those statutory provisions.

Stakeholders should evaluate the relative importance of promoting the transactional efficiency of water trades, on the one hand, in comparison with the potential loss of transparency, accountability, and protection of existing water rights owners and the environment, on the other hand, that could result from the Plan's encouragement of temporary transfers which would be exempt from Nevada water law's requirements for permanent change applications. Additionally, because the DVGMP could be used as a model for future similar plans in other parts of the State or in other states, the State Engineer should evaluate whether it is in the public interest to provide for such an exemption from the State Engineer's decisionmaking process, which is designed to protect existing rights and the public interest, including the environment. The State Engineer and stakeholders should consider building protections into the Plan that would guarantee the desired flexibility and efficiency while ensuring that the interested public has a voice and that changes in place or purpose of use do not harm existing water rights owners or the public interest.

Along similar lines, we are concerned by the fact that Sections 14.6 and 14.7 of the Plan describe discretionary standards to guide the State Engineer's decisionmaking authority to deny new wells applications or additional withdrawals from existing wells which appear to depart significantly from the requirements that ordinarily would apply to such decisions under NRS 533.370. Denial of an application under NRS 533.370 is mandatory, not discretionary, in the circumstances described in Sections 14.6 and 14.7 of the GMP, and such a departure from Nevada law could have the effect of allowing impacts to existing water rights and the environment that otherwise would be prohibited.<sup>86</sup>

Additionally, Sections 14.6 and 14.7 do not even mention, let alone provide for, any consideration of whether such applications are consistent with the public interest, which is required by NRS 533.370. This omission may be an oversight, as the public interest criterion is required under Sections 14.8 and 14.9. Nonetheless, failure to include the public interest criterion of Nevada water law in the evaluation of proposed new wells would be a significant departure from, and weakening of, the protection provided by longstanding Nevada law

This departure from the protections contained in Nevada water law exemplifies a pattern throughout the GMP of loosening the procedural and substantive requirements that Nevada water law has long adhered to for both new appropriations and changes in place of diversion, place of use, and manner of use. Those requirements were based on fundamental prudential principles meant to protect against unreasonable harmful effects and to ensure the sustainability of the State's water resources. The failure to achieve those ends in Diamond Valley is due to the DWR's past failure to apply the law rigorously, rather than to any problem with the law's requirements. Accordingly, we believe that the State Engineer and stakeholders should expressly require consideration of potential harm to the public interest in these kinds of decisions under the Plan. We also believe that stakeholders and the State Engineer should make denial of such applications mandatory where the proposed new well or withdrawal would be inconsistent with or threaten to harm the public interest.

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<sup>86</sup> *Id.* §§ 14.6, 14.7.

Finally, we note that the protection of wells that are maintained as required by the DVGMP from the risk of abandonment under Nevada law establishes a positive incentive for conservation and water banking.<sup>87</sup> Additionally, the DVGMP's provision allowing for unlimited water banking encourages conservation consistent with the goal of the Plan.<sup>88</sup> Both of these provisions are designed to rectify the problems, including conservation disincentives, associated with the "use it or lose it" component of the prior appropriation doctrine, and both are positive steps towards encouraging conservation in Diamond Valley which are responsive to comments made during the scoping process by interested citizens.

10. Approach to Groundwater Use Metering and Reporting (GMP § 15):

The GMP contains a number of provisions which are designed to ensure that accurate and continuous well metering occurs throughout the Valley to ensure accurate monitoring of water use.<sup>89</sup> Stakeholders could explore the potential for an additional provision which would assume a certain level of water use during any period of flow meter failure to encourage users to maintain properly working measuring devices and to better account for usage during breaks in meter functionality. Additionally, the Plan includes provisions governing flow metering of each well subject to the GMP to ensure that only the amount of water authorized for withdrawal is actually withdrawn, but it does not include details of a monitoring program which would give the State Engineer information about water levels that could be used to inform decisionmaking about the amount of groundwater permitted to be pumped as the Plan's effects on groundwater conditions play out. Such monitoring is referred to as an "important component of the GMP,"<sup>90</sup> but details of that monitoring and how it is to be used to inform State Engineer decisionmaking is not included in the Plan. For example, it is unclear whether the use of water level monitoring will be limited to a broad basin-wide scale to assess the Plan's effectiveness or whether it will also be used to ensure that individual transfers do not conflict with existing rights or threaten to be detrimental to the public interest. We recommend that the State Engineer and stakeholders consider including a monitoring provision which would both give the State Engineer a better picture of water levels at a basin-wide level and allow the State Engineer to take proactive action to prevent site-specific harms to existing water rights owners and the public interest that could result from approvals of transfers under the Plan.

11. Implications of Approach to Overdraws of Groundwater Accounts and Annual Special Assessments Penalties (GMP §§ 16 & 20.5):

The DVGMP adopts a somewhat permissive approach to a groundwater user's overdraw of an annual allocation account (i.e., the overuse of groundwater over what has been deemed properly available under the user's water rights and shares).<sup>91</sup> While the Plan adopts the principle that a user must obtain additional water allocations to compensate for such an overdraw, it also allows users to instead borrow against their future annual allocations.<sup>92</sup> By postponing the ultimate reckoning a groundwater user must face for overuse of groundwater, this approach could encourage cumulatively unmanageable imbalances between allocations

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<sup>87</sup> *Id.* § 14.2.

<sup>88</sup> *Id.* § 13.9.

<sup>89</sup> *Id.* § 15.

<sup>90</sup> *Id.* § 13.12 n.18.

<sup>91</sup> *Id.* § 16.

<sup>92</sup> *Id.* § 16.3.

and actual use, and eventually require more socioeconomically disruptive corrections to be made. It also could encourage those with the greatest resources to engage in such overdraw because they will have the greatest capacity to bear future reductions. By allowing for, and perhaps inadvertently incentivizing a certain amount of overuse by those with the greatest water rights and shares, this component of the Plan may unintentionally perpetuate the overpumping of groundwater in Diamond Valley and undercut the goals of the GMP.

The relatively permissive approach to the overdraw of a groundwater account contrasts with the strict punitive approach taken by the GMP toward any delay in water users' payment of annual assessments for the funding of the GMP and the Water Manager who will administer it.<sup>93</sup> The Plan will not allow any annual groundwater allocation whatsoever to the account of any groundwater user who has paid not their annual assessment, and immediately once the assessment's due date passes the Plan begins to impose progressive monthly reductions, or depreciations, to the amount of the groundwater allocation that may be allowed to the account after late payment is made.<sup>94</sup>

There may be sound reasons for providing some flexibility to allow limited overdrafts of groundwater accounts over relatively short timeframes in order to deal with exceptional dry years. And there may be a need to ensure that the duty to pay annual assessments is taken seriously in order to ensure that there is adequate funding to implement the Plan. Nonetheless, the contrast between the former and the latter seems likely to bear hardest on water rights holders in Diamond Valley who already are most vulnerable either because they will have the smallest amount of water shares under the Plan or because they are the poorest financially, or both. We therefore suggest that, before adopting the Draft DVGMP in its present form, the stakeholders and State Engineer consider whether some modification of these provisions would better comport with the Plan's stated goal of protecting the socioeconomic structure of Diamond Valley.

## 12. Treatment of Groundwater Uses Excluded from GMP (GMP § 18):

Pursuant to Section 18.2 of the DVGMP, groundwater uses which are excluded from the Plan, such as vested, mining rights without an irrigation base right, commercial, stockwater rights, and domestic wells, shall remain under the provisions of Title 48 of the Nevada Revised Statutes and any applications to change place of use or diversion or purpose of use would proceed before the State Engineer. Because they are excluded from the Plan, these uses also would not receive shares or allocations.<sup>95</sup> As such, they also would not be subject to the reductions contemplated by the plan as discussed above.

However, the Plan does contemplate the conversion of water shares and allocations from uses covered by the GMP to uses that were not covered by the GMP at the time of its approval. To at least some extent groundwater rights under the GMP can be used for so-called "excluded" uses, but as a consequence those previously "excluded" uses then would become at least partially subject to the requirements of the GMP.<sup>96</sup> In the event of such a change in purpose of use, only the amount of an existing water allocation under the Plan that is converted to the "excluded" use would be subject to the GMP.

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<sup>93</sup> Compare DVGMP § 16 with § 20.5.

<sup>94</sup> *Id.* § 20.5.

<sup>95</sup> DVGMP § 18.2.

<sup>96</sup> *Id.* § 18.3.

The conversion of an allocation based on an irrigation groundwater right to another, “excluded,” use is allowed for, and, if permanent, requires the ordinary application and permitting process of the NSE under NRS 533.345, NRS 533.365, and NRS 533.370.<sup>97</sup> If approved, then the new use (which previously would have been considered “excluded”) would fall under the GMP and its requirements.<sup>98</sup> For example, in the event that allocations under the Plan are used for development projects, the State Engineer would evaluate what base rights would need to be purchased in order to supply the project for its life, accounting for the planned reductions outlined in Appendix G of the Plan.<sup>99</sup> We do not necessarily think there is anything problematic about the Plan’s approach to such conversions from uncovered to covered types of groundwater uses, but we do think it is important to ensure that the implications of such conversions and how the GMP would apply to the new uses are openly analyzed. In particular, we hope that the stakeholders have been given an opportunity and the necessary information to evaluate whether it is equitable to exempt non-irrigation uses from the reductions imposed by the Plan while allowing those same uses to purchase irrigation rights that are covered by the Plan for conversion to a previously exempted use.

The GMP makes recommendations to encourage groundwater conservation in the uses that are excluded from the Plan, but these recommendations are simply aspirational goals as those excluded users are not bound by the Plan.<sup>100</sup>

13. Non-Consumptive Uses (GMP § 19):

Section 19.1 of the DVGMP provides that non-consumptive uses of groundwater in Diamond Valley such as mine pit dewatering, will remain under the authority of the State Engineer. However, Section 19.2 suggests that any consumptive use component of this right will require an allocation under the GMP. It would be desirable to clarify that Section 19 applies only to those mining rights with irrigation base rights as all other mining uses are exempted from the GMP. Section 19.3 contains a provision which encourages, but does not require, that return flows from these non-consumptive uses provide a net benefit to the aquifer. It would be desirable to make this provision a requirement as opposed to a suggestion. Similarly, it would be helpful to describe measures in detail that would provide such a net benefit to the aquifer in the Plan, so that the Plan itself provides guidance as to how to achieve and/or manage such return flows in a manner that enhances the probability that their quality and quantity are consistent with Nevada law and the goals of the DVGMP.

14. Encouragement of Groundwater Conversion from Irrigation to Mining Uses (GMP §§ 13.15, 20.6, 21):

One of the goals listed in Section 6 of the DVGMP is to “[p]reserve the socio-economic structure of Diamond Valley and southern Eureka County.”<sup>101</sup> However, the GMP not only contemplates relinquishment and conversion of groundwater rights and allocations from irrigation uses to other uses, it appears to facilitate and perhaps incentivize conversions to mining uses in particular. This is reflected in the Plan’s allowance for a mining operator to forego the ordinary payment of the assessment that would be due for pit lakes or other man-made surface water bodies by dedicating groundwater rights and allocations at a 2:1 ratio to the actual amount of

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<sup>97</sup> *Id.* § 18.3 n.29.

<sup>98</sup> *Id.*

<sup>99</sup> *Id.*

<sup>100</sup> *Id.* § 18.4.

<sup>101</sup> DVGMP § 6.

evaporative loss from such bodies. The Plan further provides that the amount of such dedicated rights and allocations that exceeds the amount of evaporative loss is to be made available and equally distributed to the remaining groundwater users under the GMP.<sup>102</sup>

The implication of this provision is that the developers of the DVGMP anticipate the conversion of water rights from irrigation to mining operations, and that they have created this 2:1 conversion option with any excess left from the converted rights going to all remaining groundwater users under the Plan (which would be irrigators) as an incentive for such conversions or to soften potential opposition among remaining irrigators to such conversions.

Additionally, as noted above, Section 13 of the DVGMP, which addresses and appears to anticipate a future pit lake (perhaps associated with the Mount Hope Mine), and provides for necessary reallocations, would facilitate conversion of irrigation rights to mining uses. While the Plan does not expressly refer to the Mount Hope Mine project, it does acknowledge the presence of an ongoing effort by the Mount Hope Mine's owner, General Moly, Inc., to work with the Eureka Producers Cooperative to fund a "Diamond Valley Sustainability Trust" for the purpose of encouraging relinquishment or retirement of groundwater rights or allocations.<sup>103</sup> It also is common knowledge that the DVGMP has been developed at the same time as the groundwater ramifications of General Moly's Mount Hope Mine project is being litigated. So, it seems reasonable to assume that the developers of the DVGMP bore that project in mind when addressing the potential conversion of agricultural shares to mining uses, including use to offset evaporative losses from mine pit lakes.

These provisions related to mining in the Plan itself, contained in Sections 8, 13, 20, and 21, coupled with the recent litigation involving Eureka County and General Moly, suggest that the Plan has been developed with such conversion in mind. While the mining provisions of the Plan appear to have been drafted with General Moly's Mount Hope Mine in mind, it is unclear whether the intent is to more broadly encourage mining at the expense of irrigation.<sup>104</sup> Additionally, it is unclear whether the amount of water needed to supply the Mount Hope Mine pit lake, and any other anticipated mining uses, would be significant. Allowing for those uncertainties, we believe it is important for the State Engineer and stakeholders to address the potential for and carefully consider the implications of the transfer of a large amount of water to that mine or other mining operations under the Plan before the DVGMP is adopted.

15. Implications for the Local Agricultural Economy and Culture of Anticipated Conversion from Existing Irrigation Uses (GMP § 21, 22, 23):

As noted above, it appears clear that the DVGMP contemplates the conversion of agricultural rights to other uses as time passes.<sup>105</sup> Notwithstanding this anticipated conversion, and despite the fact that one of the Plan's stated goals is to protect the socioeconomic structure of Diamond Valley, the DVGMP does not provide protections to local communities that may be concerned about socioeconomic impacts of such conversions. The omission of any proactive protections against potential harms from such conversions to the agriculture-based community in Diamond Valley, despite the fact that preservation of the socioeconomic structure of Diamond Valley is listed as one of the Plan's goals, raises concerns about the adequacy of the DVGMP because during scoping stakeholders expressed substantial concern about the protection of Diamond

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<sup>102</sup>*Id.* § 20.6.

<sup>103</sup> *Id.* § 21.1 n. 31.

<sup>104</sup>*Id.* § 21.1 n.31.

<sup>105</sup> *Id.* § 22.

Valley's socioeconomic structure. Potential harms from the conversion of agricultural rights to other uses include impacts to the local tax base, the agrarian culture, the local economy and job base, and air quality due to dust emissions from fallowed land. Given the fact that agriculture is, and for a considerable time has been, the dominant basis of the Diamond Valley economy and that agriculture sustains and defines the character of the rural community in Diamond Valley, we believe that stakeholders and the State Engineer should consider making the Plan more holistic by adding provisions designed to proactively ensure the local agricultural economy's continued existence. In addition to the direct gross value of Diamond Valley's agricultural output, the value added in terms of employment, local taxes, income growth, and social resilience must be taken into account in evaluating the relative importance of sustaining Diamond Valley's agricultural use of groundwater.

Potential protections for local agricultural economies could include ensuring greater representation of that sector's voice on the AB beyond the initial 8 year period covered in the Plan, additional incentives to promote agriculture to agriculture trading, a partial or total limitation under the Plan to trading between agricultural users, and limitations on trading to prevent an excessive concentration of pumping in one part of the basin that would create problematic impacts. Additionally, funding for economic development in Diamond Valley could be used to alleviate the negative impact on local communities that the transition away from irrigated agriculture likely would cause. Such funding might be dedicated to supporting crop conversion to less water intensive crops and use of efficient irrigation technology, which could enable existing agricultural users to remain operational while engaging in trading of unused allocations. With proper planning and funding, the conversion of some water allocations or shares from agricultural to non-agricultural uses need not lead to an unwanted and unintended decline in the agricultural economy of Diamond Valley. Pilot programs that have been developed for other basins in the West could serve as models for such conversion, but they would require funding from some source such as the State or a water fund funded by assessments under the Plan. Allocation trading fees could also be used to help fund such a program if set at sufficient rates.

16. Implications for the Environment of Anticipated Conversion from Existing Irrigation Uses (GMP §§ 21, 22, & 23):

As noted above, the DVGMP acknowledges that it appears likely that the Plan will facilitate transfers from irrigated agriculture to other uses. The DVGMP's inclusion of fallow land stabilization among the needs to be funded through the Plan's annual assessments reflects an anticipation that some amount of the land and water rights currently being used for irrigated agriculture in Diamond Valley will go out of production.<sup>106</sup> This expectation is also made explicit in the sections addressing the manner of relinquishing existing groundwater rights or allocations and the treatment of such rights or allocations.<sup>107</sup> It also is reflected in the Plan's acknowledgement of the likelihood that Diamond Valley lands will be retired from irrigation. Despite this expectation, the GMP does not address the implications for the fallowing of irrigated land on wildlife habitat or air quality.

While the Plan expresses a preference for some continued beneficial use of retired lands, the Plan makes no concrete commitment and does not provide for any specific action to ensure such continued beneficial use.<sup>108</sup> It does not mandate that owners of fallow lands plant cover

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<sup>106</sup>*Id.* § 20.4.

<sup>107</sup>*Id.* § 21.

<sup>108</sup>*Id.* § 22.

crops and control weeds and rodents.<sup>109</sup> Without concrete requirements, it is unlikely that any environmental protections for habitat on fallowed land will be realized.

We believe that, in the interest of providing a more holistic level of protection for Diamond Valley, stakeholders and the State Engineer should explore the possibility for additional provisions requiring specific actions to be taken and/or plans to be developed to maintain retired lands, in order to protect existing wildlife habitat and environmental integrity. Examples and guidance are available in an Environmental Defense Fund report that includes suggested water market reforms which could be used to provide protection for the environment in the context of water trading.<sup>110</sup> Those reforms include incentivizing environmental protection with the creation of an environmental water fund using transfer fees, including protections for local water uses that might be harmed by changes in place of use, and promotion of exchanges that achieve multiple objectives.<sup>111</sup>

On a broader level, the DVGMP contains only minimal acknowledgment of the environmental effects of existing overpumping of groundwater in Diamond Valley or of the various potential changes in use that may occur as a result of the water market created by the Plan. Similarly, the Plan does not address whether or how environmental needs or uses will be served by the market system established under the GMP. We urge the State Engineer and stakeholders to revise the DVGMP to include meaningful consideration of current environmental conditions and the potential environmental effects of future water management decisions, and to include provisions designed to incentivize environmentally protective measures.

17. Procedure for Amending or Discontinuing the GMP (GMP § 26):

Pursuant to Section 26 and NRS 534.037(5), the GMP can be amended or discontinued by the same procedure required for the Plan's initial proposal and approval. This means that a majority of water rights holders' signatures are required, after which the proposed amendment or termination of the GMP is presented to the State Engineer, who then must hold a properly noticed hearing to take testimony on the proposal. The process would require the signatures of "a majority of the holders of permits or certificates to appropriate water in the basin." NRS 534.037(1). This statutory language is different than the weighting of votes of water rights or shares that is provided for in the Plan for certain types of decisions or actions under the Plan. Imposing this more inclusive, and burdensome, requirement appears to be protective of current water rights owners who may transfer allocations while maintaining their underlying water rights, which would guarantee their right to vote on whether to amend the Plan.

The DVGMP provides that changes to Nevada law shall not be deemed to be amendments to the DVGMP regardless of how they affect aspects of the Plan. We believe that, before adopting the DVGMP, the State Engineer and stakeholders should consider what sorts of changes to Nevada water law could alter the operation or effects of the Plan in ways that raise significant concerns, whether such changes to the law are reasonably likely, and if so whether they warrant modification of the Plan to protect against unintended consequences under the DVGMP from such changes in Nevada law.

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<sup>109</sup> *Id.* § 22.4.

<sup>110</sup> Environmental Defense Fund, Better Access. Healthier Environment. Prosperous Communities. Recommended Reforms for the California Water Market (2016).

<sup>111</sup> *Id.*

## **CONCLUSION AND SUMMARY OF RECOMMENDATIONS**

As mentioned at the outset, this Report's public interest-oriented analysis is meant to be a supportive tool to assist decision makers in preparing the best plan possible for the management of groundwater in Diamond Valley. Overall the DVGMP appears to be a laudable, but not fully adequate, water marketing plan that needs some revision and, in places, completion in order to meet its stated goals and adequately protect the public interest.

To begin with, we recommend that stakeholders and the State Engineer consider alternatives to water marketing for comparative purposes to ensure that the best possible approach, or combination of approaches, is taken in Diamond Valley. It does not appear that any such alternatives were considered either during scoping or in the development of the DVGMP.

As explained above in this Report's analysis of the Plan's strengths and weaknesses, it is important for the stakeholders and the State Engineer to consider making revisions to address the potential unintended consequences of: (1) limiting the scope of the DVGMP and its pumping reductions to groundwater irrigation rights and mining rights with irrigation base rights; (2) not including any position on the AB to represent the public interest, including local community interests and environmental concerns;; (3) the built-in transition away from guaranteed agricultural representation to at-large positions that may be held by whatever individual or entity might purchase water for other uses under the Plan; (4) diminished State Engineer and public review of changes in purpose and place of use that will result from encouraging the trading of allocations on a temporary annual basis; (5) allowing the market to determine what dominant purpose of use persists or emerges in Diamond Valley; (6) failure to provide for environmental protection or incentives for environmentally friendly uses; and (7) the potential for unbundling water from land to create increasing pressures for out-of-basin transfers. Stakeholders should consider incorporating additional constraints into the DVGMP that would be designed to ensure that potential unintended consequences are avoided and the goals outlined in the plan are realized so that the public interest is adequately protected.

To protect against such unintended consequences, we recommend that the stakeholders and State Engineer strongly consider revising parts of the Plan to better: (1) ensure that the complete range of values and goals related to groundwater in the basin are addressed and protected; (2) ensure adequate representation of agricultural water uses and the public interest on the Advisory Board over the long-term; (3) provide for transparency of the terms and procedures under which the proposed Water Manager will make decisions regarding proposed transfers and other matters affecting groundwater use in the Valley; and (4) ensure that Diamond Valley water users and residents have an adequate opportunity to be heard and a meaningful role in decisionmaking processes affecting groundwater use in the Valley.