

**IN THE SUPREME COURT OF THE STATE OF NEVADA**

**Case No. 81224**

DIAMOND NATURAL RESOURCES PROTECTION & CONSERVATION  
ASSOCIATION; J&T FARMS, LLC; GALLAGHER FARMS LLC; JEFF  
LOMMORI; M&C HAY; CONLEY LAND & LIVESTOCK, LLC; JAMES  
ETCHEVERRY; NICK ETCHEVERRY; TIM HALPIN; SANDI HALPIN;  
DIAMOND VALLEY HAY COMPANY, INC.; MARK MOYLE FARMS LLC;  
D.F. & E.M. PALMORE FAMILY TRUST; WILLIAM H. NORTON;  
PATRICIA NORTON; SESTANOVICH HAY & CATTLE, LLC; JERRY  
ANDERSON; BILL BAUMAN; DARLA BAUMAN; TIM WILSON, P.E.,  
NEVADA STATE ENGINEER, DIVISION OF WATER RESOURCES,  
DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES;  
AND EUREKA COUNTY;

Appellants,

v.

DIAMOND VALLEY RANCH, LLC; AMERICAN FIRST FEDERAL, INC.;  
BERG PROPERTIES CALIFORNIA, LLC; BLANCO RANCH, LLC; BETH  
MILLS, TRUSTEE MARSHALL FAMILY TRUST; TIMOTHY LEE BAILEY;  
CONSTANCE MARIE BAILEY; FRED BAILEY; CAROLYN BAILEY;  
SADLER RANCH, LLC; IRA R. RENNER; AND MONTIRA RENNER,

Respondents.

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Appeal From Order Granting Petitions for Judicial Review  
Seventh Judicial District Court of Nevada Case No. CV-1902-348

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**JOINT APPENDIX  
VOLUME IX**

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LEONARD LAW, PC  
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## AFFIRMATION

The undersigned does hereby affirm that the preceding document does not contain the social security number of any person.

Date: September 23, 2020

/s/ Debbie Leonard

Debbie Leonard (Nevada Bar No. 8260)

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*Attorney for DNRPCA Appellants*

## **CERTIFICATE OF SERVICE**

I HEREBY CERTIFY that I am an employee of Leonard Law, PC, and that on September 23, 2020, the foregoing document was electronically filed with the Clerk of the Court for the Nevada Supreme Court by using the Nevada Supreme Court's E-Filing system (E-Flex). Participants in the case who are registered with E-Flex as users will be served by the EFlex system. All others will be served by first-class mail.

/s/ Tricia Trevino  
An employee of Leonard Law, PC

Case No.: CV1902-348 (consolidated with Case Nos. CV1902-349 and CV-1902-350)

Dept. No.: 2

NO. \_\_\_\_\_ FILED

NOV 26 2019

By  Eureka County Clerk

**IN THE SEVENTH JUDICIAL DISTRICT COURT OF THE STATE OF NEVADA  
IN AND FOR THE COUNTY OF EUREKA**

TIMOTHY LEE & CONSTANCE MARIE  
BAILEY; FRED & CAROLYN BAILEY;  
IRA R. & MONTIRA RENNER; and  
SADLER RANCH, LLC;

Petitioners,

vs.

TIM WILSON, P.E., Nevada State Engineer,  
DIVISION OF WATER RESOURCES,  
DEPARTMENT OF CONSERVATION  
AND NATURAL RESOURCES,

Respondent, and

EUREKA COUNTY; and DIAMOND  
NATURAL RESOURCES PROTECTION  
AND CONSERVATION ASSOCIATION,  
et al.,

Intervenors.

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**REPLY BRIEF OF PETITIONERS SADLER  
RANCH, LLC AND IRA R. & MONTIRA  
RENNER**

COME NOW, Petitioners SADLER RANCH, LLC, a Nevada limited-liability company ("Sadler Ranch"), and IRA R. & MONTIRA RENNER, husband and wife ("Renner"), by and through their counsel, DAVID H. RIGDON, ESQ. and PAUL G. TAGGART, ESQ., of the law firm of TAGGART & TAGGART, LTD., and hereby file their Reply Brief in this matter. This reply brief is based on all papers and pleadings relating to this matter currently on file with the Court and any oral argument the Court may entertain.

JA1786

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## Other Authorities

26	BLACK’S LAW DICTIONARY (10th ed. 2014).....	4, 9
27	Grace Danberg, CONFLICT ON THE CARSON: A STUDY OF WATER LITIGATION IN WESTERN NEVADA (1975).....	1



1	Gregory J. Hobbs, Jr., <i>Priority: The Most Misunderstood Stick in the Bundle</i> , 32 Env'tl. L. 37 (2002) .....	6
2	Jason King, P.E., Nevada State Engineer (2016). The Australian Approach to Water Management: A Pilot Project in Diamond Valley, Nevada. 2016 Western State Engineer's Annual Conference.....	1
3	Stuart Banner, <i>AMERICAN PROPERTY: A HISTORY OF HOW, WHY, AND WHAT WE OWN</i> (2011) .....	6
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6	<i>Minutes of the Assemb. Comm. on Gov. Affairs</i> , May 4, 2011 .....	12
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## INTRODUCTION

The central question in this case is whether a simple majority of water right holders in a basin can vote to exempt themselves from Nevada’s long-established water laws and doctrines and thereby seize the private property of others for their own benefit. Petitioners assert that they cannot.

With only a brief interruption, the prior appropriation doctrine has reigned supreme in Nevada since statehood.<sup>1</sup> The fundamental principles of this doctrine are first in time, first in right and beneficial use. There is no dispute that the Diamond Valley Groundwater Management Plan (“GMP”) violates both of these principles.<sup>2</sup> The only question is whether the Legislature, when it adopted NRS 534.037 and 534.110(7), explicitly authorized the State Engineer to abrogate this foundational doctrine.

The State Engineer’s position on this question has varied with time. In 2016, he publicly stated that additional legislative action would be required to grant him authority to approve a GMP that deviates from prior appropriation. As a result, he submitted a bill to the Legislature asking them to do just that.<sup>3</sup> After the bill was rejected, the State Engineer went ahead and approved the GMP anyway, arguing instead that the Legislature had *impliedly* authorized a deviation from prior appropriation when it adopted NRS 534.037 and 534.110(7).<sup>4</sup> However, he also acknowledged that the statutes in question are ambiguous and contain “scarce direction concerning how a plan must be created or what the confines of any plan must be.”<sup>5</sup> Now, in his answering brief, the State Engineer changes position yet again, claiming that the statutes are “unambiguous” and the legislative intent is clear on its face.<sup>6</sup>

The State Engineer had it right the first time. Neither NRS 534.037 nor 534.110(7) contain express language authorizing a GMP to deviate from prior appropriation doctrine. The legislative

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<sup>1</sup> The prior appropriation doctrine was followed by the Nevada Supreme Court from its inception. *See, e.g., Lobdell v. Simpson*, 2 Nev. 274 (1866). However, in 1872, the Court reversed course and adopted the English common law riparian doctrine. *Van Sickle v. Haines*, 7 Nev. 249 (1872). This decision was wildly unpopular and denounced in newspapers across the state. *See* Grace Danberg, CONFLICT ON THE CARSON: A STUDY OF WATER LITIGATION IN WESTERN NEVADA 13-18 (1975). In 1885, the Supreme Court corrected its error, overruled *Van Sickle*, and re-adopted prior appropriation. *Jones v. Adams*, 19 Nev. 78, 84-88, 6 P. 442, 444-48 (1885). The outfall from *Van Sickle* stands as a stark warning about the dangers of radically altering Nevada’s prior appropriation doctrine by judicial fiat.

<sup>2</sup> *See* SE ROA 6 (“the GMP does deviate from the strict application of the prior appropriation doctrine”) 10-11.

<sup>3</sup> *See* S.B. 73, 2017 Leg., 79th Sess. (Nev. 2017); S.B. 269, 2017 Leg., 79th Sess. (Nev. 2017); *see also* Jason King, P.E., Nevada State Engineer (2016). The Australian Approach to Water Management: A Pilot Project in Diamond Valley, Nevada. 2016 Western State Engineer’s Annual Conference. (Sadler/Renner Opening Br. Exhibit 1 at 21).

<sup>4</sup> SE ROA 6-8.

<sup>5</sup> SE ROA 7.

<sup>6</sup> State Engineer’s Answering Br. at 17.

1 history also does not support Respondents' assertion of repeal by implication. Therefore, because in  
2 Order 1302 the State Engineer found that "the GMP does deviate from the strict application of the prior  
3 appropriation doctrine,"<sup>7</sup> his approval of the GMP was arbitrary, capricious, and an abuse of discretion.

4 The proper interpretation and application of the statutes at issue in this case are questions of first  
5 impression in Nevada. These statutes were adopted in 2011 and Diamond Valley is the first basin where  
6 they have been applied. Accordingly, the Court should proceed cautiously, understanding that any legal  
7 determinations made in this case will have implications well beyond the confines of Diamond Valley.

### 8 FACTUAL BACKGROUND

9 For the sake of brevity, Petitioners hereby incorporate the factual background from their opening  
10 brief. However, Respondents have made certain factual misstatements that need to be corrected.

11 Eureka County inaccurately asserts both that "Petitioners did not actively participate" in  
12 development of the plan and provided only "desultory participation."<sup>8</sup> The State Engineer makes similar  
13 allegations stating that Petitioners did not regularly attend or participate in the meetings where the GMP  
14 was developed and that Sadler Ranch only attended the first meeting and no others.<sup>9</sup> Both the State  
15 Engineer and Eureka County also claim that Renner and Sadler Ranch failed to raise their issues and  
16 suggest alternatives prior to filing this appeal.<sup>10</sup> These allegations are false and belied by the record.

17 Both Renner and Sadler Ranch actively participated in the meetings related to development of  
18 the GMP. A review of the record shows that Sadler Ranch attended no less than eleven of the GMP  
19 development meetings.<sup>11</sup> Renner attended no less than thirteen of them,<sup>12</sup> and was an active member of  
20 the advisory board.<sup>13</sup> At these meetings, Renner and Sadler Ranch raised many of the same issues that  
21

22  
23 <sup>7</sup> SE ROA 6.

24 <sup>8</sup> Eureka County's Answering Br. at 3

25 <sup>9</sup> State Engineer's Answering Br. at 1-2. The State Engineer then adds in a footnote that Renner did, in fact, attend workshops  
26 "somewhat regularly," attending thirteen of the twenty-eight meetings, but that Sadler Ranch only attended one meeting.  
27 State Engineer's Answering Br. at 2 n.1.

28 <sup>10</sup> State Engineer's Answering Br. at 2; Eureka County's Answering Br. at 3.

<sup>11</sup> SE ROA 286, 293, 301, 304, 311, 387, 358, 382, 404, 421, 449. (Sadler Ranch was represented at meetings by either  
Doug Frazer, one of the members, or Levi Shoda, the ranch manager. See ROA 677.)

<sup>12</sup> SE ROA 293, 299, 304, 311, 338, 345, 357, 382, 421, 431, 432, 442, 454.

<sup>13</sup> Any attendance documentation of the advisory board was not included in the record, but the advisory board held meetings  
in addition to the twenty-eight referenced by the State Engineer, many of which Renner attended and participated in as a  
member of the board. SE ROA 230 n.12, 278-82, 593.

1 are being raised on appeal now. Additionally, Renner and Sadler Ranch participated in all State  
2 Engineer proceedings related to the GMP.<sup>14</sup>

3 The present appeal was necessitated by the fact that Renner and Sadler Ranch's concerns were  
4 wholly ignored and never properly addressed.<sup>15</sup> Instead, the GMP proponents simply told them to get  
5 over their grievances and referred to them as "narrow minded."<sup>16</sup> When issues were raised about how  
6 the plan failed to address continuing drawdowns, unreasonable lowering of the groundwater levels, and  
7 harm to non-GMP water users, the response was that these concerns were of no value and served only  
8 to "create a tone of conflict."<sup>17</sup>

9 Sadler Ranch and Renner were not the only participants made to feel unwelcome. Other water  
10 right holders have described the meetings as "very intense" and stated that dissenting voices were made  
11 to feel unwelcome.<sup>18</sup> Contrary to Respondents' representations, the process of developing the GMP was  
12 *not* characterized by a spirit of openness and willingness to hear, understand, and address everyone's  
13 concerns; rather, only those who were generally supportive of the approach taken had their concerns  
14 heard, understood, and addressed.

15 Eureka County also makes certain claims respecting Petitioners' mitigation rights. Contrary to  
16 these claims, Sadler Ranch's mitigation rights have not been finally determined. Instead, Eureka County  
17 has appealed this Court's determination regarding those rights to the Nevada Supreme Court and that  
18 appeal is ongoing. Furthermore, this Court granted Sadler Ranch's mitigation right subject to the final  
19

20 <sup>14</sup> SE ROA 593, 596-641, 660-79.

21 <sup>15</sup> When opponents brought up the fact that the plan did not account for non-irrigation water use, these comments were  
22 disregarded since these other uses represent "less than 5% of the total use." SE ROA 460. However, this 5% of the total  
23 allocation actually represents over 15-20% of the perennial yield (without accounting for vested right and mitigation rights,  
24 which bump this proportionate share up to over a third of the perennial yield). SE ROA 3, 17, 481. (When using the  
25 groundwater management plan numbers, the total exceeds 20%, when using the State Engineer's unsupported accounting,  
the number is 15%). When complaining that vested owners are not properly represented or protected by the plan, the answer  
was merely that vested right owners are not curtailed under the plan so their exclusion was proper, and that the plan is not  
intended to mitigate harm. SE ROA 463, 464, 465, 467. When complaining about the unfairness of the juniors' majority  
rule, the group admitted that "juniors do outnumber seniors," but that this was permissible because some seniors supported  
the plan as written. SE ROA 461.

26 <sup>16</sup> SE ROA 460, 462.

27 <sup>17</sup> SE ROA 468.

28 <sup>18</sup> SE ROA 723 (Public comment of Carolyn Bailey); SE ROA 679-80 (Public Comment of Kenny Benson) ("anybody who  
was perceived as not being in favor with the ongoing bandwagon was not particularly well-received."); SE ROA 684 (Public  
Comment of Ari Erikson) (describing how domestic well owners whose wells had run dry were "too afraid" to participate in  
the discussion on the GMP).

1 outcome of the adjudication proceeding. That proceeding is also ongoing and Sadler Ranch asserts that  
2 its mitigation right does not, at this time, fully reflect the quantity of water it is entitled to receive.

3 Even if the mitigation rights did encompass the full amount of water that Sadler Ranch is entitled  
4 to, they do not constitute full mitigation for the harm done to vested rights. Vested right holders are  
5 entitled to receive their mitigation water at no additional cost or expense.<sup>19</sup> Because the use of the  
6 mitigation rights still requires Sadler Ranch to pay for the costs of drilling, operating, and maintaining  
7 the wells used to divert the water, they have not been made whole.

8 Finally, Eureka County's assertion that Renner has not applied for mitigation rights under Order  
9 1226 is incorrect. Renner recently filed such applications with the State Engineer. However, regardless  
10 of whether Sadler Ranch and Renner have applied for mitigation rights, and regardless of whether such  
11 rights are exempt from the GMP, neither party is estopped from challenging Order 1302 or contesting a  
12 GMP that allows continued over-pumping that will cause further declines to water levels at their ranches.

### 13 STANDARD OF REVIEW

14 State Engineer decisions must be supported by substantial evidence in the record and must not  
15 be arbitrary, capricious, an abuse of discretion, or otherwise affected by prejudicial error.<sup>20</sup> A decision  
16 is arbitrary if it is "made without consideration of or regard for facts, circumstances, fixed rules, or  
17 procedures."<sup>21</sup> A decision is capricious if it is "contrary to the evidence or established rules of law."<sup>22</sup>  
18 A misapplication or misinterpretation of Nevada's water laws in a State Engineer order is, by definition,  
19 both arbitrary and capricious.<sup>23</sup>

20 *Dry Gulch Ditch Co. v. Hutton*, 133 P.2d 601 (Or. 1943). This Court also previously stated that "Sadler Ranch's mitigation rights are meaningless if the water source from which [the] mitigation rights [are] received is depleted through over-pumping by junior appropriators." Order Granting in Part and Denying in Part Mot. to Dismiss First Am. Pet. for Curtailment in Diamond Valley at 5, *Sadler Ranch, LLC v. Jason King, P.E., et al.*, No. CV-1409-204 (Seventh Jud. Dist. Ct. Nev. Jul. 15, 2016).

21 *Pyramid Lake Paiute Tribe of Indians v. Washoe County*, 112 Nev. 743, 751, 918 P.2d 697, 702 (1996) (citing *Jim L. Shetakis Distrib. Co. v. State, Dep't of Taxation*, 108 Nev. 901, 903, 839 P.2d 1315, 1317 (1992)). *Office of State Eng'r v. Morris*, 107 Nev. 699, 701, 819 P.2d 203, 205 (1991). *Revert v. Ray*, 95 Nev. 782, 787, 603 P.2d 262, 264-65 (1979).

22 *Arbitrary*, BLACK'S LAW DICTIONARY (10<sup>th</sup> ed. 2014).

23 *Capricious*, BLACK'S LAW DICTIONARY (10<sup>th</sup> ed. 2014).

24 *See King v. St. Clair*, 134 Nev. 137, 141, 414 P.3d 314, 317 (2018) (finding that the State Engineer's misapplication of Nevada's laws regarding abandonment was arbitrary and capricious.).

1 All State Engineer decisions must include “findings in sufficient detail to permit judicial  
2 review”<sup>24</sup> and “must clearly resolve all the crucial issues presented” to him.<sup>25</sup> A reviewing court must  
3 also consider whether the decision was based on a consideration of the relevant factors or “whether there  
4 has been a clear error of judgment.”<sup>26</sup> The State Engineer’s interpretations of Nevada’s water laws are  
5 also “not entitled to deference.”<sup>27</sup> Instead, this Court must review all legal questions on a de novo  
6 basis.<sup>28</sup>

## 7 ARGUMENT

### 8 I. Prior Appropriation Is The Foundational Doctrine Of Nevada’s Water Laws.

9 Prior appropriation has been the basis of Nevada’s water law since statehood. This doctrine  
10 applies a “first in time, first in right” principle to all appropriations of water.<sup>29</sup> Every water right,  
11 whether vested, permitted, or for a domestic well, is assigned a relative priority date. This priority date  
12 is an essential component of the water right that cannot be stripped away without damaging the right  
13 itself.<sup>30</sup> Respondents claim that (1) the Legislature expressly authorized junior priority users to strip  
14 away the priority rights of senior users, and (2) strict application of the prior appropriation doctrine will  
15 result in economic catastrophe. Respondents are wrong on both counts.

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22 <sup>24</sup> *Revert*, 95 Nev. at 787, 603 P.2d at 265.

23 <sup>25</sup> *Revert*, 95 Nev. at 787, 603 P.2d at 264-65.

24 <sup>26</sup> *City of Reno v. Reno Police Protective Ass’n*, 118 Nev. 889, 894, 59 P.3d 1212, 1216 (2002); *Motor Vehicle Mfrs. Ass’n*  
25 *of U.S. v. State Farm Mut. Auto. Ins.*, 463 U.S. 29, 30-31, 103 S. Ct. 2856, 2860-61 (1983) (an agency’s action is deemed  
26 arbitrary and capricious if it was not based on a full consideration of all the relevant statutory factors).

27 <sup>27</sup> *Sierra Pac. Indus. v. Wilson*, 135 Nev. Adv. Op. 13, 440 P.3d 37, 40 (2019); *see also St. Clair*, 134 Nev. at 139, 414 P.3d  
28 at 316 (Courts “review purely legal questions de novo.”); *Pyramid Lake Paiute Tribe of Indians v. Ricci*, 126 Nev. 521, 525,  
29 245 P.3d 1145, 1148 (2010) (Court must “review purely legal questions *without deference* to the State Engineer’s ruling.”)  
(emphasis added); *Andersen Family Assocs. v. Ricci*, 124 Nev. 182, 186, 179 P.3d 1201, 1203 (2008) (Courts have “authority  
to undertake an independent review of the State Engineer’s statutory construction, *without deference* to the State Engineer’s  
determination.”) (emphasis added); *Town of Eureka v. Office of State Eng’r of State of Nev. Div. of Water Res.*, 108 Nev.  
163, 165-66, 826 P.2d 948, 950 (1992) (State Engineer’s interpretation of a statute is “not controlling.”).

<sup>28</sup> *St. Clair*, 134 Nev. at 139, 414 P.3d at 316.

<sup>29</sup> *Lobdell*, 2 Nev. 274 (“he has the best right who is first in time.”).

<sup>30</sup> *Wilson v. Happy Creek, Inc.*, 135 Nev. Adv. Op. 41, 448 P.3d 1106, 1115 (2019).

1           A.     The priority date of a water right is its most valuable element and cannot be  
2                 abrogated by a simple majority vote.

3                 1.     The importance of priority

4                 The priority date is the most important element in the ‘bundle of rights’ that we refer to as a  
5                 water right.<sup>31</sup> This is especially true in the western United States where water shortages occur with  
6                 frequency. As one Court has noted, “to deprive a person of his priority is to deprive him of a most  
7                 valuable property right.”<sup>32</sup> This is because “the chief value of an appropriation consists in its priority  
8                 over other appropriations . . . .”<sup>33</sup> Because the relative priority date of a water right is so important,  
9                 Courts have viewed “a priority in a water right [as] property in itself.”<sup>34</sup> Just this past September, the  
10                Nevada Supreme Court, citing long-standing precedent, reiterated that “a loss of priority that renders  
11                rights useless ‘certainly affects the rights’ value’ and ‘can amount to a de facto loss of rights.’”<sup>35</sup>

12               When a water right holder has a senior priority date, that holder is ensured that he will receive  
13               his water *during a time of water shortage*. This makes such rights more valuable than those with junior  
14               priority dates. Accordingly, holders of senior rights have a reasonable investment-backed expectation  
15               in the security that their priority date provides. Decisions regarding whether and how much to invest in  
16               a property are often based on the priority date of the water rights associated therewith precisely because  
17               that priority determines whether there will be a dependable source of water *in the event of a shortage*.

18               2.     Junior priority users cannot strip away the senior priorities of other users  
19                 for their own benefit.

20               Respondents frame the GMP development process as a voluntary collaboration of water right  
21               holders working together to find a solution to the over-pumping problem. In reality, the Diamond Valley  
22               GMP is little more than a collaboration among junior water right holders to abolish the priority rights of  
23               the senior water right holders.<sup>36</sup> While “[o]ur democratic system of government is founded upon the

24               <sup>31</sup> Stuart Banner, AMERICAN PROPERTY: A HISTORY OF HOW, WHY, AND WHAT WE OWN 45 (2011) (describing the ‘bundle  
25               of rights’ theory of property).

26               <sup>32</sup> *Whitmore v. Murray City*, 154 P.2d 748, 751 (Utah 1944).

27               <sup>33</sup> *Whitmore*, 154 P.2d at 751.

28               <sup>34</sup> *Colo. Water Conservation Bd. v. City of Central*, 125 P.3d 424, 434 (Colo. 2005), *Nichols v. McIntosh*, 34 P. 278, 280  
(Colo. 1893).

<sup>35</sup> *Happy Creek, Inc.*, 135 Nev. Adv. Op. 41, 448 P.3d at 1115 (citing *Andersen Family Assocs.*, 124 Nev. at 190-91, 179  
P.3d at 1206) (internal quotations omitted); see also Gregory J. Hobbs, Jr., *Priority: The Most Misunderstood Stick in the  
Bundle*, 32 Env’tl. L. 37, 43 (2002) (“The priority of a water right is . . . its most important . . . feature.”).

<sup>36</sup> The fact that some senior water right holders voted in favor of the plan is not dispositive of this statement. Several  
individuals hold both junior and senior water rights in the basin. Some of these individuals will end up receiving more water

1 notion that, in most instances, the views and wishes of the majority are entitled to prevail,”<sup>37</sup> this  
2 principle does not condone a majority using its power to take valuable property from a minority.

3 The prior appropriation doctrine allows for the voluntary sale and movement of water rights.<sup>38</sup>  
4 Senior water right holders are allowed to voluntarily gift, sell, or lease their rights to a junior user to  
5 allow the junior user to continue pumping. A GMP can be used to accommodate such voluntary  
6 exchanges without running afoul of prior appropriation.

7 But, a GMP cannot force senior right holders to transfer their property to other private parties.<sup>39</sup>  
8 And even if it could, just compensation would be required.<sup>40</sup> Here, junior priority water right holders  
9 admitted they had opportunities to buy out senior water right holders, but chose not to exercise this  
10 option.<sup>41</sup> Instead, they bought less expensive junior priority rights.<sup>42</sup> The record shows that during the  
11 early stages of development of the GMP, participants indicated that the plan should include provisions  
12 for compensating senior right holders through a “water right buyout program.”<sup>43</sup> But this idea was later  
13 discarded in favor of the heavy-handed approach of simply stripping away senior priority dates without  
14 any compensation.

15 The ability of the water users in Diamond Valley to develop a GMP under NRS 534.037 does  
16 not authorize junior right holders to ignore the priority rights of senior right holders. Despite this, the  
17 more numerous junior users in Diamond Valley are using the GMP process as a guise to effectively take  
18 water from senior users without any compensation or mitigation. In his answering brief, the State  
19 Engineer admits that the water right holders developed the GMP “aiming to reduce pumping and  
20 stabilize groundwater levels in the basin *to avoid curtailment by priority.*”<sup>44</sup> However, the method

21  
22 under the GMP than they would just from their senior rights because of the much greater quantity of junior rights that they  
own.

23 <sup>37</sup> *Dudley v. Kerwick*, 421 N.E.2d 797, 802 (N.Y. 1981).

24 <sup>38</sup> NRS 533.382, 533.345, 533.370.

25 <sup>39</sup> NEV. CONST. art. I, §22(1) (“Public use shall not include the direct or indirect transfer of any interest in property . . . from  
one private party to another private party.”). The State Engineer has clearly stated that the plan is binding on all irrigation  
right holders even those who did not sign the petition or vote in favor of the plan. ROA 458, 679.

26 <sup>40</sup> NEV. CONST. art. I, §8(6) (“Private property shall not be taken for public use without just compensation having first been  
made . . . .”); U.S. CONST. amend. V (“nor shall private property be taken for public use, without just compensation.”).

27 <sup>41</sup> SE ROA 735:23 (Public Comment of Dusty Moyle).

28 <sup>42</sup> SE ROA 735 (Public Comment of Dusty Moyle) (“in the last ten years I’ve been purchasing land and it’s not been senior.  
It’s been junior.”).

<sup>43</sup> SE ROA 252, 253, 262, 265.

<sup>44</sup> State Engineer’s Answering Br. at 7 (emphasis added).



1 employed to accomplish this purpose is to strip away the priority of the senior users, take their water,  
2 and distribute it among the junior users for their own private benefit. While it is understandable that the  
3 junior users are in favor of such a plan, they knew that their water rights were in a junior position when  
4 they acquired them.<sup>45</sup> In its essence, the GMP is nothing more than an attempt to shield junior right  
5 holders from the consequences of their having acquired junior-priority rights.

6 **B. Respondents are incorrectly conflating the prior appropriation doctrine with the**  
7 **remedy of curtailment.**

8 Placing limits on the exercise of a particular remedy does not, either expressly or impliedly,  
9 abrogate the underlying legal doctrine that the remedy enforces. This is especially true when multiple  
10 other remedies remain available to enforce the legal doctrine.

11 Respondents confuse the remedy of curtailment with the doctrine of prior appropriation in an  
12 attempt to claim that NRS 534.110(7)'s language, stating that the State Engineer is not *required* to order  
13 a curtailment if a GMP is approved, somehow expresses the Legislature's intent to abrogate prior  
14 appropriation doctrine. This claim fails for two reasons. First, curtailment is just one of many remedies  
15 the State Engineer has at his disposal to enforce prior appropriation. Second, contrary to DNRCPA's  
16 claim, NRS 534.110(7) does not prohibit a curtailment if a GMP is submitted and approved.

17 The State Engineer has multiple tools at his disposal to enforce prior appropriation. Curtailment  
18 is just one of these tools. Instead of a basin-wide curtailment, the State Engineer can also order  
19 individual junior pumpers to halt their pumping if it interferes with an existing senior right.<sup>46</sup> He can  
20 also issue an order prohibiting the drilling of new wells if such wells would cause an undue interference  
21 with existing wells in the basin.<sup>47</sup> The State Engineer can also establish a rotating schedule for water  
22 use, as long as senior rights are not injured.<sup>48</sup> Another option is to call for proofs of beneficial use and  
23 cancel any permits whose owners fail to place their water to beneficial use (a key component of the prior  
24

25 <sup>45</sup> SE ROA 735 (Public Comment of Dusty Moyle) ("in the last ten years I've been purchasing land and it's not been senior.  
26 It's been junior.").

27 <sup>46</sup> See, e.g., NRS 534.020 (all appropriations of groundwater are subject to existing rights.); NRS 534.110(5) (requiring the  
28 State Engineer to impose a condition on every permit stating that withdrawals under the permit may be limited or prohibited  
to prevent unreasonable adverse effects on existing domestic wells.).

<sup>47</sup> NRS 534.110(8).

<sup>48</sup> NRS 533.075.

1 appropriation system).<sup>49</sup> In addition, he can punish users who waste water by requiring such users to  
2 replace 200 percent of the amount wasted.<sup>50</sup> Finally, he can declare permits and certificates forfeit where  
3 the owners do not regularly place the water to beneficial use.<sup>51</sup> All of these options were discussed  
4 during the early development of the GMP.<sup>52</sup>

5 However, even if elimination of a remedy also abrogated the legal doctrine the remedy enforces,  
6 that is not what NRS 534.110(7) does. Nowhere in the language of NRS 534.110(7) is the State Engineer  
7 prohibited from ordering a *discretionary* curtailment under NRS 534.110(6), even if a GMP is approved.  
8 Instead, the statute simply says that the State Engineer is not *required* to impose that remedy.  
9 Accordingly, curtailment has not been removed from the State Engineer's toolbox of remedies. And  
10 because a discretionary curtailment by priority remains an option even if a GMP is adopted, the  
11 Legislature cannot be presumed to have abrogated the prior appropriation doctrine.

12 **C. Requiring a GMP to adhere to prior appropriation will not result in catastrophe.**

13 Respondents describe a 'parade of horrors'<sup>53</sup> that they allege will occur in Eureka County if  
14 curtailment by priority is required. And Petitioners do not disagree that, in a basin whose major  
15 economic activity is agriculture, reductions in pumping *may* be accompanied by reductions in overall  
16 economic output. However, no one believes that current pumping levels in Diamond Valley are  
17 sustainable. Pumping has exceeded available supply for forty-nine years<sup>54</sup> and this situation cannot  
18 continue. Whether pumping is reduced as a result of a curtailment order, a GMP, or because water level  
19 declines have made pumping uneconomical (i.e., the basin has been pumped dry),<sup>55</sup> these unsustainable  
20 levels of pumping will eventually be halted. In other words, Respondents' alleged economic  
21 consequences will happen regardless of the method by which pumping is reduced.

22  
23 <sup>49</sup> NRS 533.400.

24 <sup>50</sup> NRS 534.193(1), 533.460, 533.563, 533.481. The State Engineer argues that calling for proofs would encourage users to  
25 waste water in order to try and prove up a maximal amount. This provision provides the State Engineer with an enforcement  
26 mechanism to prevent such activity.

27 <sup>51</sup> NRS 534.090.

28 <sup>52</sup> SE ROA 259.

<sup>53</sup> *Parade of Horribles*, BLACK'S LAW DICTIONARY (10th ed. 2014) (a "litany of detrimental or retrograde consequences that  
will, in the view of an opponent of some proposed action, occur if the action was taken.").

<sup>54</sup> SE ROA 625.

<sup>55</sup> SE ROA 105 (noting that "future utilization of existing permits will result in massive local overdraft and accelerated rates  
of water-level decline.").

1 In addition, the issue of economic impact is wholly irrelevant to these proceedings. First, even  
2 if Order 1302 is overturned, Respondents have ample time before a curtailment is mandated to develop  
3 an alternative GMP that complies with Nevada's laws.<sup>56</sup> The Diamond Valley basin was designated a  
4 Critical Management Area ("CMA") on August 25, 2015. Accordingly, under NRS 534.110(7)  
5 curtailment is not mandated to occur until August 25, 2025. This gives Respondents six years to develop  
6 a new plan, or amend the current plan, to comply with Nevada water law.

7 Second, there is no exception in the prior appropriation doctrine for economic hardship.  
8 Nevada's water resources are limited. Since 1982, when the State Engineer held a hearing to consider  
9 curtailment in Diamond Valley, water users in the basin have been on public notice that their levels of  
10 pumping are unsustainable and they are living on borrowed time. Refusing to enforce Nevada's water  
11 laws because such enforcement might result in economic hardship is akin to authorizing people to rob  
12 banks because they need the money.

13 **II. The Legislature Did Not Authorize Water Users To Write Their Own Personal Water Law**  
14 **When It Adopted NRS 534.037.**

15 Respondents argue that the Legislature essentially gave water users in a basin a "blank check"  
16 to write their own personal water law when it adopted NRS 534.037 and 534.110(7). But nothing in the  
17 statutory text or legislative history indicates any such intent. And, when provided the opportunity to  
18 expressly declare that a GMP could deviate from prior appropriation, the Legislature declined to do so.

19 **A. The plain language of NRS 534.037 and 534.110(7) does not authorize an abrogation**  
20 **of prior appropriation.**

21 The prior appropriation doctrine is a long-standing and well-established principle of Nevada law.  
22 Accordingly, if the Legislature desires to overturn or create exceptions to that doctrine, it must do so  
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24  
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27 <sup>56</sup> Petitioners are not arguing that the State Engineer is prohibited from imposing a discretionary curtailment immediately or  
28 that his failure to do so is not an abuse of that discretion. Petitioners are merely pointing out that the State Engineer is not  
statutorily required to curtail pumping at this time.

1 with express language that clearly states that intent.<sup>57</sup> In other words, “[t]he Legislature is ‘presumed  
2 not to intend to overturn long-established principles of law’ when enacting a statute.”<sup>58</sup>

3 There is nothing in the express language of either NRS 534.037 or 534.110(7) that indicates an  
4 intent to abrogate prior appropriation in CMA-designated basins. The only place where priority is even  
5 mentioned in either statute is in NRS 534.110(7), which mandates a curtailment by priority if a GMP is  
6 not approved within ten years. A mandate to impose a particular remedy under a certain condition  
7 cannot be construed as express authorization by the Legislature to jettison prior appropriation altogether  
8 or allow junior users to ignore priority status of senior users.

9 In their answering briefs, Respondents, including the State Engineer, claim that the statutes are  
10 unambiguous and, because of this, Petitioners’ citations to legislative history are improper.<sup>59</sup> But this  
11 claim is belied by the State Engineer’s own finding in Order 1302 that the statutes contain “scarce  
12 direction concerning how a plan must be created or what the confines of any plan must be.”<sup>60</sup> A statute  
13 that contains “scarce direction” on what a GMP can or cannot do is, by definition, ambiguous.

14 In fact, in the section of Order 1302 where the State Engineer discusses prior appropriation, he  
15 does not recite any specific language from either statute that authorizes a deviation from the doctrine.  
16 Instead, the sole legal authority he cites to support his claim that “the legislature’s enactment of NRS §  
17 534.037 demonstrates legislative intent to permit action in the alternative to strict priority”<sup>61</sup> is the *Lewis*  
18 case from New Mexico.<sup>62</sup> But now, in his answering brief, the State Engineer concedes that *Lewis* is  
19 factually distinguishable from the present case and states that it was “not cited as authority for Order  
20 1302.”<sup>63</sup> The State Engineer’s disavowal of the only supporting authority cited in Order 1302 means  
21 that his legal conclusion lacks any support whatsoever. An administrative agency’s determination of a  
22 legal question that lacks any supporting legal authority is, by definition, an arbitrary and capricious act.

23  
24 <sup>57</sup> *W. Realty Co. v. City of Reno*, 63 Nev. 330, 344, 172 P.2d 158, 165 (1946) (“Where express terms of repeal are not used,  
the presumption is always against an intention to repeal . . .”) (citing *Ronnow v. City of Las Vegas*, 57 Nev. 332, 65 P.2d  
133, 145 (1937)).

25 <sup>58</sup> *Happy Creek, Inc.*, 135 Nev. Adv. Op. 41, 448 P.3d at 1111 (citing *Shadow Wood Homeowners Ass’n v. N.Y. Cmty.*  
*Bancorp, Inc.*, 132 Nev. 49, 59, 336 P.3d 1105, 1112 (2016)) (internal quotations omitted).

26 <sup>59</sup> State Engineer Answering Br. at 16-17; DNRCPA Answering Br. at 11-12.

27 <sup>60</sup> SE ROA 7.

28 <sup>61</sup> SE ROA 6.

<sup>62</sup> *State ex rel. Office of State Eng’r v. Lewis*, 150 P.3d 375 (N.M. 2006).

<sup>63</sup> State Engineer’s Answering Br. at 29.

1 The post-hoc rationalizations proffered in Respondents’ briefs also cannot save Order 1302. The  
2 Nevada Supreme Court has stated that the State Engineer cannot rely on post-hoc rationalizations  
3 contained in appellate briefs to correct for his failure to cite to adequate support in an order or ruling for  
4 his determinations.<sup>64</sup> Instead, his determinations must be supported by authorities or evidence that was  
5 available and cited to at the time the order was issued.<sup>65</sup> Because, by the State Engineer’s own  
6 admission, *Lewis* does not provide legal authority supporting his decision, and because he does not cite  
7 to any other legal authority in Order 1302, the State Engineer’s determination that the Legislature  
8 impliedly authorized a GMP to set aside the doctrine of prior appropriation was arbitrary, capricious,  
9 and an abuse of discretion.

10 **B. The legislative history of NRS 534.037 and 534.110(7) supports Petitioners’ position**  
11 **that the Legislature did not authorize a deviation from the prior appropriation**  
12 **doctrine.**

13 Respondents claim that the Legislature contemplated that water users would develop a plan  
14 substantially similar to the Diamond Valley GMP when it adopted NRS 534.037.<sup>66</sup> But that claim is  
15 belied by the very legislative history Respondents cited. During a hearing on the bill, Assemblyman  
16 Goicoechea indicated that junior users (not senior users) would bear the burden<sup>67</sup> to develop a  
17 “conservation plan that actually brings that water basin back into some compliance.”<sup>68</sup> He suggested  
18 that this could be done “by planting alternative crops, water conservation, or using different irrigation  
19 methods.”<sup>69</sup> Nowhere did he suggest that junior users would be allowed to vote away the priority rights  
20 of senior users. In addition, testimony from other participants at the hearing indicated that water users  
21 should “find *voluntary* ways to reduce over appropriation.”<sup>70</sup>

22 The GMP submitted by the project proponents is nothing like the voluntary water conservation  
23 plan promised by advocates of the 2011 bill. There is no requirement in the GMP for junior

24 <sup>64</sup> *Revert*, 95 Nev. at 787, 603 P.2d at 266.

25 <sup>65</sup> *Eureka County v. State Eng’r*, 131 Nev. 846, 855, 359 P.3d 1114, 1120 (2015).

26 <sup>66</sup> State Engineer’s Answering Br. at 29.

27 <sup>67</sup> *Minutes of the S. Comm. on Gov. Affairs*, May 23, 2011, at 16.

28 <sup>68</sup> *Minutes of the Assemb. Comm. on Gov. Affairs*, March 30, 2011, at 66-67 (emphasis added); *see also Minutes of the Assemb. Comm. on Ways and Means*, May 11, 2011, at 9 (Testimony of Assemb. Goicoechea stating that the bill contemplates a ten-year conservation plan).

<sup>69</sup> *Minutes of the S. Comm. on Gov. Affairs*, May 23, 2011, at 13.

<sup>70</sup> *Minutes of the Assemb. Comm. on Gov. Affairs*, May 4, 2011, at 20 (testimony of Andy Belanger, representing the Southern Nevada Water Authority) (emphasis added).

1 appropriators to plant lower water use crops or use different irrigation methods to conserve water. And,  
2 most importantly, the plan is not voluntary.<sup>71</sup> Instead, the GMP radically rewrites Nevada's water laws  
3 to forcibly seize water from seniors and vested right holders who did not support the plan for the benefit  
4 of the more numerous juniors. This is far from what the Legislature contemplated.

5 The GMP proponents were fully aware of the type of plan the 2011 Legislature was  
6 contemplating. The record shows that, initially, the proponents were actively considering the same types  
7 of provisions mentioned by Assemblyman Goicoechea, like changing crops to species that require less  
8 water per acre, increasing the efficiency of watering systems, removing end guns, implementing better  
9 irrigation practices, reducing the number of irrigated acres, educating farmers on more efficient  
10 irrigation techniques, restricting the season of use, implementing a water rights buyout program, and  
11 rotating fields out of production.<sup>72</sup> However, these options were later rejected when plan proponents  
12 decided instead to implement the water sharing program known as the Australian Plan promoted by  
13 Mike Young (which is little more than a scheme to strip away priority from senior right holders). The  
14 Australian scheme was not known to the Legislature in 2011<sup>73</sup> and, therefore, could not have been  
15 contemplated by them when they adopted NRS 534.037 and 534.110(7).

16 C. **When given a clear opportunity to expressly authorize a GMP to deviate from prior**  
17 **appropriation, the Legislature chose not to do so.**

18 In 2016, after reviewing drafts of the GMP that were based on the Australian scheme, the State  
19 Engineer determined that the existing statutory language would not allow him to approve the plan's  
20 violation of the prior appropriation doctrine.<sup>74</sup> Accordingly, he submitted what would become SB 73 to  
21 the 2017 Legislature. The bill proposed to amend NRS 534.037 to expressly authorize the State  
22 Engineer to approve a GMP that "[l]imit[s] the quantity of water that may be withdrawn under any  
23 permit or certificate or from a domestic well *on a basis other than priority.*"<sup>75</sup>

26 <sup>71</sup> SE ROA 678-79 (Statement of State Engineer Jason King that even water users who did not vote for or agree with the plan  
27 will be bound by its terms).

<sup>72</sup> SE ROA 252, 253, 256, 259, 260.

<sup>73</sup> Mike Young first presented his scheme to the advisory board during a workshop held on June 11, 2015. SE ROA 297.

<sup>74</sup> Sadler/Renner Opening Br. Exhibit 1.

<sup>75</sup> S.B. 73 at 3, 2017 Leg., 79th Sess. (Nev. 2017) (emphasis added).

1 SB 73 was introduced on February 17, 2017, and referred to the Senate Natural Resources  
2 Committee. The committee held a single hearing on the bill. At the hearing, supporters of the GMP  
3 made clear that the intention of the bill was to allow a GMP to disregard prior appropriation. For  
4 example, testimony from Jake Tibbitts, Eureka County's Natural Resources Manager, mirrors exactly  
5 the argument Respondents are now making in their briefs:

6 Severely over appropriating a basin and then allowing 60 years of  
7 overpumping, letting a community be developed, people's entire  
8 livelihoods staked in this community, and then saying "let's apply strict  
9 prior appropriation" would likely prove devastating to the community.  
10 We must have the flexibility within the law *for Critical Management Areas* to allow these local communities to find local solutions to keep  
communities intact while helping address the past mistakes of the State  
Engineer's office.<sup>76</sup>

11 Likewise, Denise Moyle, an ardent GMP proponent, testified that:

12 As an active member of the Groundwater Management Plan, I can tell you  
13 that the process has been long and difficult, and our community has  
14 persevered. We have come together and created a plan that is the fairest  
15 and most inclusive plan that we can put together to create an environment  
where everybody in the community gets to stay and continue working  
together. *SB 73 will give us the opportunity to implement the plan and  
move forward to rectify the problems.*<sup>77</sup>

16  
17 Importantly, the italicized portion of Ms. Moyle's testimony provides additional evidence that the GMP  
18 proponents believed, as the State Engineer did,<sup>78</sup> that SB 73 was essential to making the plan legal.

19 Others testified in opposition to the bill. Bob Marshall, an attorney representing senior right  
20 holders, explained the importance of the prior appropriation system and the need to protect seniors. He  
21 testified that:

22 The Allens have senior water rights. They also have junior water rights.  
23 I am concerned about how the proposed Groundwater Management Plan  
24 in Eureka County and Diamond Valley does not focus on a meaningful  
25 approach to compensating senior rights holders when their rights are  
denigrated. My client is not against groundwater management plans. I  
urge you to look at a method of compensating senior water right holders  
in a way that is consistent with the constitutional principle of not taking  
property without just compensation.<sup>79</sup>

27 <sup>76</sup> Minutes of the S. Comm. on Nat. Res., February 28, 2017, Exhibit F at 3 (emphasis in original).

28 <sup>77</sup> Minutes of the S. Comm. on Nat. Res., February 28, 2017, at 15 (emphasis added).

<sup>78</sup> Sadler/Renner Opening Br. Exhibit 1.

<sup>79</sup> Minutes of the S. Comm. on Nat. Res., February 28, 2017, at 14-15.

This history makes clear that the Legislature was presented with a crystal-clear policy choice between two competing views and rejected Mr. Tibbitts and Ms. Moyle’s arguments by declining to move SB 73 forward. In doing so, it affirmatively upheld prior appropriation. When, as here, the Legislature is given a clear choice between two policy alternatives, and decides to reject one of those alternatives in favor of the status quo, both the State Engineer and this Court should respect that choice. The State Engineer’s approval of the GMP after the Legislature explicitly rejected SB 73 was arbitrary, capricious, and an abuse of his discretion.

### III. Order 1302 Is Not Supported By Substantial Evidence In The Record.

All orders of the State Engineer must be based on substantial evidence in the record. Here, Order 1302 lacks such evidence. First, and foremost, the GMP does not include the necessary steps to remove the CMA designation. Second, in Order 1302 the State Engineer failed to properly analyze the evidence submitted in relation to five of the six factors required to be considered pursuant to NRS 534.037(2).

#### A. The GMP does not contain the necessary steps for removal of the CMA designation.

The essential facts of this case are undisputed. Diamond Valley has an established perennial yield of 30,000 acre-feet/annually. The basin has been over-pumped *in every single year* since 1970 (49 years total).<sup>80</sup> While some Respondents quibble over NRS 534.110(7)’s use of the adverb “consistently,”<sup>81</sup> no one can reasonably question whether a 100% occurrence of a condition is consistent.

The GMP continues this unacceptable condition *over the entire timeframe of the plan*. As shown in the table in Appendix G, there is not a single year in the plan where pumping will be less than the 30,000 acre-foot perennial yield.<sup>82</sup> In fact, even under the “Most Aggressive Reductions” schedule, pumping will only be reduced to 33,440 acre-feet/annually – a full 10% above the established perennial yield.<sup>83</sup> And the pumping listed in the table does not include all the pumping authorized in the basin. Domestic wells and non-irrigation water rights are authorized to pump an additional 5,486 acre-feet.<sup>84</sup>

<sup>80</sup> SE ROA 625.

<sup>81</sup> DNRCPA Answering Br. at 19.

<sup>82</sup> SE ROA 510.

<sup>83</sup> *Id.*

<sup>84</sup> The State Engineer allocates 234 acre-feet for domestic wells in the basin. SE ROA 3-4. Also, Table 1a of the GMP shows there are 5,252 acre-feet allocated to non-irrigation permits and certificates in the basin that are not subject to the GMP’s pumping reductions. SE ROA 481.



1 Also, water rights issued to Bailey, Sadler, and Venturacci, which are not subject to the GMP, total  
2 6,300 acre-feet more.<sup>85</sup> This means that, even at the end of the most aggressive reduction schedule,  
3 pumping will exceed 45,000 acre-feet/annually – a full 50% more than the available perennial yield.

4 Eureka County concedes that “in order for a groundwater management plan to meet the necessary  
5 steps for removal as a critical management area, the plan must *ensure* that withdrawals of groundwater  
6 eventually do not ‘consistently exceed the perennial yield of the basin.’”<sup>86</sup> Using this standard, the  
7 evidence shows that pumping will *never* be reduced below the perennial yield. Accordingly, the GMP  
8 does not meet the absolute minimum requirement for approval under NRS 534.037 referenced by Eureka  
9 County.

10 However, as the State Engineer stated in Order 1302, and the Petitioners argued in their opening  
11 brief, the true measure of whether the perennial yield is not being exceeded “is a stabilization of water  
12 levels.”<sup>87</sup> As the State Engineer explains, “as long as recharge and discharge are ultimately balanced  
13 then an equilibrium condition can be reached and the goal of the GMP to stabilize water levels can be  
14 achieved.”<sup>88</sup> But the plan the State Engineer approved does not contemplate a situation where total  
15 pumping is ever less than the perennial yield. Thus, even at the end of the plan, discharge will exceed  
16 recharge in the basin by more than 40%.

17 The hydrologic evidence in the record also shows that the pumping reductions will never succeed  
18 in balancing the recharge/discharge equilibrium. The United States Geological Survey (“USGS”)  
19 determined that, if pumping in the southern portion of the valley (where most of the junior permits are  
20 located) is greater than 12,000 acre-feet/annually, equilibrium will never be reached (i.e., groundwater  
21 levels will never stabilize).<sup>89</sup> Neither the State Engineer, nor the other Respondents, discuss or refute  
22 this scientific finding in either Order 1302 or their answering briefs.

23 <sup>85</sup> Sadler Ranch’s water right is 5,100 afa (Permits 82268 & 81720); Bailey’s water right is 408 afa (Permit 63497, Certificate  
24 16935); and Venturacci’s water right is 849 afa (Permits 81825, 82572, & 87661). Renner has also applied for a similar  
25 water right of 932 afa under Order 1226 but this application is still in process (Applications 89295 & 89296). Although the  
State Engineer did not include copies of these permits and application in his record on appeal, they are matters of fact that  
the Court can take judicial notice of pursuant to NRS 47.130 & 47.150.

26 <sup>86</sup> Eureka County Answering Br. at 15 (emphasis added).

27 <sup>87</sup> SE ROA 16.

28 <sup>88</sup> SE ROA 16.

<sup>89</sup> SE ROA 27; SE ROA 102. In 1968, as part of a cooperative water report project, the USGS authored, and the State  
Engineer published, Water Resource Bulletin No. 35 for the Diamond Valley Basin. SE ROA 20-133 (J.R. Harrill,  
*Hydrologic Response to Irrigation Pumping in Diamond Valley, Eureka and Elko Counties, Nevada, 1950-65, Water*

1 There is simply no evidence in the record showing that the pumping reductions will actually  
2 result in a stabilization of groundwater levels. The State Engineer and the GMP proponents had the  
3 tools available, in the form of the Dimond Valley groundwater model, to develop such evidence and  
4 consciously chose not to use them.<sup>90</sup> The State Engineer's failure to require proponents to use the best  
5 available science to evaluate whether the GMP will meet its stated goal of stabilizing groundwater levels  
6 was arbitrary, capricious, and an abuse of discretion. Accordingly, Order 1302 should be overturned.

7 **B. The State Engineer failed to properly consider the NRS 534.037(2) factors in Order**  
8 **1302.**

9 The State Engineer correctly notes that before adopting a GMP he must consider the factors set  
10 forth in NRS 534.037(2).<sup>91</sup> But Order 1302 mostly fails to do that. Rather, in Order 1302, the State  
11 Engineer references the six factors but then, with respect to five of them, fails to analyze or discuss how  
12 they relate to his review or consideration of the plan.<sup>92</sup> The State Engineer appears to have  
13 misinterpreted the statute as dictating elements that the plan must contain rather than elements he must  
14 consider when approving the plan. This is incorrect. Regardless of whether the GMP includes its own  
15 analysis, the statute requires the State Engineer to independently and neutrally evaluate all six factors in  
16 his order. Under the statute the State Engineer is required to take the information submitted with the  
17 plan, any supporting or contrary information submitted by members of the public, and any relevant  
18 information, data, scientific publications and tools already on file in his office, and perform a neutral  
19 analysis of each of the factors to determine whether the GMP includes the necessary steps for removal  
20 of the CMA designation. Without such an analysis, Order 1302 lacks substantial evidence and the State  
21 Engineer's approval of the GMP was arbitrary and capricious.<sup>93</sup>

22  
23  
24 *Resources Bulletin No. 35*, (Department of Conservation and Natural Resources, Division of Water Resources and U.S.  
25 Department of the Interior, Geological Survey), 1968.). This report found that even if pumping were limited to 12,000 acre-  
feet/annually in the south Diamond Valley area, it would still take 300-400 years for the basin to reach a new equilibrium  
condition (i.e., for groundwater level declines to cease). SE ROA 103.

26 <sup>90</sup> Eureka County faults Petitioners for not running the groundwater model themselves.

27 <sup>91</sup> State Engineer's Answering Br. at 14, 19.

28 <sup>92</sup> SE ROA 5. Petitioners agree and stipulate that the sixth factor (NRS 534.037(2)(f)) was discussed in Order 1302 and that,  
at the time Order 1302 was issued, no groundwater management plan then existed in Diamond Valley.

<sup>93</sup> *Motor Vehicle Mfrs. Ass'n of U.S.*, 463 U.S. at 30-31, 103 S. Ct. at 2860-61 (an agency's action is deemed arbitrary and  
capricious if it was not based on a full consideration of all the relevant statutory factors).

1 The first factor requires the State Engineer to consider the hydrology of the basin.<sup>94</sup> However,  
2 in Order 1302 the State Engineer conducted no independent analysis of the basin's hydrology. While  
3 he provides limited citations to Water Resources Bulletin No. 35,<sup>95</sup> he does not discuss any of the  
4 findings in that bulletin related to the ability of the aquifer to reach a new equilibrium in response to  
5 continued over-pumping in the southern portion of the valley. He also admits that while he has in his  
6 possession both extensive data related to basin hydrology and a working groundwater model that can be  
7 used as an analysis tools, he did not consider this information.<sup>96</sup> Instead, he states that "[g]roundwater  
8 modeling and hydrogeologic analysis are not the basis for the GMP's determination of pumping  
9 reduction rates and target pumping totals at the end of the plan."<sup>97</sup> He then summarily concludes,  
10 without citation or evidence, that "[t]he lack of a groundwater model or detailed hydrogeologic analysis  
11 does not preclude approval of the GMP as written."<sup>98</sup> In short, the State Engineer admitted in Order  
12 1302 that there was relevant evidence related the hydrology of the basin that he unilaterally decided not  
13 to use or consider. Such a response is the very definition of an arbitrary and capricious action that  
14 constitutes an abuse of discretion.

15 In Order 1302, the State Engineer also failed to analyze hydrologic impacts to vested rights.  
16 There is no discussion of what effect continued declines in groundwater levels will have on vested right  
17 holders' ability to access their water. The State Engineer is prohibited from taking any action that  
18 impairs senior vested rights.<sup>99</sup> Approval of a GMP in the face of hydrologic evidence showing that such  
19 rights will continue to be negatively impacted violates this prohibition.

20 The second factor concerns the physical characteristics of the basin.<sup>100</sup> In Order 1302, the State  
21 Engineer expressly refused to consider physical environmental factors, noting that it is "not necessary  
22 to explicitly identify certain areas of environmental concern" because the reductions in pumping would  
23

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24 <sup>94</sup> NRS 534.037(2)(a).

25 <sup>95</sup> SE ROA 3 n.3.

26 <sup>96</sup> Petitioners wholeheartedly agree with the State Engineer's statement that "[g]roundwater modeling is a helpful and  
informative tool for projecting the effects of pumping reduction and planning accordingly." SE ROA 16. That is what makes  
his decision not to use this tool to evaluate the GMP so baffling.

27 <sup>97</sup> SE ROA 16.

28 <sup>98</sup> SE ROA 17, 19.

<sup>99</sup> NRS 533.085.

<sup>100</sup> NRS 534.037(2)(b).

1 be benefit enough.<sup>101</sup> Additionally, during the public comment meeting, the State Engineer received  
2 evidence regarding the physical damage caused by land subsidence resulting from declining water  
3 levels.<sup>102</sup> But the State Engineer did not even mention this evidence in Order 1302 or consider how the  
4 physical characteristics of the basin were related to his consideration of the plan. A failure to consider  
5 and properly analyze evidence presented to him is the definition of an arbitrary and capricious action.

6 The third factor concerns the geographic spacing and location of withdrawals in the basin.<sup>103</sup>  
7 Order 1302 contains no analysis regarding the location of pumping in relation to existing rights. The  
8 record in this case contains specific and highly credible scientific evidence relating to how and where  
9 pumping should be restricted to bring the basin back into balance.<sup>104</sup> However, the State Engineer  
10 completely disregarded this evidence. Instead, the GMP forces reductions in pumping on irrigators in  
11 the north despite the fact that hydrologic evidence in the record shows that their pumping from these  
12 wells is not a significant contributing factor to the basin's massive water level declines.<sup>105</sup> This approach  
13 is also inconsistent with how the State Engineer has previously regulated the basin.<sup>106</sup> The State  
14 Engineer's failure in Order 1302 to analyze the location and spacing of the withdrawals in the basin,  
15 despite explicit legislative direction to do so, was arbitrary, capricious, and an abuse of his discretion.

16 The fourth factor concerns the quality of water in the basin.<sup>107</sup> Again, Order 1302 contains no  
17 analysis of how this element relates to the State Engineer's decision to approve the plan. The State  
18 Engineer did not consider how allowing pumping to continue to exceed the perennial yield for another  
19 thirty-five years will impact the water quality in the basin. The GMP, itself, notes that the water gradient  
20 has changed and that poor quality water underneath the playa is migrating south due to the large cone

21 <sup>101</sup> SE ROA 12.

22 <sup>102</sup> SE ROA 633-41, 643-52, & 722 (Public Comment of Daniel Venturacci) ("The over-pumping has resulted in the  
23 subsidence of the valley floor, which has created large fissures. These fissures prevent the vested mountain runoff water  
from reaching the existing meadow, therefore impairing our rights even more.").

24 <sup>103</sup> NRS 534.037(2)(c).

25 <sup>104</sup> See generally ROA 27-133 (Water Resource Bulletin No. 35). This report indicates that pumping in the southern portion  
of the basin should be limited to 12,000 acre-feet/annually. SE ROA 102 ("Sustained annual pumping much in excess of  
12,000 acre-feet per year [in the southern part of the basin] would produce accelerated rates of water level decline . . . and  
any new equilibrium . . . probably could not be attained . . .").

26 <sup>105</sup> SE ROA 102 (pumping near areas of natural discharge has minimal effect on basin storage).

27 <sup>106</sup> The original designation of the basin, and regulations including curtailment of appropriations were preciously limited to  
the pumping center in the southern portion of the basin. (Orders 277, 280, 541, 717, 809, and 813). The northern portion of  
the basin was not designated until 1983 (Order 815), and applications in the north were not officially curtailed until 2013  
(Order 1226). See Renner's Pet. for Judicial Review at 4.

28 <sup>107</sup> NRS 534.037(2)(d).

1 of depression created by the over-pumping of that portion of the basin.<sup>108</sup> This risks contaminating the  
2 irrigation and domestic water supplies in that area.<sup>109</sup> The State Engineer's failure to analyze this  
3 evidence, and determine whether the pumping reductions in the plan are sufficient to eliminate the risk  
4 of water contamination, was arbitrary, capricious, and an abuse of his discretion.

5 The fifth factor concerns the location of wells in the basin, including domestic wells.<sup>110</sup> Once  
6 more, Order 1302 contains no discussion or independent analysis of this factor. Instead, the State  
7 Engineer concludes that since domestic wells are not curtailed in the plan, he need not consider them at  
8 all.<sup>111</sup> But that does not address the issue of what effect continued groundwater declines in the basin  
9 will have on those domestic wells.<sup>112</sup> Neither Order 1302, nor the GMP, contain information regarding  
10 the depth of existing domestic wells or the current groundwater levels at those well locations. Such  
11 information is critical to determine whether additional groundwater declines from continued over-  
12 pumping will cause even more domestic wells to fail.

13 Because the State Engineer failed to review and analyze the GMP using the statutorily required  
14 factors, his decision to approve the GMP was not based on substantial evidence and was arbitrary,  
15 capricious, and an abuse of his discretion.

16 **IV. The GMP's Banking Program Violates State Law.**

17 In his answering brief, the State Engineer notes that in Order 1302 he determined that the banking  
18 program is not an Aquifer Storage and Recovery ("ASR") project subject to the regulations of NRS  
19 534.250 – 534.340, inclusive. But, the GMP proponents' own expert concluded that the banking  
20 program is an ASR project and the State Engineer's determination (1) was not based on any evidence in  
21 the record, and (2) is contrary to Nevada's water statutes.

22 The concept of beneficial use is foundational to the prior appropriation doctrine. In Nevada this  
23 concept is codified in NRS 533.035, stating that "[b]eneficial use shall be the basis, the measure, and  
24

25 \_\_\_\_\_  
26 <sup>108</sup> SE ROA 494.

27 <sup>109</sup> SE ROA 494.

28 <sup>110</sup> NRS 534.037(2)(e).

<sup>111</sup> SE ROA 6, 15.

<sup>112</sup> At the public comment meeting, one commenter indicated that domestic wells have already begun to fail in the basin. SE ROA 684 (Public Comment of Ari Erikson).

1 *the limit* of the right to use water.”<sup>113</sup> Likewise, NRS 533.045 states that “no person shall be permitted  
2 to divert or use the waters of this State except as such times the water is required for a beneficial  
3 purpose.” While year-to-year carryover storage of water is allowed under Nevada law, a separate permit  
4 is required to operate such a project.<sup>114</sup> The irrigation permits that are subject to the GMP have only  
5 one authorized use – irrigation. Nothing in those permits authorizes the permit holder to store water  
6 from one year and use it in a subsequent year. If they wish to do so, they need to file an appropriate  
7 carryover storage application with the State Engineer.<sup>115</sup>

8 This is true even if the State Engineer is correct (which he is not) that the banking program is  
9 not an ASR project. Carryover storage of water requires a separate permit from the State Engineer  
10 regardless of whether it is an ASR permit or just a general reservoir storage permit. When making  
11 application for such a permit, the statutes require, in addition to the regular application contents, extra  
12 information so that the State Engineer can determine the feasibility of the storage scheme.<sup>116</sup> The  
13 proponents of the GMP have never applied for or received any such permit. Accordingly, the State  
14 Engineer’s approval of the banking program is arbitrary, capricious, and an abuse of his discretion.

15 In addition, the banking program contained in the GMP is not hydrologically sound. There is  
16 one central fact related to the banking program that Respondents simply cannot get around – that the  
17 “bank” consists of all withdrawals and no deposits. As Petitioners pointed out in their opening brief,  
18 water above the perennial yield is, by definition, not available for appropriation. Accordingly, it cannot  
19 be used as the source of supply that is stored for future use.

20 The State Engineer argues that this water is available because “it was already appropriated via  
21 permits and certificates.”<sup>117</sup> But those permits and certificates are conditional and only grant use of the  
22 water when it does not interfere with existing rights. Also, those permits and certificates only allow the  
23 water to be used during a single irrigation season.<sup>118</sup> All water right permits have an annual quantitative

24 <sup>113</sup> Emphasis added.

25 <sup>114</sup> NRS 533.325 (“No application shall be for the water of more than one sources to be used *for more than one purpose*.”).

26 <sup>115</sup> For an example of what such a permit looks like, *see* Permit 78338 authorizing the City of Fernley to store water in  
upstream reservoirs.

27 <sup>116</sup> For regular storage permits the extra requirements are found in NRS 533.340(6). For an ASR permit, the requirements  
are found in NRS 534.260.

28 <sup>117</sup> State Engineer Answering Br. at 38 (emphasis removed).

<sup>118</sup> A permit holder is granted the right to use a certain amount of water per year or per irrigation season. For example, Mr.  
Renner owns Permit 52465, Certificate 14143 authorizing him to use apx. 11 acre-feet of water from January to December

1 limit that cannot be exceeded and which does not carry over to subsequent years. Banking allows a  
2 water user to carry over water from one year and thereby increase their water right for the next year.

3 Here, it is indisputable that the over-pumping of the basin has interfered with existing rights *and*  
4 that the banking program violates the terms of the water users' permits and certificates. Also undisputed  
5 is the fact that there is no limit to the amount of banked water that can be accumulated by a single user,  
6 and no real depreciation for water banked in the southern portion of the basin. The water users subject  
7 to the GMP have no right under their permit terms to establish or participate in a water banking program.

8 The State Engineer's approval of a GMP that authorizes a banking program that is contrary to  
9 the law and the terms of water users' permits was arbitrary, capricious, and an abuse of his discretion.  
10 Accordingly, Order 1302 should be overturned.

11 **V. The State Engineer's Public Comment Meeting Did Not Comply With The Requirements**  
12 **Of The Statute.**

13 Under NRS 534.037, the State Engineer is required to hold a public hearing "to take testimony"  
14 on a proposed GMP. The State Engineer's own regulations clearly state that "public commentary is not  
15 considered testimony" and that "[a]ll testimony of witnesses appearing on behalf of a party must be  
16 given under oath or affirmation."<sup>119</sup> Further, these same regulations require that parties have a right to  
17 cross-examine witnesses called by opposing parties.<sup>120</sup> No party disputes that, at the October 30, 2018,  
18 public comment meeting, no commenter was sworn under oath and no cross-examination was allowed.  
19 Accordingly, pursuant to the State Engineer's own regulations, the public comments provided at the  
20 meeting were not testimony and the State Engineer's failure to follow his own hearing regulations was  
21 arbitrary, capricious, and an abuse of discretion.

22 The State Engineer claims that Petitioners' arguments regarding this issue are barred by the  
23 Court's September 4, 2019, Order.<sup>121</sup> However, the subject of the order was the State Engineer's motion  
24 in limine regarding whether Petitioners could supplement the record on. The pleadings on the motion  
25 were not intended to adjudicate a substantive claim in the underlying case. Rather, they were addressing

26  
27 of each year for livestock purposes. If Mr. Renner does not use the water from his permit this year, he does not get the right  
28 to use 22 acre-feet next year. Instead, the permit terms limit his to use no more than 11 acre-feet *in any given year*.

<sup>119</sup> NAC 533.240(1).

<sup>120</sup> NAC 533.240(4).

<sup>121</sup> State Engineer Answering Br. at 39-40.

1 a specific evidentiary issue. Interpreting an evidentiary ruling as prohibiting a party from arguing the  
2 substantive merits of their petition would be improper and risks converting the Court's evidentiary order  
3 into a summary judgment on the merits.

4 The statute that authorized Petitioners to file this appeal specifically states that Petitioners must  
5 be given a "full opportunity to be heard . . . before judgment is pronounced."<sup>122</sup> The upcoming  
6 December 10, 2019, hearing on the merits is the proper time and place for Petitioners to raise *all* of their  
7 arguments regarding Order 1302, including arguments related to whether the State Engineer acted  
8 arbitrarily and capriciously when he failed to take sworn testimony from witnesses and allow such  
9 witnesses to be cross-examined.

10 **VI. This Court Can And Should Take Judicial Notice Of The State Engineer's Prior**  
11 **Inconsistent Interpretation Of The Substantive Law.**

12 The State Engineer argues that the Court should strike an exhibit attached to Petitioners' opening  
13 brief.<sup>123</sup> The exhibit consists of a PowerPoint presentation the State Engineer gave to his fellow western  
14 state engineers at a conference held on September 26, 2016. Each page of the presentation is imprinted  
15 with the State Engineer's official seal, and the first page indicates that Mr. King was speaking in his  
16 official capacity as the Nevada State Engineer. Ostensibly, Mr. King's time and costs preparing the  
17 presentation were paid by the State of Nevada, as were the expenses incurred by Mr. King in attending  
18 the conference. Accordingly, the document is an "official state record" because it is "evidence of the  
19 organization, operation, policy, or any other activity of that agency."<sup>124</sup>

20 At the public comment meeting, the hearing officer stated that he was taking "administrative  
21 notice of all relevant publications, information, and *records of the office of the State Engineer*."<sup>125</sup>  
22 Because the exhibit is an official record of the State Engineer, it falls within this general incorporation  
23 of such documents into the record. In addition, this Court is required, if requested by a party, to take  
24 judicial notice of any fact that is generally known and capable of accurate and ready determination.<sup>126</sup>  
25

26  
27 <sup>122</sup> NRS 533.450(2).

<sup>123</sup> State Engineer Answering Br. at 39-40.

<sup>124</sup> NRS 239.005.

<sup>125</sup> SE ROA 657.

<sup>126</sup> NRS 47.130 & 47.150.



1 The State Engineer has not, and cannot, reasonably question the accuracy or provenance of an official  
2 record created and used by his own agency.

3 Importantly, as noted in Petitioners' opening brief, the exhibit is not being offered to supplement  
4 the record on appeal or argue that the record does not contain sufficient evidence supporting the State  
5 Engineer's determination. Rather, it is being offered to show that the State Engineer acted arbitrarily  
6 and capriciously when he determined in Order 1302 that he had the legal authority to approve a GMP  
7 violating prior appropriation. The exhibit demonstrates that the State Engineer had previously asserted  
8 the exact opposite position – that the GMP was not legal under existing law and a statutory change was  
9 needed to make it so. This view was widely known at the time and is reflected in statements made by  
10 GMP proponents to the 2017 Legislature that changes to NRS 534.037 were required "to implement the  
11 plan and move forward to rectify the problems."<sup>127</sup>

12 The Court is required to review legal questions de novo.<sup>128</sup> The subject exhibit is an official  
13 document from the State Engineer relating to his own interpretation of his legal authority under the  
14 statute. The exhibit is being included for the same purpose that Eureka County and DNRCPA have  
15 offered extra-record attachments to their own briefs. Because the exhibit is an official agency record,  
16 and because this Court is required to take judicial notice of such records if requested to do so by a party,  
17 the State Engineer's request to strike the exhibit from the record is improper and should be denied.

18 **VII. The State Engineer Had Authority To Consider Alternatives And/Or Condition His**  
19 **Approval On Changes To The GMP.**

20 Finally, the State Engineer claims that he was powerless to ask for any modifications or place  
21 any conditions on his approval of the GMP.<sup>129</sup> This claim is meritless. An agency's authority to approve  
22 or deny an application inherently includes the power to approve or deny it subject to modifications or  
23

24  
25 <sup>127</sup> *Minutes of the S. Comm. on Nat. Res.*, February 28, 2017, at 15.

26 <sup>128</sup> *Sierra Pac. Indus.*, 135 Nev. Adv. Op. 13, 440 P.3d at 40; *see also St. Clair*, 134 Nev. at 139, 414 P.3d at 316 (Courts  
27 "review purely legal questions de novo."); *Andersen Family Assocs.*, 124 Nev. at 186, 179 P.3d at 1203 (Courts have  
28 "authority to undertake an independent review of the State Engineer's statutory construction, without deference to the State  
Engineer's determination.").

<sup>129</sup> State Engineer's Answering Br. at 13 ("The State Engineer is not provided with an opportunity to make edits, changes,  
or suggestions to a submitted groundwater management plan.").

1 conditions.<sup>130</sup> Accordingly, the State Engineer had full authority to consider other methods of reducing  
2 pumping that did not violate the prior appropriation doctrine.

3 Even if the State Engineer incorrectly believed that his options after formal submittal of the GMP  
4 were limited to mere approval or denial of the plan, the record shows that draft versions of the GMP  
5 were provided to him for review and comment on at least three occasions *prior to* formal submittal.<sup>131</sup>  
6 Accordingly, he had ample opportunity to advise plan proponents that the proposed GMP did not  
7 conform to the prior appropriation doctrine and direct them to consider alternatives that would. His  
8 failure to do so was arbitrary, capricious, and an abuse of his discretion.

9 Additionally, even if the State Engineer's authority were limited to a simple binary choice  
10 between approval and disapproval, he could still have disapproved the plan, clearly stated which sections  
11 of the plan needed to be changed, and sent it back to the proponents with direction to fix these sections  
12 and then resubmit an amended plan to him. In short, a review of a proposed plan is not a "take it or  
13 leave it" situation that bars the State Engineer from criticizing the plan or rejecting portions of it. All  
14 parties agree that pumping must be reduced. However, this is not an excuse to rubber stamp a  
15 fundamentally flawed plan that does not comply with Nevada's water statutes.

16 The State Engineer's conscious choice not to consider reasonable alternate methods for reducing  
17 pumping, and his failure to require project proponents to comply with Nevada's long-standing water  
18 laws and doctrines, was arbitrary, capricious, and an abuse of his discretion.

19 ///

20 ///

21 ///

22 ///

23 ///

24 ///

25 ///

26 ///

27 <sup>130</sup> *Conn. Fund for Env't, Inc. v. Envtl. Prot. Agency*, 672 F.2d 998, 1006 (2d Cir. 1982) ("an agency's power to approve  
28 conditionally is inherent in the power to approve or disapprove.").

<sup>131</sup> Eureka County's Answering Br. at 39 (stating that drafts were submitted to the State Engineer for review and comment  
on October 24, 2016, May 22, 2017, and January 2018).

**CONCLUSION**

For the reasons stated above, Petitioners respectfully request that Order 1302 be overturned.

**AFFIRMATION**  
**Pursuant to NRS 239B.030(4)**

The undersigned does hereby affirm that the preceding document does not contain the social security number of any person.

DATED this 25<sup>th</sup> day of November, 2019.

TAGGART & TAGGART, LTD.  
108 North Minnesota Street  
Carson City, Nevada 89703  
(775) 882-9900 – Telephone  
(775) 883-9900 – Facsimile

By: 

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**CERTIFICATE OF SERVICE**

Pursuant to NRCP 5(b), I hereby certify that I am an employee of TAGGART & TAGGART, LTD., and that on this day, I served, or caused to be served, a true and correct copy of the foregoing document, which applies to Case Nos. CV1902-348, -349, and -350, as follows:

[X] By **ELECTRONIC SERVICE**, addressed as follows:

James N. Bolotin, Esq.  
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[X] By **UNITED STATES POSTAL SERVICE**, by depositing for mailing in the United States Mail, with postage prepaid, an envelope containing the above-identified document, at Carson City, Nevada, in the ordinary course of business, addressed as follows:

The Honorable Gary D. Fairman  
801 Clark Street, Suite 7  
Ely, Nevada 89301

Beth Mills, Trustee  
Marshall Family Trust  
HC 62 Box 62138  
Eureka, NV 89316

DATED this 25<sup>th</sup> day of November, 2019.

  
\_\_\_\_\_  
Employee of TAGGART & TAGGART, LTD.

Case No.: CV1902-348 (consolidated with Case Nos. CV1902-349 and CV-1902-350)

Dept. No.: 2

NO. \_\_\_\_\_ FILED

NOV 26 2019

By Eureka County Clerk  
*[Signature]*

**IN THE SEVENTH JUDICIAL DISTRICT COURT OF THE STATE OF NEVADA  
IN AND FOR THE COUNTY OF EUREKA**

**RECEIVED**

NOV 26 2019

Eureka County Clerk

TIMOTHY LEE & CONSTANCE MARIE  
BAILEY; FRED & CAROLYN BAILEY;  
IRA R. & MONTIRA RENNER; and  
SADLER RANCH, LLC;

Petitioners,

vs.

TIM WILSON, P.E., Nevada State Engineer,  
DIVISION OF WATER RESOURCES,  
DEPARTMENT OF CONSERVATION  
AND NATURAL RESOURCES,

Respondent, and

EUREKA COUNTY; and DIAMOND  
NATURAL RESOURCES PROTECTION  
AND CONSERVATION ASSOCIATION,  
et al.,

Intervenors.

**SADLER RANCH, LLC AND IRA R. &  
MONTIRA RENNER'S ADDENDUM TO  
REPLY BRIEF**

Pursuant to NRAP 28(f), Petitioners Sadler Ranch, LLC and Ira R. & Montira Renner provide this Court with this addendum which includes the following:

Exhibit	Document Description	Date	Page Number
1.	SB 73 (2017 Legislature)	Nov. 17, 2016	PET ADD 001 – 007
2.	Minutes of the Senate Committee on Natural Resources	Feb. 28, 2017	PET ADD 008 – 026

**JA1819**

3.	Exhibit F from Minutes of the Senate Committee on Natural Resources	Feb. 28, 2017	PET ADD 027 – 031
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**AFFIRMATION**  
**Pursuant to NRS 239B.030(4)**

The undersigned does hereby affirm that the preceding document does not contain the social security number of any person.

DATED this 25<sup>th</sup> day of November, 2019.

TAGGART & TAGGART, LTD.  
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By: 

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Nevada State Bar No. 13567

PAUL G. TAGGART, ESQ.

Nevada State Bar No. 6136

Attorneys for Sadler Ranch, LLC and Ira R. &  
Montira Renner

**CERTIFICATE OF SERVICE**

Pursuant to NRCP 5(b), I hereby certify that I am an employee of TAGGART & TAGGART, LTD., and that on this day, I served, or caused to be served, a true and correct copy of the foregoing document, which applies to Case Nos. CV1902-348, -349, and -350, as follows:

[X] By **ELECTRONIC SERVICE**, addressed as follows:

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Marshall Family Trust  
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Eureka, NV 89316

DATED this 25<sup>th</sup> day of November, 2019.

  
\_\_\_\_\_  
Employee of TAGGART & TAGGART, LTD.

**JA1821**

# **EXHIBIT 1**

# **EXHIBIT 1**



SENATE BILL NO. 73—COMMITTEE ON NATURAL RESOURCES

(ON BEHALF OF THE DIVISION OF WATER RESOURCES  
OF THE STATE DEPARTMENT OF  
CONSERVATION AND NATURAL RESOURCES)

PREFILED NOVEMBER 17, 2016

Referred to Committee on Natural Resources

SUMMARY—Revises provisions relating to water. (BDR 48-177)

FISCAL NOTE: Effect on Local Government: May have Fiscal Impact.  
Effect on the State: Yes.

EXPLANATION – Matter in *bolded italics* is new; matter between brackets ~~{omitted material}~~ is material to be omitted.

AN ACT relating to water; revising certain provisions relating to domestic wells; declaring the policy of this State to manage conjunctively all sources of water in this State; revising certain provisions relating to groundwater management plans and critical management areas; and providing other matters properly relating thereto.

**Legislative Counsel's Digest:**

- 1 Under existing law, the State Engineer has various powers and duties relating to
- 2 managing the water resources of this State. (Chapters 533 and 534 of NRS) **Section**
- 3 **1** of this bill declares the policy of this State to manage conjunctively the
- 4 appropriation, use and administration of all water in the State, regardless of the
- 5 source.
- 6 Under existing law, the Legislature has declared that water supplied by a
- 7 domestic well is protected from unreasonable adverse effects which are caused by
- 8 municipal, quasi-municipal or industrial uses which cannot be reasonably
- 9 mitigated. **Section 1** instead declares that water supplied by a domestic well is
- 10 protected from adverse effects which are caused by new appropriations of water or
- 11 changes to existing water rights.
- 12 Under existing law, the State Engineer is required to designate certain basins as
- 13 a critical management area upon receipt of a petition signed by a majority of the
- 14 holders of permits or certificates to appropriate water in the basin. (NRS 534.110)
- 15 Existing law further provides that in a basin that has been designated a critical
- 16 management area, a petition for the approval of a groundwater management plan
- 17 may be submitted to the State Engineer. The petition must be signed by a majority
- 18 of the holders of permits or certificates to appropriate water in the basin. (NRS
- 19 534.037) **Sections 2 and 3** of this bill revise the majority requirements to instead



20 require these petitions be signed by a number of the holders of such permits or  
21 certificates and the owners of domestic wells in the basin who together hold at least  
22 two-thirds of the total amount of groundwater committed in the basin. If the  
23 petition for a groundwater management plan is approved, **section 2** provides that  
24 the plan is binding on all groundwater users in the basin. Additionally, **section 2**  
25 provides a number of management options which may be included in a  
26 groundwater management plan. Further, **section 2** authorizes any holder of a water  
27 right or owner of a domestic well in certain designated basins to submit a petition  
28 for the approval of a groundwater management plan, which, if approved, is binding  
29 on only those parties who signed the petition.

---

THE PEOPLE OF THE STATE OF NEVADA, REPRESENTED IN  
SENATE AND ASSEMBLY, DO ENACT AS FOLLOWS:

1     **Section 1.** NRS 533.024 is hereby amended to read as follows:  
2     533.024 The Legislature declares that:  
3     1. It is the policy of this State:  
4     (a) To encourage and promote the use of effluent, where that use  
5     is not contrary to the public health, safety or welfare, and where that  
6     use does not interfere with federal obligations to deliver water of the  
7     Colorado River.  
8     (b) To recognize the importance of domestic wells as  
9     appurtenances to private homes, to create a protectable interest in  
10    such wells and to protect their supply of water from unreasonable  
11    adverse effects which are caused by ~~{municipal, quasi-municipal or~~  
12    ~~industrial uses and}~~ *new appropriations of water or changes to*  
13    *existing water rights* which cannot reasonably be mitigated.  
14    (c) To encourage the State Engineer to consider the best  
15    available science in rendering decisions concerning the available  
16    surface and underground sources of water in Nevada.  
17    (d) To encourage and promote the use of water to prevent or  
18    reduce the spread of wildfire or to rehabilitate areas burned by  
19    wildfire, including, without limitation, through the establishment of  
20    vegetative cover that is resistant to fire.  
21    (e) *To manage conjunctively the appropriation, use and*  
22    *administration of all waters of this State, regardless of the source*  
23    *of the water, and to encourage the use of augmentation plans to*  
24    *maximize the beneficial use of the water.*  
25    2. The procedures in this chapter for changing the place of  
26    diversion, manner of use or place of use of water, and for  
27    confirming a report of conveyance, are not intended to have the  
28    effect of quieting title to or changing ownership of a water right and  
29    that only a court of competent jurisdiction has the power to  
30    determine conflicting claims to ownership of a water right.



\* S B 7 3 \*

1     **Sec. 2.** NRS 534.037 is hereby amended to read as follows:

2     534.037 1. In a basin that has been designated as a critical  
3 management area by the State Engineer pursuant to subsection 7 of  
4 NRS 534.110, a petition for the approval of a groundwater  
5 management plan for the basin may be submitted to the State  
6 Engineer. The petition must be signed by a ~~{majority}~~ *number* of the  
7 holders of permits or certificates to appropriate water in the basin  
8 that are on file in the Office of the State Engineer and *owners of*  
9 *domestic wells in the basin who together hold at least two-thirds of*  
10 *the total groundwater committed in the basin. The petition* must be  
11 accompanied by a groundwater management plan which must set  
12 forth the necessary steps for removal of the basin's designation as a  
13 critical management area. *For the purposes of determining the*  
14 *amount of groundwater held by an owner of a domestic well, it*  
15 *shall be deemed that each owner of a domestic well holds 2 acre-*  
16 *feet of water per year. A groundwater management plan submitted*  
17 *pursuant to this subsection which is approved by the State*  
18 *Engineer is binding on all groundwater users in the basin.*

19     2. *In a groundwater basin that has been designated by the*  
20 *State Engineer pursuant to NRS 534.030, a petition for the*  
21 *approval of a groundwater management plan for the basin may be*  
22 *submitted to the State Engineer by any holder of a water right or*  
23 *owner of a domestic well. The petition may be signed by any other*  
24 *water user in the basin, including, without limitation, any owner*  
25 *of a domestic well. In determining whether to approve a*  
26 *groundwater management plan submitted pursuant to this*  
27 *subsection, the State Engineer shall consider, without limitation,*  
28 *the percentage of holders of water rights and domestic well users*  
29 *in the basin in support of the groundwater management plan who*  
30 *signed the petition. A groundwater management plan submitted*  
31 *pursuant to this subsection which is approved by the State*  
32 *Engineer is binding on only those water users who signed the*  
33 *petition.*

34     3. *In addition to any other power granted by law, the State*  
35 *Engineer may consider any reasonable action set forth in a*  
36 *groundwater management plan submitted pursuant to subsection*  
37 *1 or 2, including, without limitation:*

38     (a) *Limiting the quantity of water that may be withdrawn*  
39 *under any permit or certificate or from a domestic well on a basis*  
40 *other than priority;*

41     (b) *Limiting the movement of water rights, particularly those*  
42 *water rights which have not been used for 5 successive years;*

43     (c) *Designating preferred uses of existing water rights;*

44     (d) *Establishing a program for the voluntary relinquishment of*  
45 *a water right to revert to the groundwater source of the water;*



\* S B 7 3 \*

1 *(e) Establishing mandatory timelines to require the filing of*  
2 *proofs of beneficial use pursuant to NRS 533.400;*

3 *(f) Adopting rules or regulations to further a groundwater*  
4 *management plan; and*

5 *(g) Any other action deemed appropriate by the State Engineer*  
6 *to remove the basin's designation as a critical management area*  
7 *or remove the need for a groundwater management plan in a*  
8 *designated basin, as applicable.*

9 4. In determining whether to approve a groundwater  
10 management plan submitted pursuant to subsection 1 ~~1~~ or 2, the  
11 State Engineer shall consider, without limitation:

12 (a) The hydrology of the basin;

13 (b) The physical characteristics of the basin;

14 (c) The geographic spacing and location of the withdrawals of  
15 groundwater in the basin;

16 (d) The quality of the water in the basin;

17 (e) The wells located in the basin, including, without limitation,  
18 domestic wells;

19 (f) *The timeline for carrying out the plan, including, without*  
20 *limitation, any benchmarks established for the plan;*

21 (g) Whether a groundwater management plan already exists for  
22 the basin; and

23 ~~(g)~~ (h) Any other factor deemed relevant by the State  
24 Engineer.

25 ~~3~~ 5. *The State Engineer shall not approve a groundwater*  
26 *management plan submitted pursuant to subsection 1, if the State*  
27 *Engineer determines that the plan will not return the basin to the*  
28 *appropriate level of sustainability as determined by the State*  
29 *Engineer.*

30 6. Before approving or disapproving a groundwater  
31 management plan submitted pursuant to subsection 1 ~~1~~ or 2, the  
32 State Engineer shall hold a public hearing to take testimony on the  
33 plan in the county where the basin lies or, if the basin lies in more  
34 than one county, within the county where the major portion of the  
35 basin lies. The State Engineer shall cause notice of the hearing to be:

36 (a) Given once each week for 2 consecutive weeks before the  
37 hearing in a newspaper of general circulation in the county or  
38 counties in which the basin lies.

39 (b) Posted on the Internet website of the State Engineer for at  
40 least 2 consecutive weeks immediately preceding the date of the  
41 hearing.

42 ~~4~~ 7. The decision of the State Engineer on a groundwater  
43 management plan may be reviewed by the district court of the  
44 county pursuant to NRS 533.450.



1     ~~{5.}~~ 8. An amendment to a groundwater management plan  
2 must be proposed and approved in the same manner as an original  
3 groundwater management plan is proposed and approved pursuant  
4 to this section.

5     **Sec. 3.** NRS 534.110 is hereby amended to read as follows:

6     534.110 1. The State Engineer shall administer this chapter  
7 and shall prescribe all necessary regulations within the terms of this  
8 chapter for its administration.

9     2. The State Engineer may:

10    (a) Require periodical statements of water elevations, water  
11 used, and acreage on which water was used from all holders of  
12 permits and claimants of vested rights.

13    (b) Upon his or her own initiation, conduct pumping tests to  
14 determine if overpumping is indicated, to determine the specific  
15 yield of the aquifers and to determine permeability characteristics.

16    3. The State Engineer shall determine whether there is  
17 unappropriated water in the area affected and may issue permits  
18 only if the determination is affirmative. The State Engineer may  
19 require each applicant to whom a permit is issued for a well:

20    (a) For municipal, quasi-municipal or industrial use; and

21    (b) Whose reasonably expected rate of diversion is one-half  
22 cubic foot per second or more,

23    ↳ to report periodically to the State Engineer concerning the effect  
24 of that well on other previously existing wells that are located within  
25 2,500 feet of the well.

26    4. It is a condition of each appropriation of groundwater  
27 acquired under this chapter that the right of the appropriator relates  
28 to a specific quantity of water and that the right must allow for a  
29 reasonable lowering of the static water level at the appropriator's  
30 point of diversion. In determining a reasonable lowering of the static  
31 water level in a particular area, the State Engineer shall consider the  
32 economics of pumping water for the general type of crops growing  
33 and may also consider the effect of using water on the economy of  
34 the area in general.

35    5. This section does not prevent the granting of permits to  
36 applicants later in time on the ground that the diversions under the  
37 proposed later appropriations may cause the water level to be  
38 lowered at the point of diversion of a prior appropriator, so long as  
39 any protectable interests in existing domestic wells as set forth in  
40 NRS 533.024 and the rights of holders of existing appropriations  
41 can be satisfied under such express conditions. At the time a permit  
42 is granted for a well:

43    (a) For municipal, quasi-municipal or industrial use; and

44    (b) Whose reasonably expected rate of diversion is one-half  
45 cubic foot per second or more,



\* 5 B 7 3 \*



1   ↪ the State Engineer shall include as a condition of the permit that  
2   pumping water pursuant to the permit may be limited or prohibited  
3   to prevent any unreasonable adverse effects on an existing domestic  
4   well located within 2,500 feet of the well, unless the holder of the  
5   permit and the owner of the domestic well have agreed to alternative  
6   measures that mitigate those adverse effects.

7   6. Except as otherwise provided in subsection 7, the State  
8   Engineer shall conduct investigations in any basin or portion thereof  
9   where it appears that the average annual replenishment to the  
10   groundwater supply may not be adequate for the needs of all  
11   permittees and all vested-right claimants, and if the findings of the  
12   State Engineer so indicate, the State Engineer may order that  
13   withdrawals, including, without limitation, withdrawals from  
14   domestic wells, be restricted to conform to priority rights.

15   7. The State Engineer:

16   (a) May designate as a critical management area any basin in  
17   which withdrawals of groundwater consistently exceed the perennial  
18   yield of the basin.

19   (b) Shall designate as a critical management area any basin in  
20   which withdrawals of groundwater consistently exceed the perennial  
21   yield of the basin upon receipt of a petition for such a designation  
22   which is signed by a ~~majority~~ *number* of the holders of certificates  
23   or permits to appropriate water in the basin that are on file in the  
24   Office of the State Engineer ~~and~~ *and owners of domestic wells in the*  
25   *basin, who together hold at least two-thirds of the total*  
26   *groundwater committed in the basin. For the purposes of*  
27   *determining the amount of groundwater held by an owner of a*  
28   *domestic well, it shall be deemed that each owner of a domestic*  
29   *well holds 2 acre-feet of water per year.*

30   ↪ The designation of a basin as a critical management area pursuant  
31   to this subsection may be appealed pursuant to NRS 533.450. If a  
32   basin has been designated as a critical management area for at least  
33   10 consecutive years, the State Engineer shall order that  
34   withdrawals, including, without limitation, withdrawals from  
35   domestic wells, be restricted in that basin to conform to priority  
36   rights, unless a groundwater management plan has been approved  
37   for the basin pursuant to NRS 534.037.

38   8. In any basin or portion thereof in the State designated by the  
39   State Engineer, the State Engineer may restrict drilling of wells in  
40   any portion thereof if the State Engineer determines that additional  
41   wells would cause an undue interference with existing wells. Any  
42   order or decision of the State Engineer so restricting drilling of such  
43   wells may be reviewed by the district court of the county pursuant to  
44   NRS 533.450.



1      **Sec. 4.**   This act becomes effective on July 1, 2017.

30



\* S B 7 3 \*

# **EXHIBIT 2**

# **EXHIBIT 2**



**MINUTES OF THE  
SENATE COMMITTEE ON NATURAL RESOURCES**

**Seventy-ninth Session  
February 28, 2017**

The Senate Committee on Natural Resources was called to order by Chair Yvanna D. Cancela at 1:31 p.m. on Tuesday, February 28, 2017, in Room 2144 of the Legislative Building, Carson City, Nevada. The meeting was videoconferenced to Room 4412E of the Grant Sawyer State Office Building, 555 East Washington Avenue, Las Vegas, Nevada. Exhibit A is the Agenda. Exhibit B is the Attendance Roster. All exhibits are available and on file in the Research Library of the Legislative Counsel Bureau.

**COMMITTEE MEMBERS PRESENT:**

Senator Yvanna D. Cancela, Chair  
Senator Mark A. Manendo, Vice Chair  
Senator Julia Ratti  
Senator James A. Settelmeyer  
Senator Pete Goicoechea

**STAFF MEMBERS PRESENT:**

Alysa Keller, Policy Analyst  
Erin Roohan, Counsel  
Maria Vega, Committee Secretary

**OTHERS PRESENT:**

Steve Bradhurst, Executive Director, Central Nevada Regional Water Authority  
Mike Baughman, Executive Director, Humboldt River Basin Water Authority  
Edwin James, General Manager, Carson Water Subconservancy District  
Jake Tibbitts, Natural Resources Manager, Eureka County  
Boyd Spratling  
David Berger, Director, Nevada Water Science Service Center, U.S. Geological Survey, U.S. Department of the Interior  
Bob Marshall  
Denise Moyle  
Vickie Buchanan  
Bob Burnham  
Martin Moyle

Senate Committee on Natural Resources  
February 28, 2017  
Page 2

Russell Conley  
Ari Erickson

CHAIR CANCELA:

I call the hearing to order and I am requesting introduction of Bill Draft Request (BDR) 48-736:

**BILL DRAFT REQUEST 48-736**: Revises provisions pertaining to basin water budget calculations. (Later introduced as Senate Bill 231).

SENATOR RATTI MOVED TO INTRODUCE BDR 48-736.

SENATOR GOICOECHEA SECONDED THE MOTION.

THE MOTION CARRIED UNANIMOUSLY.

\*\*\*\*\*

STEVE BRADHURST (Executive Director, Central Nevada Regional Water Authority): I have provided written testimony (Exhibit C) regarding the Central Nevada Regional Water Authority, which was established in 2005. The Authority was created pursuant to *Nevada Revised Statutes* (NRS) 277, the Interlocal Cooperation Act.

The Authority functions to bring government, businesses and environmental communities together on water-related issues to present united positions to the State Legislature, the U.S. Congress and State and federal agencies. The Authority is not only interested in water resource issues in rural Nevada but also in Nevada in general.

The Authority's mission emphasizes that the foundation of rural Nevada's future is in a sustainable water supply for humans and the natural environment. Nevada's worst natural resource fear is the real possibility of a water shortage by the mid twenty-first century. Clark County has been in a drought for many years. From 2000 to 2016, we experienced the driest 17-year period in the 102-year historical record for the Colorado River.

A combined study by research scientists at NASA, Cornell University and Columbia University predicted a megadrought would occur over the next 35 years. The study is titled *Unprecedented 21st Century Drought Risk in the American Southwest and Central Plains*. The U.S. Department of the Interior published the *SECURE Water Act Report*. The report shows a number of increased risks to the western U.S. water resources. Specific projections are temperature increases of five to seven degrees, precipitation increases in the northwestern and north central portions of the U.S., and a decrease in snowpack.

In 2016, the State Engineer presented to the Legislative Commission's Subcommittee to Study Water a presentation on water resource issues. One issue presented was the overappropriation of groundwater resources in at least 84 water basins of which approximately 50 are severely overappropriated. The imbalance between a water basin's appropriated groundwater relative to its perennial yield will likely be exacerbated in a number of water basins. The perennial yield concept provides an overestimate of a water basin's sustainable groundwater resources. The U.S. Geological Survey believes a new perspective for groundwater management is needed. The change from perennial yield to sustainable groundwater management is to change from maximum capture of all groundwater discharge to acceptable groundwater discharge. The perennial yield concept provides an overestimate of how much groundwater can be appropriated by the State Engineer.

Nevada is the driest state in the Nation. Some government land use plans have been developed without consideration of the amount and source of water needed to implement the plans. The Authority recommends the State of Nevada, Nevada Legislature and Nevada's local governments, along with Nevada's business community, discuss Nevada's water future.

There is no question that surface water and groundwater are a single source in many areas. The State Engineer should be required to make sure an application to appropriate surface water or groundwater does not adversely affect surface water or groundwater resources.

*Nevada Revised Statute* 533.370, subsection 2 states the State Engineer shall reject an application for water if there is no unappropriated water in the proposed source of supply or the proposed use or the change conflicts with

existing rights or with protectable interests in existing domestic wells or threatens to prove detrimental to the public interest.

Nevada's traditional sources of water, surface water and groundwater, are limited. Future water resources for Nevada should include water conservation, reclaiming wastewater, using graywater, capturing rainwater, cloud seeding and desalination of water.

MIKE BAUGHMAN (Executive Director, Humboldt River Basin Water Authority):  
I have provided my slide presentation (Exhibit D), an overview of the Humboldt River Basin Authority. We have to move water from the upper basin, where most of the runoff is and most of the snowmelt comes from, to the lower basin, a distance of about 1,000 miles. It is a very difficult system to manage, particularly when we are not getting the quantities of water that historically the water decrees were based on.

We should not forget we will have drought again. We will have severe drought. Everything tells us that the frequency and duration of droughts in the future are going to be more intense. Warming trends and climate change is undeniably going to cause some changes. The long-term trend tells us we will have a reduced snowpack. With warmer climates, we have less snow in the fall and less snow in the spring.

During the last year and a half, the State Engineer has designated every basin in the Humboldt River as requiring special management. All wells are required to have meters, except domestic wells.

South Fork Reservoir of the Humboldt River Basin stores no water for irrigation or downstream usage. It is a recreational body of water. Rye Patch Reservoir is where the principal water storage exists. It is the least effective place to store water in the Humboldt River Basin. We need more storage in the middle and upper Humboldt River. The reason Truckee, Reno and Sparks have such a great drought reserve is storage in the upper basin.

The State Engineer is addressing unpermitted pit lake evaporation. The State Engineer issued a policy to the mining industry. The policy requires all new mines in the permitting process, whether expansion of an existing mine or a new project, must obtain water right permits to cover the evaporative water losses from their pit lakes. All existing mines that have pit lakes or will have pit

lakes are grandfathered in, although they are encouraged to comply with the policy. Marigold Mine is the first project to come under the new policy and filed applications with the State Engineer to cover its pit lake evaporation. Newmont Gold is the first company to voluntarily comply with the policy.

The Authority worked with the Truckee Meadows Water Authority, Southern Nevada Water Authority, Walker River Irrigation District, Pershing County Water Conservation District, Truckee-Carson Irrigation District, and the Carson Water Subconservancy District. These groups had several conference calls and recommended to the Legislature cloud seeding in our State. The State funded cloud seeding from the 1980s through 2008. During the recession, the funding was cut. The Subcommittee elected to request a bill allowing the existing water project grant fund, administered by the Department of Conservation and Natural Resources, to include cloud seeding.

The State Engineer's Office is doing a capture analysis to mitigate the impact of groundwater pumping that is occurring on the base flow of the Humboldt River. Every groundwater right within the Humboldt River Basin is junior to the senior surface-decreed water rights. In order to protect those surface-decreed water rights, there is going to have to be some reduced groundwater pumping.

The Authority would like the Committee to introduce a bill. We do not want an amendment to another bill because this is a controversial issue. The Authority believes this is important because it concerns domestic wells.

Every domestic well has a duty of two-acre feet. There is no water right tied to it, but it is on the books and the State Engineer recognizes it as two-acre feet. The Authority is talking about having to curtail domestic well use and limit indoor use only in some areas. The Humboldt River Basin Authority voted to ask the Legislature to consider a committee bill introduction which would limit the duty to all new domestic wells, especially in our area and certainly within those basins that are overappropriated, to one-acre foot per domestic well. The reason for this is that average consumption has been determined to be not much more than an acre-foot. We are looking at thousands of parcels, existing and to be created over time, that would all be able to get a domestic well. At two acre-feet per domestic well, we are just adding to the problems in the basin.

SENATOR GOICOECHEA:

Marigold Mine is coming into mandatory compliance. I assume the mine operators filed an application for consumptive use of groundwater.

MR. BAUGHMAN:

Yes, that is correct.

EDWIN JAMES (General Manager, Carson Water Subconservancy District):

My slide presentation is on Carson River watershed activities (Exhibit E). The Carson watershed begins in Alpine County. There are two forks, the East Fork and West Fork, that come together in Douglas County, and the Carson River flows through Carson City, Lyon County and into Churchill County. The watershed is almost 4,000 square miles; the river length is 184 miles. We have very limited up-stream storage in the upper watershed. Our largest reservoir is down two-thirds at Lahontan. Upstream we have less than 10,000 acre-feet of storage. Lahontan holds almost 300,000 acre-feet of storage.

In 1989, the Legislature realized there needed to be an agency to supervise on a regional basis which changed the Subconservancy role from managing and developing the water resources of the Carson River to alleviating reduction losses, promoting conservation, and protecting the health, safety, and welfare of the people in the Carson River Basin. In 2000, Alpine County, California, joined the Subconservancy. We now have all six counties in two States, and we are the only agency in the Country that is a bistate and multicounty operation run from the bottom up, dealing with water resources on a holistic approach.

It is important to understand the kind of projects or studies the Authority does. There are environmental, municipal water demand and agricultural issues. All three are very important. If you take care of one, you take care of the other, or the system will no longer be balanced. Any planning the Subconservancy does looks at the impact it may have on the other two resources.

The Subconservancy's mission is to promote cooperative action across agency and political boundaries in the Carson River watershed using integrated water management. Some of the things we deal with are water quality, invasive species, recreation, riverbank stabilization, outreach and education. The Subconservancy also deals with floodplain management and water supply demands.

The Carson River Coalition (CRC) realized one agency could not deal with all of the issues. The CRC is a stakeholders group of different entities throughout the entire watershed and is comprised of federal, State, local, tribal and nongovernmental agencies as well as private citizens and landowners. The information gathered from the CRC is presented to the counties.

A goal of the CRC is to conserve our floodplains. The community came together and said it did not want to see the Carson River channelized. It did not want to become the Los Angeles River and preferred a living river concept. This means floodplains must be kept open. This protection is important because it is less costly than construction alternatives; it causes less property damage and is more environmentally friendly. The State claims ownership of the river to the Carson watershed.

There was a slight increase in temperatures from 1940 to 2000. In 2009, the CRC asked the Desert Research Institute (DRI) to do a study. It reported seeing more flows coming off the watershed than it did historically. This means it is getting drier in the watershed. Agricultural users are running out of water earlier. Municipalities depending upon the river need to have a firm water supply backup because they cannot depend upon the Carson River to provide those resources. Even though we are flooding this year, water supply is something we always have to look at. We also look at changes in runoff.

There are 11 major water purveyors in the watershed. We have a waterline that runs between Lyon County and Carson City that moves water back and forth. We have a waterline that brings water from Minden and provides water to north Douglas County, Indian Hills and Carson City. This line was not put in because of lack of water. It was constructed because water quality standards changed. It was cheaper for the community to put in a regional pipeline than to have residents treat their wells separately.

The issue we deal with is wet water versus paper water. We think the State Engineer needs more tools to be able to deal with the issue of wet water versus paper water. The reality is that the paper water is not there. We need to have proper planning.

You will often hear about pivots or circles. Pivots are centralized irrigation systems for crops. A pivot goes around in circles and creates circular shapes.

Basins are often overappropriated because there have been so many failures in desert land entries. In the 1950s and until 1960, people really did not have any idea how much water was available. The perennial yield had not been established yet.

When land is irrigated for agriculture, it is called net pumping. There is secondary recharge. The secondary recharge occurs when part of the water not used by the crops soaks back into the ground and eventually reaches back down to the groundwater aquifer. What is legal to pump is not necessarily aligned with what is available.

JAKE TIBBITTS (Natural Resources Manager, Eureka County):

Assembly Bill No. 419 of the 76th Session became NRS 534.110, which allows for a Critical Management Area designation. This designation starts a ten-year stopwatch for individuals under this designation to come together and develop a groundwater management plan. If a plan is not developed at the end of ten years, the State Engineer regulates by priority. At the time, A.B. No. 419 of the 76th Session seemed to empower more local approaches to finding solutions and seemed to allow solutions outside of strict junior and senior water rights. During the same period, there were applications for groundwater rights to mitigate declines in vested claims to surface water. This added more issues in Diamond Valley that continue today. This not only created a sense of urgency for many people with water rights in Diamond Valley, but it also created a sense of futility for many of the other residents.

In March 2014, the State Engineer held a workshop in Diamond Valley to explain the new statute. The statute would provide residents the opportunity to come up with local solutions. The residents were told they needed to start making a management plan.

In August 2015, the designation of a Critical Management Area (CMA) order was signed by the State Engineer. This brought people together to talk about solutions. Diamond Valley is the only designated CMA in the State. The Diamond Valley water users involved in developing the plan did not want it to affect anyone else.

Nevada's water law is based on two basic principles: prior appropriation and beneficial use. Prior appropriation of water rights is the legal doctrine that the



first person to take a quantity of water from a water source for beneficial use has the right to continue to use it. This is also known as first in time, first in right. This allows for the use of the State's water resources by granting priority to senior water rights in times of shortage. A water right may only be granted for beneficial uses as provided in NRS 533 and 534.

Incentives were given to farm in Diamond Valley by giving individuals free land. These folks were not hydrologists or water law experts. They applied to do something, and they were granted the right to do it. That was nearly 60 years ago. These families, whether senior or junior water right holders, have invested their livelihood and lives into this community. There has been an entire community built on overappropriation. Tremendous conservation efforts have taken place. These people are using half of the water they are entitled to use. There is an argument that prior appropriation must be followed from the inception of groundwater development: first well, second well and then a third well. Each well should be analyzed going forward so you do not get into a situation like Diamond Valley.

The time to fix this problem through strict prior appropriation was 60 years ago when there was a flood of applications. Now 60 years later, the State Engineer is saying we are going to use strict prior appropriation. This is unworkable for a community.

[Exhibit F](#) highlights the Diamond Valley Draft Groundwater Management Plan. The plan builds in some priority where senior water rights will receive more than junior rights. The Plan outlines a very specific reduction plan to get back into sustainability.

BOYD SPRATLING:

Thirteen percent of the State's property is privately owned and mostly dedicated to agriculture. The wetlands are unique in a state like Nevada, as noted in my presentation ([Exhibit G](#)). These meadows are very important. They provide habitat for people, wildlife and livestock. In Nevada, we depend on snowpack. Meadows provide floodplains that slow the water down. There are very few meadows left in the Truckee Meadows. As humans, we cannot eat grass, but through cattle, sheep and goats, we can harvest the grass and turn it into a nutrient-dense, high-protein food product. The meadows also act as a fire barrier. Later in the summer as the flows slow down, the water seeps back into the channel so we have continuous flow later into the summer. We have an

infrastructure that is privately owned, maintained and paid for with no cost to the taxpayer. We have the benefit of these green meadows throughout the entire State.

CHAIR CANCELA:  
How much of Nevada's entire land is wetlands?

MR. SPRATLING:  
I cannot give you an exact figure.

SENATOR SETTELMEYER:  
The question opens up a slew of other questions, such as, are these native wetlands or are they wetlands created by irrigating. I would love to see data on both.

SENATOR GOICOECHEA:  
Is it correct that the State Engineer's policy does not allow any water rights on the Humboldt to be transferred upstream?

MR. SPRATLING:  
Yes.

DAVID BERGER (Director, Nevada Water Science Center, U.S. Geological Survey, U.S. Department of the Interior):

My slide presentation is on water science in Nevada (Exhibit H). The United States Geological Survey (USGS) is a nonregulatory federal agency that provides unbiased earth sciences information to cooperators, stakeholders and the public. The USGS has a variety of science-focused centers across the United States. In Nevada, the focus is on water. Seventy percent of our water sciences activities are from reimbursable funding. This reimbursable funding structure makes us responsive to water resource needs and concerns of our stakeholders in Nevada. The water science that we do in Nevada is generally 60 percent basic data collection and 40 percent interpretative studies. Our data program is extensive, and we monitor approximately 305 sites Statewide.

One program that is unique to the USGS is the Cooperative Matching Funds Program. The Program allows science centers to provide federal dollars to match with cooperator dollars to support water science needs. We have 35 local, State and tribal agencies in Nevada that participate in the Cooperative Matching Funds

Program. Nevada continues to be one of the Water Science Center's most active partners in the Program. Nevada received 50 percent of the matching funds allocation in fiscal year 2016.

The oldest gauge in Nevada is in Carson Valley along the Carson River near Gardnerville. The USGS maintains about 152 real-time stream flow gauges throughout Nevada. The stream flow network is an important component of what the USGS does in Nevada. The National Weather Service relies on this data to forecast flooding. In addition to basic data collection, the Water Science Center also conducts groundwater interpretative studies throughout the State. The importance of reconnaissance studies is they not only evaluate the water quality in these basins in terms of irrigation potential but also help with estimates of water budgets from which the perennial yield estimates were often derived.

CHAIR CANCELA:  
What are phreatophytes?

MR. BERGER:  
Phreatophytes are plants with taproots that reach down to the water table, such as greasewood or rabbit brush.

SENATOR RATTI:  
What is a cone of depression?

MR. BERGER:  
When a well turns on, the groundwater starts flowing to the well and defines a cone of depression. It is called that because it is shaped like a cone.

The first hydrologic concept I want to introduce is the groundwater budget. Groundwater budgets are a summary of all the inflows to and the outflows from groundwater systems. Prior to groundwater development, when the system is under natural conditions, the budget is in a state of dynamic equilibrium. This means that the inflows equal the outflows with very little change in storage. Once pumping starts, the volume of that pumped water and the associated change in aquifer storage must be considered in a groundwater budget.

Groundwater and surface water are a single resource. In most of Nevada's large river systems, groundwater and surface water are interconnected and behave as

a single source. When the groundwater level is above the stream stage, the stream is considered a gaining stream because the groundwater is discharged into the stream. Please refer to page 9 of [Exhibit H](#). This is what hydrologists often call base flow in mountain streams after spring runoff. When the stage in the stream is higher than the groundwater levels, the stream is considered to be a losing stream in which the stream flow infiltrates or discharges into the groundwater system.

After a pump is turned on, the water to the well comes from the storage in the aquifer right around the pumping well. After time, pumping begins to intercept groundwater that initially discharged to the stream. This is what we call stream flow capture. After a significant amount of time and pumping, the cone of depression lowers the water table. The phreatophytes die off. All the evapotranspiration (ET) is captured by the pumping, stream flow depletion continues and you get reduced flow from the stream.

The definition of perennial yield is the maximum amount of groundwater that can be salvaged each year over the long term without depleting the groundwater reservoir. Additionally, perennial yield cannot be more than the natural recharge of the groundwater reservoir and is usually limited to the maximum amount of natural discharge. The initial perennial yield estimates for Nevada basins were mostly determined from groundwater budgets estimated from the reconnaissance studies and were designed to be limited to the volume of discharge that could be captured by pumping. The original intent of perennial yield was to capture groundwater that was consumed by phreatophytic vegetation because when these studies were developed, ET by phreatophytes was considered of no beneficial use.

Pumping cannot capture ET without also affecting stream flow and potentially other surface water features, such as springs and wetlands. Other limitations associated with the perennial yield concept are that most streams and large springs are often already appropriated, and they typically provide critical habitat. The protection of senior water right holders is often not considered in the definition of perennial yield.

Groundwater sustainability is the use of groundwater in a manner that can be maintained for an indefinite time without causing unacceptable consequences. Unacceptable consequences are impacts on ecosystems from groundwater development that have evolved over time. Society has now recognized drying

up springs, wetlands and phreatophytic vegetation are affecting other water users, which is not an acceptable impact. We need to ask what are acceptable changes or impacts to the system. We also need to recognize that groundwater and surface water are interconnected and need to be treated as a single resource. We need to fully understand the effects of timing, rates and location of pumping on groundwater systems. Groundwater and surface water interactions are complex. A single value of perennial yield for a basin is no longer an effective way to manage a basin.

The USGS has published reports that address these kinds of questions regarding the sustainability of groundwater resources and understanding and managing the effects of groundwater pumping on stream flow. The most effective approach to the understanding of the complexities of a groundwater and surface water interaction, and the potential effects of groundwater development on these systems, is the application of groundwater flow models. The Nevada Water Science Center is conducting a study designed to evaluate stream flow depletion related to groundwater development along the Humboldt River Basin. This study is in cooperation with the USGS, the State of Nevada and DRI. The general approach of this study is to develop a conceptual model that describes the movement of groundwater and its interactions with the Humboldt River and to describe the hydrogeologic structure that controls this movement of water.

The next step is to construct a numerical flow model that can effectively simulate the components of this conceptual model, including the water budget. This study will give the State Engineer needed information and tools to make informed decisions regarding groundwater management in the Humboldt River Basin and the other basins in Nevada that are dominated by river systems.

Without data, studies cannot be done with any kind of certainty. Capture maps are stream flow depletion maps that are just one of the tools that are planned because of study of the Humboldt River Basin. These maps are designed to characterize the effects of groundwater withdrawals on the timing and rates of stream flow depletion. Capture maps are created by repeated simulations of a groundwater flow model. Each simulation computes the stream flow depletion resulting from pumping at various locations and times.

Groundwater and surface water are connected and need to be treated as a single resource. Groundwater systems in Nevada basins are very complex and need to be studied at more than just a reconnaissance level. The use of

groundwater models is an effective way to understand the complexity of groundwater flow systems and their interactions with stream flow and pumping.

SENATOR GOICOECHEA:

I am not a fan of groundwater models. I am intrigued that you say they are a useful tool.

MR. BERGER:

When you look at sustainability, perennial yield and groundwater flow, there are boundary conditions. The groundwater flow model can look at those kinds of boundary conditions. I agree you have a right to be skeptical about groundwater flow models, but I think it is the best tool to study these complex groundwater systems, especially when the groundwater and the surface water are interacting, like in the Humboldt River Basin and the Carson River Basin.

SENATOR SETTELMEYER:

It is important to point out that there are many other factors that go into this. The Carson Valley cannot be judged as one area. At the bottom of the Valley, the water underneath has been recorded to move up to a rate of 127 feet a day. I agree with Senator Goicoechea, trying to make a general rule for an area is not a good idea.

MR. BERGER:

I was not trying to make a general rule. I was just giving a sense of how perennial yield sustainability comes about. There is a lot more to this than I have presented.

SENATOR GOICOECHEA:

Do you have any data on the Humboldt River Basin study, or is it still too early?

MR. BERGER:

We are still in the process. We have made some progress, but do not have anything to talk about yet.

BOB MARSHALL:

I represent Roger and Judy Allen who have two farms in Diamond Valley in Eureka County. We want to inform people who are not familiar with water law

the basis of Nevada's water law, which is first in time, first in right and the priority system.

Nevada's water law is based on two basic principles: prior appropriation and beneficial use. Prior appropriation, also known as first in time, first in right, allows for the orderly use of the State's water resources by granting priority to senior water rights in times of shortages. Before rights can be taken away or made less valuable, the holders have to be compensated. Every single permit issued is subject to prior rights. That is Nevada's law.

The Allens have senior water rights. They also have some junior water rights. I am concerned about how the proposed Groundwater Management Plan in Eureka County and Diamond Valley does not focus on a meaningful approach to compensating senior water right holders when their rights are denigrated. My client is not against groundwater management plans. I urge you to look at a method of compensating senior water right holders in a way that is consistent with the constitutional principle of not taking property without just compensation.

DENISE MOYLE:

I am an owner/operator and a partner in my family farm in Diamond Valley. Mr. Tibbitts gave a thorough overview of the difficulties the irrigators in Diamond Valley are facing. As an active member of the Groundwater Management Plan, I can tell you that the process has been long and difficult, and our community has persevered. We have come together and created a plan that is the fairest and most inclusive plan that we can put together to create an environment where everybody in the community gets to stay and continue working together. Senate Bill 73 will give us the opportunity to implement the plan and move forward to rectify the problems.

**SENATE BILL 73**: Revises provisions relating to water. (BDR 48-177)

VICKIE BUCHANAN:

My family is one of three original land entry filers still in operation in Diamond Valley. I am a fully senior water right holder. There is a difference between senior water right holders who have been impacted by the pumping of junior water rights and the ones that have not been impacted. I live in the middle of the cone of depression for the whole valley. When junior water rights were granted was the point in time when priority should have been put into place.

The State Engineer should have said this valley cannot sustain overpopulation and no new permits will be issued. The State Engineer was still issuing new permits on water rights in early 2000.

I feel that to curtail strictly by priority at this point is not going to help me. My water has dropped 300 feet. I have drilled new wells. I have done everything physically possible. Even if three-quarters of the valley goes away, I am not going to survive financially. Some things in the Groundwater Management Plan will give us some help so my family can continue to live and operate in the Valley.

BOB BURNHAM:

The time to use strict prior appropriation concepts in Diamond Valley was 60 years ago. We have to find more flexible, innovative, constructive solutions now. Many other basins in the State are not at this point yet. The community has done a lot of work to come up with a plan that does not affect anyone else.

MARTIN MOYLE:

The CMA designation may give us the opportunity to do some things outside of State law. Critical Management Area designation gives us an opportunity to do some special things that are particular to the area. We are not looking to change State law but to get solutions. Our livelihoods are at stake.

RUSSELL CONLEY:

I am a member of the advisory board for the Groundwater Management Plan. Diamond Valley is mostly comprised of family farming operations. Our local climate enables us to produce very high-quality hay and forage. The farming portion of our operation is completely reliant upon groundwater. Our water rights have been in effect since early 1961. Even though they have been active for the last 55 years, they are still considered junior and would be among those curtailed if the State Engineer is forced to curtail based on priority.

When we purchased our farm, we knew the basin was overappropriated, but we did not know if our water rights were senior or junior. All we knew was that our water rights were in good standing with the State Engineer's Office. Now, ten years later, we face the possibility of losing our water rights to curtailment. If the Groundwater Management Plan is not adopted within the time frame set forth in subsection 7 of NRS 534.110, we will no longer be able to make a living. Even if we went into bankruptcy, we would have very little to show for



our many years of hard work. Our family, like many others in the community, would be forced to relocate and pursue a different livelihood.

Most of the irrigators in the valley have come together to develop the Groundwater Management Plan. The plan is almost complete. I believe it is a strong plan that would bring the basin back into balance. Our plan provides a local solution to our groundwater problem — a problem we did not create. Not all groundwater users in Diamond Valley agree with the development of the local Groundwater Management Plan. Some believe that the prior appropriation doctrine should be strictly adhered to. Let me reiterate, it was the failure to follow the doctrine that allowed the overpumping in Diamond Valley for so many years. Failure to follow the doctrine has allowed people to build their livelihoods, raise their families and create a strong agricultural community. It would be contradictory to suddenly curtail usage with the aforementioned doctrine, not to mention the impact it would have in the surrounding communities. I urge this Committee to give us the tools necessary to implement a Groundwater Management Plan. It is necessary to keep our local economy thriving and our community intact.

ARI ERICKSON:

I went to the Groundwater Management Plan meetings. I listened and learned. The community has come together and developed a plan where everyone wins. This is a very serious problem. The Basin is dying. The community will die if the Basin dies, and we need to address both problems.

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Senate Committee on Natural Resources  
February 28, 2017  
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CHAIR CANCELA:

These presentations, not just today but throughout the course of the last three weeks, have been designed to prepare the Committee to take on what are some complex issues.

Seeing no further business before the Committee, this meeting is adjourned at 3:22 p.m.

RESPECTFULLY SUBMITTED:

---

Maria Vega,  
Committee Secretary

APPROVED BY:

---

Senator Yvanna D. Cancela, Chair

DATE: \_\_\_\_\_

<b>EXHIBIT SUMMARY</b>			
<b>Bill</b>	<b>Exhibit / # of pages</b>	<b>Witness / Entity</b>	<b>Description</b>
	A 1		Agenda
	B 3		Attendance Roster
	C 10	Steve Bradhurst / Central Nevada Regional Water Authority	Written Testimony
	D 15	Mike Baughman / Humboldt River Basin Water Authority	Slide Presentation
	E 25	Edwin James / Carson Water Conservancy District	Slide Presentation
	F 5	Jake Tibbitts / Eureka County Department of Natural Resources	Presentation
	G 21	Boyd Spratling	Presentation
	H 17	David Berger / United States Geological Survey, Nevada Water Service Center	Presentation

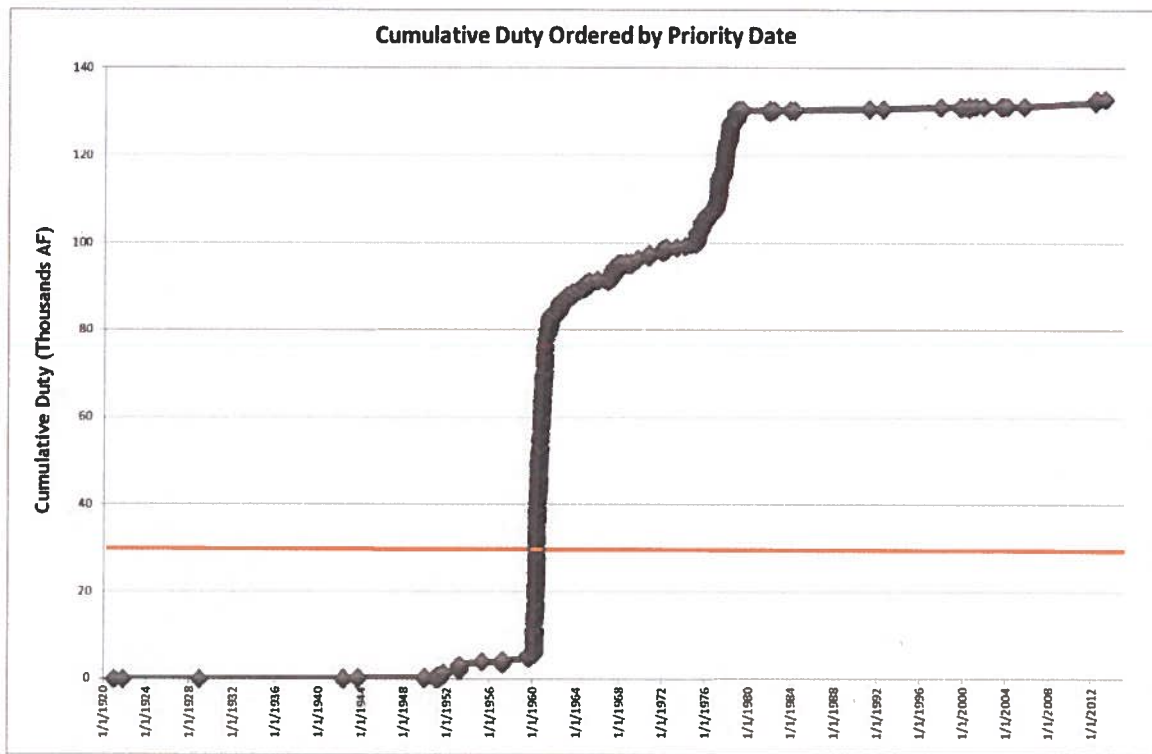
# **EXHIBIT 3**

# **EXHIBIT 3**

## Diamond Valley Background:

- Perennial yield of 30,000 acre-feet (1968 USGS reconnaissance series report) or 35,000 acre-feet (2016 USGS report);
- ~26,000 acres under irrigation – about 200 “circles”;
- About 131,000 acre-feet appropriated of which 125,000 acre-feet is for irrigation;
  - Many reasons given why this happened with a couple being: Desert Land Entries had high success rate and amount of water available for appropriation was not really known at the time.
- Current groundwater pumping approximately 76,000 acre-feet with net pumping about 64,000 acre-feet; 58% of what can legally be pumped and 49% of what can legally be consumed, but still consuming about two times more than the perennial yield;
- Over 110,000 tons of hay produced annually (alfalfa and grass) with total farming income over \$22M annually. The hay sector has an average final demand multiplier of 1.67; for every \$1 generated by the sector Eureka County’s economy will benefit \$1.67 of total revenue. The hay sector has an average income multiplier of 1.28 and an employment multiplier of 1.5. Thus, for every \$1 generated by hay production, total county household income increases by \$1.28 and for every job added by the hay sector, total employment in Eureka County increases by 1.5 employees. (2005, University of Nevada Reno Technical Report UCED 2005/06-14 *Updated Economic Linkages in the Economy of Eureka County*);
- Diamond Valley has been characterized as the “social glue” that holds our community throughout the booms and busts of mining;
- Nearly two-thirds of Eureka County residents get their domestic water needs from DV – Town of Eureka, two GIDs, and dozens of wells;
- Only basin in Nevada currently designated as a Critical Management Area (NRS 534.110).





#### **Water Wars - 1970's and 1980's:**

- Neighbors protesting neighbors
- Claims of impacts to valley floor springs
- State Engineer Hearings in 1980s - movement towards development of a Groundwater Board to find local solutions
- Initiation of formal adjudication

#### **Movement towards a Critical Management Area and Groundwater Management Plan:**

- March 2009 State Engineer Workshop similar to 1980's request – "take matters into your own hands to reduce pumping."
- Many local efforts with a focus on "finding" funding to purchase and retire water rights;
  - Grants
  - Feasibility studies
- 2011 Legislature passed AB 419 (NRS 534.110) allowing CMA designation
  - Seemed to empower more local approaches to finding solutions
- Applications for groundwater rights to mitigate declines in vested claims to surface water added a wrinkle
  - Created a sense of urgency for some and futility for others.
- March 2014 – Another State Engineer Workshop but focused more on the "new" ability provided under AB 419
  - "Need to make progress" was the message taken to heart
- CMA designation in August 2015
  - Something to come together on
- Many formal meetings making progress towards a Groundwater Management Plan
  - As the only CMA currently designated in Nevada, many Diamond Valley water users wish to find local solutions through development of a GMP that is specific and unique to Diamond Valley. They do not wish for their efforts to resolve the challenge in Diamond Valley and keep their agricultural community intact to affect anywhere else in Eureka County or the balance of the state of Nevada.

## Why not simply regulate by strict priority and cut off all juniors in Diamond Valley?

Farmers were incentivized to come to Diamond Valley under the Desert Land Act. They applied for water rights and were granted water rights by the State Engineer. These families have invested their lives into the community. Water rights holders in Diamond Valley are only doing what they are legally entitled to do. Through conservation efforts, much less water is being pumped than is allowed.

We argue that prior appropriation must be followed from the inception of groundwater development at the first application for water and every subsequent application moving forward in a way to avoid conflicts with prior rights and detriment to the water resource itself. If followed in this way, there would not be groundwater appropriations above the perennial yield. Prior appropriation is beautiful if followed this way. Severely over appropriating a basin and then allowing nearly 60 years of overpumping, letting a community be developed, people's entire livelihoods staked in this community, and then saying "let's apply strict prior appropriation" would likely prove devastating to the community. We must have the flexibility within the law **for Critical Management Areas** to allow these local communities to find local solutions to keep communities intact while helping address the past mistakes by the State Engineer's office.

### Diamond Valley Draft Groundwater Management Plan Highlights:

Vision Statement - Diamond Valley and Southern Eureka County are prosperous and economically stable using all means including education and diversification. We are a community that is united, fair and forward thinking about our groundwater usage in order to ensure stability for ourselves now and our future generations.

#### Goals

- Stabilize groundwater levels of the aquifer
- Net groundwater pumping not to exceed perennial yield
- Increase groundwater supply
- Maximize groundwater users committed to achieving vision statement
- Preserve economic outputs
- Maximize viable land-uses of private land
- Do not impair vested rights
- Preserve the socio-economic structure of Diamond Valley and southern Eureka County

Water market-based system - During this process, the groundwater rights holders received presentations on the potential development and implementation of a water market-based system meant to provide ultimate flexibility in using water, while incentivizing conservation and allowing quick sale, lease, trade, etc. of water in times when needed by willing participants. This GMP was developed adapting these concepts to local needs, desires, and constraints.

Water Shares - All irrigation groundwater rights and mining groundwater rights with an irrigation base permit, in good standing according to the records of the State Engineer, will be converted to and issued groundwater shares upon approval of the GMP. Shares issued for mining groundwater rights with an irrigation base permit will be issued on the irrigation base permit, not the mining permit. Priority (i.e., seniority) taken into account -

Accomplished using formula:

$$WR * PF = SA$$

WR = Total groundwater right volume as recognized by DWR accounting for total combined duty

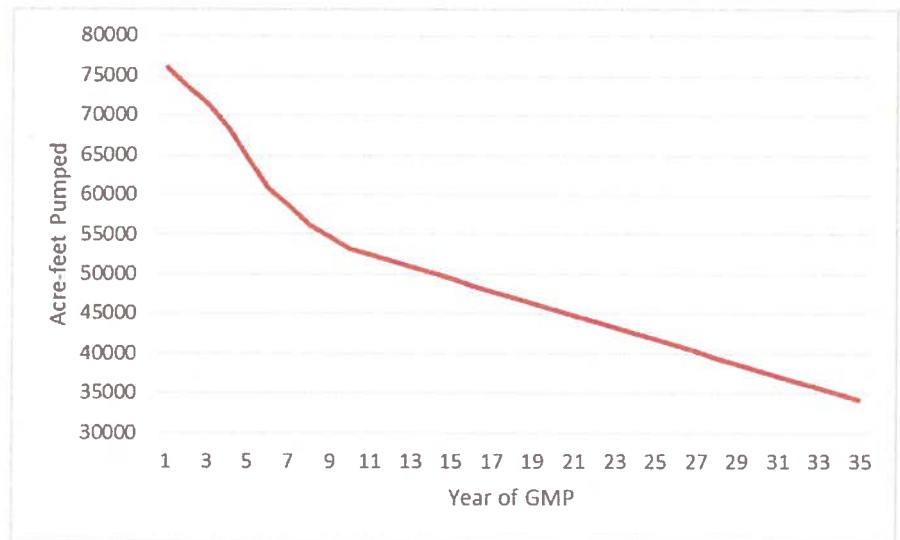
PF = Priority factor based on seniority

SA = Total Groundwater share allotment

**Annual Water Allocations and Pumping Reductions** – annual allocations will be issued to shares each year following the benchmark reductions outlined in the GMP. A secure groundwater share and allocation transfer, settlement, and market system will be developed. Groundwater can only be withdrawn if there is a positive balance in an account. Unused water balances will roll over (banked). Any or all of any groundwater allocation in any individual groundwater Account may be transferred to any other individual groundwater account through willing-party agreements and transactions.

Annual allocations are calculated by taking the total pumping allowed in any given year under the GMP and dividing by the total number of shares, being 114,906.

Year of GMP	Groundwater Pumping (Acre-Feet)	Cumulative Pumping Reduction (%)	Water Allocation (AF/Share)
1	76000	0	0.66
2	73720	3	0.64
3	71440	6	0.62
4	68400	10	0.60
5	64600	15	0.56
6	60800	20	0.53
7	58520	23	0.51
8	56240	26	0.49
9	54720	28	0.48
10	53200	30	0.46
11	52440	31	0.46
12	51680	32	0.45
13	50920	33	0.44
14	50160	34	0.44
15	49400	35	0.43
16	48640	36	0.42
17	47880	37	0.42
18	47120	38	0.41
19	46360	39	0.40
20	45600	40	0.40
21	44840	41	0.39
22	44080	42	0.38
23	43320	43	0.38
24	42560	44	0.37
25	41800	45	0.36
26	41040	46	0.36
27	40280	47	0.35
28	39520	48	0.34
29	38760	49	0.34
30	38000	50	0.33
31	37240	51	0.32
32	36480	52	0.32
33	35720	53	0.31
34	34960	54	0.30
35	34200	55	0.30



**Measuring Use and Administering the System** - All groundwater pumped from Diamond Valley that is subject to the GMP shall be required to be metered using an approved smart flow meter, including a compatible wireless data transmission module with near real-time reporting.



Vested water rights - including spring vested rights that have been diminished and mitigated with groundwater rights, will not be under the jurisdiction or requirements of the GMP.

No out of basin transfers of water

State Engineer retains authority to analyze potential for conflicts and take action if necessary –Wells intended for use to be registered annually. This provides a nexus for the State Engineer to see if pumping will have unreasonable effects on another user or domestic well.

Diamond Valley Groundwater Authority

- Sets annual allocation (cannot operate out of GMP side-board reductions)
- Full-time, paid Water Manager
- State Engineer (or Deputy) is the chair
- Follow Open Meeting Law
- Determines waivers for certain provisions
  - Meter system
- Members have no financial interest in water in DV

Advisory Board - 7 members elected by DV groundwater rights holders. Mining, 2 Agriculture, 4 “open” (will very likely be whatever the main use of water is which is agriculture). Authority required to consult with AB and AB advise Authority on matters.

NOV 26 2019

By  Eureka County Clerk

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**IN THE SEVENTH JUDICIAL DISTRICT COURT OF THE STATE OF NEVADA**  
**IN AND FOR THE COUNTY OF EUREKA**

TIMOTHY LEE BAILEY & CONSTANCE  
MARIE BAILEY, FRED BAILEY &  
CAROLYN BAILEY, IRA R. RENNER &  
MONTIRA RENNER, and SADLER  
RANCH, LLC,

Petitioners,

vs.

TIM WILSON, P.E., Acting State Engineer,  
DIVISION OF WATER RESOURCES,  
NEVADA DEPARTMENT OF  
CONSERVATION AND NATURAL  
RESOURCES,

Respondent.

EUREKA COUNTY, NEVADA, DNRPCA  
INTERVENORS, et al.,

Intervenors.

Case No. CV1902-348

(Consolidated with Case Nos. CV1902-349  
and CV-1902-350)

**REPLY BRIEF OF BAILEY  
PETITIONERS**

**JA1856**

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## INTRODUCTION

Not surprisingly, the Respondents' briefs each take the position that the Diamond Valley Groundwater Management Plan need not comply with Nevada water law. What is surprising, however, is that few of their arguments overlap. Although there is nothing in the text of the relevant statutes that repeals or otherwise authorizes deviations from applicable water law, and although no party argues that the statutory language is ambiguous, the Respondents' arguments, taken together, demonstrate the lack of any coherent argument that the State Engineer properly approved the GMP despite its clear violation of Nevada water law.

The Legislature obviously intended for NRS 534.037 to take Diamond Valley's hydrologic fate from the hands of the State Engineer and place it into the hands of local water rights holders. The issue on appeal is not whether the Nevada Legislature could do that—of course it could. The dispute is whether the text of the subject statutes allows the local water users to violate Nevada water law in ways the State Engineer cannot. The State Engineer takes the position on appeal that the locals are free to create from scratch a water management scheme for their own basin, untethered to the historic and statutory water law that governs water management in the rest of the State. Eureka County argues that it was the CMA designation, not the GMP preparation, that exempts the locals from complying with the law. And DNRPCA, taking the most drastic interpretation, argues that the Legislature did not just allow the GMP to ignore prior appropriation, but actually intended to *prohibit* a GMP from considering priority of water rights.

If it were really the case that these statutes allow a GMP to ignore the foundations of Nevada water law, one would think the Legislature would have clearly said so, or at the least that the proponents would have converged upon the same legal rationale. That neither is the case speaks volumes.

One of the few consistent themes of the Respondents' arguments is their claim that the Legislature must have intended to allow a GMP to violate Nevada's water law because the purpose of the GMP statutes is to avoid strict curtailment by priority. This argument suffers from the fatal flaw that it conflates the legal doctrine of prior appropriation with the statutory remedy of strict curtailment by priority. As shown below, these are separate concepts, and a GMP can easily

1 comply with prior appropriation and at the same time not employ strict curtailment as its remedy,  
2 contrary to the Respondents' arguments.

3 At the end of the day, the Diamond Valley GMP is less a plan to conserve groundwater  
4 and more a blueprint for taking private property from the senior rights and redistributing it to the  
5 junior rights, including to municipal and industrial uses that are not required to share in the  
6 mandated water rights reductions.

## 7 ARGUMENT

### 8 **I. FACTUAL DISPUTES**

9 The Respondents make multiple factual claims in their Answering Briefs which the  
10 Baileys dispute. Many of these are important for understanding the background and context of  
11 this matter, but are irrelevant with respect to the legal issues presented on appeal. Nonetheless, in  
12 order to ensure that the Baileys are not accused of waiving their right to object to the Respondents  
13 factual claims, the Baileys respond briefly below.

#### 14 **A. The Diamond Valley Groundwater Management Plan is Not a Local Product**

15 In their Opening Brief, the Baileys went to great length to discuss and explain the Young  
16 Paper. Bailey Op. Br. at 6. The Young Paper is included in the attached Addendum at 1–50. The  
17 Young Paper was developed by Australian economist Prof. Michael Young. None of the  
18 Respondents have disputed that the Young Paper formed the blueprint and significantly influenced  
19 the development of the GMP. Nor have any of the Respondents provided an explanation for the  
20 genesis of the Young Paper and its adoption as the blueprint for the GMP. Nor have any of the  
21 Respondents explained how, why or upon whose invitation Mr. Young came to Eureka in 2016 to  
22 present his concept.

23 What is clear, then, is that the GMP, and specifically its free-market and water banking  
24 approaches, is not the product of the local groundwater users putting their collective heads  
25 together to plot their future in response to the designation of Diamond Valley as a critical  
26 management area. Instead, the Eureka Conservation District imposed this concept onto the  
27 process from the very beginning. The State Engineer designated Diamond Valley as a critical  
28 management area on August 25, 2015 (ROA 134–38), and the Young Paper was published weeks

1 later in September 2015. The amount of detail regarding Diamond Valley and its potential as a  
2 petri dish for Mr. Young's water-marketing scheme leads to the obvious conclusion that the  
3 intention to use Diamond Valley as the testing ground for this new water market was developed  
4 much earlier than the State Engineer's CMA designation. Furthermore, as early as June 2015,  
5 Eureka County and/or the Eureka Conservation District had announced that "[o]ur  
6 recommendations have been influenced significantly by a Blueprint for Western Water  
7 management that builds upon the Australian water sharing [and] permit unbundling and was  
8 presented to us by Prof. Mike Young on Thursday, June 11, 2015." ROA 294.

9       The true local input was gathered very early, during the facilitated Walker & Associates  
10 2014 scoping process. That process involved actual interviews and collaborative meetings with  
11 local irrigators to develop ideas and solutions to the over pumping occurring in Diamond Valley.  
12 ROA 249–257. That truly local process resulted in a litany of potential solutions. ROA 252–54.  
13 Specifically, ideas such as a funded water rights purchase program, implementation of farming  
14 best management practices, efficiency improvements such as upgrading to more efficient  
15 sprinklers, well metering, establishment of a shorter irrigation season, fallowing programs, etc.  
16 were proposed by the local stakeholders. *Id.* Notably, the 2014 local scoping process revealed  
17 that only *once* was a water marketing approach suggested (ROA 262), and it only received a single  
18 vote of support at that time; and water banking was only suggested twice, receiving a total of five  
19 votes of support (ROA 262, 266).

20       The Walker & Associates July 29, 2014, final summary of the local scoping process did  
21 not include the water marketing or aquifer banking proposals as resolutions for continued  
22 consideration. ROA 258–61. Nonetheless, as described in the Baileys' Opening Brief, less than a  
23 year later Eureka Conservation District explained that its decision to proceed with a water-  
24 marketing approach for the Diamond Valley GMP was "influenced significantly by a Blueprint for  
25 Western Water Management that builds upon the Australian water sharing & permit unbundling  
26 and was presented to us by Prof. Mike Young." ROA 294. None of the Respondents explained  
27 how or why Mr. Young's approach was selected in this manner when its concepts were not a  
28 popular choice after the 2014 local scoping process.



1 It is clear that the blueprint used for creation of the GMP is not a local product, but was  
2 instead created in advance by an Australian economist for the purpose of a pilot test in Diamond  
3 Valley, contrary to the Respondents' claims that the GMP is the product of the toil and heartbreak  
4 of the local community. As the minutes of the local meetings show, the Diamond Valley GMP's  
5 fundamental approach never deviated from the Young Paper's blueprint, and the only local input  
6 was around the edges. GMP Appendix C (ROA 277–475).

7 **B. The Baileys Participated in the GMP Meetings But Their Input and Concerns**  
8 **Were Ignored**

9 The Respondents also attempt to cast aspersions upon the Baileys by claiming that the  
10 Baileys did not participate in the GMP development process and failed to provide comments and  
11 alternatives, and therefore the Baileys' legal arguments should be discounted. *See e.g.* SE Ans.  
12 Br. at 2; Eureka Co. Ans. Br. at 3. These claims are not supported by the evidence in the record.  
13 For example, one or more of the Baileys attended the GMP meetings from the inception through  
14 the first approximately year and a half. *See e.g.* ROA 286, 293, 299, 301, 311, 338–40. The last  
15 meeting attended by any of the Baileys was on August 25, 2016, when it had become clear that the  
16 anti-prior appropriation, water-marketing scheme had been sufficiently imposed upon Diamond  
17 Valley. In addition, the Baileys provided both oral and written comment on the GMP at and  
18 following the October 30, 2018, public hearing. ROA 536–539 (written comments); ROA 658–59  
19 (public comment of Timothy Bailey); ROA 723–26 (public comment of Carolyn Bailey).

20 Based upon the evidence in the record, it is simply untrue that the Baileys refused entirely  
21 to participate in the process of GMP development. To the contrary, the Baileys participated up  
22 until the time the GMP had been developed and it was clear that no amount of participation would  
23 influence the decision to adopt Mr. Young's free-market scheme to undo the prior appropriation  
24 doctrine in Diamond Valley.

25 **II. GROUNDWATER MANAGEMENT PLANS ARE NOT EXEMPT FROM LAW**

26 As explained in the Bailey's Opening Brief, the GMP violates numerous provisions and  
27 doctrines of Nevada water law. In their answering briefs, the Respondents argue on the one hand  
28 that the relevant statutes clearly countenance such violations despite no clear statutory text to that

1 effect, and on the other hand that the GMP does, in fact, comply with the law. Obviously, they  
2 cannot have it both ways.

3       **A.       Strict Curtailment By Priority is Not the Sole Remedy of the Prior**  
4       **Appropriation Doctrine**

5       The fatal flaw of the Respondents' argument is that they conflate the prior appropriation  
6 doctrine with the remedy of strict curtailment by priority by arguing that strict curtailment is the  
7 only remedy available consistent with the prior appropriation doctrine. By conflating the legal  
8 doctrine with the remedy for its violation, the Respondents mistake the legislative intent of the  
9 new groundwater management plan statutory scheme with the underlying historic foundation of  
10 Nevada's water law. Their claim that strict curtailment by priority was the only remedy available  
11 prior to the groundwater management plan statute is incorrect, and therefore so is their argument  
12 that the legislature intended to abolish the entirety of the prior appropriation system.

13       As explained in the Bailey's Opening Brief, the prior appropriation doctrine forms the  
14 underpinning of Nevada's entire scheme of water law. That doctrine stands for the proposition  
15 that a senior water right (measured by its relative initiation of the use of water) has the superior  
16 claim to the water source over a junior water right. 'First in time is first in right' is the foundation  
17 of the entire structure of allocation of the use of the public's water resources throughout the entire  
18 State of Nevada. *See e.g. Jones v. Adams*, 19 Nev. 78, 86 (1885) ("the first appropriator of the  
19 waters of a stream had the right to insist that the water flowing therein should, during the irrigating  
20 season, be subject to his reasonable use and enjoyment to the full extent of his original  
21 appropriation and beneficial use."). The prior appropriation doctrine is based upon the notion that  
22 the holder of the senior right is entitled to the full use of his right before a junior right; and  
23 conversely, a junior right may not begin to use water from the source unless the senior right is  
24 fully satisfied. There is no conflict among senior and junior rights holders when the water source  
25 is of sufficient quantity to satisfy all water rights.

26       In times of shortage, however, *curtailment by priority* is the ultimate remedy available to  
27 the State Engineer in order to allocate available water to those with a right to use it, when all else  
28 fails. This remedy, while very much related, is not synonymous with the underlying doctrine of

1 prior appropriation, as the Respondents' briefs argue. Nor is strict curtailment by priority the sole  
2 statutory remedy available to the State Engineer for over appropriated basins. It does not follow,  
3 then, that upon creation of the statutory authority to approve a groundwater management plan as  
4 an alternative to curtailment, the underlying doctrine of prior appropriation was functionally  
5 abolished. This, however, is precisely the argument made by the Respondents.

6       The Respondents attempt to contort the Baileys' position by misstating their argument as  
7 requiring that a groundwater management plan must employ the remedy of strict curtailment in  
8 order to comply with the prior appropriation doctrine. This is not the Baileys' position. The  
9 Baileys' agree with the Respondents that the Legislature intended for a groundwater management  
10 plan to provide for remedies other than strict curtailment by priority, but that does not mean a  
11 groundwater management plan may jettison the underlying foundation of Nevada's water law.  
12 This is precisely the reason the Baileys' Opening Brief included a short discussion of possible  
13 alternative groundwater management plan schemes—not to propose alternatives that the State  
14 Engineer was required to consider, but to provide examples to the Court that it is easily possible  
15 for a groundwater management plan to both comply with the prior appropriation doctrine and *not*  
16 employ the statutory remedy of strict curtailment by priority.

17       Additionally, as set forth above, the original 2014 facilitated scoping process conducted by  
18 Walker & Associates resulted in the identification of multiple alternative remedies that would  
19 have both reduced the demand on the aquifer and complied with the doctrine of prior  
20 appropriation. *See e.g.* ROA 252–54 (a funded water rights purchase program, implementation of  
21 farming best management practices, efficiency improvements such as upgrading to more efficient  
22 sprinklers, well metering, establishment of a shorter irrigation season, fallowing programs, etc.  
23 were proposed by the local stakeholders). For undisclosed reasons, these proposals were not  
24 pursued and none of them are mandated by the GMP.

25       This is also where the *Lewis* case, from New Mexico, may be instructive—not for  
26 providing the legal cover used by the State Engineer in Order 1302 to approve the GMP that fails  
27 to comply with prior appropriation, but as an example of alternative remedies during times of  
28 shortage that are not strict curtailment or a “priority call,” but nonetheless comply with prior

1 appropriation. *Lewis*, of course, found both that the plan at issue there complied with prior  
2 appropriation and avoided strict curtailment by priority, showing that both can be done. *See State*  
3 *Engineer v. Lewis*, 150 P.3d 375, 376 (N.M. 2006) (“The present case involves ... a settlement  
4 agreement to resolve difficult long-pending water rights issues ... *without offending New Mexico’s*  
5 *bedrock doctrine of prior appropriation, and without resorting to a priority call.*”) (emphasis  
6 added).

7 **B. The CMA and GMP Statutes Lack Any Express Language Permitting**  
8 **Deviations from Nevada Water Law**

9 Despite taking the correct position that NRS 534.037 and 534.110(7) are not ambiguous,  
10 the Respondents tie themselves in knots trying to articulate how the statutes can possibly permit a  
11 GMP to violate prior appropriation doctrine when there is no such language in the statutes. Let us  
12 be clear: for a statute to unambiguously permit a GMP to violate Nevada water law, it would need  
13 to include language such as, ‘A groundwater management plan created pursuant to this act is not  
14 required to comply with Nevada’s prior appropriation law.’ There is, of course, no such language  
15 in the relevant statutes.

16 Unless a statute is ambiguous, the Court need not delve into legislative intent. *McKay v.*  
17 *Board of Supervisors*, 102 Nev. 644, 648 (1986) (“Where a statute is clear on its face, a court may  
18 not go beyond the language of the statute in determining the legislature’s intent.”) (citing  
19 *Thompson v. District Court*, 100 Nev. 352, 354 (1984); *Robert E. v. Justice Court*, 99 Nev. 443  
20 (1983)); *see also In re Nev. State Eng. Ruling No. 5823*, 128 Nev. 232, 239 (2012) (“we do not  
21 inquire what the legislature meant; we ask only what the statute means”) (quoting Oliver Wendell  
22 Holmes, *Collected Legal Papers* 207 (1920)); *Washoe Med. Ctr. v. Second Jud. Dist. Ct.*, 122  
23 Nev. 1298, 1302 (2006); *Pro-Max Corp. v. Feenstra*, 117 Nev. 90, 95 (2001) (“in circumstances  
24 where the statute’s language is plain, there is no room for constructive gymnastics, and the court is  
25 not permitted to search for meaning beyond the statute itself.”).

26 NRS 534.037 and 534.110(7) are not ambiguous, so the Court need not look beyond the  
27 statutes’ plain, clear text. Had the Legislature intended to repeal the prior appropriation doctrine,  
28 or any other law, for groundwater management plans, it would have explicitly said so. *State*

1 *Indus. Ins. Sys. v. Woodall*, 106 Nev. 653, 657 (1990) (had the Legislature intended a particular  
2 result, it “would have indicated as much in the statutes themselves so the judiciary would not be  
3 required to divine such a rule out of thin air.”). The terms “repeal,” “replace,” “abrogate,” etc. do  
4 not appear in either NRS 534.037 or NRS 534.110(7).

5 This is especially important here because the law that the Respondents claim was impliedly  
6 repealed is the bedrock prior appropriation law that governs one of the most important, and scarce,  
7 natural resources in Nevada. Priority of water rights is the most valuable stick in the bundle that  
8 makes up the private right to use water in the West. *See e.g. Whitmore v. Murray City*, 154 P.2d  
9 748, 751 (Utah 1944) (“It often happens, that the chief value of an appropriation consists in its  
10 priority over other appropriations”) (quoting *Nichols v. McIntosh*, 34 P. 278, 280 (Colo. 1893));  
11 *see also Wilson v. Happy Creek, Inc.*, 448 P.3d 1106, 1115 (Nev. 2019) (“the loss of priority here  
12 could ultimately cause an effective cancellation; rendering ... otherwise valuable rights useless....  
13 And to ignore such injury would seem to run contrary to this court’s precedent that recognizes that  
14 a loss of priority that renders rights useless certainly affects the rights’ value and can amount to a  
15 de facto loss of rights.”) (internal quotations omitted) (citing *Andersen Family Assocs. v. State*  
16 *Engineer*, 124 Nev. 182, 190, 191 (2008)).

### 17 **C. Implied Repeal of Existing Law Is Strongly Disfavored**

18 Notwithstanding that each Respondent argues the subject statutes are not ambiguous, they  
19 are left only with arguing that the GMP statutes *impliedly repealed* the prior appropriation  
20 doctrine because the text lacks any express repeal of Nevada water law.

21 Repeal by implication is heavily disfavored in Nevada:

22 Where express terms of repeal are not used, *the presumption is always against an*  
23 *intention to repeal an earlier statute*, unless there is such inconsistency or  
repugnancy between the statutes as to preclude the presumption....

24 *W. Realty Co. v. City of Reno*, 63 Nev. 330, 344 (1946) (emphasis added) (quoting *Ronnow v. City*  
25 *of Las Vegas*, 57 Nev. 332, 364–65 (1937)); *see also id.* (“Where two statutes are flatly repugnant,  
26 the later, as a general rule, supplants the earlier.”); *Washington v. State*, 117 Nev. 735, 739 (2001)  
27 (repeal by implication “is heavily disfavored, and we will not consider a statute to be repealed by  
28 implication unless there is no other reasonable construction of the two statutes.”); *Thomas v.*



1 *Yellow Cab*, 327 P.3d 518, 521 (2014) (“The presumption is against implied repeal unless the  
2 enactment conflicts with existing law to the extent that both cannot logically coexist.”); *Ramsey v.*  
3 *City of N. Las Vegas*, 392 P.3d 614, 629 (Nev. 2017) (“a newer provision impliedly supersedes the  
4 older when the two are *irreconcilably repugnant, such that both cannot stand.*”) (emphasis added).

5 For the Court to find that the GMP statutes repealed Nevada water law by implication, it  
6 must first determine that the GMP statutes and the prior appropriation doctrine are “flatly  
7 repugnant” to each other and conflict with each other “to the extent that both cannot logically  
8 coexist.” That is a very high burden, and the Respondents’ have failed to meet it.

9 This is the reason the Baileys’ Opening Brief included a short discussion of alternative  
10 potential groundwater management plans—not because they should have been mandated by the  
11 State Engineer in Diamond Valley, but to show by way of example that it is easy to create a plan  
12 that harmonizes the prior appropriation doctrine with the legislature’s intent to avoid the remedy  
13 of strict curtailment by priority. *See e.g.* Bailey Op. Br. at 17–18; *see also Hefetz v. Beavor*, 133  
14 Nev. Adv. Rep. 46, 397 P.3d 472, 475 (2017) (“When construing statutes and rules together, this  
15 court will, if possible, interpret a rule or statute in harmony with other rules and statutes”)  
16 (citing/quoting *Albios v. Horizon Communities, Inc.*, 122 Nev. 409, 418 (2006); *Orion Portfolio*  
17 *Servs. 2, LLC v. County of Clark*, 126 Nev. 397, 403 (2010) (“This court has a duty to construe  
18 conflicting statutes as a whole, so that all provisions are considered together and, to the extent  
19 practicable, reconciled and harmonized.”). As the New Mexico court did in the *Lewis* case, the  
20 State Engineer should have interpreted any ambiguity in NRS 534.037 and 534.110(7) in such a  
21 way that they are harmonized with the prior appropriation doctrine, not repugnant to it. The  
22 failure to do so by approving the anti-prior appropriation Diamond Valley GMP constitutes an  
23 error of law that this Court should reverse.

#### 24 **D. The General-Specific Canon of Construction**

25 Eureka County argues that a groundwater management plan need not comply with the  
26 doctrine of prior appropriation because it is a “specific” provision that is an exception to a more  
27 “general” provision. Eureka Co. Br. at 12. The general-specific canon is, of course, only to be  
28 used if the relevant statute is ambiguous, which, as set forth above, all Respondents have claimed

1 is not the case. Nonetheless, Eureka Co. relies upon this canon of statutory interpretation to argue  
2 that NRS 534.110(7) is a specific statute that is an exception to the general curtailment authority  
3 of NRS 534.110(6). “Under the general specific canon, the more specific statute will take  
4 precedence, and is construed as an exception to the more general statute, so that, when read  
5 together, the two provisions are not in conflict, but can exist in harmony.” *Williams v. State Dept.*  
6 *of Corr.*, 402 P.3d 1260, 1265 (Nev. 2017) (citing/quoting *Lader v. Warden*, 121 Nev. 682, 687  
7 (2005); Antonin Scalia & Bryan A. Garner, *Reading Law: The Interpretation of Legal Texts* at 183  
8 (2012); *Piroozi v. Eighth Judicial Dist. Court*, 131 Nev., Adv. Op. 100, 363 P.3d 1168, 1172  
9 (2015)).

10 Here, NRS 534.110(6) and 534.110(7) are not subject to the general-specific cannon of  
11 construction because they are not in conflict with each other when read plainly. The only reading  
12 that puts them in conflict is to assume from the outset, as Eureka County does, that the Legislature  
13 intended to repeal prior appropriation, i.e. they *must be* in conflict *precisely because* the  
14 Legislature must have intended to exclude a groundwater management plan from the foundational  
15 prior appropriation doctrine. Eureka County puts the cart before the horse and makes an argument  
16 that requires first assuming the desired outcome.

17 **E. The Legislature Did Not Need to Affirmatively Subject GMPs to Existing Law**

18 The Respondents’ also describe a ridiculous and wholly unworkable canon of statutory  
19 construction: that the Legislature must not have intended for groundwater management plans to be  
20 subject to the existing prior appropriation law because the statute does not contain express  
21 language to that effect. Eureka Co. Br. at 14 (“if the Legislature had wanted senior rights fulfilled  
22 before junior rights as part of any groundwater management plan approved pursuant to NRS  
23 534.037, it would have put such a requirement in NRS 534.037”); DNRPCA Br. at 12 (“the  
24 Legislature established *a whole new statutory structure* regarding CMA designation and GMP  
25 approval”) (emphasis added); SE Br. at 26 (“Absent from this list of factors [for SE approval] is  
26 any requirement that the proposed groundwater management plan comply with the strict  
27 application of the prior appropriation doctrine”).

28 It cannot be the case that anytime the Legislature creates a new statutory scheme or act, it

1 must expressly and affirmatively subject that new scheme to all other legal provisions for the new  
2 scheme to be subject to other laws. To the contrary, the Legislature need not affirmatively list  
3 what laws are still in place when passing new laws; it must clearly state which laws are repealed or  
4 which laws the new scheme is *not* subject to. *State Indus. Ins. Sys. v. Woodall*, 106 Nev. at 657  
5 (had the Legislature intended a particular result, it “would have indicated as much in the statutes  
6 themselves so the judiciary would not be required to divine such a rule out of thin air.”)

7       At the end of the day, it is clear that the Legislature created a process whereby alternative  
8 remedies could be fashioned to address the State Engineer’s creation of a man-made shortage of  
9 groundwater. However, such alternative remedies, no matter the good will of the participants to  
10 correct the overappropriation of the groundwater basin, cannot ignore the requirements of  
11 Nevada’s substantive water law. The Nevada Supreme Court, long ago, determined that the senior  
12 right holder’s protection is paramount under the prior appropriation doctrine: “The conservation of  
13 the waters in this state is the order of the day, and will increase the population and wealth, and is  
14 for the public good. It should be encouraged by all legitimate means, *but not to the extent of*  
15 *depriving the owner of water already acquired by prior application to a beneficial use.”* *Tonkin v.*  
16 *Winzell*, 27 Nev. 88, 99 (1903) (emphasis added). Such conservation cannot be had at the expense  
17 of senior right holders: “let this desired improvement and economy be at the expense of the later  
18 claimant, who is desirous of utilizing the water thereby to be saved; or at least without detriment  
19 to existing rights, whether up or down the stream.” *Id.* See Also Eureka Co. Ans. Br. at 19  
20 (quoting Sen. Pete Goicoechea’s own recognition that the 2011 GMP bill was not intended to  
21 redistribute water rights from senior holders to junior holders: “People with *junior rights will try*  
22 *to figure out how to conserve* enough water under these [groundwater management] plans.”)  
23 (emphasis added).

24       **F. 1999’s AB 380 Law is a Perfect Example of Clear Legislative Language to**  
25       **Repeal Prior Appropriation with a New Statute**

26       DNRPCA argues that the Nevada Legislature has “rejected” the prior appropriation  
27 doctrine numerous times in past legislation. DNRPCA Br. at 13–15. Only one of those examples,  
28 1999’s AB 380, is actually an example of a legislative adoption of a new scheme that did not



1 comply with the prior appropriation doctrine; and AB 380's statutory text was very clear in that  
2 regard. The other cases cited by DNRPCA as alleged "rejections" of the prior appropriation  
3 doctrine, such as *Town of Eureka v. State Engineer, Application of Fillippini*, and *Mt. Falls Acq.*  
4 *Corp v. State* (unpublished), do not in fact reject prior appropriation—they merely state that the  
5 State has authority to manage the public's water resources. That general authority is not  
6 challenged on appeal.

7 AB 380, however, did drastically change the forfeiture and abandonment of water rights  
8 provisions of the prior appropriation doctrine. *See* Addendum at 61–65. But the context and  
9 statutory text of that drastic change are instructive when compared to the groundwater  
10 management act statutes and the manner in which the Respondents argue the foundations of prior  
11 appropriation doctrine were allegedly rejected. The question presented in this case is not *whether*  
12 the Legislature is empowered to reject prior appropriation through statutory change, but instead  
13 *how* such a drastic change must be enacted.

14 AB 380 was a legislative compromise of a seemingly intractable legal fight among several  
15 major stakeholders in the Truckee-Carson River systems. Those stakeholders—the Truckee-  
16 Carson Irrigation District, Pyramid Lake Paiute Tribe, City of Fallon, Churchill County and Sierra  
17 Pacific Power Company—submitted joint testimony in favor of AB 380 before the Senate  
18 Committee on Natural Resources. *See* Addendum at 51–60. These stakeholders' joint written  
19 testimony explains that, beginning in 1984, several applications to change the place of use of  
20 Newlands Project irrigation water rights were subjected to legal protest, including the claim that  
21 the water rights had been forfeited or abandoned. *Id.* at 1. The joint testimony describes that these  
22 legal challenges to irrigation water rights ultimately resulted in three legal decisions by the United  
23 States District Court for the District of Nevada, two decisions of the Ninth Circuit and weeks of  
24 hearings before the State Engineer. *Id.* at 2. In addition to the challenges before the State  
25 Engineer which resulted in the numerous court decisions, the Pyramid Lake Paiute Tribe had also  
26 filed two massive legal challenges in the Nevada federal district court claiming irrigation water  
27 rights had been forfeited or abandoned, in the *Orr Ditch* Decree governing the Truckee River and  
28 the *Alpine* Decree governing the Carson River. *Id.* In the early 1990s, Churchill County and the

1 City of Fallon began to protest changes of irrigation water rights to municipal or industrial use  
2 within the greater Reno area, including claims that water rights had been forfeited or abandoned.  
3 *Id.* at 3. The joint testimony recognizes that all of these challenges would have “consumed  
4 substantial resources of the Office of the State Engineer and the courts.” *Id.* This seemingly  
5 intractable problem was the background for the negotiation of AB 380.

6 So what did AB 380 do, and how did it do it? As explained by the joint stakeholder  
7 testimony, AB 380 was intended to “provide a stimulus” for the resolution of the legal challenges  
8 and dismissal of the litigation by “provid[ing] a funding mechanism for the acquisition of water  
9 rights” and by providing that “surface water rights are not subject to forfeiture and set out specific  
10 guidelines regarding abandonment”. *Id.* at 3. Specifically, AB 380 provided for the voluntary  
11 acquisition, retirement and abandonment of 6,500 acres of irrigation surface water rights  
12 (approximately 23,000 to 29,000 acre-feet) using funds dedicated for that purpose. *Id.* at 4. Those  
13 funds, totaling approximately \$13,500,000, were provided by the State of Nevada, the United  
14 States and Reno municipal and industrial water users. *Id.* There were, however, strict conditions  
15 on the acquisition of water rights using this fund: “Surface water rights are to be acquired only  
16 from **willing sellers**.” *Id.* (emphasis added). Once 6,500 acres of land and associated water rights  
17 had been taken out of use through this program, the litigation and legal challenges would be  
18 dismissed. *Id.* at 5. As to the statutory change necessary to effectuate the removal of forfeiture  
19 from Nevada’s water law, the Legislation did so expressly and clearly by *repealing* the existing  
20 forfeiture law and *replacing* it with a new provision that “expressly provides that a right to the use  
21 of surface water cannot be lost by nonuse alone.” *Id.* at 6; *see also id.* at 62.

22 DNRPCA is correct that AB 380 was a drastic change in law that effected the rejection of  
23 one piece of the prior appropriation doctrine; but that rejection was clear and express and its  
24 effects on the stakeholders were accepted and mitigated with millions of dollars of funding for  
25 voluntary water rights retirements. Here, of course, there is nothing of the sort. As set forth  
26 above, the groundwater management plan statutes lack any text repealing the prior appropriation  
27 doctrine, no funds have been provided to mitigate the impact of mandatory taking of private  
28 property rights in water, and there is nothing voluntary about the water rights reductions of the

1 GMP. The comparison to 1999's AB 380 therefore is quite instructive, but it strongly supports the  
2 notion that a drastic change of the underpinnings of Nevada's prior appropriation law must be  
3 done clearly, expressly and with an eye toward mitigating the impacts to those who would be  
4 harmed by such a change, none of which is the case with respect to the Respondents' claim that  
5 the GMP statutes impliedly repealed prior appropriation in order for the Diamond Valley majority  
6 to adopt Mr. Young's market-based water banking scheme that redistributes private property  
7 rights.

### 8 **III. OTHER VIOLATIONS OF LAW**

#### 9 **A. The GMP's Groundwater Banking Violates the Beneficial Use Requirement**

10 As the Baileys explained in their Opening Brief, the GMP's groundwater banking scheme  
11 violates the beneficial use requirement of Nevada water law because it allows the instant  
12 perfection of previously unperfected "paper" water rights permits through the creation of a new  
13 and untested beneficial use of aquifer banking, and because it allows for the storage of water rights  
14 year after year without a water right storage permit. As with the GMP's annihilation of the  
15 priority of water rights, these deviations of Nevada water law lack any express statutory  
16 foundation.

17 The Respondents argue this banking scheme was properly approved despite these legal  
18 aberrations on the alleged basis that allowing storage of groundwater in the aquifer would help to  
19 conserve water, first through incentivizing the non-use of groundwater and second through  
20 removing the incentive for owners of unperfected paper water rights to begin putting them to use  
21 immediately. But banking groundwater serves no conservation purpose because it just delays, but  
22 does not end, the withdrawals. One purpose of banking unused water today is to save it for  
23 withdrawal in the future, either by the holder of the permit or by selling to another, but banking  
24 water does not result in permanent conservation in the aquifer. Therefore, water banking does not  
25 promote the recovery of the groundwater aquifer—it incentivizes its eventual withdrawal—and  
26 there is no hydrologic or other analysis presented in the record to the contrary.

1           **B.       The GMP's Permissive Approach to Water Rights Changes Violates Law**

2           Citing extensively to the Young Paper, the Baileys' Opening Brief explained that the ease  
3 of changes to the point of diversion, place of use and manner of use of water rights—including  
4 limiting the State Engineer's ability to review such changes—is not a bug of the GMP, it is a  
5 primary feature of the scheme. Bailey Op. Br. at 29–30. The purpose of this easing of the State  
6 Engineer's otherwise statutory obligation to review water rights change applications is to allow  
7 “buyers and sellers [to be] able to trade with one another with dramatically reduced transaction  
8 costs,” i.e. to avoid constant scrutiny of potential adverse impacts and related legal challenges.  
9 Young Paper at 1. However, the Young Paper correctly notes that the only way such a scheme  
10 could pass muster is if it includes, at the very least, prescriptive rules to avoid adverse impacts to  
11 others. Young Paper at 13. The Diamond Valley GMP allows for the easy temporary trading of  
12 water rights with no review by the State Engineer, but it fails to include Mr. Young's suggestion to  
13 determine in advance how to avoid the adverse impacts of such transfers. Not a single Respondent  
14 addressed this point in their Answering Briefs.

15           The GMP violates the requirements of NRS 533.325 and 533.370(2) that require the State  
16 Engineer to analyze all proposed water rights change applications for potential conflicts with other  
17 water rights. The State Engineer claims on appeal that his “involvement” in the change process  
18 via the 14-day trigger is enough to comply with law, even though the entire burden is shifted from  
19 the applicant to the State Engineer because water rights changes are “deemed approved” if the  
20 State Engineer does not act on them within the 14-day period. The State Engineer's mere  
21 “involvement” in this process does not save it from violating the existing statutes.

22           Furthermore, there is no evidence in the record that demonstrates these liberal change  
23 provisions will support the conservation goals of the GMP statute; just like aquifer banking, liberal  
24 water rights changes incentivize water use rather than conservation because it incentivizes trading  
25 unused water to another for future use.

1           **C.      Adverse Impacts to Vested Rights**

2           In their Opening Brief, the Baileys argue that the GMP violates NRS 533.085(1) because it  
3 allows for the continued impairment of their senior vested water rights. Bailey Open Br. at 30–32.  
4 The impacts are caused by the continued lowering of the water table during the 35 or more years it  
5 takes to reach a new equilibrium between natural recharge and withdrawals, and the fact that even  
6 after that equilibrium is reached the senior vested surface water rights will still fail to be satisfied.  
7 *Id.* The Baileys argue that the State Engineer’s approval of the GMP, which the State Engineer  
8 admits was based not on hydrogeologic analysis but was instead based on “agreement of the GMP  
9 authors” (Order 1302 at 15 (ROA at 16)), was therefore arbitrary and capricious and should be set  
10 aside. There is simply no evidence in Order 1302 or in the record that the GMP will alleviate,  
11 rather than exacerbate, adverse impacts to vested surface water rights.

12           In response, the State Engineer argues, as he does with the law of prior appropriation, that  
13 unless NRS 534.037 affirmatively proscribes that a GMP must not impact surface water rights,  
14 then the State Engineer is powerless to reject a plan that has such impacts. SE Ans. Br. at 36  
15 (“NRS 534.037 does not require the proponents of a groundwater management plan or the State  
16 Engineer *to consider the alleged effects on surface water rights*”) (emphasis added); *see also*  
17 DNRPCA Ans. Br. at 24 (“the Legislature did not require the State Engineer to look at effects on  
18 vested rights as part of a GMP approval process.”). Of course, a standard that requires every new  
19 law to affirmatively list the existing laws with which it must comply, or the existing rights it must  
20 not harm, is a completely unworkable standard.

21           The State Engineer also argues, without citation to anything in the record, that the GMP’s  
22 eventual reduction of annual allocations to the perennial yield “will have a side-benefit of  
23 protecting senior surface rights.” As set forth in the Baileys’ Opening Brief and immediately  
24 above, this is a complete misunderstanding of the expected state of the aquifer after the 35 year  
25 period of gradual allocation reductions. By reducing allocations to the perennial yield, the GMP  
26 may *slow the decline*, but the GMP and the State Engineer’s Order 1302 purposefully refused to  
27 consider whether this would result in stopping or reducing the adverse impacts to vested surface  
28 water rights. Because the GMP at best only slows aquifer decline, it continues the harm to vested



1 surface water rights.

2 Finally, with respect to the continuing harm to vested surface water rights, Eureka County  
3 argues that both the Baileys and Sadler Ranch are estopped from making these claims because  
4 they have never complained of such impacts in the past. Eureka Co. Ans. Br. at 22–23. This  
5 argument does not even pass the smell test. Application of “the doctrine of equitable estoppel  
6 ... depends upon the particular facts and circumstances of a given case.” *Chequer, Inc. v. Painters*  
7 *& Decorators Joint Comm.*, 98 Nev. 609, 614 (1982). Here, Eureka County’s argument is  
8 premised upon two unsupported allegations: that the Baileys have a so-called “mitigation” water  
9 right tied to their vested surface water rights, and that they “never complained” that the so-called  
10 mitigation right was not adequate. Eureka County does not cite to anything in the State Engineer’s  
11 Record on Appeal in support of these factual claims, which is because neither have any support in  
12 the record, and neither are true. Furthermore, the estoppel defense requires a showing that the  
13 party asserting it relied to his detriment upon the representations of the adverse party. *Id.* Here,  
14 Eureka County has not provided any evidence, or even argued, that it relied on the Baileys’  
15 alleged satisfaction that their surface water rights had been fully mitigated as part of its support of  
16 the GMP, or that they suffered any detriment because of such reliance. The Court should reject  
17 out of hand Eureka County’s complete failure to make a coherent estoppel argument regarding  
18 impacts to senior vested surface water rights.

19 **D. Voting Procedure**

20 In their Opening Brief, the Baileys explained that NRS 534.037(1) does not by its terms  
21 limit the voting power for approval of a groundwater management plan to only groundwater  
22 permits. Nor does the statute expressly limit voting power to only irrigation permits. To the  
23 contrary, the statute reads much more broadly; it requires that all water rights in the basin be given  
24 an opportunity to vote for or against a groundwater management plan: “by a majority of holders of  
25 permits or certificates to appropriate water in the basin....” *Id.* Yet, the GMP proponents  
26 weighted the vote in favor of the junior groundwater users by excluding the senior surface water  
27 users from voting.

28 The State Engineer argues that, because this statute is found in Chapter 534, it must be

1 interpreted to apply only to groundwater. SE Br. at 24–25. First, the State Engineer cites no  
2 authority for this proposition, and second, the plain language of the statute does not limit voting to  
3 only rights to appropriate *groundwater*, it uses the term “water.” Had the Legislature intended  
4 voting power to only vest in groundwater rights, instead of all water rights, it could have made that  
5 limitation clear in the statute, which it did not. Furthermore, the State Engineer overstates the  
6 distinction between Chapter 533 generally governing surface water rights and Chapter 534  
7 generally governing groundwater rights. For example, NRS 534.110 employs the term “vested-  
8 right claimants” to describe those rights that are to be considered when determining whether to  
9 restrict withdrawals to conform to priority. NRS 534.110(6) (“adequate for the needs of all  
10 permittees and all vested-right claimants”). Vested rights are generally surface water rights  
11 because they are pre-1913 appropriations and therefore generally predate the time in which  
12 groundwater pumping was occurring. Therefore, the State Engineer’s assumption that Chapter  
13 534 never applies to surface water rights, and could not therefore allow for surface water rights to  
14 have a vote for or against the GMP, does not hold water. Additionally, NRS 533.325 and NRS  
15 533.370(2), both under Chapter 533 generally governing surface water rights, also apply to  
16 groundwater rights. Similarly, the legislative declaration that “[t]he water of all sources of water  
17 supply within the boundaries of the State whether above *or beneath the surface of the ground*,  
18 belongs to the public” is found in Chapter 533, but applies to both surface water and groundwater  
19 rights. NRS 533.025. There is simply no support for the claim that the general language “permits  
20 or certificates to appropriate water” in NRS 534.037(1) was intended by the Legislature to actually  
21 be limited to only permits to appropriate *groundwater*.

22 Other Respondents argue that non-irrigation water rights and/or surface water rights were  
23 not required to have an opportunity to vote on the GMP because such rights are not “affected” by  
24 the GMP’s withdrawal reductions. First, there is no language in NRS 534.037(1) that limits  
25 voting to only those water rights that would be reduced under the GMP’s scheme. Second, even if  
26 “affected” water rights were a proper limitation for voting rights, the fact is that all water rights in  
27 the Diamond Valley basin are ultimately going to be affected by the GMP—either the GMP will  
28 have its intended effect and the groundwater aquifer will recover, or the GMP will not have its

1 intended effect and water rights will continue to be adversely impacted in this groundwater-  
2 dependent basin. In either case, all water rights, both surface and groundwater, and irrigation and  
3 otherwise, will be affected and should have been afforded an opportunity to participate in the  
4 process of considering the GMP. The failure to include all water rights in the basin in the voting  
5 procedure is a fundamental defect that renders the State Engineer's approval of the GMP invalid.

6 **CONCLUSION**

7 Because the Diamond Valley Groundwater Management Plan violates Nevada law,  
8 including the two foundational doctrines of prior appropriation and beneficial use, the Baileys  
9 respectfully ask that this Court reverse Order 1302.

10 **Affirmation Pursuant to NRS 239B.030(4)**

11 The undersigned does hereby affirm that the preceding document does not contain the  
12 social security number of any person.

13  
14 DATED November 25, 2019.

15 **WOLF, RIFKIN, SHAPIRO, SCHULMAN & RABKIN, LLP**

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**CERTIFICATE OF SERVICE**

I hereby certify that on November 25<sup>th</sup>, 2019, pursuant to the Court's April 25, 2109 Order, a true and correct copy of **OPENING BRIEF OF BAILEY PETITIONERS** was sent via electronic mail to the following:

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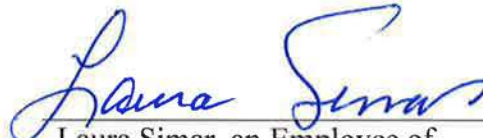
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Nicholas Institute for  
Environmental Policy Solutions

# Unbundling Water Rights: A Blueprint for Development of Robust Water Allocation Systems in the Western United States

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Report  
NI R 15-01

September 2015

ADDENDUM TO DAILEY REPORT BRIEF

JA1881



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During the preparation of this report, many people willingly sought ways to adapt the Australian experience to the U.S. West. The contribution of these people has been immense, especially as their time was given during one of the West's biggest droughts and when crops needed to be brought in.

Thanks also go to the following: colleagues and students in the Global Food Studies Program at the University of Adelaide; Michael and Mary Hanemann for use of their home as a base from which many of the ideas contained in this report took shape; and the late John Briscoe and others for my appointment to the Australia Chair at Harvard University, which gave me time to think about ways to adapt the Australian water reform experience.

## SUMMARY

This report lays out a blueprint for transitioning to robust water rights, allocation, and management systems in the western United States—a blueprint ready for pilot testing in Nevada's Diamond Valley and Humboldt Basin. If implemented, the blueprint's reforms would convert prior appropriation water rights into systems that keep water withdrawals within sustainable limits, allow rapid adjustment to changing water supply conditions, generate diverse income streams, and improve environmental outcomes.

The blueprint's essential element is unbundling of existing water rights. In law and economics, property rights are often described as a bundle of sticks. When applied to a water right, unbundling involves separating an existing right into its specific, component parts. In an unbundled system, each part is defined and can be managed and traded separately. During the unbundling process, as proposed here, the value of each component is enhanced, and the taking of property rights is avoided.

Unbundling brings clarity to water rights and reveals the true value of the water, because willing buyers and sellers are able to trade with one another with dramatically reduced transaction costs. "Liquid markets" emerge. Shares, a primary product of the unbundling, can be used to finance innovation, and opportunities for improving environmental outcomes are increased through the transparent value of water rights shares and allocations.

If water managers in Nevada find that an unbundled water rights system is more desirable than the current system, they can use this report's proposed reforms and schedules to facilitate the transition to it. Although the state engineer and governor's office may have sufficient prerequisites to proceed without the support of new legislation, implementation would be easier if underpinned by legislation.

## **Executive Summary**

### **Overview**

This report lays out a blueprint for transitioning to robust water rights, allocation, and management systems in the western United States—a blueprint ready for pilot testing in Nevada’s Diamond Valley and Humboldt Basin. If implemented, the blueprint’s reforms would convert prior appropriation water rights into systems that stabilize water withdrawals to sustainable limits, allow rapid adjustment to changing water supply conditions, generate diverse income streams, and improve environmental outcomes.

The blueprint’s essential element is unbundling of existing water rights. In law and economics, property rights are often described as a bundle of sticks. When applied to a water right, unbundling involves separating an existing right into its specific, component parts. In an unbundled system, each part is defined and can be managed and traded separately. During the unbundling process, as proposed here, the value of each component is enhanced. If implemented properly, no taking of property rights occurs.

Unbundling allows each right holder to pursue new opportunities. Clarity is brought to water rights, and the true value of the water can be revealed because willing buyers and sellers are able to trade with one another with dramatically reduced transaction costs. “Liquid markets” emerge. Shares, a primary product of the unbundling, can be used to finance innovation, and opportunities for improving environmental outcomes are increased through the transparent value of water rights shares and allocations.

Many of the concepts developed in the blueprint presented here derive from Australian experience. Over a 20-year period, beginning in 1994, Australia embraced the idea that the low-cost trading of water shares (i.e., entitlements) and allocations, coupled with the use of statutory water resource sharing plans, could be used to improve water use. Under the system that Australia has now put in place

- Plans are used to set limits and determine how and when water is allocated,
- Share trading is used to encourage innovation and the efficient management of risk, and
- Allocation trading used to encourage users to put water to the use that best serves community and individual interests.

The key insight that emerges from this experience is that low-cost trading and a transition to sustainable use arrangements is possible only when existing water right arrangements are converted into ones that are designed to achieve these goals.

This blueprint has been developed in consultation with water users, administrators, and community leaders in the Diamond Valley and the Humboldt Basin. It should be interpreted as the beginning of a more comprehensive conversation about how water rights could be unbundled in the western United States.

If the proposed pilot tests suggested that the proposed system is beneficial and more desirable than the current water right system, this blueprint could be used to assist with the preparation of proposed legislative reforms necessary to facilitate the proposed system’s wider application in the United States.

### ***Application in Nevada***

As a tightly connected but rapidly depleting groundwater resource used by a relatively small number of irrigators, the Diamond Valley presents an ideal location for testing the viability of the proposed blueprint. By contrast, the transition to a new system in the Humboldt Basin will require greater preparation. This basin, like many others in the United States, includes a river system fed by several estuaries, storages that are used to regulate flow, and a number of connected groundwater resources. Some river reaches flow continuously. Other reaches flow episodically. As such, this basin represents a good test of the more general applicability of the blueprint.

Because both case studies are wholly located in Nevada no interstate complications are involved.

Because the proposed water rights system is relatively new to the United States, a pilot test of five years is recommended. To provide a level of confidence at the outset and to reduce the risk of legal challenge to the proposed system, all involved in the test should be offered the opportunity to revert to the existing system at the end of five years.

In essence, this blueprint proposes four changes to the existing water rights system:

- **Unbundling** of existing water rights into shares, allocations, and use approvals so that long- and short-term interests and impacts on third parties can be managed separately from one another and at reduced costs.
- Development and use of **statutory water resource sharing plans** to ensure use remains within sustainable limits.
- Appointment of **expertise-based boards** to prepare plans and oversee implementation of the new system in partnership with the Office of the State Engineer or an equivalent office.
- Establishment of **government-guaranteed water-right registers and bank-like water accounting systems** so that the value of water can be used to finance private investment and increase the speed and transparency of water rights and volumes trades.

This report details recommendations for changes in administrative arrangements, the mechanisms used to deliver environmental outcomes and to protect third-party interests, and the role of the courts—recommendations aimed at increasing stakeholder engagement and rigorous monitoring.

### ***Application to the Diamond Valley***

Located near Eureka, 250 miles east of Carson City, the Diamond Valley contains an aquifer from which water is pumped for agricultural, urban, mining, and livestock uses. Most of the water is extracted with some 200 center-pivot irrigators to grow alfalfa.

The first water right in the Diamond Valley was issued in 1890. Today, water rights are held by approximately 110 legally distinct interests. The most junior water right was issued in 2005 for livestock purposes.



Because water use in the Diamond Valley is not metered by the Office of the State Engineer, the rate of use has to be estimated. At present, annual water use is thought to be around 70,000 acre feet, and at this rate of use, the aquifer is declining at 2 to 3 feet per year. The U.S. Geological Survey (USGS) has estimated the aquifer's sustainable yield to be 35,000 acre feet per year; at current withdrawal rates, the aquifer will likely be depleted within 30 years. A significant proportion of Diamond Valley water users have indicated that they would like to find a way to avoid this outcome by transitioning to a new water rights system that would enable them to bring use within sustainable

limits and to open up opportunities for further development. At the same time, the state engineer announced that because Diamond Valley groundwater is being overused, he intends to declare it a "critical management area." Once a groundwater resource is declared such an area, groundwater users have 10 years to prepare a management plan. If they fail to do so, the state engineer is required to restrict all water use, including withdrawals from domestic wells, on the basis of seniority.

If Diamond Valley water users wish to prepare a plan that is consistent with this blueprint, the following actions would be appropriate:

- The county should appoint a five-member, expertise-based Diamond Valley Water Board to prepare and, following approval by the state engineer, implement a sustainable water resource sharing plan that would gradually bring withdrawals in the valley into alignment with recharge.
- The board should establish a community reference panel to help it develop and implement the water resource sharing plan.
- In recognition of increases in water-use efficiency that the pilot test can be expected to produce, grant funding should be sought to expedite preparation of the water resource sharing plan, meter installation, and development of water registers and water accounts.
- The water resource sharing plan should outline the transition to a new unbundled water rights system and a process that will reduce water use to ensure sustainability of the aquifer.
- The water resource sharing plan should
  - Issue shares to all existing water right holders using a formula that accounts for water right seniority.
  - Begin with a total allocation equivalent to current use and propose a pathway for the transition to sustainable yield.
  - Require the board to make allocations in proportion to the number of shares held and to do so well before the start of each irrigation season (February 1 of each year is suggested).
  - Allow water account holders to carry forward as many unused water allocations as desired from one season to the next.



- Require all significant water use to be metered and recorded in a robust water accounting system.
  - Discourage intentional overuse by setting the penalty for a water account deficit of more than 21 continuous days at three times the cost of restoring the account to a zero balance.
  - Require the county to hold sufficient shares to offset the estimated impact, thereby allowing households and businesses that take small amounts of water without holding a water right.
  - Require the board to commission an independent review of the plan three years after commencement and, after five years, to implement a process to determine whether the new system should continue.
- The Office of the State Engineer should establish a water share register and water accounting system for trial in the Diamond Valley.
  - If a majority of water holders wish to abandon the new system and revert to the old system after five years, the plan should be dissolved and all the previously held water rights should be returned.<sup>1</sup>

Assuming that timely funding can be obtained, implementation of the Pilot Diamond Valley Water Resource Management Plan could commence as early as the start of the 2016 irrigation season.

#### ***Application to the Humboldt Basin***

The Humboldt Basin represents a substantial opportunity to fully implement an unbundled water rights system in the United States. This river is more than 330 miles long and includes both surface and groundwater resources. Wholly located in Nevada, it drains into the Humboldt Sink east of Reno. No interstate issues are associated with water in the Humboldt Basin.

The first stages of implementation, including establishment of the Humboldt Water Management Authority and preparation of the Basin Plan could begin under existing legislation. Detailed implementation, however, may be possible only in those parts of the basin that the state engineer can declare a “critical management area.” Full implementation would be less risky if underpinned by legislation.

For administrative purposes, the Humboldt is split into two regions—the Upper Humboldt and the Lower Humboldt—near Palisade. A holding dam has been built in the Lower Humboldt to help supply water to users during periods of low flow. In both regions, there are a number of significant groundwater bodies. A five-year study to assess the degree of connectivity between the ground and surface water systems is under way. In recent years, allocations to irrigators in the Lower Humboldt have been zero.

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<sup>1</sup> If at the end of 10 years after the declaration of the Diamond Valley as a critical management area no management plan for this resource has been agreed, the state engineer is obliged to curtail use of all junior water rights and bring the total amount of water used back to into alignment with his or her estimate of perennial yield. On the basis of currently available data, this “brutal solution” would curtail all 316 water rights issued after June 3, 1960, and allow only ongoing use of the 85 water rights issued prior to that date.





To transition to the unbundled water rights system, this blueprint would have to be applied in stages, beginning with system governance, which must be streamlined. The 15-member Humboldt River Authority, which meets several times a year to provide advice and oversight for surface water but not groundwater, would need to be reconstituted as a much smaller board and staff with greater powers as well as supported by the Community Reference Panel. The authority would prepare the Humboldt Basin Water Resource Sharing Plan, encompassing and setting limits on the use of surface water and groundwater resources. It would then develop separate plans for each of the basin's defined water resources (e.g., upper region surface water management plan).

The Basin Plan would set sustainable diversion limits for each defined water resource and establish the sharing rules necessary to enable robust management of flows from one resource to another. In parallel with and consistent with the rules set out in the Basin Plan, a detailed plan would be prepared for each defined water resource.

While the Humboldt Basin Basin Plan and detailed plans for each defined water resource are being prepared, conversion of water rights into shares and use approvals could commence for (1) the main stem of the Humboldt River, (2) each tributary, and (3) each groundwater resource.

#### Surface Water Resources of the Humboldt Basin

For surface water systems, there is a strong case for grouping shares into multiple priority tiers so that supply risk can be efficiently managed. Allocations would be made first to tier-one shares, then tier-two shares, and so on. Once allocations have been made, shareholders would be free to transfer them to any person.

The transition to a less rigid water rights system would significantly increase economic opportunity. Allocations could, for example, be traded on a daily basis. During periods when there is no flow in the lower Humboldt, tier-one shareholders in the lower system would be able to trade allocations with shareholders upstream.

#### Groundwater Resources of the Humboldt Basin

In under-allocated groundwater bodies, share allocations are relatively simple and can be made in proportion to each right-holder's volumetric entitlement weighted by seniority. In seriously over-allocated groundwater systems, conversion could follow the processes recommended for the Diamond Valley. Once the sharing system is in place, seasonal allocations would be made and immediately become fully tradeable and bankable at rates that reflect system losses. Under the new system, groundwater users would be able to accept surface water and store it in a groundwater system.

***Likely Benefits***

As the first western state to pilot test and demonstrate the feasibility of moving to a new system reflecting lessons from Australia's experience, Nevada can expect to gain a leadership position and first-mover advantage.

Under the current water rights system, there is little incentive to innovate and ensure that every drop of water is put to its best use. In the proposed unbundled system, innovation is encouraged. Investment and risk taking is rewarded. A blunt, all-or-nothing irrigation system is replaced with a smart one that encourages every water user to be as efficient and as productive as they possibly can. Two water markets soon emerge, one for shares and the other for allocations.

Australian experience suggests that adoption of a system consistent with the concepts set out in this blueprint will reveal the true value of water and that this value will be used to underwrite and fund much of the investment that can be expected to occur. Widespread innovation and economic development should be expected commensurate with the increased recognition and realization of the value of water. The expected impact of droughts will likely be lessened for those who convert to the proposed sharing system. All water users, whether large or small, will be given equal opportunity.

If the proposed system is rolled out quickly, Nevada might become a leader in providing advice on the most appropriate way to transition to state-of-the-art water right and allocation systems. Development of smart irrigation technology might be ignited. Development of integrated meter recording and water accounting systems as well as development of the systems needed to establish state-guaranteed registers and efficient validation processes might bring significant benefits to the state.

## Introduction

The persistence of droughts across regions of the western United States has triggered a re-examination of water rights and use. Irrigators, manufacturers, and now public utilities face economic losses. Existing water rights no longer appear as secure as they used to be. Their supply is limited. Often, ecosystems are squeezed out of the little water left or are sustained only through complex and costly litigation, often with unclear benefits. The challenges of water management in arid landscapes are driven obviously by scarcity, but perhaps equally by uncertainty about year-to-year water availability and the inability of current water governance to allow transfers of water to those who value it most. That is, many of the challenges now before western water users are due as much to the way water is managed as to how much water there is.

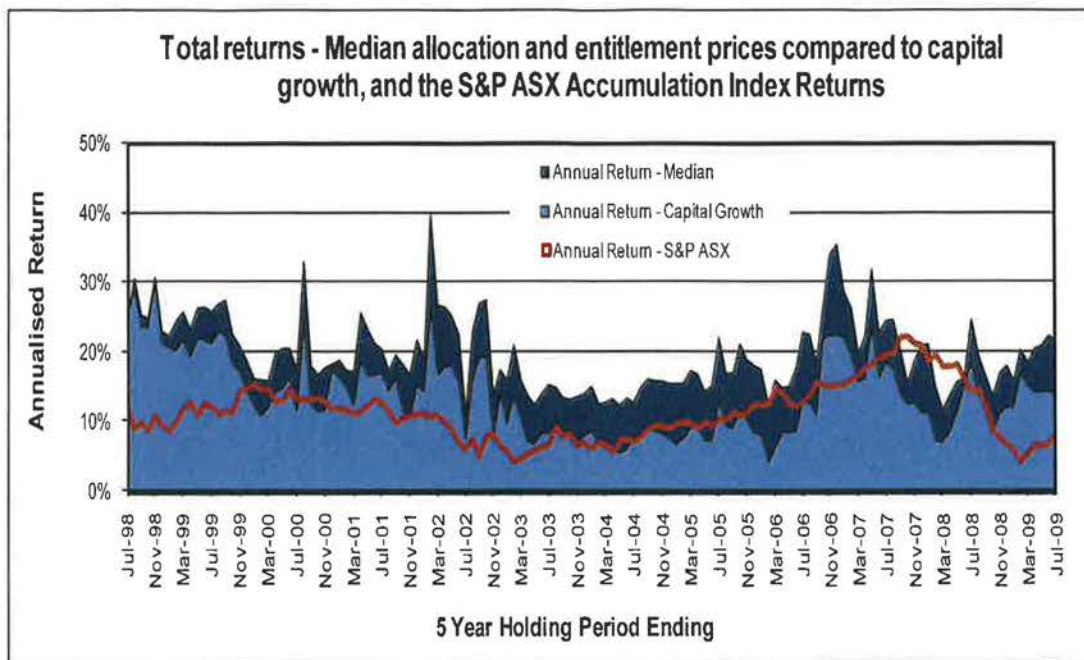
At the start of the 21st century, Australia faced a similar suite of challenges. Fortunately, Australia had already begun transitioning to a much more robust water-sharing system. When the near decade long “millennium” drought hit, Australia was able to increase the pace of reform. Work on long-term sustainability plans and a water rights system in which rights were “unbundled” was already well under way. As the drought hit, the benefits of transitioning to this new system for both the economy and the environment were quickly apparent. Even though water allocations to the irrigation industry had to be cut by two-thirds, the gross value of irrigated agricultural production fell by less than 20% (Gooday 2011). In one year alone (2008–2009), the reforms added \$200 million to national GDP.<sup>2</sup>

Despite many differences between the western United States and Australia, there are also important similarities. Much can be learned from the Australian experience, both positive and negative. The primary insight of that experience is that progress comes from building the institutional conditions that enable markets to flourish. In Australia, the gains came from implementation of a sequence of reforms that simplified the system and gave users every incentive to consider selling their water to someone else. As the systems used to define water rights were improved, the value of the rights increased. Water trading became the norm, and profits increased. In the first decade of water reforms, the internal rate of return from holding a water right averaged well over 15% per year (Figure 1).

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<sup>2</sup> Economic modeling commissioned by the National Water Commission estimated that Australia’s GDP in 2008–2009 was enhanced by AUD220 million as a result of water trading (Bennett 2015). For more information on this reform experience, see Young (2010; 2015).

**Figure 1. Return on investment from holding a water right in the Southern Connected River Murray System, selling all the water received for a five-year period, and selling the right after five years**



Source: Adapted from Bjornlund and Rossini (2007).

If implemented, the reforms proposed in this paper could be expected to bring similar benefits to the western United States.

#### ***Transitioning from an "Old" to a "New" System***

This report focuses on increasing the range of economic opportunity available to all water users, on simplifying the systems used to manage change, and on generally reducing costs and risks. The proposed changes also make it easier to ensure realistic opportunities for water to be allocated to ecosystem uses.

Two case studies are developed for the state of Nevada, but at different levels of detail. Although both have been developed in consultation with water users and water managers in Nevada, they should be viewed as illustrative. Stakeholders in these two case study regions should be given access to the resources and allowed the political time and space necessary to consider this blueprint carefully. In addition, the transition from an "old" to a "new" water right system should be the subject of a pilot test. If it fails, all involved in it should be given the option to revert to the "old" system (i.e., the existing water rights system).



### **Core Concepts**

The blueprint is built around six concepts:

- **Well-defined rights and legal enforcement coupled with constraints and limits** on the amount of water that can be taken.
- **Unbundling** of water rights into their component parts:
  - A perpetual right to a proportion of all allocation made,
  - The actual allocation made in any season or part thereof, and
  - An authorization to take water from a defined water resource coupled with an obligation to use it for a beneficial purpose.
- A voluntary, **pilot approach** within well-identified geographical boundaries, with “exit ramps” to protect water rights holders.
- **Legislated plans** that address environmental and regional development concerns up front and that set limits so that water rights holders and water users can go forward without fear that the courts may intervene.
- Electronic access to **water-entitlement registers and water accounts** that define ownership, track water use, and allow trading with bank-like certainty.
- **Administratively efficient processes** designed to speed adjustment and keep transaction costs low.

The result is a regime that is characterized by

- **Robustness** in the sense that the resultant water rights, allocation, and governance systems are designed to work well during times of extreme stress.
- Water rights and administrative systems with **hydrological integrity** in the sense that they properly account for hydrological relationships between each water resource.
- **Efficient management of supply risks** so that those who need access to a very reliable water supply have the opportunity, at an appropriate cost, to secure it.
- **Incentives** that encourage people to search for more efficient ways to save and use water and, also, to invest in resources that use water.

The idea of robustness has led specialists in the design of water rights and allocation systems to search for administrative structures that work well under stress. The literature looks, in particular, for systems that have withstood the test of time (Young 2014). Structures that have endured for centuries include many of the protocols associated with using and accounting for money. One example is the structure of limited liability companies that was invented nearly 150 years ago. In limited liability companies, unit shares are used to define ownership and equity.<sup>3</sup> The rule is simple: once shares are issued, those desiring a larger number of shares must find someone who is prepared to sell them shares. Structures like this are readily

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<sup>3</sup> For more information, see Young and McColl (2002, 2003).

transferred to water management. If water users want access to more water, they must find someone who is prepared to sell them this opportunity.

Share corporations have another feature relevant to the management of connected water resources. Shares are unitized and are organized in a manner that makes it relatively simple to move some parts of a company from one business to another and to merge two companies. These same features can be used to enable the equitable rearrangement of water resource boundaries without prejudice to the interests of those affected by the change. If, for example, research reveals that the assumed boundary between two groundwater resources is wrong, then under a unit share system the shares assigned to the wrong resource can be cancelled and replaced with shares in the new groundwater resource without changes to all the shares issued in each resource. If, however, the shares had been defined as proportional shares, each and every share would have to be re-issued.<sup>4</sup>

Another feature that can be borrowed from the corporate world is the importance of boards that can and do make final decisions. When the board of a corporation makes a decision, that decision is final. Shareholders can vote to change board membership, but neither they nor the courts have the power to prevent implementation of a decision (unless illegal). So it is with management of water; shareholders are co-owners of the resource based on the number of shares owned, but the board directs the management of the overall resource itself. As a guiding rule and within reason, the smaller the size of a board, the more likely it is that a good decision will be taken.

Further insights into the best way to manage water can be found by looking at the way money is managed. One fairly recent innovation has been the development of bank accounts that can be accessed over the Internet. Seasonal allocations of water can also be managed with this tool.

Another concept directly applicable to water is the idea of double-entry book keeping, which requires everyone to operate under a simple rule: if one account is to be credited, another account has to be debited.

These ideas and their institutional supports not only simplify water management but also protect third-party interests and keep water use within sustainable limits, making all water users better off.

### ***Building Blocks***

Multiple changes to the existing water rights system are needed to establish a robust foundation for a shares-based system.

#### **Unbundling**

A key limitation of the current, bundled system is that each water right is fairly unique, and great care must be taken to assess the legal risks associated with existing rights (and potential trades) and to ensure that beneficial use is maintained. In many cases, the decisions associated with a trade get locked up in

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<sup>4</sup> Each shareholder's proportional entitlement can be calculated, but shares are never defined as a percentage. No one is ever allowed to own a fraction of a share.

expensive legal proceedings that run for many years. As a general rule, water markets in the western United States have high transaction costs.

The driving concept of this blueprint is that existing water rights be unbundled into their component parts. Among other things, unbundling increases the fungibility of each component. As fungibility increases, each component becomes easier to value, monitor, and trade.

In an unbundled system, the component of a water right that defines the long-term interest is defined as a share. The water that is available for use within a time period (e.g., year or season) is then defined as a seasonal allocation. A share can be thought of as a perpetual entitlement to a portion of any water that is allocated for use. A seasonal allocation can be thought of as an acre foot of water available in a particular season. In an unbundled system, this acre foot can be used, traded, or, with adjustment for losses, saved for use in a subsequent season. The number of seasonal allocations a person receives is a function of the number of shares he or she holds in that particular water resource. When an allocation is made, it is recorded in a water account, but not recorded on a share certificate.

In some systems, the bundle of rights also includes rights to storage, delivery, and, with many caveats, obligations to return water to a water body.

As part of the unbundling process, "old" system water rights will be validated and converted into **priority shares**. The shift from the current bundled rights system to an unbundled system involves several steps. During the conversion process, those with senior rights are issued more shares than those with junior rights. This task is accomplished by multiplying the maximum volume of the right by a seniority coefficient.

Water shares are like shares in a corporation in that they provide the proportional access or rights to a resource. In the case of water, the number of shares held determines the proportion of allocated water that a shareholder was allowed to withdraw or transfer to someone else. Each year the total amount of water available (i.e., the total allocation) is divided among users by the number of shares held by each. Because all shares and all allocations are identical in form, it is easy to establish their value and to decide quickly whether or not to sell them. If a water user wants access to a larger amount of water (i.e., larger portion of the allocation), he or she must find a shareholder who is prepared to sell shares. In systems in which the total amount of available water fluctuates, several share classes of differing reliability can be used to facilitate the efficient management of supply risk.

During every relevant time period, shareholders will be given **seasonal or annual allocations** of water in proportion to the number of shares they hold. The amount issued to each shareholder is decided by reference to allocation rules set out in the water resource sharing plan for the resource. As these volumes of water become available for use, allocations are formally credited to each shareholder's water account. Each shareholder is then free to use this water, sell it, or, with adjustment for losses, carry it forward for use or sale in a subsequent year.

Every shareholding is linked to a water account, and when water becomes available for use, this fact is established an allocation to the water account. Once an allocation is made, decisions about how, when,

and where to use the allocation are no longer linked to the share. Separated management of shares and allocations enables two forms of trading: (1) **share trading**, which facilitates efficient management of risk and investment and (2) **allocation trading**, which ensures that all water is put to its best economic use.

To enable trade, brokers and dealers can hold water allocations without holding shares or owning land.

Most existing water rights contain a beneficial use requirement obligating the holder of the right to use 100% of any water allocated to him or her in a period. During the unbundling process, this requirement is replaced with an approval that places conditions on the taking and use of water. In an unbundled system, these approvals are similar to the permit needed to construct a house. A typical beneficial use approval would, for example, be location specific and require that all use at that location be metered. There is, however, no requirement for an allocation to be used.

These changes, coupled with parallel changes in governance arrangements, should increase the value of water rights held by local landowners, reduce the adverse impacts of drought on local and regional economies, improve environmental outcomes, and lessen the cost of resource recovery.

#### Water Resource Sharing Plans

A robust water right and allocation system requires statutory water resource management plans that set out binding rules for the allocation and use of water in each defined water resource. These plans need to be prescriptive and leave as little as possible to judgments that can be contested in courts. When it is possible to trade water allocations from one river reach to another, for example, the plan should dictate the exchange rate that should be used.

Water resource sharing plans are common in many western states but are rarely binding. To make such plans statutory—as would be desirable for the water rights and management regime set out in this blueprint—legislation would require preparation of water resource management plans, registers, accounts, and so on. During the pilot testing proposed for this blueprint, new legislation may not be necessary, but ultimately new legislation would be desirable to ensure that the new water right registers, new accounting systems, and water resource sharing plans have a strong legal basis. Once a plan has received statutory recognition, an allocation trade cannot be appealed, provided it is executed in accordance with exchange rate and trading rules set out in a water resource sharing plan.

In the proposed system, allocations are made to water accounts that relate to a specified river reach or groundwater body. Trade within a reach or groundwater body occurs at a one-for-one exchange rate. Trade from one reach to another occurs at a prescribed exchange rate. Trade, however, does not establish permission to take water from a water body. Taking water from a water body is possible if and only if the taker has shares, has a use approval, and has allocations in the water account associated with that use approval.

In essence, a water resource sharing plan sets out the rules for determining how much water needs to be set aside to provide for base flows, transfer to other systems, and allocations to shareholders. Plans also stipulate how this water may be used and how flows should be managed to take account of environmental



needs, facilitate recreation, maintain water quality, and provide other types of public goods. If these plans are made statutory or are prepared under pre-existing executive authority, the opportunity for a third party to legally challenge them is limited.

For an unbundled water rights system to operate, water resource management plans need to be prescriptive and dictate outcomes. If, for example, a plan prescribes that the exchange rate for the transfer of water from one location to another is 0.8, there should be no opportunity for a third party to oppose a transfer provided the exchange rate used is 0.8. If, however, a plan simply states that transfers should cause no harm to third parties, there is opportunity for the transfer process to hold up a transfer due to the vagueness of language about the exchange rates that need to be made and so on.

Each plan needs to be developed in close consultation with the local community and those who hold water rights. At least one plan is needed for each water resource, and it must establish a set of rules for establishing the sharing regime. In particular, the water resource sharing plan must address how much water must be (1) set aside for conveyance and meeting of downstream obligations, (2) allocated to shareholders, and (3) defined as flood water and, hence, not held as a right.<sup>5</sup>

Each plan should be required to set a maximum sustainable limit on diversions/withdrawals and to put in place a regime allowing this limit to be adjusted as assessments of likely future climatic conditions, run-off, and so on evolve. Rules for allocating (sharing) water as it becomes available need to be unambiguous. If a water resource is over-allocated, for example, the plan must have a scheme that shows how use will be brought back within sustainable limits.

In cases in which interaction between a groundwater resource and a surface water resource is significant, administrative efficiency dictates a high-level "basin" plan providing rules for system interaction and exchange and separate, detailed plans for each defined water resource. These detailed plans focus on sharing relationships within each defined water resource.

The underpinning concept of this blueprint is that third parties need to assert their concerns and positions as water resource plans are being developed. Once a plan has been finalized, third parties can lobby for its review, but they cannot stop trades or allocations made in a manner consistent with plan rules.

As already noted, plans need to be prescriptive and prepared using the best available knowledge. An initial review three years post-transition to the new rights system and at regular intervals thereafter is desirable. Because knowledge will increase as monitoring improves understanding of the impacts of water use on the resource under the new rights system, periodic review of each plan is needed at least every 7 to 10 years.

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<sup>5</sup> If it was held as a right, right holders might be legally responsible for its control.

Once a plan is finalized, it must be endorsed by the person responsible for the state's water management and, if possible, it should be approved by the legislature.<sup>6</sup> In Nevada, the responsible person is the state engineer. This blueprint recommends that water resource sharing plans be developed by skill- and expertise-based boards appointed through a process involving the state engineer and county commissioners.

Appendix C contains more detailed guidelines for the preparation of water resource sharing plans.

Pegram et al. (2015) have produced a set of guidelines for the preparation of water resource sharing plans. They stress that such plans and associated sharing systems need to be sufficiently robust to cope with multiple future scenarios, including changes in water availability, water use efficiency, and water demand.

#### Water Registers

Although present in all western states, water registers are typically incomplete. Even when water rights have been adjudicated, there is no place to identify the rightful owners and the interests associated with them. Some water is managed by the courts, some by government, and some under arrangements that have yet to be defined or quantified. As a result, transactions of water rights involve risk and thus greater expense than they would if rights were clear and transparent. Transparency and certainty can be achieved by building Torrens Title-like water right registers. Under a Torrens Title registration system, water rights are recorded in a central location and the only way a person can secure ownership of a right is to change the name in the register. This system is used for property (i.e., land) ownership in the United States. The system is simple and minimizes all arguments (and associated litigation) about who owns what and to what they are entitled.

The legislation used to establish the Torrens Title system also makes it clear that the only way a person may hold a financial interest in a water right issued under the proposed system is to have that interest recorded in the register.<sup>5</sup> The most common example of an interest is a mortgage. Unrecorded interests have no legal standing and cannot be used to stop the sale or other dealings associated with the right. Torrens Title systems, once implemented, make the costs of buying and selling property and using it as a security for a loan much simpler and more likely.

Torrens Title-like water registers are likely to be strongly supported by the banking industry, because they simplify and cut the cost of lending money against the value of recorded water entitlements. And because the integrity of new system registers are guaranteed by the state, no title insurance is necessary.

Replacing the current paper-based system with one that relies on a single register would increase the efficiency of water trades. In the United States, it would require a state to legislate to establish a new water entitlement register and to set up an office to build and maintain it. It would also require the

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<sup>6</sup> In Australia's Murray Darling Basin Plan development process, the board prepares and submits the plan to the equivalent of the state engineer, who has a fixed time to respond and request changes. The board then considers the suggested changes and submits a revised plan. The engineer must either accept that plan or amend and submit it for ratification by the legislature.

<sup>5</sup> Interests include a mortgage, a caveat, and a right of way or any other condition attached to the right.

surrender of an “old” system title and its replacement with an entry in the “new” register of guaranteed integrity.<sup>6</sup>

Another desirable feature of a Torrens Title-like register is secure, low-cost mortgageability. In Australia, any bank that wishes to take out a mortgage over a water right needs only to complete the necessary forms and to get all parties to sign and lodge the application. The state government then records the mortgage in its water rights register and then guarantees not to transfer this right to another entity without clearance of the mortgage. Legislation establishing the register ensures that no holder of an unregistered interest in a right recorded in a register may prevent its transfer to another person.

In the first instance, conversion from the “old” to the “new” system would involve surrender of an existing right and, following validation of its authenticity, entry of priority, acre feet, and ownership details in the register. As a default position, all names recorded on the land title associated with an old system water right would be assumed to hold an interest in the new right and all such people would be given enough time to propose a different arrangement. Banks are given time to negotiate new mortgage arrangements.

#### Priority Tiers

In large surface water systems, shares can be grouped into priority tiers or classes so that long-term supply risk can be efficiently managed. In some systems, especially those with little variability, it will make sense to have only one share class. In others, it may make sense to have two, three, or even four. For instance, in Victoria’s Southern Connected River Murray System, there are two broad share classes: high-security shares and low-security shares.<sup>7</sup> In New South Wales, high-security shares and general security shares are traded on a regular basis. A single sharing pool would be sufficient for groundwater in the Diamond Valley, because allocations would be made only once a year. In the Humboldt Basin, however, several priority sharing pools might be needed so that users can efficiently manage supply risks by holding a mix of shares of differing reliability.

#### Conversion from Existing to New Rights System

The first step in establishing a share system is to close access to a water resource and declare that no more shares, licences, or other forms of water right will be issued. Then, a formula for deciding how many shares should be issued to each water right holder is developed and shares are issued. Thereafter, all allocations are made in proportion to the number of shares held.

In most systems, a simple approach is to issue one share per acre inch of water in the existing right. To address seniority of water rights, the formula used to determine the number of shares issued usually starts with multiplication of the maximum volumetric entitlement by the number of years in 100 that a full allocation would be made. If the most senior rights holder is entitled to 4 acre feet, he or she would receive 4,800 shares (4 acre feet x 12 inches x 100 years). If the next most senior rights holder also held 4

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<sup>6</sup> The processes are relatively efficient and, in the case of water in Australia, involved about one hour of administrative staff time per water right (Young and Esau 2003).

<sup>7</sup> The Victorian Share register can be inspected at <http://waterregister.vic.gov.au/water-trading/water-share-trading#watersharevolumeandpricestats>.

acre fee but could expect only to receive an allocation 99 years in a 100, he or she would receive 4,752 shares (4 acre feet x 12 inches x 99 years). Under this approach, those with more senior rights are issued more shares per maximum volumetric entitlement than those with more junior rights.

From this starting point on, all shares within each defined water resource are identical and, as a result, all shareholders gain from the increased opportunity to discover value, to trade, and to borrow. The transfer of a share from one person to another is not subject to third-party appeal, because shares do not determine where or how water will be used. These “water use” considerations are managed through arrangements set out in water resource management plans and in use approvals. Trades, once approved by the system manager, cannot be undone.

Unbundling of rights should reflect the status quo as closely as possible. In over-allocated systems, a case can sometimes be made for simultaneous re-assignment of shares, but unless there is broad community consensus about the best way to do this, great care needs to be taken.<sup>8</sup> The entire conversion process can be destroyed by arguing that the existing regime is inequitable or that now is the time to give someone else an opportunity, to give additional shares to the environment, or both. As a general rule, these conversations are best dealt with separately from the process used to build a register.

Appendix B contains a more formal and detailed specification of the key features of a Torrens Title-like water rights register.

#### Use It, Sell It, or Save It—Never Lose It

In an unbundled water rights system, there is no obligation to use water. Instead, every encouragement is given to each water user to find ways to use water most efficiently. The emphasis here is on “economic efficiency” not “technical efficiency.” When supplies are variable, for example, it is more economically efficient to have a mix of technically efficient and technically inefficient irrigation systems. When little water is available, technically inefficient systems can be shut down at little cost to a business or community. Conversely, when water is abundant, water can be diverted quickly into the inefficient system in a manner that increases the revenue generated from water use.

The spreading of water on a meadow pasture is one example of a technically inefficient but economically efficient water use when supplies are abundant. In a drought, however, all might be better off if the holder of a right to irrigate a meadow pasture is able to sell “his or her water” to someone who could make more money by buying the water and using it to water fruit trees or grow a vegetable crop. Such a water rights holder will be much more willing to sell water during a drought if the investment he or she made in the irrigation land is minimal.

An unbundled water rights system allows unused water to be carried forward from year to year when hydrologically feasible. When unused water is carried forward, adjustments are needed for losses in surface and groundwater systems. The importance of allowing market-driven carrying forward of unused water allocations was driven home during the early stages of developing Australia’s water trading

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<sup>8</sup> To date, there is no objective review of attempts to simultaneously convert to an unbundled rights system and re-assign shares. For information on the costs of such a process, see Young and Esau (2013).

systems, when it was discovered that all the gains from trade in some parts of the country were being lost because too little water was being carried forward. Trading was deepening rather than reducing the impacts of drought. When the policy was changed to allow water to be carried forward to the next year, the price of allocations doubled, that is, the value of water increased dramatically.<sup>9</sup>

Although robust water entitlement and allocation systems allow unused water to be carried forward, they should not allow borrowing from allocations yet to be made. This feature is necessary to maintain overall system integrity. When a water account is overdrawn, it is usual to allow a grace period, of say, 21 days, to “make good” through the purchase of an allocation. If a water account is not returned to a positive balance within the grace period, the system manager is required to make good on behalf of the account holder and charge that person several times the cost of bringing the account back to a zero balance.<sup>10</sup>

Australian water administrators learned the hard way that a government should never allocate water until it exists in reality rather than forecast. In earlier times, Australian governments promised that some water would always be available at the start of an irrigation season so that irrigators could plan with confidence. In the Southern River Murray system, this promise was based on the assumption that the lowest amount of water available would always be more than the sum of all monthly minima. In 2005–2006, the monthly minima was broken for 11 months in succession and sometimes by a factor of two. As a result, water allocations that people had been planning on accessing had to be cancelled.<sup>11</sup> Today, no Australian water manager makes a water allocation until delivery can be guaranteed. In a robust water allocation system, risks are made clear.

#### Issuing and Accounting for Allocations

In an unbundled water rights system, water allocations are managed using bank-like accounting systems. Every use approval is linked to a water account. Every share is linked to a water account. All use is metered and accounted for. As soon as an allocation announcement is made, allocations are credited to an account. Use is possible only if user holds a use approval and this approval is linked to a water account. As allocations are used or sold, they are debited from the account. Trading is as simple as logging onto the system and entering the name of the person to whom an allocation is to be transferred. Each individual can access his or her account online and at any time. The availability of summary information to system managers dramatically improves managers’ ability to actively inventory water in the system and use impacts on sustainability.

Once bank-like accounting is in place, water-brokering businesses can emerge. Brokers advertise water for sale, and interested water users approach them. Very quickly, break-even prices can be calculated, and, if the price is less than the break-even price, water is purchased.

In an unbundled system, all water use is metered so that the total amount of water that has been used can be tracked and unused allocations can be traded with confidence. With adjustment for losses, metering also allows unused water to be carried forward from one season to the next.

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<sup>9</sup> Young and McColl (2007).

<sup>10</sup> Three times the cost of making good is suggested as a penalty.

<sup>11</sup> For a discussion of the 17 mistakes Australia made and the way each error was corrected, see Young (2010).



Table 1 provides a simple mock-up of a water account that shows how allocations are made, trades are executed, and water use is recorded. Access rules are just like those that apply for a bank account. Each account is confidential to the account holder and the system manager.

Summary reports of the state of a system as a whole are available in an anonymized format. For any water resource, everyone can discover how much water has been used, how much is available, and how much has been being carried forward from the previous irrigation season. Unidentified information on the prices being paid is published. Brokers have an incentive to make price information available, because the more that information is available, the more likely they are to be able to organize to transfer water from one person to another.

**Table 1. Mock-up of an individual water account**

<b>J &amp; J Smith</b>			
Diamond Valley Groundwater Resource			
Date		Debit	Credit      Balance acre inches
Jan. 1, 2016	Opening Balance		12,000
Jan. 1, 2016	Allocation to shares held in the name of J&J Smith 3,000 shares @ 3 acre inches per share		9,000      21,000
March 10, 2016	Transfer from B&T Smith		3,000      24,000
April 21, 2016	Transfer to B Harvey Farms	2,000	22,000
June 10, 2016	Use May 10 to June 10, 2016	500	21,500
July 10, 2016	Use June 10 to July 10, 2016	3,000	18,500
Aug. 10, 2016	Use July 10 to Aug. 10, 2016	9,000	9,500
Sept. 10, 2016	Use Aug. 10 to Sept. 10, 2016	6,000	3,500
Oct. 10, 2016	Use Sept. 10 to Oct. 10	500	3,000
Dec 30, 2016	Use Oct. 10 to Dec. 30	0	3,000
	Closing balance		3,000

Once a water accounting system along the lines shown in Table 1 is established, water trading can occur on a continuous basis.

Regular announcement protocols are important to ensure that insider trading risks are minimized. In Australia's Murray Darling Basin, most announcements are made on the first working day after the first and fifteenth day of each month at 9:00 a.m. In most groundwater rights systems, announcements can be made one month before the start of an irrigation season.

In unregulated systems, in which there is no capacity to regulate flows, allocation announcements need to be made on a near-continuous basis. In some systems, it is possible to establish opportunities to trade options to take water only if water becomes available. These opportunities can be created by transferring what is, in effect, an option to take water from one location within a reach to another. In some unregulated systems, water allocations are more efficiently managed by issuing shares in flow rates at the top of a reach and then by using an allocation-exchange rate to determine how much water can be taken at any point along the reach.<sup>12</sup>

#### Beneficial Use Approvals

As noted above, most existing water rights in the western states require water to be used for a beneficial use and, if water is not used, the status of the right is put at risk. As many others have noted, this kind of beneficial use requirement discourages innovation and efficient water use. However, it allows water managers and the courts to limit impacts on third parties.

Under the proposed system, control of third-party impacts is achieved by issuing separate use approvals and works approvals and by including rules for the transfer of allocations from one reach to another in water resource sharing plans. Use approvals and works approvals are like a development permit and are typically issued by the Office of the State Engineer and or a local government authority. Use approvals are specific to a location and set out all the rules associated with taking water from a water resource. Separation of the use approval from allocations and shares increases efficient use of capital. It is possible, for example, for a landowner to obtain approval to irrigate an acre of land without indicating where or how he or she will source the water.

Among other requirements, a beneficial use approval must always be linked to a water account, and any water used at the location must be sourced from that account. There is, however, no need for all water accounts to be linked to a land title or to a share—a water trader, for example, could have a holding account—groups interested in purchasing water allocations for ecosystems could also hold a water account.

#### Rules-based Water versus Shares-based Water

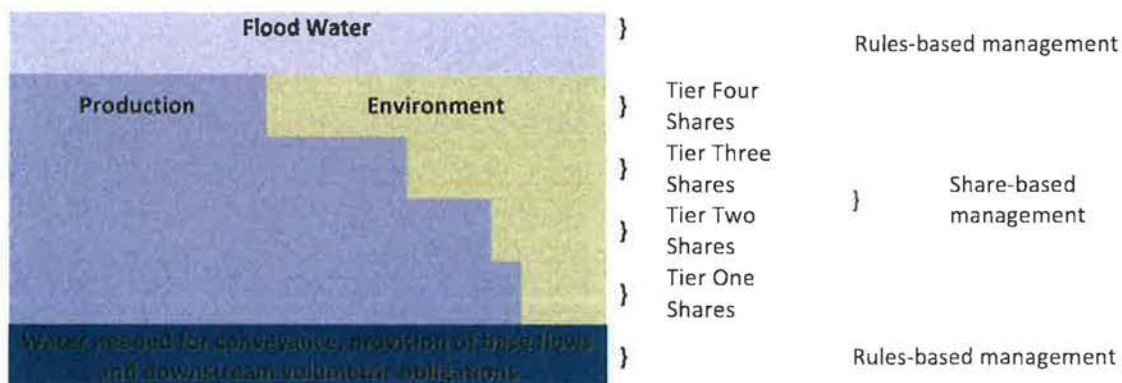
In sharing systems, more attention is paid to the physical than to the theoretical nature of water that flows through the system. Rather than simply calling this water environmental or ecosystem water, sharing systems make a clear distinction among the water needed for conveyance, that required for transfer to other systems, that available to enhance environmental outcomes, and flood water. Well-written water resource sharing plans give first priority to the water needed for conveyance. In the United Kingdom, this water is called a “hands off” flow. After water has been set aside for conveyance, the next tranche of water can be shared. In some systems, it is desirable to issue shares, purchase shares, or both for the environment during the conversion process. Australian experience suggests that the allocation of water shares to the environment can increase the efficient delivery of environmental outcomes.

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<sup>12</sup> In these systems, a maximum limit on surface water storage can be worthy of consideration.

One of the most difficult decisions to resolve when developing a water resource sharing plan is how much water should be managed according to rules and how much through the sharing and allocation system. Figure 2 shows the relationship between rules-based water and shares-based water.

Figure 2. Relationship between rules-based and shares-based water



In Australia, much has been gained from inclusion of the environment as a shareholder in the allocation system. In the Murray Darling Basin, for example, nearly 20% of water shares are held in trust for the environment by state, federal, and private trusts.<sup>13</sup> Empowered to decide when and how to use water, those responsible for managing shares now held in the environment's interest have begun exploring ways to improve the efficiency of environmental water use. The concept of "more crop per drop" is being matched with the concept of "more environment per drop," and considerable progress is being made.

<sup>13</sup> For a detailed summary of federal government holdings, see <http://www.environment.gov.au/water/cewo/about/water-holdings>.



Once a significant environmental share has been established, environmental trusts can engage in counter-cyclic trading. Counter-cyclic trading involves the sale of environmental allocations to irrigators during a drought and the use of this money to purchase shares and thereby increase expected future allocations to ecosystem purposes.<sup>14</sup>

A related issue is the question of how delivery losses are to be managed. In the process of setting up its new systems, Australia gave irrigation districts shares in the *water being lost* from their distribution system (through seepage and other means) but gave individual irrigators shares for the *water being used*. This approach created an incentive for individual irrigators to improve irrigation efficiency and an incentive for districts to improve distribution efficiency.

#### Trading Rules and Restrictions

Unbundling of rights enables water users to trade both shares and allocations, which allows the emergence of two “markets”—both of which work efficiently without reference to one another. Because the holder of a share holds a perpetual right to a share of all future seasonal allocations, shares tend to be valuable and, hence, are worth using as a bankable security. Allocations, on the other hand, are much less valuable because of their transience. Once allocated, an acre foot of water is exactly that. It should not be possible to mortgage or in any way encumber an allocation, but it should always be possible to encumber a share. In short, a share is something akin to a land title, whereas a seasonal allocation is a volume of water waiting to be used.

When trading is first set up, the most appropriate exchange rate to be used may not be well understood. In that case, in lieu of conversion of a share in one management zone into a share in another management zone (e.g., from the upper to the lower Humboldt River), tagged share trading arrangements can be used. **Tagged trading** involves an agreement to always transfer allocations made to shares in one reach or zone to be “tagged” for trade to another zone as soon as the allocation is made. This trade is made at the exchange rate applying at the time the trade is made. The share always retains its original characteristics, and any person making a tagged trade needs to understand that exchange rates can vary with seasonal conditions and can vary as knowledge about transmission losses and so on improves. In tagged trading, the risk is always borne by the shareholder. But in large river systems, downstream water users can use such trading to reduce supply risk.

During the early stages of this blueprint’s implementation, both share trading and allocation trading could be expected to start within a district and to gradually extend to trading within reaches and among hydrologically connected systems. Therefore, rules about the setting of exit fees will need to be developed. An exit fee is the charge that a water user can be required to pay if he or she chooses to permanently transfer water out of an irrigation district and, potentially, leave those within the district with increased operating costs. In Australia, where a water delivery contract is not in place, the maximum exit

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<sup>14</sup> In January 2014, in the midst of a drought in the Gwydir Valley, the Commonwealth Environmental Water Holder announced that it had accepted 16 offers to buy a total of 10 gigalitres of water allocations for A\$3.217 million and is holding this money until a purchase of water for greater environmental benefit within the Murray-Darling Basin is identified. See <http://www.environment.gov.au/mediarelease/commonwealth-environmental-water-holder-water-sale-gwydir>.

fee that may be set is 10 times the fixed annual charge that an irrigator would have to pay to his or her district.<sup>15</sup>

Some restrictions on trade make hydrological sense. In Australia's River Murray, for example, the amount of water that can pass through the Barmah Choke is constrained by the choke's narrowness, and trading rules to prevent congestion have had to be developed. The arrangement ensures and maintains hydrological integrity. The aim of trade, however, should be to encourage completion and innovation.

Appendix E contains a set of trading principles. Because many of the controls needed to ensure efficient water trading are generic, it can be more efficient to legislate a set of generic water trading rules and protocols than to include them in each water resource sharing plan.

#### Governance

During any transition to a new system, the design of governance systems is critical. The key difference between the current and the proposed governance systems is the appointment of boards that take over many of the responsibilities currently undertaken by courts. A sense of trust in and respect for the appointment process must be established. Boards must be perceived to be good listeners and competent decision makers.

As a general rule, literature suggests that the optimal number of board members is five to seven; each person beyond this number diminishes effectiveness by some 10%.<sup>16</sup> This literature also recommends that board members be chosen on the basis of skill and expertise. Skills that need to be well represented on any water board include stakeholder communication and engagement, hydrology, environmental management, irrigation and business management to which end a community reference panel might be established. Community reference panels can assist the board to understand the interests of stakeholders.

It is suggested that boards be comprised of an independent chair with excellent communication and negotiation skills, two to three individuals who have experience in the water-using industry and who are trusted by the community, one individual nominated by the government department responsible for managing water rights and planning arrangements, and one individual responsible for day-to-day management of the water resource.<sup>17</sup>

Boards must be seen to be managing in the interests of all rather than protecting a specific interest, particularly if its members hold shares in or are directly involved in the irrigation industry. Some of the decisions considered by boards can open up opportunities for insider trading. Therefore, if a shareholder

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<sup>15</sup> See <https://www.accc.gov.au/regulated-infrastructure/water/water-guides> for more information.

<sup>16</sup> For a good summary of this literature, see <http://dorgerconsulting.com/2011/07/20/size-matters-right-sizing-your-board-of-directors/>.

<sup>17</sup> Australia's Murray Darling Basin Authority consists of a chair, a chief executive, and four other members. To be eligible for appointment, an individual must have a high level of expertise in one or more relevant fields. The list of relevant fields includes water resource management, hydrology, freshwater ecology, resource economics, irrigated agriculture, public sector governance, and financial management. Appointments are made for up to four years, and no person is allowed to serve for more than eight years.

is appointed to a board, restrictions on the times when he or she may and may not trade need to be established. Public disclosure of all trades undertaken by board members should be required.

The most appropriate way to appoint members to a board is context specific and depends on the size of the system, the number of counties involved, and so on. As a guiding rule, members should be paid for the work they do and should be appointed on the basis of their skills and expertise. Normally, applications would be called for and an appointment process used. In all cases, the State Engineer would need to approve an appointment and have the power to dismiss members should they behave in an inappropriate manner. In small systems, the local county could run the process. In systems that involve several counties, a formal selection committee would need to be established.

Boards can be advised by a community reference panel of a much larger size (e.g., to obtain broad stakeholder input). Water planning legislation must include a process to ensure that disputes between the board and those responsible for final approval of a water resource sharing plan can be resolved efficiently. In Australia's Murray Darling Basin, for instance, the equivalent of the state engineer has to approve a plan within 12 weeks or refer it back to the board with recommendations for change. On receipt of a revised plan, the equivalent of the state engineer must then either approve the plan or make an alternative one within six weeks. The final plan is then presented to the legislature for approval as subordinate legislation.

#### System Specifics

When designing a new system, boards must make many important system-specific decisions for which no general guidelines can be provided. In most cases, however, it is useful to consider the administrative costs of the trade-off and the cost of acquiring the knowledge needed to improve decision making. It can be better to be approximately right than comprehensively wrong. The cost of being precisely right can be very high.

*Return flows: Net versus gross allocation systems:* The first decision is whether to run a "net" or "gross" allocation system. In a net system, the quantity of water likely to be returned to the water resource by each irrigator is estimated. Because the proportion of an allocation that returns to a system depends on irrigation practice, a net system typically adjusts each water account accordingly. But this practice can be administratively expensive because records of irrigation practice, crop type, and so on need to be kept for each water user.

In gross allocation systems, no account is taken of the proportion of water that each user returns to the system from which it was taken. Instead, return flows are managed at the catchment level. Each year, a general assessment of the proportion of water that has been returned to the system is made, and in the following year allocations per share are reduced by an appropriate amount.

The decision to establish a gross allocation system or a net system depends primarily on administrative cost considerations. Most Australian systems are run as gross systems because they are cheaper to administer. These systems incentivize increases in water use efficiency and reward those who move first and, thereby, initially gain access to more allocations than others. If one person never improves the

efficiency of his or her irrigation system and everyone else does, that person's return flows end up subsidizing everyone else's.

*Interception by dams, trees, check banks, and so on:* Another decision is how to account for actions that reduce the amount of water available to others without using a pump or taking water from a stream. The most common examples of interception include construction of small farm dams and levy banks and planting of trees. In each case, these actions intercept water that otherwise would have reached a water source. Construction of a dam high up in a catchment or of a levy bank will reduce the volume of water that reaches a river. Trees planted over a shallow aquifer can quickly send their roots down into the aquifer and start using large amounts of water.

If the administrative regime is to have hydrological integrity, the sharing system needs to require interception impacts to be offset. In the southeast of South Australia, the planting of trees is regulated because those trees can take as much water as they would if they were being irrigated. In recognition of this fact, any landholder who plants a significant area of trees over a shallow aquifer is required to purchase water shares and or allocations from the dairy farmers and wine producers that tree planting otherwise would have adversely affected. In western states, the introduction of similar mechanisms would do much to reduce the opportunity for third parties to appeal to the courts. All legislation should include a mechanism that allows for the management of significant forms of interception as and when it occurs.

*Minor uses:* Another decision is which users should not be required to hold a water share because their individual impacts on a water source are minor. In many countries, the taking of water for stock and domestic purposes does not require a water right. The state of the art in the management of minor impacts—which can be significant when added together—is to require a legal entity to hold shares on behalf of all minor interests. In this way, the aggregate impact of minor uses on other shareholders is zero and, hence, hydrological integrity is maintained.

In each case, a pragmatic judgment needs to be made. It may, for example, be appropriate for all people who take less than two acre feet of water per year not to be required to account for the effect of their actions on other right holders. If that is the case, the water resource sharing plan could require a regular assessment of the total volume of water taken by minor water users and could include a mechanism to account for the established collective impacts. In Nevada, one option would be to require each county to hold water shares sufficient to offset this water use.

*The environment, floods, and conveyance water:* In sharing systems, more attention is paid to the physical than to the theoretical nature of water that flows through the system. Rather than simply calling this water environmental or ecosystem water, these systems make a clear distinction between the water needed for conveyance, that required for transfer to other systems, that available to enhance environmental outcomes, and flood water.

Well-written plans give first priority to the water needed for conveyance. The next tranche of water can be shared. In some systems, it is desirable to issue shares, to purchase shares, or both for the environment during the conversion process. Experience suggests that the allocation of water shares to the environment can increase the efficient delivery of environmental outcomes.

*System interconnectivity:* Relationships among connected water resources are most efficiently organized through development of a basin plan that sets out, for example, the rules for accounting for and managing interactions among surface and groundwater resources. Plans for each specific water resource can then be prepared in a manner consistent with the basin plan.

One authority should be responsible for managing all connected surface and groundwater resources. Where knowledge about connectivity is uncertain, an adaptive approach should be taken. Full attention should be given to the distribution of risks and clarity about risk assignment.

As a general rule, it is more efficient to replace conjunctive use arrangements with systems that assign shares to each river reach and each groundwater zone and to leave it to users to decide how best to manage supply risk by mixing opportunities to invest in and use ground and surface water resources. Connectivity issues are most effectively managed at the system, not the individual, level.

*Terminology:* One of the more serious mistakes that Australia made during the early stages of water policy reform was to fail to pay attention to the definition of terms and concepts. Progress was stalled by the tendency of each state to use different terminology. Terms used in one state had a totally different meaning in another state. Early agreement among states and among those involved in developing reforms on terminology and language would have sped progress.

In Australia, discussion was facilitated when it dropped the use of terms like “water right” and focused on the meaning of terms like “shares,” “entitlements,” and “obligations.”

Appendix A contains a glossary that may be helpful in securing agreement on terminology.

## **Two Case Studies**

Two case studies illustrate how the blueprint proposed here might be implemented. Both locations are in entirely within Nevada and thus avoid interstate complications.

The **Diamond Valley** was chosen in part because of the relative simplicity of its ground water system. The case study here has been prepared to demonstrate that

- Conversion from a prior rights to a sharing system is possible.
- Compulsory metering can bring significant benefits.
- Over-allocation problems can be addressed efficiently and equitably.
- Water banking—the carrying forward of unused water from one year to the next—can be highly beneficial for water uses.

The **Humboldt Basin** was chosen because in many ways it represents an incremental yet significant step in complexity. This basin is substantially larger than the Diamond Valley, includes dams as well as regulated and unregulated surface water reaches, and has connected groundwater systems. If water users in this basin can transition from their current system to an unbundled water rights system, users in many more systems with comparable levels of complexity should be able to transition as well. This second case study has been prepared to address the following issues:

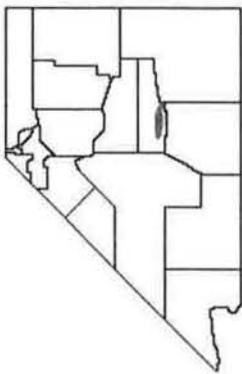


- Trading within and between districts,
- Ground-surface water connectivity,
- Inclusion of environmental/ecosystem water uses, and
- Assignment of rights to transmission losses.

### **Case Study 1: Diamond Valley**

Located, near Eureka, 250 miles east of Carson City, the Diamond Valley contains an aquifer supplying groundwater for agricultural, urban, mining, and livestock purposes. The main product is high-quality hay, which is produced with groundwater pumped through some 200 center-pivot irrigation systems. The first water right in the Diamond Valley was issued in 1890. Today, 720 water rights are held by approximately 110 legally distinct interests. The most junior water right was issued in 2005 for livestock purposes.

The Diamond Valley aquifer is unconfined and highly connected. Pumping at any one location likely changes the water level throughout the valley. A small part of the valley benefits from heavier soil close to the surface, and in these areas some flood irrigation remains.



The quantity of water use has been estimated by tracking changes in depth to groundwater and by combining crop area statistics with estimates of water use per acre. Annual use is thought to be approximately 70,000 acre feet but has recently been closer to 100,000 acre feet. The State Engineer reports that, since 1960, water withdrawals from the Diamond Valley have decreased groundwater elevation by more than 100 feet; the current rate of decline is 2–3 feet per year.<sup>18</sup> The USGS has estimated sustainable yield to be approximately 35,000 acre feet per year. To bring use within sustainable yield, the current rate of water use should be cut in half. Otherwise, the aquifer will be depleted within 30 years.

The Diamond Valley community has indicated that it would like to find a way to transition to a new water rights system, and the state engineer has issued a notice indicating that he intends to declare the valley's groundwater resource a "critical management area."

If Diamond Valley water users wish to prepare a plan that is consistent with this blueprint, the following actions would be appropriate:

- The county should appoint a five-member, expertise-based Diamond Valley Water Board to prepare and, following approval by the state engineer, implement a sustainable water resource sharing plan that would gradually bring withdrawals in the valley into alignment with recharge.
- The board should establish a community reference panel to help it develop and implement the water resource sharing plan.

<sup>18</sup> Notice of intent to declare the Diamond Valley a critical resource management area dated June 29, 2015.

- Given increases in water-use efficiency that the pilot test can be expected to produce, grant funding should be sought to expedite preparation of the water resource sharing plan, meter installation, and development of water registers and water accounts.
- The water resource sharing plan should outline the transition to a new unbundled water rights system and a process that will reduce water use to ensure sustainability of the aquifer.
- The water resource sharing plan should
  - Issue shares to all existing water right holders using a formula that accounts for water right seniority.
  - Begin with a total allocation equivalent to current use and propose a pathway for the transition to sustainable yield.
  - Require the board to make allocations in proportion to the number of shares held and do so well before the start of each irrigation season (February 1 of each year is suggested).
  - Allow water account holders to carry forward as many unused water allocations as desired from one season to the next.
  - Require all significant water use to be metered and recorded in a robust water accounting system.
  - Discourage intentional overuse by setting the penalty for a water account deficit of more than 21 continuous days at three times the cost of restoring the account to a zero balance.
  - Require the county to hold sufficient shares to offset the estimated impact, thereby allowing households and businesses to take small amounts of water without a requirement to holding a water right.
  - Require the board to commission an independent review of the plan three years after commencement and, after five years, to implement a process to determine whether the new system should continue.
- The Office of the State Engineer should establish a water share register and water accounting system for testing in the Diamond Valley.
- If a majority of water holders wish to abandon the new system and revert to the old system after five years, the plan should be dissolved and all the previously held water rights should be returned in a manner that protects the interests of mortgagees.<sup>19</sup>

Assuming that timely funding can be obtained, implementation of the Diamond Valley Water Resource Management Plan could commence as early as the start of the 2016 irrigation season.

Because irrigation water use throughout the Diamond Valley is relatively uniform and little water is returned from urban water use and mining enterprises, the valley would likely obtain maximum benefit by

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<sup>19</sup> If at 10 years after the declaration of Diamond Valley groundwater as a critical management area no management plan for this resource has been agreed, the state engineer is obliged to curtail use of all junior water rights and bring the total amount of water used back to into alignment with his or her estimate of perennial yield. On the basis of currently available data, this "brutal solution" would curtail all 316 water rights issued after June 3, 1960, and allow only ongoing use of the 85 water rights issued prior to that date.

implementing a “gross” water-accounting system and by requiring the board to periodically assess changes in return flow and to reduce allocations per share accordingly.

The most difficult issue to consider when developing this proposal has been the design of the formula used to convert existing water rights to shares. More discussion with irrigators and further analysis of data are required to make a final decision. However, on the basis of the available data, it is suggested that all duties under current water right arrangements first be brought into alignment with best practice. In most instances, irrigators in the Diamond Valley have a duty to apply 4 acre feet of water per acre of their irrigated land. In practice, however, most irrigators find it difficult to apply more than 3 acre feet per year to a crop. Best practice is thought to be in the vicinity of 2.5 acre feet. If the duty is reduced from 4 to 2.5 acre feet, the combined duty to use water would be reduced from 131,000 acre feet to 81,000 acre feet.

If this approach is acceptable, the next question is how much weight should be given to those who hold more senior rights, given that many irrigators hold a mix of senior and junior rights. On the basis of available data, it would appear that if rights issued after 1960 are weighted on a sliding scale of between 100% and 70%, the initial total allocation would start at approximately 70,000 acre feet, which is close to current use. If this starting point is acceptable and allocations per share are reduced at a rate of 3.2% per year, sustainable yield (perennial yield) would be reached in 20 to 25 years. A faster adjustment rate might be possible, and the board should be required to carefully consider opportunities to reach a sustainable yield at a faster rate.

In summary, it is suggested that the conversion be accomplished by

- Reducing all rights by a proportion such that each duty aligns with best irrigation practice;
- Assigning shares on the basis of one share per acre inch multiplied by a seniority co-efficient that declines slowly from 100% in 1960 to 60–70% in 2015; and
- Allowing each shareholder to use, trade, or save allocations.<sup>20</sup>

An alternative approach is simply to weight all rights by a seniority factor without adjustment for improvements in irrigation efficiency occurring after the initial 4 acre feet allocation decision. Discussions with existing irrigators and spreadsheet evaluation of the likely implications of this approach suggest that this approach is likely to be preferred only by a small proportion of irrigators.

Another approach is to give each water rights holder the option to opt in or out of the new sharing system and to comply with whatever actions the state engineer imposes on him or her during the test period.

In the Diamond Valley, two surface water springs have not flowed at a rate sufficient to enable rights attached to them to be exercised. Recently, the holders of rights to take water from these springs have taken action in the courts with a view to ensuring recovery of their claimed rights. Under the sharing proposal contained in this blueprint, it would be possible for these claimants to be issued shares and, in effect, become part of the groundwater system. Given the nature of the Diamond Valley’s water

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<sup>20</sup> The spreadsheet model used to develop this proposal has not been validated. Further analysis is necessary.



resources, it would make hydrological sense to define the springs as part of the Diamond Valley's groundwater system and to include them in the Diamond Valley Water Resource Sharing Plan.

### **Case Study 2: Humboldt Basin**

The Humboldt River is 330 miles in length and drains into the Humboldt Sink east of Reno. The basin includes five counties: Elko, Eureka, Lander, Humboldt, and Pershing.

Fewer than 2,000 surface water rights and some 3,000 groundwater rights are listed in government records for the Humboldt Basin. In total, these rights are held by nearly 1,500 legal entities.

The Humboldt Basin contains some of the largest gold mines in the United States. Although agriculture remains that major user, a significant proportion of water rights are held by mining and mineral processing interests.

The surface waters of the Humboldt Basin were adjudicated over an 18-year period ending in 1935 in



what is now known as the "Humboldt Decree." The basin's groundwater resources have not been adjudicated, but because most groundwater development is relatively recent, the Office of the State Engineer's records are considered reliable. All groundwater users in the basin are required to have meters installed by the end of this year and to begin reporting how much water they are using.

On a day-to-day basis, the Humboldt River is managed by two water commissioners, one for the Upper Humboldt and one for the Lower Humboldt. The dividing point between the upper and the lower river system is near Palisade. Several small dams are located in the Upper Humboldt and are used to regulate flow and assist with the supply of essential services. In the Lower Humboldt, the

Rye Patch Dam is used to supply water during periods of low flow. In 2014 and 2015, deliveries of water to the Lower Humboldt's Pershing County Conservation District were zero, and in the two years before that they were reduced significantly.

### **Governance**

The 15-member Humboldt River Basin Water Authority meets several times a year to provide advice and oversight for the surface water system but not the groundwater system. To transition to a new water rights system, it is recommended that the existing authority be disbanded and replaced with a board of seven people. Board members would be paid and established as a new authority empowered to employ staff. In practice and once a Humboldt Basin Water Resource Sharing Plan had been approved, this board would take over many of the functions currently managed through appeals to courts. One of their first challenges would be to oversee preparation of a basin plan and resource-specific plans that reduce the need to involve the courts in many decisions.

One of the first tasks of the new Humboldt River Basin Water Authority would be to appoint a community reference panel of 15 to 20 people to help gauge the likely views of all people interested in water use throughout the basin. Most members of the existing authority would likely be appointed to this panel, but it would be widened to include mining and other interests. The authority would regularly meet with and provide detailed briefings to this panel as well as discuss most sensitive issues with it.

The board would then begin preparing a Humboldt Basin water resource management plan that sets limits on the use of the basin's surface and groundwater resources and on the sharing of water among water sources. Basin-wide planning would need to be conducted in parallel with the development of plans for each hydrographic region. A considerable amount of information is already available to assist with plan preparation. In the Upper Humboldt, the USGS has identified eight hydrographic areas.<sup>21</sup>

While the basin plan and resource-specific plans are being prepared, conversion of water rights into shares and unbundling of rights could commence for (1) the main stem of the Upper Humboldt River, (2) each tributary, and (3) each groundwater resource.

By beginning with the unbundling of water rights within each part of the system, progress could be made while the basin plan is being developed. This progress could include installation of meters and development of a means to read them and record use in the water accounts.<sup>22</sup> Registers could be validated during this period.

#### Surface Water Use

In each surface water resource, careful consultation is necessary to determine whether to establish two, three, or four priority sharing tiers. Australian experience suggests the need for at least two tiers in each part of the surface water system so that supply variability can be efficiently managed. Given that average inflow to the river is in the vicinity of 300,000 acre feet and that the sum of all decreed and permitted water rights is more than double average flow, a case could be made for four classes of shares in most parts of the Humboldt River. As a starting point, is suggested that

- Tier one shares encompass rights issued before 1880;
- Tier two shares cover rights issued between 1881 and, say, 1910;
- Tier three shares include rights issued between 1911 and 1960; and
- Tier four shares cover rights established after 1961.

Currently, allocations in the Humboldt River are made by reference to priority date and crop type and are made on rotation and follow rules established by the Humboldt Decree. When in seniority, "harvest crop" right holders have a duty to use water over a 120-day period; "meadow pasture" holders, for a 60-day period; and "diversified pasture" holders, for a 30-day period. Locked down in the 1930s, the framework

<sup>21</sup> <http://pubs.usgs.gov/sir/2009/5014/section5.html>.

<sup>22</sup> Integrity of the metering system would be easier to maintain if all meters are owned and read by either by the authority or the Office of the State Engineer.

is rigid and severely restricts the options available to each irrigator. In a low-flow period, water is delivered on rotation, and when it is their turn, the holders of a water right are required to take it.<sup>23</sup>

Under the system proposed in this blueprint, allocations would be made, and users would be free to accept them or to transfer some or all of them to someone else with an adjustment for delivery losses. In the surface water system, shares within each tier would be issued in proportion to the volume that could be expected within a 100-year period and with a further weighting to compensate for differences in the length of time for which water is allocated. Careful consultation with users would be needed to decide whether to issue 120-, 60-, and 30-day shares within each tier.

In the interests of simplicity, it may be more administratively efficient to establish three rather than four priority tiers and to issue them by time period so that nine share types are established, as shown in Table 2.

**Table 2. Priority tiers issued by time period that water is available**

Priority	Allocation Period		
	April 15 to May 14	May 15 to June 14	June 15 to August 15
Tier One	April–May flow shares	May–June flow shares	Summer flow shares
Tier Two	April–May flow shares	May–June flow shares	Summer flow shares
Tier Three	April–May flow shares	May–June flow shares	Summer flow shares

In some reaches and tributaries, it may be politically impractical to unbundle rights and to move to a share system in one step. Where this is the case, the first step could simply be introduction of meters and volumetric accounting coupled with the unbundling of existing rights from use requirements. Allocations would then be made in proportion to the priority table book currently used, and they would be made tradeable.

Each right holder would be issued a separate beneficial use approval that would **not** nominate the crop or pasture that has to be irrigated. It would, however, specify the location or locations where water could be taken, all the conditions associated with its use, and the water account from which allocations are to be deducted as it is used.

In this first step, no right holders would be worse off, and all would be given the opportunity to trade any allocations made to them. Many are likely to choose to sell part of their allocation.

The economic and investment advantages of share title guarantee and mortgageability, however, would be limited to those who proceed to the second step and convert their existing rights into shares.

<sup>23</sup> Informally, some flexibility is offered on a case-by-case basis.

#### The Lower Humboldt River

Downstream in the Lower Humboldt, right holders could be given a right to a share of delivery losses under a continuous accounting system and shares could be defined by reference to the flow rate at the top of the Lower Humboldt River. At present, the flow rate at Palisade is used to define water-sharing relationships between the Upper and the Lower Humboldt and this flow rate could be used as a basis for issuing shares. If so, shareholders could let their water flow down to Rye Patch Dam and decide how long, with adjustment for losses, to hold it there.

In the Lower Humboldt, as indicated above, there is a case for establishing a system that gives Lower Humboldt shareholders ownership of delivery losses. If losses upstream of Palisade are defined as zero, these shareholders would have an incentive to consider selling allocations made during a dry period upstream. Careful modeling of the proportion of delivery losses to be managed through shares and through system-based rules is warranted.

Consider provision of some 30,000 acre feet in Rye Patch Dam to irrigators in the Pershing Irrigation District. When the system is dry, most of the water released would be lost in transmission. Under a new sharing system, allocations could be made to all shareholders in the Lower Humboldt, and a bidding process could be used to determine how best to maximize agricultural production and minimize transmission losses. The likely consequence is that a few shareholders would decide to irrigate their fields and the rest would decide to sell their water to these shareholders. If so, a much higher proportion of the available water could be used, and a much lower proportion would be lost during transmission. Those who choose to sell their allocations would be compensated by those who end up using the small amount of available water.

Under the proposed sharing system, Lower Humboldt shareholders would be free to carry forward unused allocations in Rye Patch Dam from year to year with adjustments for evaporative and other losses. Similarly, when flows are very low and it is not possible to deliver water to the Lower Humboldt, tier one shareholders would be able to trade allocations upstream to a place where this water can be used. To this end, careful consideration needs to be given to the allocation of a proportion of delivery losses to individual irrigators in a manner that would allow them to sell the resultant savings to upstream users. Rights to some of these delivery losses, however, should be allocated to the district as a whole. If the district can find a way to improve the efficiency of water delivery, it would be free to offset the cost of improving its system by selling the resulting savings.

#### Efficient Trading

All water use would be metered so that rapid within-reach allocation trading becomes possible throughout the Humboldt River. As in the Diamond Valley pilot test, it is recommended that meters be installed and owned by the state.

Metering would allow each irrigator to optimize water use within and between seasons. Each user would benefit from increased flexibility. The current practice of forcing some irrigators to produce a harvest crop, some to irrigate meadow pasture, and others to diversify pasture would be replaced with a practice that allows each shareholder to optimize use. Considerable restructuring should be expected. New crops may be introduced, and new irrigation land may be brought into production.



## Groundwater

Significant groundwater bodies are located on either side of the Humboldt River. A five-year study to assess the degree of connectivity between the groundwater and the surface water systems is under way.

Like surface water use, all groundwater use in the Humboldt Basin would be metered, and, preferably, all meters would be owned and read by the state.

Within each groundwater system, there would be a single share pool.

In under-allocated groundwater systems, share allocation would be relatively simple. Water users would be given an initial allocation of shares in proportion to their maximum volumetric entitlement and would have this amount weighted by expected annual yield. In cases in which the total volume of rights on issue is still within sustainable limits, holders would receive the same weighting. In over-allocated groundwater systems, conversion could follow the processes recommended for the Diamond Valley.

In over-allocated groundwater systems, share assignment would follow the arrangements recommended for the Diamond Valley. Transition to the proposed water rights system could be implemented under the state engineer's existing power to identify a groundwater body as a critical management area. Elsewhere, implementation would be possible if users request the engineer to take such action.

The transition to the proposed rights system for surface water systems might be implementable in areas where all rights holders agree to lease their rights to a company on the condition that transition proceeds in a manner consistent with the concepts presented in this blueprint.

## Mining

Mining is widespread throughout the Humboldt Basin and, in some areas, mining is associated with significant dewatering arrangements to stop groundwater flowing into a mine. Where these arrangements are in place and the quality of the groundwater is acceptable, it may be possible for mines to return water to a surface water system or to get credit for storing it underground.

Mines would benefit from the opportunity to purchase shares, allocations, or both as needs arise.

## The Humboldt Basin Water Resource Sharing Plan

While sharing systems are being established in each tributary, reach, and groundwater system, water-sharing arrangements for the entire basin should be developed. Consistent with knowledge emerging from the current groundwater study, rules for management of intended and unintended transfers between groundwater and surface water sources would be put in place. These rules must allow for the development of aquifer storage and recovery programs involving the return of surface water to a groundwater system where it can be stored. As a guiding principle, rules for resolution of tensions involving transfers should reflect, as far as possible, current use and should set a uniform timeframe for a return, if needed, to sustainable use.

### **State Legislation**

Under existing legislation and as shown in Box 1 the state engineer could declare a groundwater resource to be a critical management area and could require preparation of and then implement a water resource sharing plan.

This power to declare a critical management area may not extend explicitly to surface water resources. If a groundwater resource area is in a critical state and can be shown to be connected to a surface water resource, it may be possible to argue that the critical management area declaration power extends to an entire basin.

Alternatively, under Chapter 416, the governor may

devise contingency plans that provide for conserving, allocating, using, increasing the supply or taking whatever steps are necessary to prevent a water or energy emergency, or in the event of a water or energy emergency, to ensure the fairest and most advantageous use of water or energy or of any water or energy source or supply for the benefit of all the people of this state.

Prevention of an emergency such as the failure of an entire irrigation district may be sufficient to justify implementation of the proposed water rights system in the Humboldt Basin.

When the above-described preventative and declaration powers are combined, the state engineer would appear to have sufficient authority to pilot test the proposed rights system in the Diamond Valley and the Humboldt Basin.

Notwithstanding the strong support for this blueprint or a variant of it, new water planning and water allocation legislation could be needed. Such legislation should be generic in its form and should enable conversion to the new rights system on a water resource-by-water resource basis. Once this legislation has been passed, any group of water users should be given the opportunity to elect to test the new system and, if a significant majority are pleased with the outcome, to remain under it.

Rather than preparing a single integrated water resource bill for consideration by the Nevada's legislature, it may be more appropriate to prepare separate bills for

- Validation and conversion of existing rights into shares recorded on a Torrens Title-like registration system,
- Establishment of water allocation accounting systems, and
- Transition to a new water sharing system.

**Box 1. Extract from Chapter 534 – Underground Water and Wells**

**NRS 534.110 Rules and regulations of State Engineer; statements and pumping tests; conditions of appropriation; designation of critical management areas; restrictions.**

1. The State Engineer shall administer this chapter and shall prescribe all necessary regulations within the terms of this chapter for its administration.

7. The State Engineer:

- (a) May designate as a critical management area any basin in which withdrawals of groundwater consistently exceed the perennial yield of the basin.
- (b) Shall 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.

The designation of a basin as a critical management area pursuant to this subsection may be appealed pursuant to NRS 533.450. 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.

**NRS 534.037 Groundwater management plan for basin designated as critical management area: Petition; hearing; approval or disapproval; judicial review; amendment.**

1. In a basin that has been designated as a critical management area by the State Engineer pursuant to subsection 7 of NRS 534.110, 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.

Source: <https://www.leg.state.nv.us/NRS/NRS-534.html>.

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## Recommended Reading

There is a growing literature on the design of water abstraction regimes that focus on the Australian experience. To help improve the Australian system, much of this literature is critical of one or more dimensions of the many changes that have and that are still being made. None of the authors would recommend a return to the system that was in place in the 1970s and 1980s.

Explanation of how the Australian system works nationally:

Australia's National Water Initiative ([www.nwc.gov.au](http://www.nwc.gov.au))

Explanation of how the Australian system works in each state:

- Victoria (<http://www.depi.vic.gov.au/water/governing-water-resources/water-entitlements-and-trade>)
- New South Wales (<http://www.water.nsw.gov.au/water-licensing>)
- Queensland (<https://www.dnrm.qld.gov.au/water>)
- South Australia (<http://www.environment.sa.gov.au/managing-natural-resources/water-use/water-planning>)

Reports prepared by Australia's National Water Commission ([www.nwc.gov.au](http://www.nwc.gov.au)):

- *Strengthening Australia's Water Markets*
- *Water Markets in Australia: A Short History*
- *Australian Water Markets: Trends and Drivers 2007–08 to 2011–12*
- *Water Management and Pathways to Sustainable Levels of Extraction*

Papers, books, book chapters, and reports helping inform people about the Australian approach:

- OECD. 2015. *Water Resources Allocation: Sharing Risks and Opportunities*. Paris: OECD.
- Young, M.D. 2015. "Unbundling Water Rights as a Means to Improve Water Markets in Australia's Southern Connected Murray Darling Basin." In *Use of Economic Instruments in Water Policy: Insights from International Experience*, edited by Manuel Lago, Jaroslav Mysiak, Carlos M. Gómez, Gonzalo Delacámara, and Alexandros Maziotis. London: Springer.
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- Garrick, D. 2015. *Water Allocation in Rivers under Pressure*. London: Edward Elgar.
- Bennett, J. 2015 "Doing Better with Less: Lessons for California from Australia's Water Reforms." Reason Foundation Policy Brief No. 129, July 2015
- Young, M. 2014. "Designing Water Abstraction Regimes for an Ever-Changing and Ever-Varying Future." *Agricultural Water Management* 145:32–38.

Reports and papers with a significant impact on the development of the Australian approach:

- Wentworth Group of Concerned Scientists. 2003. *Blueprint for a National Water Plan*. World Wide Fund for Nature, Sydney.
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## Appendixes

### **Appendix A: Glossary**

This glossary is adapted from Australia's National Water Initiative ([www.nwc.gov.au](http://www.nwc.gov.au)) and modified to reflect circumstances in Nevada.

**beneficial use approval:** A permit or other similar regulatory approval authorizing the taking or capture of water from a defined resource in a manner consistent with the conditions set out in a water resource plan. Such an approval should allow only the taking and use of water in ways that are of net benefit to society.

**carry over:** With adjustment for losses and storage capacity limitations, the practice of transferring water allocated to a water account from one time period to the next.

**consumptive pool:** The proportion of a defined water resource that may be assigned to shareholders under the rules of the relevant water resource sharing plan. In a surface water system, it is normal to have two, three, or four consumptive pools each of priority.

**consumptive use:** Use of water for private benefit consumptive purposes, including irrigation, industry, urban, and livestock, and domestic use.

**environmental and other public benefit outcomes:** Environmental and other public benefit outcomes are defined as part of the water planning process and are specified in water resource sharing plans. They may include *environmental outcomes* such as maintaining ecosystem function (e.g., through periodic inundation of floodplain wetlands), biodiversity, water quality, and river health targets as well as *other public benefits* such as mitigating pollution and protecting public health (e.g., by limiting noxious algal blooms), indigenous and cultural values, recreation, fisheries, tourism, navigation, and amenity values.

**environmental manager:** an expertise-based function with clearly identified responsibility for the management of environmental water so as to achieve the environmental objectives of statutory water resource sharing plans. The institutional form of the environmental manager will vary from place to place, reflecting the scale at which the environmental objectives are set, the degree of active management of environmental water required, and the proportion of water set aside primarily for the production of environmental benefits through allocation rules and the proportion of water access entitlements held in the environment's interest. The environmental manager may be a separate body or an existing basin, catchment, or river manager, provided that the function is assigned the necessary powers and resources, potential conflicts of interest are minimized, and lines of accountability are clear.

**environmentally sustainable level of extraction:** The level of water extraction from a particular system that, if exceeded, would compromise key environmental assets or ecosystem functions and the productive base of the resource.

**exchange rate:** The rate of conversion calculated and agreed to be applied to water to be traded from one trading zone, or one jurisdiction, or both to another.

**extraction rate:** The rate in terms of unit volume per unit time that water can be drawn from a surface water or a groundwater system. (Used in the context of a constraint that might exist due to the impact of exceeding a particular extraction rate at a particular point or within a specified system.)

**irrigation district:** An area or district that is primarily supplied with irrigation water through water service infrastructure.

**metropolitan:** Water and wastewater services provided in metropolitan urban areas.

**over-allocation:** Situations in which the total volume of water that could be extracted by *entitlement holders* at a given time exceeds a system's *environmentally sustainable level of extraction*.

**over-use:** Situations in which the total volume of water actually extracted for consumptive use in a particular system at a given time exceeds the system's *environmentally sustainable level of extraction*. Over-use may arise in systems that are over-allocated, or it may arise in systems in which the planned allocation is exceeded due to inadequate monitoring and accounting.

**reliability:** The frequency with which water allocated under a *water access entitlement* can be supplied in full.

**rural and regional:** Water and wastewater services provided for rural irrigation and industrial users and in regional urban areas with fewer than 50,000 connections.

**seasonal allocation:** A specified volume of water that may be taken from a water resource within an irrigation season and, if not used, with adjustment for storage and other losses carried forward for use in a subsequent year.

**sharing delivery capacity:** An approach to sharing of an irrigation supply channel capacity (supplemented systems) or a water course capacity (unsupplemented) held by an *entitlement holder* and specified as a percentage share or volumetric supply rate at a particular time.

**surface water:** Water that flows over land and in water courses or artificial channels and that can be captured and stored and supplemented from dams and reservoirs.

**termination fee:** A fee payable to an operator by a holder of a right of access for terminating access or surrendering a water delivery right.

**trading zones:** Zones established to simplify administration of a trade by setting out the known supply source or management arrangements and the physical realities of relevant supply systems within the zone. Trade of shares or allocations within a zone can occur without redefinition of the share or allocation. Trade between trading zones may occur at exchange rates other than one for one and, in some circumstances, may require a time delay until the re-assigned water arrives in the new zone and for compensating arrangements to take effect.

**unbundling:** The process of separating an existing water right into shares, seasonal allocations, and the approvals necessary to make the works necessary to take and use water from a defined water resource.

**validation:** The process of identifying and confirming an existing water right, identifying all the people and legal entities with an interest in the right, and acceptance of the surrender of the right on the understanding that an equivalent or better right will be recorded in a water right register of state-guaranteed integrity.

**water share:** A perpetual or ongoing entitlement to exclusive access to a share of water from a specified *consumptive pool* as defined in the relevant water resource sharing plan.

**water account:** A government-guaranteed record of the maximum volume of water that may be used within a defined period, transferred to another water account, or both.

**water allocation:** The specific volume of water allocated to water access entitlements in a given season, defined according to rules established in the relevant water resource sharing plan.

**water irrigation district:** The area under control of an individual water service provider (e.g., an irrigation corporation, cooperative or trust, or water authority).

**water plan:** A statutory plan for surface water systems, groundwater systems, or both and developed in consultation with all relevant stakeholders on the basis of best scientific and socio-economic assessment to provide positive ecological outcomes and resource security for users.

**water system;** A system that is hydrologically connected and described at the level desired for management purposes (e.g., sub-catchment, catchment, basin or drainage division, groundwater management unit, sub-aquifer, aquifer, groundwater basin).

**works approval:** An approval to make and maintain the physical infrastructure needed to take water from a water resource.

**water tagging:** An accounting approach that allows a traded *water access entitlement* to retain its original characteristics when traded to a new jurisdiction or trading zone, rather than being converted into a form issued in the new jurisdiction or trading zone.

#### **Appendix B: Guidelines for Water Registries and Water Accounts**

These guidelines are adapted from Australia's National Water Initiative ([www.nwc.gov.au](http://www.nwc.gov.au)) and are modified to reflect circumstances in Nevada.

Water registers should be established under state legislation and should

- Be of guaranteed integrity.
- Contain records of all water access entitlements or shares in a water resource region that have been validated.
- Contain protocols for the protection of third party interests that
  - Require the holder of a registered security interest, such as a mortgage, to be notified prior to any proposed dealings in relation to the water right and require the consent of such interests to any proposed transfer.
  - Allow only authorized dealings.
  - Require the registration of permanent transfers of the water right and encumbrances that affect the right such as mortgages and other security interests.
  - Prioritize competing dealings and interests.
  - Manage time lags between date of lodgement for registration and actual registration of dealings, as such time lags may affect priorities.
  - Allow for the discharge of the security interest, in conjunction with the transfer of the entitlement, to a new registered holder.
  - Ensure that lenders are only affected by a subsequently registered interest when the lender has consented to the subsequent dealing.
- Be publicly accessible, preferably over the Internet, and include information such as the prices of trades and the identity of entitlement holders.
- Link to water accounts that record all allocations made to the holder of a water right.
- Be organized by the water resource region to which each water access entitlement refers.
- Anticipate that the boundaries of a water resource management region might need to be changed and, in such circumstances and following due process, allow adjustment of the register in a way that preserves the interests of all parties.
- Following due process, allow for the separation of any beneficial use and other conditions from the water right or water access entitlement.
- Allow for the conversion of a water right into unit shares in a manner that is consistent with a statutorily approved water resource sharing plan, legislation, or both.



### **Appendix C: Guidelines for Preparation of Water Resource Sharing Plans**

These guidelines are adapted from Australia's National Water Initiative ([www.nwc.gov.au](http://www.nwc.gov.au)) and are modified to reflect circumstances in Nevada.

- Each plan should state the
  - Water source or water sources covered by the plan (i.e., its geographic or physical extent).
  - Current health and condition of the system.
  - Risks that could affect the size of the water resource and the allocation of water for consumptive use under the plan, in particular, the impact of natural events such as climate change and land use change or limitations to the state of knowledge underpinning estimates of the resource.
  - Means by which risks are to be managed and party responsible for risk management.
  - Number of sharing tiers to be established and the process to be used when unbundling an existing water right and converting it into shares and use approvals.
  - Overall objectives of water allocation policies.
  - Knowledge base on which decisions about allocations and requirements for the environment are being made and steps for improving it during the course of the plan;
  - Uses and users of the water, including consideration of indigenous water use.
  - *Environmental and other public benefit outcomes* proposed during the life of the plan and the water management arrangements required to meet those outcomes.
  - Estimated *reliability* of the water access entitlement and rules for deployment of the consumptive pool among categories of entitlements within the plan.
  - Rates, times, and circumstances under which water may be taken from the water sources in the area or the quantity of water that may be taken from the water sources in the area or delivered through the area.
  - Conditions to which entitlements and approvals having effect within the area covered by the plan are to be subject, including monitoring and reporting requirements, minimization of impacts on third parties and the environment, and compliance with site-use conditions.
  - Conditions that must prevail before a plan is suspended, parties that may decide to suspend a plan, and actions that must occur during the suspension period.
- The relevant plan should specify a pathway to correct *over-allocation* or *over-use*.
- Plan duration should be consistent with the level of knowledge and development of the particular water source.
- A review process should allow for changes to be made in light of improved knowledge.
- Where appropriate, plans should include mechanisms to deal with
  - Relevant *regional natural resource management plans* and cross-jurisdictional plans, where applicable.
  - The level of connectivity between surface water systems (including overland flow) and groundwater systems.



- Impacts on water users and the environment that the plan may have downstream (including estuaries) or out of its area of coverage, within or across jurisdictions.
  - Water interception activities, including the construction of farm dams and other structures that in one way or another slow the rate of overland flow, groundwater recharge, or both.
- Water planning processes should involve
    - Consultation with stakeholders, including those within or downstream of the plan area.
    - Application of the best available scientific knowledge and, consistent with the level of knowledge and resource use, socio-economic analyses.
    - Adequate opportunity for consumptive use, environmental, cultural, and other public benefit issues to be identified and considered in an open and transparent way.
    - Reference to broad regional natural resource management planning processes.
    - Consideration of, and synchronization with, cross-jurisdictional water planning cycles.
    - Adequate opportunity for the potential impacts of water-sharing arrangements and trading rules among connected water bodies to be identified and considered in an open and transparent manner.

**Appendix D: Principles for Regulatory Approvals of Beneficial Water Use and Works**

These principles are adapted from Australia's National Water Initiative ([www.nwc.gov.au](http://www.nwc.gov.au)) and are modified to reflect circumstances in Nevada.

- Regulatory approvals enabling water use at a particular site for a particular purpose will
  - Be consistent with water legislation and related natural resource development and planning legislation at the federal and state level.
  - Be consistent with relevant water management plans and water accounting protocols.
  - Take into account environmental, social, and economic impacts of use, including on downstream users, and seek to ensure that water is put to its highest and best use.
  - Clearly state the conditions relating to the approval, including the circumstances and processes relating to variations or terminations of the approval.
  - Minimize application and compliance costs for applicants.
  - Allow for applications to be assessed at a level of detail commensurate with the level of the proposed activity's potential impact.
  - Ensure that full consideration is given to aquifer drawdown, supply congestion, water quality and other local effects.
  - Establish transparent and contestable processes to establish whether a proposed activity is to be approved.
  - Establish avenues for appealing approval decisions.
  - Ensure that every approval to take water from a defined water resource is linked to a nominated water account in a manner that facilitates account deduction as water is used.
- The authority responsible for regulatory approvals must
  - Be separate from water users and providers.
  - Possess the necessary legal authority and resources to monitor and enforce the conditions of a water use or works licence.
  - Periodically benchmark its practices against the practices of peer authorities in other jurisdictions.

#### **Appendix E. Principles for Trading Rules**

These principles are adapted from Australia's National Water Initiative ([www.nwc.gov.au](http://www.nwc.gov.au)) and are modified to reflect circumstances in Nevada.

Water trading rules should be established and be consistent with these principles:

- Water access entitlements may be traded permanently through lease arrangements or through other trading options that may evolve where water systems are physically shared or where hydrologic connections and water supply considerations would permit water trading.
- All trades should be recorded on a water register or water account as appropriate.
- Restrictions on extraction, diversion, or use of water resulting from a trade can only be used to manage
  - Environmental impacts, including impacts on ecosystems that depend on underground water;
  - Hydrological, water quality, and hydrogeological impacts;
  - Delivery constraints;
  - Impacts on geographical features (such as river and aquifer integrity); or
  - Features of major indigenous, cultural heritage, or spiritual significance.
- A trade may be refused on the basis that it is inconsistent with the relevant water resource sharing plan.
- The adjustment process associated with trading should be encouraged and should not be taxed as a means to claw back or reduce the total amount of water that may be taken from a defined water sourced.
- Where necessary, water authorities should facilitate trade by specifying trading zones and providing related information such as the exchange rates to be applied to trades in water allocations to (1) adjust for the effects of the transfer on hydrology or supply security (transmission losses) or reliability and (2) reflect transfers between different classes of water sources, unregulated streams, regulated streams, supplemented streams, groundwater systems, and licensed runoff harvesting arrangements.
- Water trading zones, including groundwater trading zones, should be defined in terms of ability to change the point of water extraction and to protect the environment. The volume of delivery losses in supplemented systems that provide opportunistic environmental flows should be estimated and taken into account when determining the maximum volume of water that may be traded out of a trading zone.
- Exchange rates and trading rules should not be used to achieve other outcomes, such as altering the balance between economic use and environmental protection or reducing overall water use.
- Trades should not generally result in a net increase in the volume of water being consumed. That is, trades should generally not cause an increase in the net amount of water being taken from a suite of connected water sources.
- Trade in water allocations may occur within and between connected aquifers or surface water flow systems consistent with water resource sharing plans.

- Trade from a licensed runoff harvesting dam (i.e., not a small farm dam) to a river or aquifer may occur subject to
  - Reduction in dam capacity consistent with the transferred water entitlement,
  - Retention of sufficient capacity to accommodate evaporative and infiltration losses, or
  - Conditions specified in water resource sharing plans to protect the environment.
- Exit or termination fees may be set by an irrigation district to recover reasonable costs to other irrigators of water transfers out of a district.

## Nicholas Institute for Environmental Policy Solutions

The Nicholas Institute for Environmental Policy Solutions at Duke University is a nonpartisan institute founded in 2005 to help decision makers in government, the private sector, and the nonprofit community address critical environmental challenges. The Nicholas Institute responds to the demand for high-quality and timely data and acts as an "honest broker" in policy debates by convening and fostering open, ongoing dialogue between stakeholders on all sides of the issues and providing policy-relevant analysis based on academic research. The Nicholas Institute's leadership and staff leverage the broad expertise of Duke University as well as public and private partners worldwide. Since its inception, the Nicholas Institute has earned a distinguished reputation for its innovative approach to developing multilateral, nonpartisan, and economically viable solutions to pressing environmental challenges.

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**JOINT TESTIMONY  
OF  
TRUCKEE-CARSON IRRIGATION DISTRICT,  
PYRAMID LAKE PAIUTE TRIBE OF INDIANS,  
CITY OF FALLON, CHURCHILL COUNTY  
AND SIERRA PACIFIC POWER COMPANY**

**BEFORE  
SENATE COMMITTEE ON NATURAL RESOURCES  
CONCERNING ASSEMBLY BILL 380**

## I. INTRODUCTION.

This testimony is submitted on behalf of the Truckee-Carson Irrigation District, Pyramid Lake Paiute Tribe of Indians, City of Fallon, Churchill County, and Sierra Pacific Power Company. It is intended to provide background information to explain the purposes of A.B. 380 and to acknowledge the commitments and agreements which allow these entities to support, endorse and recommend enactment of A.B. 380.

## II. BACKGROUND.

In 1980, the final decree was entered in *United States of America, Plaintiff v. Alpine Land and Reservoir Co., et al., Defendants*, Civil No. D-183 (D. Nev.) (the "Alpine Decree"). Paragraph VII of its Administrative Provisions provides that applications for changes in the place of diversion, place of use or manner of use as to Nevada water rights adjudicated by the Alpine Decree are to be directed to the Nevada State Engineer. Persons aggrieved by an order or decision of the State Engineer may appeal to the Alpine Court. Alpine Decree at 161. The application of these change provisions to the Newlands Reclamation Project was found valid and was affirmed in *United States of America v. Alpine Land and Reservoir Co.*, 697 F.2d 851 (9<sup>th</sup> Cir.), *cert. denied*, 464 U.S. 863 (1983) ("Alpine I").

After the decision in Alpine I and beginning in 1984, several groups of applications to change the place of use of Newlands Project water rights were filed with the State Engineer. The first three groups involved 129 change applications. Most of those 129 change applications were timely protested by the Pyramid Lake Paiute Tribe of Indians (the "Tribe"). With respect to 25 of the 129 change applications, the Tribe included as additional protest grounds the assertion that the applications involved the transfer of water rights which had been abandoned or forfeited. *See, United States v. Alpine Land and Reservoir Co.*, 878 F.2d 1217, 1219 (9<sup>th</sup> Cir. 1988) ("Alpine II"). Since the filing of the first three groups of change applications, numerous additional change applications have been filed, involving water rights in Fernley and in the Lahontan Valley. All of those applications were protested based upon forfeiture and



abandonment. The United States was allowed to intervene as an "unaligned" party to protect federal interests with respect to Lahontan Valley water rights and is a protestant with respect to certain Town of Fernley water rights. *See*, Nevada State Engineer's Ruling No. 3241 (Sept. 30, 1985).

Those Newlands Project change applications and the protests to them have resulted in three decisions by the United States District Court for the District of Nevada, two decisions by the Court of Appeals for the Ninth Circuit and weeks of hearings before the State Engineer all spanning over fourteen years. A definitive final outcome has not yet been achieved. The decisions of the Court of Appeals in *United States v. Alpine Land and Reservoir Co.*, 983 F.2d 1487 (9<sup>th</sup> Cir. 1993) ("Alpine III"), in *Alpine II* and in *United States v. Alpine Land and Reservoir Co.*, 27 F. Supp. 2d 1230 (D. Nev. 1998), provided interpretations of Nevada law concerning forfeiture and abandonment. Some parties, including the Nevada State Engineer, have disagreed with those interpretations. *See*, Nevada State Engineer's Ruling on Remand No. 4591 at 9-10; 38 (Dec. 22, 1997).

In addition, in April, 1993, the Tribe filed a *Petition to Declare that Certain Claimed Water Rights within the Truckee Division of the Newlands Reclamation Project Do Not Exist under the Orr Ditch Decree* (the "Orr Ditch Petition"). On that same day, the Tribe also filed a *Petition to Declare that Certain Claimed Water Rights within the Carson Division of the Newlands Reclamation Project Do Not Exist under the Alpine Decree* (the "Alpine Petition"). In both the Orr Ditch and Alpine Petitions (hereinafter "the Petitions" or "the Petitions cases"), the Tribe alleges that certain water rights within the Newlands Reclamation Project (the "Newlands Project") are either unperfected or have been forfeited or abandoned. These petitions have been referred to the Federal Water Master and a final outcome with respect to these petitions is years if not decades away.

Near the end of 1996, Churchill County and the City of Fallon began to protest certain applications to change the point of diversion and place and manner of use of water rights adjudicated by the final decree in *United States v. Orr Water Ditch Co.*, in Equity No. A-3

(D. Nev. 1994) (the "Orr Ditch Decree"). Specifically, the change applications protested by Churchill County and Fallon involve changes to municipal and industrial use of Orr Ditch Decree water rights adjudicated for irrigation use within the Truckee Meadows and the protests involve allegations of forfeiture and abandonment. Two State Engineer Rulings involving those applications are presently on appeal to the Orr Ditch Court.

The proceedings and petitions involving protests to Newlands Project water rights and to Truckee Meadows change applications have been and will continue to be time consuming and expensive for all participants. The proceedings have consumed and will continue to consume substantial resources of the Office of the State Engineer and the courts.

A.B. 380 is intended to:

A. Provide a stimulus for the resolution of these administrative and judicial proceedings through the acquisition and retirement of a specified quantity of water rights within the Newlands Project;

B. Provide a stimulus for the dismissal of administrative and judicial proceedings involving changes to water rights appurtenant to former agricultural land within the urban areas of Reno, Sparks and Washoe County;

C. Provide a funding mechanism for the acquisition of water rights within the Newlands Project;

D. Provide a simplified procedure for changing the place of use of a surface water right within farms located in federal reclamation projects;

E. Provide that surface water rights are not subject to forfeiture and to set out specific guidelines regarding abandonment of water rights; and

F. Ensure that as agricultural lands evolve into urban areas, surface water rights appurtenant to such lands remain viable for municipal use.

### **III. THE PURPOSES OF A.B. 380 AND THE AGREEMENTS AND COMMITMENTS OF THESE PARTIES WITH RESPECT THERETO.**

#### **A. Providing a Stimulus for Resolution of Administrative and Judicial Proceedings Involving Newlands Project Water Rights.**

Section 4 of A.B. 380 and the agreements and commitments of these parties with respect to it provide the stimulus for resolving the protests to Newlands Project change applications and the pending petition cases. They do so by providing for the acquisition, retirement and abandonment of 6,500 acres of Newlands Project surface water rights through the Newlands Project Water Rights Funds (the "Fund"). The Fund will be managed and administered by the Carson Water Subconservancy District ("CWSD") and acquisitions of water rights thereunder shall be administered by the CWSD under guidelines, which it develops. The CWSD will develop the guidelines in consultation with representatives of the federal, state tribal and local governments and affected parties and shall report annually to the federal government, the state and other funding entities.

During the negotiations leading up to A.B. 380 as enacted, the parties discussed the source of moneys for the Fund. Moneys for the Fund are expected to come from the State of Nevada (\$4,000,000), federal appropriations (\$7,000,000) and through a program in the Truckee Meadows which will require that an amount up to the value of .11 of an acre foot of a Truckee River water right be contributed to the Fund as part of the process for obtaining a commitment for water service to a new development in the Truckee Meadows. That program is expected to contribute \$2,500,000 to the Fund without additional cost to Truckee Meadows developers because the present requirement of dedication of 1.11 acre feet of water right for each 1.0 acre foot of demand will be reduced. Additional possible sources of funding are also identified in section 4 of the Bill. A portion of the Fund shall be allocated to the Truckee-Carson Irrigation District as a negotiated offset to lost operating and maintenance revenues associated with the retirement and abandonment of 6,500 acres of water rights within the Newlands Project.

Surface water rights are to be acquired only from willing sellers. The surface water rights to be acquired may, but need not be, water rights under challenge in the change

application proceedings and petition cases. In either case, water rights acquired by the Fund will be retired and then abandoned. The Fund will acquire no more than 6,500 acres of Newlands Project water rights and once 6500 acres of water rights are retired and abandoned, whether by acquisition by the Fund or by any other process, including the final outcome of the Tribe's protests to change applications and the Tribe's petition cases, the authority to acquire water rights under this Bill will terminate.

When the total of (a) water rights irrevocably committed to sale, retirement and abandonment and (b) water rights finally determined to be abandoned or forfeited through the Tribe's protests or petition cases equals 6500 acres of water rights, the Tribe has agreed that any then remaining protests to change applications or appeals from State Engineer or court rulings thereon will be withdrawn or dismissed and its remaining petition cases will be dismissed. In addition, because it will take several years to acquire 6,500 acres of water rights, additional agreements and commitments have been made.

First, with respect to any particular water right, upon request of any applicant or respondent, the Tribe will agree to a stay of any pending protested change application or petition case. Second, any owner of a particular water right may proceed with the administrative and judicial proceedings involving the owner's water rights. If the final outcome is a determination that all or any portion of the water right has been abandoned or forfeited, the Fund will pay the Tribe an amount equal to the fair market value of the water right which has been finally determined to be forfeited or abandoned.

Finally, the Tribe has agreed to early withdrawal of protests and dismissal of litigation with respect to particular water rights in certain circumstances. For each water right for which an owner of a challenged water right obtains an irrevocable commitment of sale and retirement through the Fund, the Tribe will immediately withdraw and/or dismiss its challenge to an equal amount of water right of that owner.

For example, if owner X has water rights appurtenant to 2.5 acres of land under challenge and owner X delivers other water rights appurtenant to 2.5 acres of land owned by

owner X or owner Y for acquisition by the Fund, the Tribe would immediately withdraw its protest to owner X's change application. This potential for early withdrawal and/or dismissal of challenges should enlist water right owners in finding water rights for the Fund to acquire.

**B. Providing a Stimulus for the Dismissal of Administrative and Judicial Proceedings Involving Truckee Meadows Water Rights.**

The enactment and approval of A.B. 380 will result in the dismissal of pending administrative and judicial proceedings involving Truckee Meadows water rights. The City of Fallon and Churchill County have committed and agreed that if A.B. 380 is enacted and approved, they will withdraw all pending protests to Truckee Meadows change applications and will dismiss all pending litigation involving appeals of State Engineer Rulings on such change applications. They have also committed to refrain from making protests to future Truckee Meadows change applications on forfeiture and abandonment grounds.

**C. Providing a Simplified Procedure for Changing the Place of Use of a Surface Water Right within Farms within a Federal Reclamation Project.**

Section 2 of A.B. 380 will allow a surface water right within a federal reclamation project to become appurtenant to an entire farm. This will require an initial application to and permit from the State Engineer. Once that happens, the farmer may use the water right anywhere within the entire farm, provided that water duty and beneficial use limits are not exceeded.

**D. Repeal of Forfeiture as a Ground for Loss of a Surface Water Right and Adoption of Guidelines for Presumption against Abandonment.**

Section 3 of A.B. 380 will result in the repeal of a forfeiture as a ground for loss of a surface water right. Under N.R.S. § 533.060(2), certain surface water rights could be lost by five (5) consecutive years of nonuse. A.B. 380 repeals that section and expressly provides that a right to the use of surface water cannot be lost by nonuse alone.

As a result of that repeal, certain surface water rights will be subject to loss by abandonment. Under Nevada law, a right to the use of water may be declared abandoned only

upon a showing of nonuse for a substantial period of time coupled with evidence of intent to permanently forsake and desert the water right. A.B. 380 in subsection 4 of section 3 provides for a presumption that a surface water right has not been abandoned if any of several facts are established. That subsection is not intended to place a limit on the evidence which may be used to establish that a water right has or has not been abandoned. Instead, it is intended to provide some guidance on evidence which establishes a presumption of nonabandonment.

**E. Ensuring that as Agricultural Lands Evolve into Urban Areas, Surface Water Rights Appurtenant to Such Lands Remain Available for Municipal Use.**

Much of the urban growth in Nevada outside of Clark County has taken place on and will continue to take place on land formerly used for agriculture and to which there is appurtenant a surface water right. Frequently, the place and manner of use of the appurtenant surface water right is not changed for many years after the land has been converted to an urban use, even in communities which require dedication of water rights for municipal use in order to proceed with new development. It is in the public interest that such water rights not be lost but remain viable for other use. This is extremely important to all of Nevada and to Western Nevada in particular.

The combination of the repeal of forfeiture and subsection 3 of section 3 of A.B. 380 will satisfy that goal. Surface water rights appurtenant to land formerly used for agriculture, which land has been converted to an urban use, will not be lost through forfeiture or abandonment. Similarly, surface water rights appurtenant to land formerly used for agriculture which have been dedicated to or acquired by a water purveyor, public utility or public body for municipal use will not be lost by forfeiture or abandonment.

**IV. EFFECTIVENESS AND APPLICABILITY OF A.B. 380.**


Pursuant to section 6, A.B. 380 will be effective immediately. The authority under section 4 of A.B. 380 to acquire Newlands Project water rights will expire July 1, 2004.



Sections 1, 2 and 3 of A.B. 380 will be effective on passage and approval. However, they will not apply to any water right being challenged on forfeiture or abandonment grounds in legal or administrative proceedings pending on April 1, 1999. They will apply to any challenge which is brought after that date regardless of when the facts giving rise to the challenge arose. Finally, they will apply to water rights which, although under challenge on April 1, 1999, are no longer under challenge as a result of the Tribe's withdrawal or dismissal of protests and related judicial proceedings and petition cases as described above.

Thank you for allowing us to submit this joint testimony.

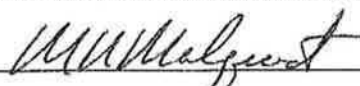
**TRUCKEE-CARSON IRRIGATION  
DISTRICT**

By: 

Title: President

Date: May 6, 1999

**SIERRA PACIFIC POWER COMPANY**

By: 

Title: Chairman, President & CEO

Date: 5/6/99


**CHURCHILL COUNTY**

By: 

Title: CHAIRMAN

Date: 5-6-99


**PYRAMID LAKE PAIUTE TRIBE OF  
INDIANS**

By: 

Title: Tribal Chairman

Date: 5/6/99

**CITY OF FALLON**

By: 

Title: Mayor

Date: 5/6/99



I, Marcia de Braga, State Assemblyman for District 35, and Chairman of the Assembly Committee on Natural Resources, Agriculture, and Mining, served as witness to the negotiations and agreement to which the signatories of this document have adhered their names. I confirm that all parties represented themselves and their organizations in good faith and with full understanding of the provisions contained in this document.

IN WITNESS THERETO:

By: Marcia de Braga  
Marcia de Braga

Title: Chairman  
Assembly Committee on  
Natural Resources, Agriculture,  
and Mining

Date: May 7, 1999

Agriculture, and Mining

CHAPTER.....

AN ACT relating to water; revising the provisions establishing the priority of certain water rights; providing that certain evidence may be considered to show whether a water right has been abandoned; declaring that certain water rights are not subject to a determination of abandonment; clarifying the circumstances under which water becomes appurtenant to land; providing that certain surface water rights are not subject to forfeiture for failure to use water pursuant to that right within a certain period; establishing the Newlands Project Water Rights Fund and a related program for the acquisition of certain surface water rights; making an appropriation; and providing other matters properly relating thereto.

THE PEOPLE OF THE STATE OF NEVADA, REPRESENTED IN  
SENATE AND ASSEMBLY, DO ENACT AS FOLLOWS:

**Section 1.** Chapter 533 of NRS is hereby amended by adding thereto a new section to read as follows:

**1. *The priority of a water right acquired by a person for use in a federal reclamation project is determined according to the date on which the United States appropriated water for initiation of the project. Notwithstanding the fact that the water right so appropriated and acquired may ultimately vest in the name of the person at a later date, all such water rights so acquired are governed by the applicable law of this state in effect on the date on which the United States appropriated water for initiation of the project, unless the water rights vested under the law in this state before the time the United States first appropriated or otherwise acquired the water for initiation of the project. If the water right vested under the law in this state before appropriation or acquisition by the United States, the date of initiation of the water right is determined according to the date on which the water was first diverted under that appropriation or acquisition by the United States.***

**2. *No water rights, in addition to those allocated under applicable court decrees, are granted, stated or implied by the determination of the date of priority pursuant to subsection 1.***

**Sec. 2.** NRS 533.040 is hereby amended to read as follows:

533.040 ~~{AH}~~

**1. *Except 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. ~~{; provided:~~***

~~**1. *That if for any reason it should***~~

**2. *If at any time ~~{become}~~ it is impracticable to use water beneficially or economically at the place to which it is appurtenant, the right may be severed from ~~{such}~~ the place of use and be simultaneously transferred and become appurtenant to ~~{other place or places}~~ another place of use, in the***



manner provided in this chapter, ~~{and not otherwise,}~~ without losing priority of right. ~~{heretofore established; and}~~

~~2. That the}~~

3. The provisions of this section ~~{shall}~~ **do** not apply ~~{in cases of}~~ **to** a ditch or canal ~~{companies which have appropriated}~~ **company that appropriates** water for diversion and transmission to the lands of private persons ~~{at}~~ **for** an annual charge.

4. *For the purposes of this section, a surface water right acquired by a water user in a federal reclamation project may be considered appurtenant to an entire farm, instead of specifically identifiable land within that farm, upon the granting of a permit for the change of place of use by the state engineer which designates the place of use as the entire farm. The quantity of water available for use on that farm must not exceed the total amount determined by applicable decrees as designated in the permit granted by the state engineer.*

5. *As used in this section, "farm" means a tract of land under the same ownership that is primarily used for agricultural purposes.*

Sec. 3. NRS 533.060 is hereby amended to read as follows:

533.060 1. Rights to the use of water ~~{shall}~~ **must** be limited and restricted to ~~{so much thereof}~~ **as much** as may be necessary, when reasonably and economically used for irrigation and other beneficial purposes, irrespective of the carrying capacity of the ditch. ~~{All the}~~ **The** balance of the water not so appropriated ~~{shall}~~ **must** be allowed to flow in the natural stream from which ~~{such}~~ **the** ditch draws its supply of water, and ~~{shall}~~ **must** not be considered as having been appropriated thereby.

2. ~~{Except as otherwise provided in subsection 4, if the owner or owners of any such ditch, canal, reservoir, or any other means of diverting any of the public water fail to use the water therefrom or thereby for beneficial purposes for which the right of use exists during any 5 successive years, the right to so use shall be deemed as having been abandoned, and any such owner or owners thereupon forfeit all water rights, easements and privileges appurtenant thereto theretofore acquired, and all the water so formerly appropriated by such owner or owners and their predecessors in interest may be again appropriated for beneficial use the same as if such ditch, canal, reservoir or other means of diversion had never been constructed, and any qualified person may appropriate any such water for beneficial use.}~~

3. ~~No}~~ **Rights to the use of surface water shall not be deemed to be lost or otherwise forfeited for the failure to use the water therefrom for a beneficial purpose.**

3. *A surface water right that is appurtenant to land formerly used primarily for agricultural purposes is not subject to a determination of abandonment if the surface water right:*

- (a) *Is appurtenant to land that has been converted to urban use; or*
- (b) *Has been dedicated to or acquired by a water purveyor, public utility or public body for municipal use.*



4. *In a determination of whether a right to use surface water has been abandoned, a presumption that the right to use the surface water has not been abandoned is created upon the submission of records, photographs, receipts, contracts, affidavits or any other proof of the occurrence of any of the following events or actions within a 10-year period immediately preceding any claim that the right to use the water has been abandoned:*

- (a) *The delivery of water;*
- (b) *The payment of any costs of maintenance and other operational costs incurred in delivering the water;*
- (c) *The payment of any costs for capital improvements, including works of diversion and irrigation; or*
- (d) *The actual performance of maintenance related to the delivery of the water.*

5. A prescriptive right to the use of ~~[such]~~ the water or any of the public water appropriated or unappropriated ~~[can]~~ **may not** be acquired by ~~[adverse user or]~~ adverse possession. ~~[for any period of time whatsoever, but any]~~ **Any** such right to appropriate any of ~~[such water shall]~~ **the water must** be initiated by ~~[first making application]~~ **applying** to the state engineer for a permit to appropriate the ~~[same]~~ **water** as provided in this chapter. ~~[and not otherwise.]~~

~~[4.]~~ 6. The State of Nevada reserves for its own present and future use all rights to the use and diversion of water acquired pursuant to chapter 462, Statutes of Nevada 1963, or otherwise existing within the watersheds of Marlette Lake, Franktown Creek and Hobart Creek and not lawfully appropriated on April 26, 1963, by any person other than the Marlette Lake Company. ~~[No such right may]~~ **Such a right must not** be appropriated by any person without the express consent of the legislature.

**Sec. 4.** 1. There is hereby appropriated from the state general fund to the Newlands Project Water Rights Fund, created by section 5 of this act, the sum of \$3,300,000 as the state's contribution to the fund for the protection and preservation of the natural resources of this state. All interest generated from this appropriation accrues to the benefit of the Newlands Project Water Rights Fund.

2. The Carson Water Subconservancy District shall not commit for expenditure any amount of the appropriation made by subsection 1 until the District determines that:

(a) There is and will continue to be substantial compliance with the "Joint Testimony of Truckee-Carson Irrigation District, Pyramid Lake Paiute Tribe of Indians, City of Fallon, Churchill County and Sierra Pacific Power Company," dated by the parties thereto on May 6, 1999, and submitted to a hearing of the Senate Standing Committee on Finance on May 24, 1999; and

(b) The City of Fallon and Churchill County have withdrawn all administrative protests and have sought to dismiss all legal actions initiated by the city and county, respectively, relating to applications for changes in

the point of diversion, place of use or manner of use of water rights pending before the State Engineer on the effective date of this act as required by that joint testimony.

3. The Carson Water Subconservancy District shall not commit for expenditure during the next biennium more than \$1,600,000 of the appropriation made by subsection 1.

4. Any remaining balance of the appropriation made by subsection 1 must not be committed for expenditure after June 30, 2004, and reverts to the state general fund as soon as all payments of money committed have been made.

**Sec. 5.** 1. The legislature hereby finds and declares that a general law cannot be made applicable to the purposes, objects, powers, rights, privileges, liabilities and duties provided in this section because of the number of atypical factors and special conditions relating thereto.

2. The Newlands Project Water Rights Fund is hereby established to be administered by the Carson Water Subconservancy District. The money in the fund may only be used:

(a) For the support of the program established pursuant to subsection 4; and

(b) To provide for the payment of an amount to offset revenue from operation and maintenance charges lost as a result of water rights retired and abandoned pursuant to the program.

3. The District may accept gifts and grants for deposit in the Fund and shall make every effort to secure money for the Fund from:

(a) The Federal Government;

(b) The State of Nevada;

(c) Sierra Pacific Power Company or its affiliates;

(d) Carson Water Subconservancy District;

(e) Carson-Truckee Water Conservancy District; and

(f) Any other interested parties.

4. The Carson Water Subconservancy District shall establish a program for the acquisition of surface water rights to assist in the resolution of legal and administrative challenges in existence on April 1, 1999, regarding water rights for the Newlands Reclamation Project. The District shall:

(a) Adopt criteria for the administration of the program, including, without limitation, criteria to determine the fair market value of the water rights to be acquired;

(b) Acquire surface water rights appurtenant to not more than 6,500 acres of land in the Newlands Reclamation Project at an amount not to exceed the fair market value of the water rights;

(c) Acquire these water rights from willing sellers with the execution of a suitable binding contract for sale in which the seller acknowledges that, upon completion of the sale:

(1) His right to the water sold is retired and deemed abandoned; and

(2) He waives any right to claim further compensation for the water rights so acquired by the District;

(d) Retain reasonable fees for the administration or operation of the program;

(e) To the extent that legal and administrative challenges in existence on April 1, 1999, result in a final determination that all or any portion of a surface water right appurtenant to land in the Newlands Reclamation Project has been forfeited or abandoned:

(1) Pay to the party who procured that final determination an amount equal to the amount that would have been paid to acquire the water right pursuant to the program; and

(2) Consider the forfeited or abandoned water right as having been acquired pursuant to the program; and

(f) Complete an annual report on the program and make it available for public review.

**Sec. 6.** The 71st regular session of the Nevada Legislature shall review the manner in which the appropriation made by section 4 of this act has been expended and determine whether there has been substantial compliance with the "Joint Testimony of Truckee-Carson Irrigation District, Pyramid Lake Paiute Tribe of Indians, City of Fallon, Churchill County and Sierra Pacific Power Company," dated by the parties thereto on May 6, 1999, and submitted to a hearing of the Senate Standing Committee on Finance on May 24, 1999.

**Sec. 7.** The amendatory provisions of sections 1, 2 and 3 of this act:

1. Do not apply to water rights that are under challenge in any legal or administrative proceeding which is pending on or before April 1, 1999; and

2. Do not constitute a legislative declaration that the law to be applied in any such pending proceeding is different from or the same as set forth in this act.

**Sec. 8.** 1. This act becomes effective upon passage and approval.

2. Section 5 of this act expires by limitation on July 1, 2004.

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