STEVE SISOLAK
Governor

STATE OF NEVADA

BRADLEY CROWELL
Director

ADAM SULLIVAN, P.E.
Acting State Engineer

DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
DIVISION OF WATER RESOURCES
901 South Stewart Street, Suite 2002
Carson City, Nevada 89701-5250
(775) 684-2800 • Fax (775) 684-2811
http://water.nv.gov

NOTICE OF HEARING ON PROPOSED INTERIM ORDER WITHIN THE HUMBOLDT RIVER REGION

The Nevada Division of Water Resources will hold a public hearing on a proposed interim order within the Humboldt River Region. The hearing is open to the public and will convene at 9:30 a.m., Friday, April 2, 2021. Due to restrictions on the operation of the State of Nevada office buildings and limitations on public gatherings established under the state of emergency declared by Governor Sisolak on March 12, 2020, the Nevada Division of Water Resources will conduct the hearing through a video conference link.

WHO: Nevada Division of Water Resources

WHAT: Hearing on Proposed Interim Order

WHERE: Videoconference link, https://call.lifesizecloud.com/7315362 and via telephone at (877) 422-8614, meeting code 7315362.
Pursuant to Governor Steve Sisolak's Emergency Directive 006 and as extended by Emergency Directive 21, section 37, there will be no physical location for this hearing. The hearing can be viewed or listened to live over the Internet or through the telephone. Any person planning to participate in the hearing must participate either by using the videoconference link or teleconference number.

WHEN: 9:30 a.m., Friday, April 2, 2021

WHY: The public hearing will be held to provide notice and to take public comment on the proposed interim order to establish procedures for the review of applications to appropriate groundwater in the Humboldt River Region with regard to the potential for capture of and conflict with decreed rights to the waters of the Humboldt River and tributaries, in Marys River Area (042), Starr Valley Area (043), North Fork Area (044), Lamoille Valley (045), South Fork Area (046), Huntington Valley (047), Dixie Creek-Tenmile Creek Area (048), Elko Segment (049), Susie Creek Area (050), Maggie Creek Area (051), Marys Creek Area (052), Pine Valley (053), Crescent Valley (054), Carico Lake Valley (055), Upper Reese River Valley (056), Antelope Valley (057), Middle Reese River Valley (058), Lower Reese River Valley (059), Whirlwind Valley (060), Boulder Flat (061), Rock Creek Valley

(062), Willow Creek Valley (063), Clovers Area (064), Pumpernickel Valley (065), Kelly Creek Area (066), Little Humboldt Valley (067), Hardscrabble Area (068), Paradise Valley (069), Winnemucca Segment (070), Grass Valley (071), Imlay Area (072), Lovelock Valley (073), Lovelock Valley-Oreana Subarea (073A), and White Plains (074), located in Elko, White Pine, Eureka, Lander, Nye, Humboldt, Pershing, and Churchill counties.

COMMENT: Oral public comment will be accepted during the hearing; a sign-in sheet will be posted the week before the hearing and you can indicate whether you would like to make public comment. Written public comments will be accepted until Friday, April 9, 2021, and may be mailed to the Nevada Division of Water Resources at the above address.

The Nevada Division of Water Resources is pleased to make reasonable accommodations for members of the public who are disabled and wish to participate in the hearing. If special arrangements for the hearing are necessary, please call (775) 684-2800.

Notice of this hearing was provided via electronic means as follows:
To all persons on the NDWR e-mail list for the Humboldt River
Division of Water Resources website: http://water.nv.gov

And via publication in Lahontan Valley News (Churchill County), Battle Mountain Bugle (Lander County), Humboldt Sun (Humboldt County), Lovelock Review Miner (Pershing County), Elko Daily Free Press (Elko County), Ely Times/Eureka Sentinel (Eureka and White Pine Counties), and Tonopah Times- Bonanza & Goldfield News (Nye County).

And via e-mail to participants in *Pershing County Water District v. State Engineer*, Eleventh Judicial District, CV15-12019.

IN THE OFFICE OF THE STATE ENGINEER
OF THE STATE OF NEVADA

DRAFT INTERIM ORDER

ESTABLISHING PROCEDURES FOR REVIEW OF APPLICATIONS TO APPROPRIATE GROUNDWATER IN THE HUMBOLDT RIVER REGION WITH REGARD TO THE POTENTIAL FOR CAPTURE OF AND CONFLICT WITH DECREED RIGHTS TO THE WATERS OF THE HUMBOLDT RIVER AND TRIBUTARIES

I. BACKGROUND OF THE HUMBOLDT RIVER REGION

WHEREAS, the Humboldt River Region is delineated by the topographic boundary of the Humboldt River watershed, extending over 11,000 square miles, including 34 hydrographic basins in eight Counties. Hydrographic basins within the Humboldt River Region are Marys River Area (042), Starr Valley Area (043), North Fork Area (044), Lamoille Valley (045), South Fork Area (046), Huntington Valley (047), Dixie Creek-Tenmile Creek Area (048), Elko Segment (049), Susie Creek Area (050), Maggie Creek Area (051), Marys Creek Area (052), Pine Valley (053), Crescent Valley (054), Carico Lake Valley (055), Upper Reese River Valley (056), Antelope Valley (057), Middle Reese River Valley (058), Lower Reese River Valley (059), Whirlwind Valley (060), Boulder Flat (061), Rock Creek Valley (062), Willow Creek Valley (063), Clovers Area (064), Pumpernickel Valley (065), Kelly Creek Area (066), Little Humboldt Valley (067), Hardscrabble Area (068), Paradise Valley (069), Winnemucca Segment (070), Grass Valley (071), Imlay Area (072), Lovelock Valley (073), Lovelock Valley-Oreana Subarea (073A), and White Plains (074).

WHEREAS, the Bartlett Decree was filed on October 20, 1931, in the Sixth Judicial Court of the State of Nevada, establishing relative rights to the use of the waters of the Humboldt River and setting forth the dates of priority and duty of water for existing claims. The Bartlett Decree determined the waters of the stream system to be fully appropriated, and that in an average year there existed no surplus water for irrigation. Subsequent decrees, orders and writs made corrections to the Bartlett Decree, and collectively form the Humboldt River Adjudication. This process was complete by 1938. The most senior decreed surface water right in the Humboldt River system has a priority date of 1861 and the most junior right has a priority date of 1921.[1]

WHEREAS, Humboldt River flow measured at the Palisade gage is the primary tool utilized for determining and scheduling delivery amounts of Humboldt River decreed rights.[2]

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[1] *In the Matter of the Determination of the Relative Rights of Claimants and Aprropriators of the Waters of the Humboldt River Stream System and Tributaries*, Case No. 2804, Sixth Judicial District Court of the State of Nevada, In and For the County of Humboldt (October 20, 1931).

[2] United States Geological Survey (USGS) Gage 10322500, Humboldt River at Palisade.

Deliveries are scheduled during the irrigation season based on the daily flow measurement at the gage.[3] When daily flows at the Palisade gage are sufficient to deliver all decreed rights on the Humboldt River and its tributaries, all water rights irrespective of location above or below the gage are scheduled to receive their full duty of water. When flows are not sufficient to deliver all decreed rights, those rights with senior priority dates are served first. In practice, actual deliveries over the expanse of the Humboldt River Region may be different than exact scheduled deliveries due to a wide range of variables including water distribution and management practices, and climatic variations that affect riparian evapotranspiration rates, streambank storage, and baseflow. Figure 1 shows the ratio of actual deliveries to scheduled deliveries at the Imlay gage, which is the furthest downstream point of diversion.[4] The ratio is generally higher in wet years and lower in dry years. Scheduled deliveries for the irrigation seasons were exceeded in all but six years since 1936.

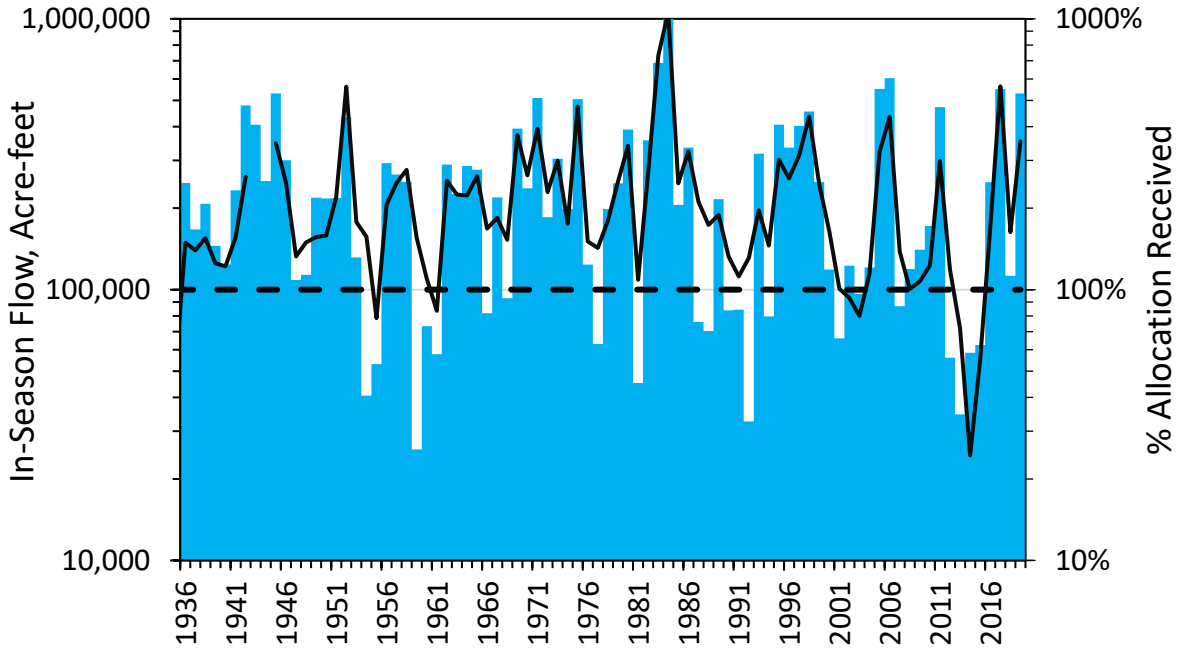

Figure 1. Humboldt River in-season flow volume (bars corresponding to left axis) at the Palisade gage and water delivery ratio of actual to scheduled (solid line corresponding to right axis) at Imlay from 1936 to 2019. Scheduled deliveries for the irrigation seasons that exceeded allocations occur when black line is above the 100% allocation line (dashed line corresponding to right axis). Conversely, years that did not meet allocations occur below the 100% allocation line (dashed line).[5]

[3] Barlett Decree, the decreed irrigation season begins March 15th downstream of Palisade and April 15th upstream of Palisade, and ends on varying dates depending on location and culture.
[4] USGS Gage 10333000, Humboldt River Near Imlay.
[5] USGS Gage 10322500, Humboldt River at Palisade; Annual Tabulation of Delivery Records for the Humboldt River Decree, official records in the Office of the State Engineer.

WHEREAS, during the 2012-2015 period the Humboldt River Region experienced one of the worst droughts since 1902.[6] Annual flow at the Palisade gage for that 4-year period averaged 82,871 acre-feet, which is 30% of the historical average annual flow of 287,846 acre-feet for the period of record spanning the 112 years.[7] At the headwaters of the Humboldt River system during 2012-2015, upstream of any significant groundwater pumping, Lamoille Creek also experienced its lowest 4-year flow since at least 1944 when continuous flow measurements on Lamoille Creek started.[8] By the end of the irrigation seasons in 2014 and 2015 the Humboldt River at Imlay was dry and water was unavailable to allocate to downstream surface water users in the Lovelock area. While this occurred during the unprecedented drought, decreed water right holders alleged that junior groundwater appropriators were capturing surface flows of the Humboldt River and that groundwater use conflicts with the senior surface water rights. In a writ filed in Pershing County District Court in 2015, Pershing County Water Conservation District requested that the Court require the State Engineer to take action within his statutory authority to address the alleged conflict.[9]

WHEREAS, nearly all groundwater vested claims and appropriations within the Humboldt River Region are junior to decreed surface water rights in the Humboldt River and its tributaries. The most senior groundwater permit has a priority date of 1912.[10] Groundwater development began to increase more substantially in the 1960s and has gradually increased in the decades since. Groundwater is now extensively relied upon for all manners of use supporting communities and industry throughout the Region. Groundwater rights were approved over the years by the State Engineer upon findings that unappropriated water was available and its use would not conflict with existing rights or the public interest, given the best data available to the State Engineer at the time.

WHEREAS, it is scientifically understood that groundwater pumping has the potential to capture stream flow in a hydraulically connected system, either by inducing greater infiltration losses from the stream channel or by reducing the amount of groundwater that would otherwise discharge as baseflow to the stream.[11] Although this principle has factored into numerous State Engineer decisions, site-specific capture data is generally not available to accurately quantify potential conflict pursuant to Nevada Revised Statute (NRS) § 533.370.[12] The potential for hydraulic connectivity and capture by itself does not demonstrate that conflict is occurring or will

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[6] Period of record for the Palisade gage begins in 1902.
[7] For water years between 1902-1906 and 1912-2019.
[8] USGS Gage 10316500, Lamoille Creek Near Lamoille.
[9] *Petition for Writ of Mandamus, or in the Alternative, Writ of Probartion*, In the Eleventh Judicial District Courth of the State of Nevada In and For the County of Pershing, (Case No. CV 15-12019), Pershing County Conservation District V. Jason King, P.E., State Engineer of the State of Nevada, Division of Water Resources, Departemnt of Conservation and Natural Resources.
[10] Nevada Division of Water Resources' Water Rights Database, official records in the Office of the State Engineer, available at *http://water.nv.gov/hydrographicabstract.aspx*.
[11] Charles V. Theis, 1940, *The Source of Water Derived from Wells -Essential factors controlling the response of an aquifer to development*, Civil Engineering, v. 10, no. 5, p. 277-280.
[12] *See* e.g., State Engineer's Ruling 55, Ruling 790, Ruling 2197, Ruling 2593, Ruling 4036.

occur in the future, unless it is shown that scheduled surface water deliveries cannot be met, and those unmet deliveries are caused by groundwater pumping.

WHEREAS, since the end of the 2012-2015 drought, all scheduled deliveries at Imlay were fully served through the 2020 irrigation season. However, with climate models forecasting a continuing pattern of increasing frequency and intensity of droughts and flood events,[13] drought-accentuated natural losses from the river, combined with greater drawdown due to increased reliance on groundwater during drought, may increase the future potential for insufficient surface flow to fully serve decreed rights. Conversely, larger or more frequent flood events may episodically replenish the groundwater system, helping to offset any natural or pumping-induced depletion during drought periods. These long-term hydrologic uncertainties were not explicitly foreseen in the Barlett Decree and underscore the difficulty in developing and implementing management strategies for future administration of groundwater and surface water in the Humboldt River Region.

II. ACTIONS TAKEN SINCE THE DROUGHT

WHEREAS, a basic tenet of prior appropriation is that if there is not enough water to serve all users then senior right holders are entitled to water before junior right holders. This principle originated at a time when surface water was the only significant source of supply, but it has been preserved in water law to also apply to groundwater. NRS 534.110 provides that where groundwater supply is not adequate for the needs of all permittees and vested-right holders, the State Engineer may order that withdrawals be restricted to conform to priority rights. This is the regulatory mechanism established in statute for the State Engineer to address conflict due to inadequate supply of groundwater or unreasonable lowering of the water table. During the drought period of 2012-2015 there were insufficient data to identify to what extent groundwater pumping was causing the inadequacy of water supply for Humboldt River senior decreed right holders, and to what extent it was the result of natural low flow because of drought. Analysis of the data at the time indicated that curtailing junior groundwater pumping to protect senior decreed rights would result in a nominal addition to flow in the River, but would have had devastating and severe impacts to the communities and economies throughout the Region that rely on groundwater.[14] Consequently, no curtailment was imposed.

WHEREAS, in the years since the end of the 2012-2015 drought, the State Engineer initiated several measures to improve the available data in the Region and thus provide a sound basis to render defensible decisions with regard to avoiding potential conflict. Among these measures: all non-designated basins within the Region were designated pursuant to NRS 534.030; totalizing meter installation and reporting were required by State Engineer's Order 1251; field

[13] USGCRP, 2017, Climate Science Special Report: Fourth National Climate Assessment, Volume I [Wuebbles, D.J., D.W. Fahey, K.A. Hibbard, D.J. Dokken, B.C. Stewart, and T.K. Maycock (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, 470 pp., *See* Chapter 8, page 237.

[14] Nevada Division of Water Resources, public presentations on the Humbodlt River in Lovelock, Winnemucca, and Elko, February 12–13, 2015.

investigations were completed to verify the meter data; the State Engineer enhanced its database capacity to maintain and manage the pumping data in a publicly accessible manner; the State Engineer established a policy requiring water rights for pit lake evaporation; and applications to appropriate groundwater or to change the point of diversion were denied if granting the application would result in an increase in capture that conflicts with existing rights.

WHEREAS, in 2016, the Humboldt Working Group was assembled to assist in developing draft regulations to resolve future conflict. The working group members included both surface water and groundwater users representing municipalities, agriculture, mining, and other community interests across the Humboldt River Region. Over the course of the next three years, the group developed a conjunctive management approach whose objective was to protect senior water rights while at the same time maximizing beneficial use of surface water and groundwater. This effort culminated in a set of draft regulations that relied on a combination of augmentation and mitigation through financial compensation to avoid future conflict. However, in the 2019 Legislative session, the supporting statutory revisions lacked unanimous support and failed. Surface water users expressed no interest in financial mitigation in lieu of water. Groundwater users express no interest in being assessed fees for capture that had yet to be quantified by best available science.

WHEREAS, in 2016, the State Engineer initiated work with the United States Geological Survey (USGS) and the Desert Research Institute (DRI) to develop improved groundwater budgets at the basin scale and to develop numerical groundwater capture models for the Humboldt River Region. These efforts are intended to serve as a basis for determining the effect of groundwater pumping on flows in the Humboldt River and its tributaries. This work will also serve to review the perennial yield values for the Region, first estimated from the early USGS Reconnaissance Series Reports and Water Resource Bulletins, which are the primary guideline used by the State Engineer to determine the availability of groundwater in any particular basin.

WHEREAS, while the completion of the Humboldt River Region groundwater model study is expected in 2021, preliminary findings from that effort provide insight into the dynamics of surface water capture by groundwater pumping. These findings indicate that there may be important non-linear, climate-driven behaviors that influence interactions between the surface water and groundwater systems. These behaviors suggest that pumping-related capture of surface water tends to increase during wet years when excess water is available and decrease during dry years when the potential for conflict is greater. Understanding these phenomena is necessary to accurately define both the timing and distribution of capture so that conflict attributable to groundwater pumping can be characterized and quantified. Long-term management will rely on completion of the modeling effort and a process of public review and deliberation to determine best practices that satisfy legislative directives of prior appropriation, beneficial use and the public interest. Until then, interim management described herein must focus on avoiding increased capture caused by new appropriations or changes to existing groundwater permits.

III. AUTHORITY AND NECESSITY

WHEREAS, NRS 533.024 directs the State Engineer "to consider the best available science in rendering decisions concerning the availability of surface and underground sources of water in Nevada."[15]

WHEREAS, NRS 533.024 was amended in 2017 adding a new subsection declaring that it is the policy of Nevada "[t]o manage conjunctively the appropriation, use and administration of all waters of this State, regardless of the source of the water."[16]

WHEREAS, NRS 534.020 provides that all underground waters of the State belong to the public and are subject to all existing rights.

WHEREAS, NRS 533.370 requires that, in review of an application to appropriate water or to change water already appropriated, the State Engineer must consider whether there is unappropriated water in the source of supply, whether the uncommitted groundwater has been reserved pursuant to NRS 533.0241, whether the proposed use or change conflicts with existing rights or protectable interests in existing domestic wells, and whether it threatens to prove detrimental to the public interest.

WHEREAS, the State Engineer's procedures to evaluate applications to appropriate groundwater or to change existing appropriations must be applied in a manner that is consistent and understandable to water right holders and their representatives, and that provide clarity to water users about how to meet the needs of communities and local economies while avoiding conflict with senior decreed water rights.

WHEREAS, procedures established herein allow for efficient administration of groundwater rights, with provisions for in-stream replacement water and withdrawal of groundwater permits, when necessary. The intent is to provide the needed flexibility for water right holders without adding to any capture impacts above what is predicted for the existing base right. Over time these procedures will result in a reduction in total groundwater commitments, an increase in availability of surface water in the Humboldt River Region to serve senior priority rights, and a reduced potential for conflict between groundwater use and Humboldt River decreed rights.

WHEREAS, these procedures do not restrict the State Engineer from adopting further conjunctive management measures necessary to address capture impacts.

IV. ORDER

NOW THEREFORE, IT IS HEREBY ORDERED, that the following considerations will be implemented by the State Engineer for the review of applications for groundwater rights in the Humboldt River Region, in addition to those considerations required by NRS 533.370 and

[15] NRS 533.024(1)(c).
[16] NRS 533.024(1)(e).

established by previous State Engineer's Orders.[17] As used herein, "capture" refers to modeled capture of surface water of the Humboldt River and its tributaries by groundwater pumping, as simulated by USGS and DRI groundwater models.

1. Applications for New Groundwater Appropriations

Applications for new appropriations of groundwater where capture, as a percentage of pumping rate, exceeds 10% after 50 years of continual pumping, may be considered if capture is offset by providing in-stream replacement water or withdrawing a portion of an existing groundwater right. Applications for new appropriations of groundwater where capture is less than 10% after 50-years of continual pumping may be evaluated without the requirement to offset capture.

A. If in-stream replacement is used to offset capture:

i. Replacement water using a senior decreed water right shall be for a crop-type, duty amount, and priority date that is sufficient to equal or exceed the predicted cumulative capture amount of the new appropriation over a 50-year period of use, as determined by the State Engineer;[18]

ii. Replacement water shall be sufficient to equal or exceed the predicted annual capture amount of the new appropriation during 80% of the years over a 50-year period, as determined by the State Engineer; and,

iii. Replacement water shall be demonstrated to have an existing place of use that can and will be stripped of use. Water used in areas of flooding or other areas that cannot be isolated from the natural or man-caused application of that water will not be considered for replacement water.

B. If withdrawal of an existing groundwater right is used to offset capture:

i. The amount of the withdrawn right shall be sufficient to equal or exceed the predicted cumulative capture amount of the new appropriation over a 50-year period of use, as determined by the State Engineer; and

ii. The amount shall be sufficient to equal or exceed the predicted annual capture amount of the new appropriation during 90% of the years over a 50-year period, as determined by the State Engineer.

2. Applications to Change Existing Groundwater Appropriations

Applications to change the point of diversion (POD) of an existing groundwater right will be considered based on net capture, defined as the difference between capture at the

[17] Nevada Division of Water Resources' Orders Database, official records in the Office of the State Engineer, available at *http://water.nv.gov/StateEnginersOrdersList.aspx*.
[18] For the purposes of this draft interim order, the mechanism to be used by the State Engineer to make this determination will be demonstrated in public workshops and available for public review.

proposed POD and capture at the existing POD. Net capture is commonly described either in terms of a percentage of the pumping rate, or as a volume of captured water, after a specified period of continuous pumping.

Change applications where capture at the proposed POD is greater than capture at the existing POD may be considered if the net capture is offset by providing replacement water or withdrawing a portion of an existing groundwater right. Change applications where capture at the proposed POD is less than or equal to capture at the existing POD may be considered on their merits without the requirement to offset capture.

If either replacement water or withdrawn groundwater rights are used they shall be subject to the same conditions as for new appropriations (as described in Section 1) but the amount shall correspond to the net capture.

In instances where a change application moves an existing POD either to a new location that is upstream of its existing location or nearer to a different tributary, the reach-specific capture impacts to senior decreed water rights who divert their water from those reaches will be determinative irrespective of the net capture.

3. Addressing Future Conflict Between Existing Valid Groundwater Rights and Decreed Humboldt River Surface Water Rights

The principle statutory mechanism available to the State Engineer to address conflict among water users is curtailment of junior-priority water use pursuant to NRS 534.110. The State Engineer finds that the data currently available do not demonstrate that curtailment of junior rights could be implemented in a manner that would eliminate potential future conflict without unduly restricting valid existing groundwater rights.

This Order provides mechanisms to prevent the increased potential for conflict over time in an effort to avoid the severe and devastating potential effects of curtailment of groundwater rights that support communities and economies throughout the Region. However, the State Engineer is not precluded from ordering that withdrawals be restricted to conform to priority rights when necessary: if conflict due to inadequate water supply is determined to be imminent, and prevention or avoidance cannot be accomplished.

The State Engineer may consider the following factors before making any decision regarding curtailment pursuant to NRS 534.110:

A. Statutory protections:
   i. Domestic well protections under NRS 533.024(b).
   ii. Preferred uses of water in the interest of public welfare per NRS 534.120(2).
B. Hydrologic conditions:
   i. Effectiveness of any curtailment to increase actual flow in the decreed source and thereby avoid conflict caused by non-delivery of senior rights.
   ii. Drought conditions as measured by available snowpack data, runoff forecast for the season, prior years' condition and cumulative water deficit.
   iii. Well location and potential for capture as demonstrated by USGS and DRI models

a. Capture as a percent of pumping rate within the time frame of potential conflict
b. Hydraulic connectivity between a decreed surface water source and a specific well location and screen depth.

iv. Storage in surface water reservoirs or aquifer storage and recovery projects and the capacity for this storage to meet scheduled deliveries.

C. Active management measures:
   i. Implementation of Water Conservation Plans developed in accordance with NRS 540.131.
   ii. Active water replacement plans carried out by groundwater right holders.

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ADAM SULLIVAN, P.E.
Acting State Engineer

Dated at Carson City, Nevada this

_____ day of _____, _____.