Summary of Minutes of the

Nevada Drought Forum

Meeting of August 19, 2015, 9:00 AM

Nevada Department of Agriculture
405 South 21st Street
Sparks, NV

Video Conference:

Nevada Department of Agriculture
2300McLeod
Las Vegas, NV

Other Video Locations (Attachment #1)

Members Present:

Leo Drozdoff, P.E., Chair

John Entsminger, Vice Chair

Dr. Doug Boyle

Dr. Justin Huntington

Jason King, P.E.

Dr. Mark Walker

Jim Barbee

Bill Elliot, in place of Caleb S. Cage

Members Absent:

Caleb S. Cage

Forum Staff Present:

Micheline Fairbank, Deputy Attorney General

Andrea Sanchez-Turner, Administrative Support

BEGIN SUMMARY MINUTES

1) Call to order and Roll Call

Chair Drozdoff called the meeting to order at 8:34 a.m., reviewed the meeting process and contacted the remote locations to clarify if people were would like to make public comments. Andrea Sanchez-Turner conducted the roll call.

2) Public Comments: (Discussion)

Mr. Drozdoff asked for public comment noting submitted written testimony did not need to be read into the record, but could be submitted to the Forum for review.

Sparks Public Comment

Joe Bower spoke about Homeowner's Associations (HOAs) and regulations some have that do not allow the homeowner to remove their front lawns. He noted his HOA does allow homeowners to remove their lawns. He stated there are only two options for the parkway strip located in the front of homes due to a sentence in the Planned Unit Development (PUD). Mr. Bower spoke about the process to amendment this sentence to include additional options. He urged the Forum to survey HOAs within the City and to encourage HOAs to remove turf from the common areas and install zero-scape.

Councilwoman Naomi Duerr, City of Reno, read a letter from the City of Reno to the Forum (Attachment #2). The City of Reno asked to participate in the Governor's Nevada Drought Summit.

As a former state water planner in Nevada, Councilwoman Duerr spoke about the Nevada State Water Plan, which addresses a wide variety of water issues, including conservation. She noted some of the recommendations from the Water Plan, including credit for conservation which could provide an incentive for agriculture and ranching. Councilwoman Duerr suggested the Forum revisit the Nevada State Water Plan and consider the recommendations within it.

Jake Tibbitts, Eureka County, provided recommendations for the Forum's consideration and spoke about the difference between hydrologic and vegetative drought and the misuse and reliance on the US Drought Monitor (USDM) in justifying grazing restrictions. He also noted there are many areas not experiencing vegetative drought and this issue is not taken into consideration when discussion drought. The totality of Mr. Tibbitts' comments to the Forum are attached (Attachment #3).

Ely Public Comment

Rick Spilsbury spoke about solar array operations on Lake Mead. He spoke about converting the evaporating water from Lake Mead into energy by using solar arrays.

Member King asked Mr. Spilsbury if he was aware of any location where solar arrays are currently being used. Mr. Spilsbury noted he was not aware of any place at this moment, but he will check on it.

Lovelock Public Comment

Bennie Hodges, Pershing County Water Conservation District, noted the Humboldt River Drainage Basin is going through one of the worst droughts on record. Groundwater basin are over appropriated for almost all of the groundwater basins and the Humboldt River Basin. Surface water users are not getting the water they are entitled to. It is not only affecting the water users in the Lovelock Valley but all the users in the Humboldt River Basin. The totality of Mr. Hodges' comments to the Forum are attached (Attachment #4).

Carl Clinger spoke about the drought affecting areas and people differently. Pershing County has had a zero water irrigation allotment for at least two years and only ten percent the year before. Pershing County is probably the worst area in the entire State affected by drought.

Mr. Hodges noted they do not have any underground water for irrigation. One hundred percent of water irrigation and crop production comes from surface water. The economy of Lovelock and the Lovelock Valley has been affected by 60 percent or greater due to the lack of water.

Yerington Public Comment

Jim Shaw, Federal Water Master, noted that if Forum members had any question for those in attendance at that location, they were available.

Sparks Public Comment

Floyd Rathbun, F.I.M. Corporation, spoke about the effects of drought throughout the State. He provided background on the F.I.M. Corporation and their operations. He spoke about ways to improve efficiencies. He spoke about Nevada Water Laws being well-written and the concern that changes made to the water laws as a reaction to the drought will become a retroactive form of change to the water rights of ranches. The totality of Mr. Rathbun's comments to the Forum are attached (Attachment #5).

Sam Hanson, Ely City Council, spoke about the polar icecaps melting and noted that Nevada needs to go where the water is, not where the water isn't. Water is in the oceans. He spoke about desalination and how other countries have relied on it for their water usage. He also spoke about economic diversity and pipeline construction to Baja California to increase the amount of water available for Clark County.

A full account of public comments were captured in the audio recording, available on the Forum's website (*www.drought.nv.gov*).

3) Review and Consideration of Approval of Agenda (Action Item)

Member King moved to approve the agenda; second by Vice-Chair Entsminger; motion passed unanimously. ***ACTION**

4) Review and Consideration of Approval of Minutes (Action Item)

Vice-Chair Entsminger moved to approve the minutes from the July 17, Drought Forum meeting; seconded by Member Huntington; motion passed unanimously. ***ACTION**

5) Overview of Nevada Drought Summit and Need for Interim Sector Meetings (Discussion)

Chair Drozdoff noted the Nevada Drought Summit is set for September 21, 22, and 23 at the Nevada Legislature in Carson City. The information received from the Nevada Drought Forum Sector meetings will be used to formulate some discussion at the Nevada Drought Summit. There is a Forum meeting scheduled after the Drought Summit and a report will be done by November 2015.

A full account of the discussion is captured in the audio recording, available on the Nevada Drought Forum's website (*www.drought.nv.gov*).

6) Update on State Government Water Audit (Discussion and Possible Action)

Tom Federici, Nevada Buildings and Grounds, noted the state facilities water audit was required to be completed by June 15th in accordance with Section 3 of the Nevada Drought Forum Executive Order. The audit was completed and delivered to the Nevada Department of Administration on May 15, 2015. Mr. Federici reviewed the results of the water audit, changes Buildings and Grounds have made to conserve water, and how they oversee the Marlette Lake water system, which provides water to Carson City and Storey County.

Member King asked if Buildings and Grounds measures their water use in gallons per year, and if so, how much water they serve. Mr. Federici noted they currently do not measure their water usage but they can make gross estimates. Member King noted there cannot be management on what is not measured. Mr. Federici noted Buildings and Groundings is hoping to provide a number for comparison and an update to Forum in the future.

Member Walker asked about remodeling bathrooms with water efficient fixtures and if there is an assessment of practical benefits on this. Mr. Federici noted Buildings and Grounds is using the guidelines from the LEED Program.

A full account of the discussion is captured in the audio recording, available on the Nevada Drought Forum's website (*www.drought.nv.gov*).

7) Climate Forecast Update (Discussion and Possible Action)

Member Boyle spoke about the current drought status based upon the U.S. Drought Monitor. Approximately 16 percent of the state is currently classified at a D4, Exceptional Drought Conditions. Twenty-two percent of the state is classified at D3, Extreme Drought. There are reports of a lot of "greening up" of the rangeland throughout the State in the northern part of the state. In general, it has been a wetter summer than expected. However over the water year, October 1 to the present, most of the state is either at or just below normal. As you move into the mountains, the numbers are approximately 70

percent of normal. Low temperatures have been much higher than anticipated. Last year was the warmest year on record. The outlook that was released a month ago indicated a probability of wetter than normal conditions for the month of August, September, and October. Member Boyle spoke about El Nino and its relationship to the "Blob" (a warm pool of water that developed over the Pacific Northwest), how strong it is anticipated to be, and how long it will last.

Member King asked which two years had an El Nino as strong as this year. Member Boyle answered the years were 1997 to 1998 and 1982 to 1983.

Chair Drozdoff asked if Member Boyle felt the Forum meetings are beneficial to him. Member Boyle noted he hopes to get more information from the community on how drought is affecting them and have access to real time information on the conditions of rangeland. The information received from the meetings and the community will be submitted to the U.S. Drought Monitor and more importantly will be used to improve the products from U.S. Drought Monitor.

A full account of the discussion is captured in the audio recording, available on the Nevada Drought Forum's website (*www.drought.nv.gov*).

8) Presentations from Representatives on Drought-Related Impacts (Discussion and Possible Action)

Agriculture

Sparks

David Stix, Jr., State Board of Agriculture, provided background on himself. He spoke about the relationship between cattlemen and federal agencies that manage the ranges. The Bureau of Land Management (BLM) is having a problem managing public lands based upon the changes of the environment. Grazing permits are not being adjusted accordingly by the BLM. He spoke about the relationship of groundwater and surface water. In several incidences the Board of Agriculture and other agencies have sent requests to address this issue to the State Legislature. There has been no response. The situation as it stands today has put the state in a tough position. Seventy Five percent of water supply in the City of Fernley is relied on the Truckee Canal. He noted that changes in the law through the state legislature is a possible answer, however, changing the law could result in additional court battles. There needs to be trust in the current water laws. The Nevada State Engineer should look into the future of the Nevada's water supply.

Member Huntington asked about the timeline for the BLM to make a decision concerning grazing and if there is flexibility to put additional head of cattle out for grazing during drought. Mr. Stix noted it has become so heavy and weighted in bureaucracy, there is not the flexibility to make decisions during the

grazing season. Decisions are being based upon things that are ever-changing (e.g. the climate). They need to reevaluate their processes.

Member Walker asked if Mr. Stix felt the awareness of a relationship between groundwater and surface water was a challenge for local governments. Mr. Stix noted he was involved in the initiation of a study that showed this relationship. Cities must get control and find out where their water is coming from.

Dr. Bill Payne, College of Agriculture and Nevada Agricultural Experiment Station, spoke about how his organizations deal with drought, how they deal with topics that are related to drought, what they are doing now, and what they will be doing. He noted for capture and storage they have a number of hydrologists and soil scientists that are conducting, teaching, researching and doing outreach. In terms of efficient use, they have biochemists and molecular biologists working on drought and temperature stress tolerance for plants grown in aerated lands. They have worked on staff and have a range program that involves at least three faculty members. They work on invasive species, management of cheat grass, PJ encroachment and riparian zone functioning. He reviewed the positions he hopes to fill in the future and what their focus will be. He stated some of the major themes of drought and climate change have been brought, but other things are also affected by drought, including: insects, disease, wildlife, weeds such as invasive species, and animal nutrition and fertility.

Vice-chair Entsminger asked if Dr. Payne had experience working with higher saline water in agriculture. Dr. Payne spoke about his international experience concerning desalinization. At Texas A&M there was money allocated to a desalination program. He has seen it on smaller scales in India with solar power for a household. Vice-chair Entsminger noted he was asking about the use of higher concentration of saline within the water. Dr. Payne noted he has one hydrologist who is looking into this in terms of the Colorado River. It is more of a modeling approach. He has seen it in Tunisia where they manage it by using different reservoirs.

Member Walker spoke about the relationship of federal land management agencies and their mandates with research institutions within the state. He asked if research is being included in the decision-making process for the federal agencies. Dr. Payne noted this is an important issue and to a certain extent it is not being included. When he reviews federal documents to an alarming extent university research is ignored. It is something he is attempting to address with federal agencies.

Elko

Ron Torrel, Nevada Cattlemen's Association and Nevada Woolgrowers' Association, provided background on himself and his organizations. He spoke about the severity of the drought and the problems along the Humboldt corridor. He endorsed the comments made by Jake Tibbitts about the U.S. Drought Monitor. The last couple of years have been some of the best grass years they have experienced, yet they are considered to be in a severe drought. The results of the drought will test the uniqueness and complexity of Nevada's water law. The Forum should identify specific statutes that can be amended and

clarified and the Governor should consider these recommendations and draft a bill for the 2017 Legislative Session. The totality of Mr. Torrel's comments to the Forum are attached (Attachment #6).

Sparks

Darrell Pursel, Nevada Farm Bureau Federation, provided some background on his organization and himself. The total economic impact of Nevada's agriculture cluster is $5.3 billion. The industry is one of the largest and most valuable in Nevada. He spoke about the impact of drought, including ranchers having to sell some of their herds, and buying or leasing more pastureland and grazing allotments. The totality of Mr. Pursel's comments to the Forum are attached (Attachment #7).

Chair Drozdoff asked if there are things Mr. Pursel is aware of that could be done but that are not currently being done. Mr. Pursel noted Water Resources monitors wells once a year, sometimes twice a year, in a normal water years there is flood water running in the river until the end of July and there is unlimited resources for water. Wells do not have to be pumped in the summer and yet there are farmers that are pumping wells to irrigate certain crops and they should not be. This is not the way supplemental wells should not be used. This issue needs to be addressed.

Member King noted the State Engineer's Office usually has two teams of three people per week monitoring water usage. Member King asked what the drop dead date for a farmer to sign up for crop insurance is. Mr. Pursel noted he believed before October 1. The problem with crop insurance is the federal government is not clear on what they are doing. They make range programs and the costs are much higher than the return, making it too expensive. The federal government has so many loopholes that it is not beneficial.

Member King noted the agriculture sector is the number one consumers of water in the State of Nevada. He asked if there are things out there not being done either by the farmers, or the Forum, that need to be changed. He spoke about silicon chips for soil and watering. Mr. Pursel noted the silicon only lasts within the soil for a month or two. The cost was prohibitive and this is an issue with most technology. He suggested rewarding for conservation; however, the Forum should keep in mind for small operations this much tougher because of the cost associated with it.

Rick Lattin, Lattin Farms, provided some background on his family farm. Mr. Lattin stated the number one thing people can do to help local farmers is to buy from them. He noted the drought has affected loss of income, created an inability to plan for the future, and increased costs. Education and the future is important, encouraging young people interested in farming. Most of Nevada farmers know they live in a low water state, they have been responding, planning and implementing. On the Lattin Farm, they converted to drip irrigation. If you want to use less water, one of the options is to convert to crops that have more value per acre foot of water used. Farmers need to look to new technology and research and adapt to new methods of activity and products. There is a need for research, educational and agricultural organizations to educate farmers on what products and technology actually work. Lattin Farms also does intensive cover cropping. Obstacles include the drought itself, the costs of conversion and the political

drought. Over the years the political drought has become more important, we need to ask ourselves do we want to keep the farming industry and then the public must be convinced that use of water for agriculture is a valid use.

Member King asked why more farmers are not converting to high value crops that use less water. Mr. Lattin noted farmers have traditionally grown commodity crops. They are rarely involved in the marketing and other aspects of farming. If they convert to high value crops they need business permits, they will need to hire people, and put together a workers' comp system and insurance. There is a fear of taking a step into that business. The farmers would also have to become a salesman and a marketer too. Chair Drozdoff asked clarification on who required the farmers to do this. Mr. Lattin noted this is typical of specialty crops. It becomes a marketing business. It puts you in a business mode rather than a farming mode.

Member Boyle asked why Lattin Farms has not converted more of their crops to high value crops. Mr. Lattin noted he would have to hire more people and work harder. He gets 75 percent of his income from 10 percent of his property.

Vice-chair Entsminger asked when Lattin Farms converted to a drip irrigation system. Mr. Lattin noted it started in 1992 to alleviate the waste of water. The water they use for their drip system is the water that has already been purchased and run across an alfalfa field and picked up and reused in the drip system.

Member Huntington asked how this drought differs from the early 1990s drought. Mr. Lattin noted this drought is more consistent and persistent. It has hurt Lattin Farms' crop rotations. Member Huntington asked if Mr. Lattin felt there were increased water demands. Mr. Lattin noted the farm is located in Fallon and Fallon has the most litigated water in the country. The farm does use less water than 50 years ago.

Sam Routson, Winnemucca Farms, reviewed a presentation provided to the Forum, which is available on the Forum website (*www.drought.nv.gov*). Mr. Rouston provided a background on Winnemucca Farms. One of the impacts of the drought is that Winnemucca Farms had to diversify in a number of ways, including moving a number of product productions out of state. Winnemucca Farms has changed their cropping pattern, moving from an emphasis of potatoes to an emphasis of peas. Potatoes take 35 inches of water. A crop of peas take approximately 18 to19 inches of water and Winnemucca Farms is able to develop contracts that have the same return. Winnemucca Farms also takes advantage of the best technology available. This is expensive for farmers. He reviewed some of the things that Winnemucca Farms has done to conserve water.

Member Walker asked how long it took Winnemucca Farms to identify options. Mr. Routson noted Winnemucca Farms is constantly evaluating their options and because they are a part of a wide network of sister companies they are exposed to different types of technology. They investigate this technology and determine their applicability for Nevada.

Matt McKinney, Bently Ranch, noted the Bently Ranch has propagated and developed a lot of different sources of water. Surface water is their main water source. They have their own private reservoir. They do have a few wells. They try to conserve every resource they have and utilize it to the best of their ability. They are diversifying for example developing more grains for bourbons. Water rights is the most important part of Mr. McKinney's job. It is more important to the operation than the real estate they own. One of the things they are seeing as an agricultural operation in an urban setting is they are under a microscope. There are strong opinions about what they are doing. He noted that when a homeowner calls and says ranches are over pumping, the response should be that he is not. He would like to see others under the microscope more, for example residential houses on five or ten acres of land. He did note the Division of Water Resources has been a little slow to come with some decisions. They asked to move a well earlier in the year, they still have not received a decision and now it is too late. Their watershed is a federal watershed. They deal both with a Federal Water Master and the State of Nevada. He asked if and when El Nino occurs, if there has been discussion concerning direct injection back into the groundwater system. He wondered if it is possibly to turn the wells around and fill the aquifer back up, especially in the Walker River Basin.

Member Huntington spoke about recharging and how infrastructure is one of the challenges to this. Flood irrigation is one of the most economical and feasible ways to recharge. What is the practicality of doing something like this. Mr. McKinney noted his thought is to do direct injection.

Joe Sicking, State Conservation Commission, provided some background on himself and the State Conservation Commission. As a result of the drought traditional users have to conserve and use less. He noted most agricultural users have done everything they can to continue their operations and remain economically viable. He spoke about the things being done by farmers. He also spoke about the need to review Nevada's "Use it, or Lose it" law. The totality of Mr. Sickings' comments to the Forum are attached (Attachment #8).

Chair Drozdoff noted that the Forum will take a look at the "Use it, or Lose it" section of the water laws. Mr. Sicking stated the Forum needed to get the word out concerning this issue because people are considering leaving their water running to use what they have.

Member Walker asked if technologies for water, crop management and soils are within reach of individuals to take advantage of easily. Mr. Sicking noted that a lot of it is not. The smaller organizations cannot justify spending the money for technology.

Lunch 12:19 p.m. to 12:57 p.m.

Non-governmental Organizations

Sparks

Michael Cameron, The Nature Conservancy (TNC), spoke about the background of The Nature Conservancy. Nevada ranks 11th in the nation in terms of overall biodiversity and is ranked 5th in the nation in terms of the number of species extinctions. More than 70 percent of Nevada's plant and animal species depend on wet areas at some part of the year. The wet areas once represented three percent of the land area in Nevada. It is now down to one percent. Water for animal and plant species is important not only for their sake, but also for the state's cultural, economic and recreational vitality. Nevada's wildlife heritage is at risk for great loss. He provided specifics from the Nevada Wildlife Action Plan.

TNC has addressed drought through land protection and habitat restoration and works to make important natural areas more drought tolerant. They are protecting and conserving floodplains, wetlands, springs and critical watersheds throughout the state. They are implementing ecosystem restoration projects and have increased the resilience of natural systems to withstand the pressures of drought.

Mr. Cameron noted there needs to be more investment in science in terms of monitoring, managing and mitigating. There needs to be more of an understanding of what the standards are for determining the adverse effects for water dependent ecosystems. There needs to be a model on the impact of groundwater pumping on water dependent ecosystems to understand the groundwater, surface water relationship. There also needs to be monitoring to detect when an ecosystem is approaching the point of no return with better information about how water depend ecosystems are responding to the available water. There should be developments of new financing methods to maintain and restore the drought resilience of the forests, floodplains, meadows, wetlands, etc. When faced with the need to make investments to explore green and natural infrastructure solutions, before the use of concrete and harder infrastructure, there should be support.

Member King asked if TNC has a position on desalination. Mr. Cameron noted TNC tends to be technology neutral overall. They try to be holistic in terms of understanding tradeoffs in terms of the environmental impacts with alternative technologic approaches.

Chair Drozdoff noted that Bob Fulkerson, Progressive Leadership Alliance of Nevada, submitted his comments in writing before the Forum meeting and they are available on the Forum's website (*www.drought.nv.gov*).

Abby Johnson, Great Basin Water Network, provided a background on her organization. She spoke about the process and noted for it to be successful it is important for the public and stakeholders to understand what the final work products will be, how they will be developed and by whom, and how they will be implemented after the Summit. The natural environment is struggling to stay in balance due to the

face of declining precipitation and rising water use. Drought should not be used as an excuse to sacrifice one part of the state for another. We are one Nevada and must find solutions for all parts of the state, including rural areas. It should be clear there is no new water to be developed into the west. Major water exportations like the Las Vegas Water Grab are not viable solutions. They depend on exploitation of the target area by depleting its water supply. The totality of Ms. Johnson's comments to the Forum are attached (Attachment #9).

Chair Drozdoff noted the reason for the sector meetings is to identify issues that come up that need to be addressed and explored more at the Nevada Drought Summit, which will feed into the final report to the Governor.

Ms. Johnson stated her concern about what regular people will be able to do and how they will be involved in the Summit especially if people are willing take time off work and drive eight hours for a three day Summit. Chair Drozdoff noted they would work very hard to establish what each of the three days will include so that people can make informed decisions on attending.

Las Vegas

Jennifer Pitt, Environmental Defense Fund, provided a background on her organization. She noted she will speak about the Colorado River Basin. She stated well more than half of the population of Nevada drinks Colorado River Water. In the Colorado River Basin drought has taken a significant toll for the past 15 years. Nature is last in line for water rights, because in most cases our legal systems do not commit adequate water to preserve river flows. At stake, is not only nature as we know it in the Colorado River Basin where 70 percent of all wildlife depends on rivers for some part of their lifecycle, but also a 26 billion dollar river-based recreation economy, which is responsible for more than a quarter of a million jobs. The delta in the Colorado River Basin has been most impacted by the drought. The delta wetlands and riverside forests are a rare strip of green in the Sonoran Desert and a critical food source and shelter for more than 380 species of birds that migrate there, through there, or live there permanently, including both endangered species and hundreds and thousands of water fowl that stop there every year. While water that is stored in the Colorado's Reservoirs began to disappear in the year 2000 as yet there haven't been any water shortages imposed on Nevada or other lower-based water users, however, impacts to the environment were immediate. Since 2000, with little exception, no water has flowed down the Colorado River into its Delta. In the last 15 years there has been a perilous loss of wetlands, river-side forests, and backwaters in the delta and the decline in the birds that rely on them. In the upper Colorado River Basin there are numerous rivers that dry up below water diversions and drought has increased their number.

In the Colorado River Delta to address drought and more broadly the issue of declining water supply as water use has increased over the last century the Environmental Defense Fund has partnered with other conservation organizations to dedicate a water supply to support river health. They have gone about this in a variety of ways. Ms. Pitt provided an example. Restoration is going to take water and stewardship efforts over time. Independently, conservation NGOs in 2008 established a private non-profit water trust in Mexico that acquired from willing sellers shares of Mexico's Colorado River water for the purpose of irrigating restored habitat.

On the Colorado River as in much of the west, there is 19th Century law, with 20th Century infrastructure, and 21st Century water needs. Clearly infrastructure improvements are needed and many were documented in a report called Moving Forward that was prepared by reclamation in partnership with states, water users, and stakeholders in the Colorado River Basin, Among its findings are: there are significant opportunities to improve agriculture water use efficiency, productivity and increased water transfers: that technologies and practices leading to water conservation have already saved substantial Colorado River Water; and existing utility plans will conserve and reuse more than a million acre feet annually by 2030. In fact, the report notes that in a number of metro areas using Colorado River water, growth has decoupled from water use. Over recent decades, utilities are serving larger populations while reducing the total volume of water use. Water efficiency is not rocket science and there are plenty of known and demonstrated technologies and practices that can conserve water uses. The challenges we face are not the technologies. They are legal and economic. Ms. Pitt suggested that Nevada with the federal government, sister states and major water users in the Colorado River Basin continue and accelerate its modernization. Another major challenge to water use efficiency is figuring out who will pay. It stands to reason that the locations where the biggest opportunities remain to improve the efficiency of water use are places where the water is not yet scarce. In these locations, there is not an incentive for water rate owners to invest in efficiency. In the upper Colorado River Basin system conservation projects are likely to improve river health as we modernize laws and agreements to increase water use efficiencies we should be looking for ways to align water management with river management.

Member King asked if the Environmental Defense Fund had a position on desalinization. Ms. Pitt noted they do not have a position and she believes it is an unlikely the solution to the Colorado River Basin's gap between supply and demand, however, in places it can be helpful.

Chair Drozdoff noted because of ambiguity in water laws there is litigation and as result there becomes legal precedent, however, the legal precedent could become problematic and may create even less flexibility to deal with many of the things Ms. Pitt spoke about. Ms. Pitt noted she does not have a lot of experience with litigation. The things she deals with spans the U.S.-Mexico border and this does not happen. They had to work on ways to bring people to the table to work on a collaborative solution. There has not been a lot of litigation in the Basin in the 15 years she has been working on these issues. Litigation can be destabilizing and progress can come slowly. The risk with taking too much time is you lose things along the way. Some of the first losses will be in the environmental arena where there is no legal protections.

Tribal Interests

Ely

Delaine Spilsbury, Ely Shoshone Tribe, spoke about the history of her tribe. There was no winter last year. The tree kill has been substantial. Recently, the regional crop of pine nuts, which has been the tribe's staple in the past failed for three years in a row, which would have been devastating to the tribe's ancestors. Without a significant runoff, the SNWA groundwater development project seems less and less feasible. They have noticed some disappearance of migrant bird species, indicating possible localized

extinctions. The overpopulation of wild horses has led to even more impacts. The drought has substantially affected the tribe. Had the tribe continued to be exclusively hunters and gatherers they themselves would be extinct. Population growth has its consequences and in the desert the consequences of unrestrained growth is that eventually there is not enough to go around. There is not enough water to go around now. The Drought Forum should recommend limits to population growth in Nevada. The totality of Ms. Spilsbury's comments to the Forum are attached (Attachment #10).

Sparks

Wes Williams, Jr., Walker River Paiute Tribe, noted there are three primary issues the tribe faces related to drought. These are ranchers dealing with grazing, farmers dealing with irrigation, and people that use the water to fish in Walker Lake. The tribe's grazing has diminished significantly. This has been reduced by 25 percent. Ranchers face the same issues off reservation land. The tribe's irrigation is at the bottom of the Walker River system. Walker River surface water is governed by federal decree and the tribe has the senior water right on the river. If there is no water, there is no water flowing downriver. The irrigation season has been reduced. Mr. Williams believes part of this is because of upstream pumping. This is one issue that there could possibly be action on. In meetings in the past, the state was not sure how to reconcile the federal decree rights with groundwater rights and all the other existing water rights. There needs to be better administration, better monitoring and better enforcement. If there is a problem, there needs to be significant punishment.

The reservation was placed at the mouth of river, because the tribe relied upon the trout in the lake and the river to sustain themselves. This is a part of their history and their legacy. There has been no trout for the last five years. There has been decades of overuse and not having significant amounts of water to get to Walker Lake. Currently, there is a congressional program to purchase water rights upstream from willing sellers. Water rights holders can make their own decision on if they want to sell their water rights. The hope is that they can restore Walker Lake.

Vinton Hawley, Pyramid Lake Paiute Tribe, noted his tribe is the bottom user of the Truckee River water system. The tribe's main concerns are the overall ecosystems. The tribe has concerns over the lake level and the continuous recession of lake levels because once the lake gets to a certain level it will be considered a dead lake. They have a large ecosystem and so they try and take advantage of any conservatory efforts they can and look at sustainability for the future. It is difficult because there are certain users in the water system who take advantage of situations and receive minor punishments. Ultimately, all water users suffer the consequences of these actions. The tribe meets on an annual basis with US Fish and Wildlife Service to determine whether or not the tribe can have a successful spawning season. They look at ways to conserve and look at population and growth. Everything that is brought to the table concerning drought should be considered.

Member King asked if Mr. Hawley knew how much the lake has declined over the last four years. Mr. Hawley stated he did not know the exact number, but it has been significant. It is close to six feet, possibly more.

Member Walker asked if there had been increases in solidity at both lakes. The answer was yes. Mr. Williams noted this affects the fish.

Donna Marie Noel, Pyramid Lake Paiute Tribe, stated a major issue with drought is not only water quantity, but water quality. As there is less water in the system with population growth upstream they are not only seeing the effects of the river with low flows, but also poor water quality, which also leads to loading in the lake as the evaporation goes down. Looking forward over the next five years with growth in the Reno/Sparks area, water quality is a serious concern for the tribe. The issue is where is the waste going to go and if the drought continues additional water in the river may not be great if it is not clean water.

Bill Elliott, attending on behalf of Caleb S. Cage, asked if during the drought period had they seen groundwater issues and how resilient is it if this drought continues. Mr. Hawley noted the potential for flood has been witnessed quite often. Although this is a desert there is always a possibly for flash floods. There is always a possibility of extreme runoff that is going to bring lake levels up. Mr. Elliott asked about the municipal bonds with the wells and if they are resilient. Mr. Hawley noted they are.

Public and Private Water

Sparks

Kevin Brown, Virgin Valley Water District, provided a background on the area Virgin Valley Water District is located. Virgin Valley Water District has water rights and groundwater rights in the Muddy Creek Aquifer. They also have water rights on the Virgin River and water rights in the springs on the Virgin Mountains. They share the aquifer with southeast Utah and northwest Arizona. They have 8,200 metered accounts, 8,000 residential accounts and 200 commercial accounts. Their water rights on the Virgin River are released to the golf courses for irrigation at this time until sometime in the future when they will need to call on them for culinary water needs. Mr. Brown provided a description of their system. He spoke about recent mitigation measures they have taken including implementing a rate increase over the last six months. As a result of the rate increase, many customers have started to conserve and the District has seen significant reductions in the amount of water usage. Last year they, did away with an unmetered secondary irrigation system that was wasting water. Things they are doing that are longer term are: a rain gauge monitoring system and monitoring the Virgin River's flow. They have not seen a tremendous amount of reductions in the flow. They also have a groundwater monitoring program for their wells for aquifer recovery. They have not seen many reductions in the numbers in their aquifer. They are embarking on a ten-year study of their springs on the Virgin Mountains to determine flow rates. The water system has a good unaccounted for water loss monitoring program. They do not have a real issue with the drought. They have a good handle on what their water resources are right now.

Chair Drozdoff noted it is important to know the Forum is trying not to get in the way or to duplicate things that are already being done at the local levels and thinks the Virgin Valley Water District should be commended for being proactive in a number of areas.

Member King noted many of the recommendations from the State Water Plan are being implemented at the local level.

Vice-chair Entsminger asked what percentage of the Virgin Valley Water District's water is unaccounted for. Mr. Brown noted on an annual average they have approximately nine percent unaccounted for. Vice-chair Entsminger asked if the rate increase was implemented primarily as a conservation tool. Mr. Brown noted it was not, the primary reason was financial. They had infrastructure needs.

Mr. Brown also noted the City of Mesquite, on the wastewater treatment side, has a 100 percent reuse of water for golf courses, parks, etc. The wastewater is not sent to the Virgin River it is sent to and being reused within the City.

Darren L. Schulz, Carson City Public Works Department, provided a brief background on Carson City and his department. Seventy-five percent of their water is groundwater and twenty-five percent is surface water. At the beginning of 2015, in an effort towards conservation they asked for a ten percent voluntary reduction in water use across the board. It is still early in the season to determine the success, but it has started and now people are aware of the idea of conservation. They estimate they will be in the range of seven to nine percent reduction. Golf courses are watered with affluent water. Their affluent numbers are also down. They are in the middle of a five year rate increase that started two and a half years ago. The rate increase was not put into effect for conservation. It was to handle their aging infrastructure and depreciation that had not been addressed recently. They have noticed a reduction in water as a result of the rate increase. Their issues as far as water quality goes is arsenic and uranium. They monitor this closely. They have not seen anything over the past few years that concerns them.

Member Walker asked if there were any examples of rate increases specifically designed to educate and achieve levels and targets of reduction and conservation. If so, have they been successful. Also, what happens when there is no need to conserve anymore in terms of the income stream for the utilities. Mr. Brown noted he is not familiar with rate increases designed specifically for reduction and conservation. Mr. Schulz noted their rate consultant stated there are cases in which this occurs, but he was not sure about the details. Vice-chair Entsminger stated it is common practice at the major municipal level, not necessarily to do a rate increase solely for the purpose of conservation, but in setting rates to include conservation within the overall rate design.

Member King pointed out in working with Carson City the State Engineer's Office allows Carson City to actually pump more of their groundwater rights in times of drought with the caveat that the ten year running average does not exceed the amount of water they have in permitted rights. The State Engineer's Office has also done that in the Truckee Meadows. Member Huntington asked if this is the reason Carson City converted to using more groundwater than surface water. Mr. Schulz noted the reason is surface water is not available.

Scott Fleckenstein, Lyon County Utilities, provided an overview of the utility. They have approximately 6,000 connections, 8 groundwater wells. They have one large producing well. It is an infiltration well run off surface water rights. They can run the well from the first part of April until August or September. The last two years they have decided not to use that well. This was an operational decision they made as an organization. Lyon County did not feel it would be cost-effective to get the well started up and only be able to run it for a short period of time. Lyon County has 26 monitoring wells throughout the valley. They monitor the static water level on these wells on a bi-weekly basis. They do their production wells on a monthly basis (the static draw down levels). Lyon County shares data with USGS and the Division of Water Resources. This year they hired two seasonal employees called Water Watchers. The Water Watchers help customers with conservation and ensure they are watering on the correct days and provide public education. Lyon County has asked their customers to cut back by ten percent. From January to July of this year compared to last year they have cut back 15 percent.

Vice-chair Entsminger asked what they were in gallons per day. Mr. Fleckenstein noted they are at approximately 4 million gallons per day this time of year.

Las Vegas

Wendy Barnett, Utilities, Inc., provided background on her organization. The key is the community and how they work collaboratively with the community for water conservation efforts particularly in a period of drought. They are having to re-drill wells, rehab wells, redistribute pumping in some of their systems and sometimes in the same basin there is no significant changes in the water levels. As a private utility, the organization is required to spend their capital and put the investment to beneficial use to the community before they can ask to recover the monies. The biggest impact from the drought is loss of revenue. Water conservation results in the less use of water and as a result revenue suffers. Water conservation also runs the risk of not putting your water rights to beneficial use. They have a robust water conservation plan, which includes well monitoring, education, and use of reclaimed water. They have created drought plans aligning and in support of the state drought plan. They were approved by the Public Utilities Commission to have financial penalties for waste of water during times of drought. System management is a big part of conservation. As a private utility if their unaccounted water is too excessive the Public Utilities Commission can say that they are not going to allow them to recover some of those costs. It is not simple to fix the problems of unaccounted water. In their system management plan they put together solid standards and specifications that at least meet the minimum requirements of code. They use technology, GIS data, metering, etc. to help control the water-loss and have information on how water is used. They provide rebates for high efficiency toilets and washing machines. They have a rebate for the removal of salt cedars, which is a noxious weed. Conservation rates (tiered rates) is the most effective conservation tool they use. They are creating an education park focused on water conservation. There needs to be a mechanism allowing private utilities to stay viable and have the money available to maintain the level of service and improve things like unaccounted for water. That mechanism is called decoupling.

Sparks

Bruce Scott, Board for Financing Water Projects, provided background on his organization. The State Revolving Fund has been the primary source of revenue for loans and in some cases forgiveness loans for water systems. Water utilities within Nevada are always planning for drought. They have seen projects that are deepening wells and trying to improve sources. The drought has given water systems an opportunity to look at consolidation or interconnections. The resources for interconnections is available through the State Revolving Fund so there is an impact to rates, however, it is somewhat limited and spread out over time. The Board of Financing Water Projects requirements include metering. They include water conservation and other elements to help make the limited resource go further. One of the problems they see in small water systems is resources, not just financial, but technical resources. Nevada Rural Water has been a great tool for many small companies. A lot of the larger systems are good about providing technological assistance on request to some of the smaller systems. Non-potable water is also a resource. In many ways this can help offset some of the needs for water. Eighty-six percent of the projects on the 2015 drinking water state revolving fund priority list are for communities with a population of less than 20,000. Fifty-one percent of the projects are for communities that serve less than 1,000 people. Mr. Scott felt the leadership from the highest level of the state needs to be focused on a water resource initiative that is closer to what they have seen recently on the education initiative. There needs to be some tools, some clarifications, and coordination. The ideal place for this to start is with the Forum, and with the Governor's Office taking a strong lead in providing a plan. The drought is not just a shortage of water. The drought affects soils, it affects fire, and it affects grazing. There needs to be education for the judiciary. Many judges do not understand resources. They do not understand water, water administration, water history, or water distribution. Mr. Scott would like to see this considered as part of the recommendations made to the Governor.

Chair Drozdoff stated his concern that a lot of issues are going to court. There is concern in dealing with people who inherently do not understand the issues. Mr. Scott feels that a large portion of many of the cases that seem to go to court in part are related to a lack of policy guidelines, legislative direction, legislative intent and the statutes themselves. It is essential to get clarification of the state's policies and the state's guidelines and the legislative intent with regard to water and resources in general. A strong initiative from the Governor's Office is important.

Member King asked if Mr. Scott had given any thought to what educating the judicial branch would look like. Mr. Scott noted he was not sure how to do it, or who should do. Perhaps putting together a group of knowledgeable individuals that could be available, or ask the judges themselves what they feel they need education on. The Engineer's Office is in the middle of lawsuits and they are the resource for water knowledge. This creates an immediate conflict of interest.

<u>Water Authorities</u>

Sparks

Mike Baughman, Humboldt River Basin Water Authority (HRBWA), provided background about his organization. For the past 20 years, HRBWA member counties have continued to meet quarterly to address surface and groundwater quantity and quality issues of common concern. He spoke about the

characteristics of the Humboldt River Basin. He noted the drought is in its fourth year. About three years ago the Governor's Office declared the drought and the Division of Emergency Management was tasked with helping to put together a drought management plan. After some work by the taskforce, a recommendation was made to the Governor to produce a drought management plan. Nothing really came of it. He reviewed drought impacts, including reduced flows and economic and fiscal impacts. He spoke about drought recovery and drought management. They have seen conflicts arise between agriculture users. This is the first time this is starting to crop up. Mr. Baughman noted it will take two to three years of above-average flows to get back to where they need to be in the Humboldt River Basin. They would like to see the state take a leadership role in designing, implementing and institutionalizing a comprehensive and cost-effective cloud seeding program. The HRBWA believes there needs to be more done to curtail groundwater pumping in select areas to facilitate the recovery of the over-pumped basins. The state should take a leadership role in helping to design and construct additional storage capacity. The totality of Mr. Baughman's comments to the Forum are attached (Attachment #11).

Chair Drozdoff asked if Mr. Baughman's organization support more storage. Mr. Baughman noted they do support it. Mr. Drozdoff asked if there was support to do conservation and put water away for future use even in the wet years. Mr. Baughman noted there are years in the Humboldt River Basin when there is so much water going through the system they are releasing everything they can to keep from washing out irrigation structures. He noted this has been a discussion and they are open to the idea. Mr. Baughman stated three things the HRBWA would like to see in the Forum Plan: what specific actions are needed, who is responsible for taking the lead within implementing the actions, and estimates of cost and funding sources.

Steve Bradhurst, Central Nevada Regional Water Authority, provided background about his agency. The drought is a huge issue, however, down the road the big issue is water supply. The traditional sources of groundwater and surface water are limited. Drought, Climate Change and population increase, affect the water supply. Clean water will not always be there as expected. Mr. Bradhurst spoke about AB 301 (2013) and AB 198 (2015) which called for a study to be done to look at alternative sources of water for communities. He noted the Committee on Public Lands and the Central Nevada Regional Water Authority met with Utah, Arizona, and California to see what they were doing in terms of addressing their water supply. The totality of Mr. Bradhurst's comments to the Forum are attached (Attachment #12).

Mr. Bradhurst's recommendation is the summit includes a section to discuss state water supplies.

John Erwin, Truckee Meadows Water Authority, reviewed a presentation, available on the Nevada Drought Forum's website (*www.drought.nv.gov*). He noted a need to culturally adjust to the concept that it is always dry in Nevada. The uniqueness of the Truckee River system is it is different and it does have its challenges at the same time as it has its opportunities. He provided background on the water system. Last year has been the driest year on record. The river system is deals with endangered species, two different states, and two sovereign nations. The Authority has spent a lot of time educating and a lot of personnel have been out in the field responding to calls with sprinkler systems, irrigation leaks, etc. As result, there is a significant change in water use by their customers. They have changes in operations

which has created an opportunity for recharge in the county systems. Customer response has been phenomenal. They have been working on affluent treatment and affluent reuse.

Member Walker noted there will be 50,000 new jobs in the Truckee Meadows area and how that affects the Authority's planning. Mr. Erwin provided a history on the planning they did concerning both groundwater and surface water and the building of more storage. He noted economics will drive the future. The Authority can accommodate growth because they planned for it.

Member Walker asked about groundwater reservoir considering this is a big pumping year and if it is more expensive to pump the water and treat it and if there are declines in the resource. Mr. Erwin noted operating costs have increased because of the increased pumping. This year the Authority will see draw-downs from 15 to 40 feet with almost complete, or at least half, recovery. It is a resilient system.

John Entsminger, Southern Nevada Water Authority, provided background on his organization. In the Nevada, Clark County uses about 11 percent of the water supply. They have a robust, young system. They pump 900 million gallons of water a day with less than 5 percent unaccounted for. The year 2002, was the driest year in reported history of the Colorado River, and 2012 and 2013 were driest back to back years in reported history. The state has been in drought for a decade and a half. The Authority has seen Lake Mead decline 130 feet from the year 2000. It is at 39 percent full today. This affects water quality not just quantity. Temperature is the biggest concern the Authority has. They have had to install aeration systems in all of their regional reservoirs. There are three major things: conservation, water banking, and new infrastructure. On conservation they have reduced their per capita water usage by 43 percent in the last 15 years. Las Vegas tells the story that population growth and economic growth does not correlate one to one with water usage. They have seen the decrease in water usage as their population has grown by 25 percent. They decreased the percentage of water use by cutting down on outdoor use. Vice-chair Entsminger spoke about water banking. The Authority has instituted a number of programs, including banking with other states and Mexico. They have 1.5 million acre feet of water banked within Nevada and around the region. At their current rate of use, this is equivalent to 7 years of full water supply for the Authority. Mr. Entsminger also spoke about infrastructure. The Authority has 90 percent of their supply in one place. There needs to be assurances that you can access that water. They have instituted construction of a third intake into Lake Mead. It should be operational in approximately eight weeks. They also need pumps, therefore they are building a new pumping station.

A full account of the presentations and discussions of all the sectors are captured in the audio recording, available on the Forum's website (www.drought.nv.gov).

9) Presentation on Drought-Related Topic (Discussion and Possible Action)

Dr. Michael Young reviewed a presentation on water markets, available on the Nevada Drought Forum's website (*www.drought.nv.gov*). Nevada has the potential to become a leader in water management by learning from the Australian experience with water markets. It is important to improve water rights and to improve the systems that manage water rights. He provided history and background on how Australia

changed their water rights process. They created water accounts similar to back accounts. He spoke about unbundling water rights and seasonal allocations. It is simple and transparent. They went from a beneficial use concept, which they found was deepening the drought, and allowed people to save water for future use. They use management plans rather than courts to resolve water issues. He suggests this option should be offered in the Diamond Valley and in the Humboldt River Basin as a trial for approximately five years. Dr. Young mentioned there will be a report available in approximately four weeks.

Member King noted that the concept is intriguing and there is a basin in the Diamond Valley that is over-appropriated. If this concept can work there, it would be considered a viable concept. Dr. Young did go out and get funding for this project. There is a lot of promise in it. It is another tool that Nevada should consider. The measurement, monitoring and reporting of *all* water use is important to make this work. The State Engineer's Office has always been an advocate for this.

Member Huntington asked about any drawbacks from the system. Dr. Young noted one of the biggest drawbacks is that the discussion on water trading can create community fear that may cause a loss of wealth. The research shows the reverse has in fact been the case. The second drawback is concerns in the early stages that people wanted to include in putting water back into the environment and a lack of trust in the shares registers and banking systems. It is important to know that when someone wants a bigger part of a share there needs to be someone willing to take a smaller share, and also there needs to be trust in the accounting system.

A full account of the discussion is captured in the audio recording, available on the Nevada Drought Forum's website (*www.drought.nv.gov*).

10) Review of Discussion, Future Meetings and Agenda Items (Discussion and Possible Action)

Chair Drozdoff stated he did not have anything to add to this agenda item. Other Forum Members also did not have anything to add.

11) Public Comment: (Discussion)

Sparks

William Campbell, Intertribal Council, provided a brief background on the Intertribal Council and noted the disappointment in having no Native American representation on the Forum.

Councilwoman Duerr stated a lot of good ideas were brought forward during the meeting and spoke about the hydrologic cycle and the hydro illogical cycle, which is when there is focus on whatever is in front of us. She would like to recommend and support the suggestions made by Bruce Scott earlier in the meeting. She suggested the Drought Summit provide a specific role for people that may not be identified with a

particular group but still have a lot to say, including Native American representation. She suggested reviewing the "use it, or lose it" water law and possibly use a credit water system. She spoke about resources and data collection.

Chair Drozdoff thanked Department of Agriculture Director Jim Barbee and his staff for assisting with the meeting and getting the remote locations involved.

A full account of the discussion is captured in the audio recording, available on the Nevada Drought Forum's website (*www.drought.nv.gov*).

12) Adjournment:

Meeting adjourned by acclamation at 4: 48 p.m.

University of Nevada Cooperative Extension – Lander County
835 N. 2nd Street
Battle Mountain, NV

University of Nevada Cooperative Extension – Lincoln County
360 Lincoln Street
Caliente, NV

Great Basin College
1500 College Parkway
High Tech Center Bldg Room 123
Elko, NV

Great Basin College – Ely Campus
2115 Bobcat Drive
Room 114
Ely, NV

University of Nevada Cooperative Extension – Eureka County
701 S. Main Street
Eureka, NV

University of Nevada Cooperative Extension – Churchill County
111 Sheckler Road
Fallon, NV

University of Nevada Cooperative Extension – Douglas County
1329 Waterloo Lane
Classroom
Gardnerville, NV

University of Nevada Cooperative Extension – Mineral County
205 South A Street
Hawthorne, NV

University of Nevada Cooperative Extension – Clark County
1897 N. Moapa Valley Blvd
Building A
Logandale, NV

University of Nevada Cooperative Extension – Pershing County
810 Sixth Street
Lovelock, NV

University of Nevada Cooperative Extension – Nye County
1651 E. Calvada Blvd
Pahrump, NV

University of Nevada Cooperative Extension – Humboldt County
1085 Fairgrounds Road
Classroom
Winnemucca, NV

University of Nevada Cooperative Extension – Lyon County
504 South Main Street
Yerington, NV

Andrew K. Clinger
City Manager

August 18, 2015

Director Leo Drozdoff
Nevada Department of Conservation & Natural Resources
1 S. Stewart St., Ste. 1003
Carson City, NV 89701

RE: City of Reno Formal Participation in the Nevada Drought Forum

Director Drozdoff,

Please find this letter as a formal request from the Reno City Council that Nevada cities, such as the City of Reno, have a formal place at the table as part of the Nevada Drought Forum. This request comes from a unanimous vote of the Reno City Council taken at the August 12, 2015 City Council meeting.

As you are likely aware, cities have a significant role in water conservation and drought management. At the local level, we create policy initiatives and enforcement focused on saving water, both at publicly-owned facilities and on private property through our regulatory role. This list includes development approvals, building and plumbing codes, landscape and tree ordinances, declaring local drought conditions, and the like. We also have an important role in educating the public and publicizing drought and water conservation efforts.

In order to both share information with and learn best practices from fellow municipalities, and other agencies and interests, we would like to see formal participation from these entities at future Nevada Drought Forum meetings.

The City of Reno is taking a leadership role in our region regarding water conservation both in response to the existing drought conditions and to effectively create sustainability as we are faced with unprecedented growth in the next five years. By creating a formal place at the table for Nevada's cities, there would be better representation and engagement from our municipalities on this important issue requiring collaboration. We look forward to hearing from you regarding this request.

Respectfully,

Andrew Clinger
City Manager

P.O. Box 1900, Reno, NV 89505 * (775) 334-2400 * (775) 334-2097 Fax
Reno.gov

Eureka County Concerned About Misuse of Drought to Reduce Livestock Grazing

Prepared by Jake Tibbitts, Eureka County Natural Resources Manager

Eureka County continues to be concerned about unjustified and arbitrary closures of livestock grazing in certain areas under the excuse of drought. BLM has developed Drought Management EAs in each district and a statewide Nevada Drought Handbook. More and more allotments are receiving livestock grazing closures because of drought. However, there are different types of drought and we contend that many of our rangelands are not experiencing vegetative drought effects due to timely rainfall events.

There is a general misuse of and reliance on the US Drought Monitor (USDM) in justifying grazing restrictions. Borrowing from definitions from the Society for Range Management, the various BLM Drought Management EAs define drought as:

- A prolonged chronic shortage of water, as compared to the norm, often associated with high temperatures and winds during spring, summer, and fall.
- A period without precipitation during which the soil water content is reduced to such an extent that plants suffer from lack of water.

An area can be in drought because of lack of snow and streamflow but well-timed precipitation events often result in normal to above normal vegetation conditions. Simply put, the rangeland forage in many areas across the state is normal to above normal due to spring and summer rains and the second definition of drought (vegetation conditions) is not occurring. We have seen specific examples of ranchers being forced into so-called "voluntary" grazing reductions or Full Force and Effect decisions based on the area being in drought while the rangeland conditions on the ground do not support that conclusion.

In regards to forage availability and rangeland condition, timing of precipitation is much more important that total precipitation. Studies from University of Idaho concluded that precipitation in only two months, May and June, explained 72% of forage species annual variability and including April explained nearly all of the variation (Rimbey et al., 1992). This means that overall, the area may be in drought based simply on annual precipitation, but good storms at the right time of the year can provide ample and even excess forage. This year, we have had rainfall at the right times, in most of the right places, to grow normal to above normal vegetation even while springs and streams are dry.

The USDM has the disclaimer that the "Drought Monitor focuses on broad-scale conditions. Local conditions may vary." The technical reference for the USDM highlights that water supply indicators such as snowpack, streamflow, groundwater levels, and reservoir levels have heavy weightings in determining severity of drought (see http://droughtmonitor.unl.edu/AboutUs/ClassificationScheme.aspx). We are not disputing that we are in a drought that matches the first definition of drought above. But the drought we are suffering from is an overall lack of moisture, primarily snow, to recharge our springs, streams, and groundwater supplies. Again, it is imperative to consider that forage and rangeland health is primarily driven by late spring and early summer rain events, not snow.

A metric that has not been actively used when taking broad scale assessments of forage availability and rangeland condition is the Vegetation Drought Response Index (VegDRI) (http://vegdri.unl.edu/Home.aspx. In fact, the Drought EAs state that the USDM will be used alone only to identify areas of water shortage. Yet, the EAs also state that the USDM and the Vegetation Drought Response Index (VegDRI) would be consulted in tandem to be the first step in "determine drought afflicted areas and vegetation condition as it pertains to drought stress" (p. 4). We contend that BLM is often purposefully choosing to overlook the VegDRI as the first step in determining where to focus site-specific monitoring because the vegetation conditions exhibited according to VegDRI do not highlight severe or extreme drought as does the USDM. As previously mentioned, the USDM is primarily for making broad scale assessments on water supply and determining federal drought assistance. Any vegetation information going into the USDM is also "outweighed" by the other water specific indicators. According to the VegDRI references, "VegDRI maps are produced every two weeks and provide regional to sub-county scale information about drought's effects on vegetation....The VegDRI calculations

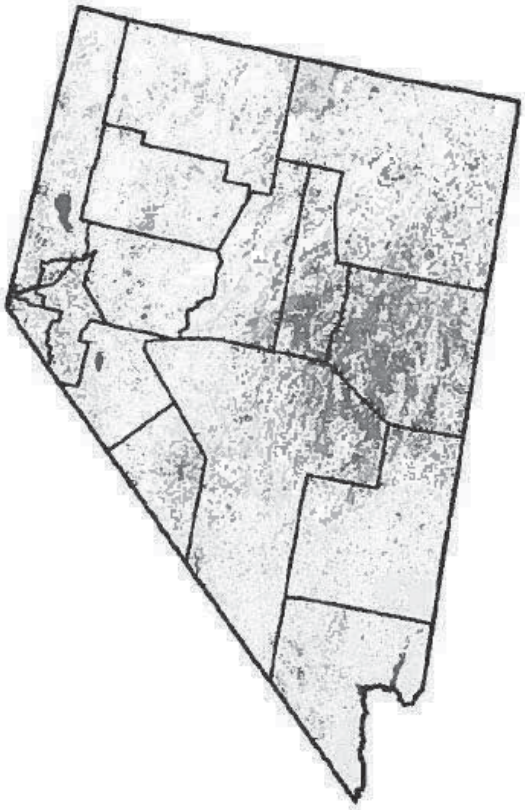
integrate satellite-based observations of vegetation conditions, climate data, and other biophysical information such as land cover/land use type, soil characteristics, and ecological setting. The VegDRI maps that are produced deliver continuous geographic coverage over large areas, and have inherently finer spatial detail (1-km2 resolution) than other commonly available drought indicators such as the U.S. Drought Monitor."

The figures below show most recent VegDRI and USDM maps. For much of Nevada, the large bulk of areas are "Near Normal" to "Pre-Drought" with some areas some areas being "Unusually Moist" and others starting to exhibit "Moderate Drought" with very few exhibiting "Severe Drought." Interestingly, the VegDRI almost depicts an inversion of the USDM of the same general date -- the areas showing the worst drought conditions through USDM are actually also exhibiting the least vegetation drought. VegDRI depicts a very different drought picture when compared to the USDM (again, primarily based on water supplies because hydrologic drought can and does occur independent of vegetative drought. Also, the comparison of VegDRI maps from a year ago shows that vegetation conditions are in much better shape and in some cases many have recovered by multiple drought classes. And last year's VegDRI in September 2014 also showed marked vegetation improvement from 2013. Yet, in our experience, most of the drought grazing restrictions imposed by the BLM have coming these past two years even with these rangeland vegetation improvements and recovery for two years in a row. These same differences between VegDRI and USDM have existed in all of the respective index maps we compared throughout the 2014 growing season up to today.

Vegetation Drought Response Index

August 10, 2015

Complete: Nevada



Vegetation Condition

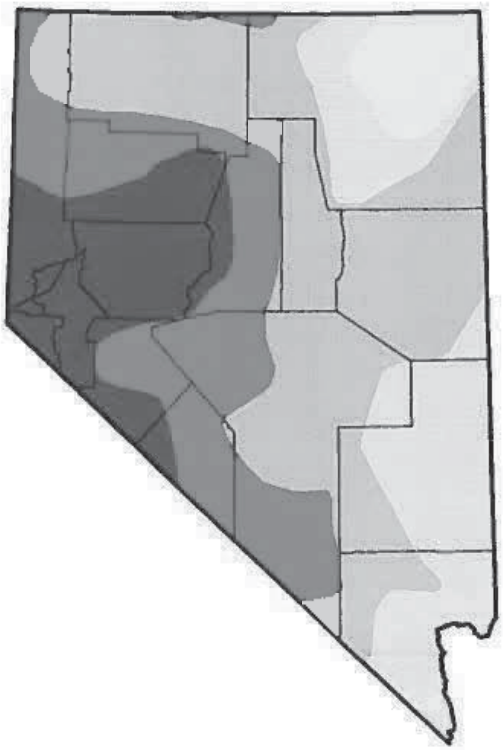
- Extreme Drought
- Severe Drought
- Moderate Drought
- Pre-Drought
- Near Normal
- Unusually Moist
- Very Moist
- Extremely Moist
- Out of Season
- Water

USGS

RMA

U.S. Drought Monitor

Nevada



August 11, 2015

(Released Thursday, Aug. 13, 2015)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	94.78	76.08	37.52	15.93
Last Week 8/4/2015	0.00	100.00	94.78	76.08	39.86	11.08
3 Months Ago 5/12/2015	0.00	100.00	99.93	67.00	43.21	18.38
Start of Calendar Year 12/30/2014	0.00	100.00	96.06	68.25	48.38	11.89
Start of Water Year 9/30/2014	0.00	100.00	97.04	69.89	48.38	11.89
One Year Ago 8/12/2014	0.00	100.00	100.00	86.92	55.21	11.89

Intensity:

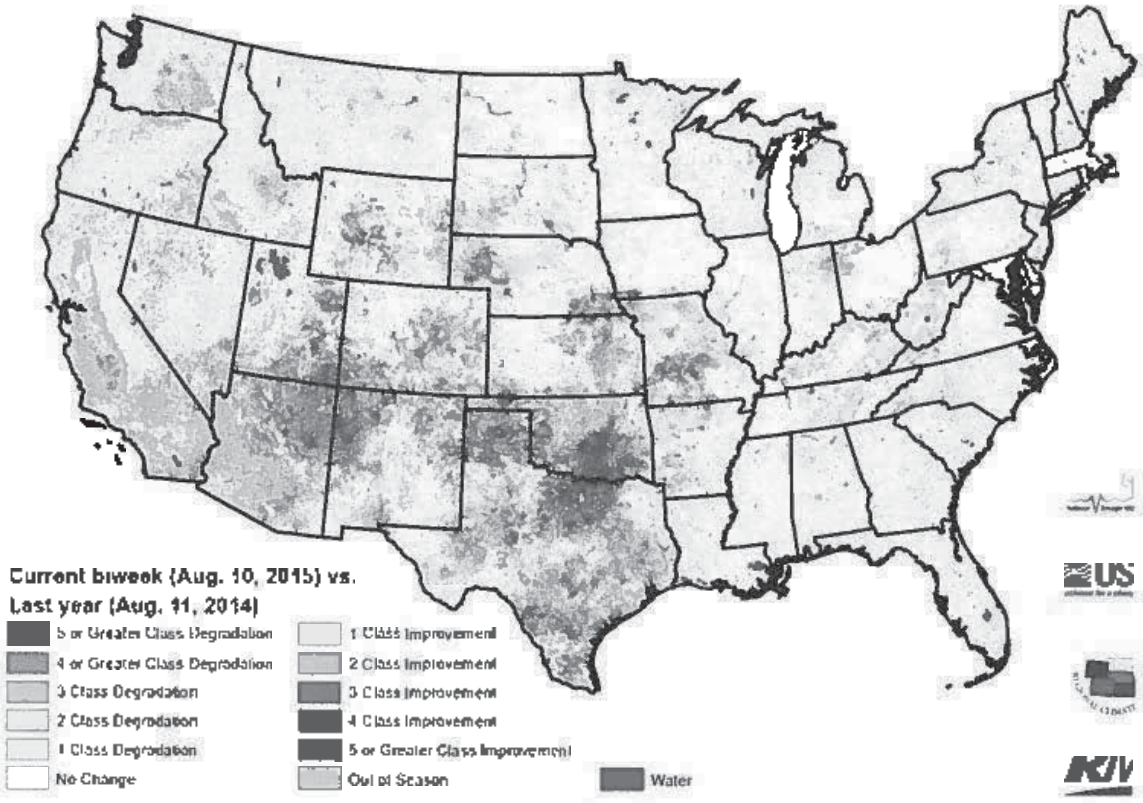
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

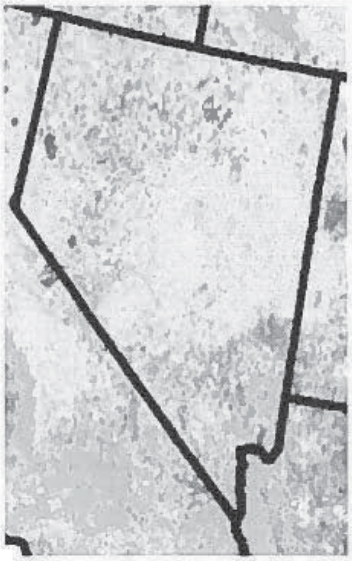
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:
Brian Fuchs
National Drought Mitigation Center

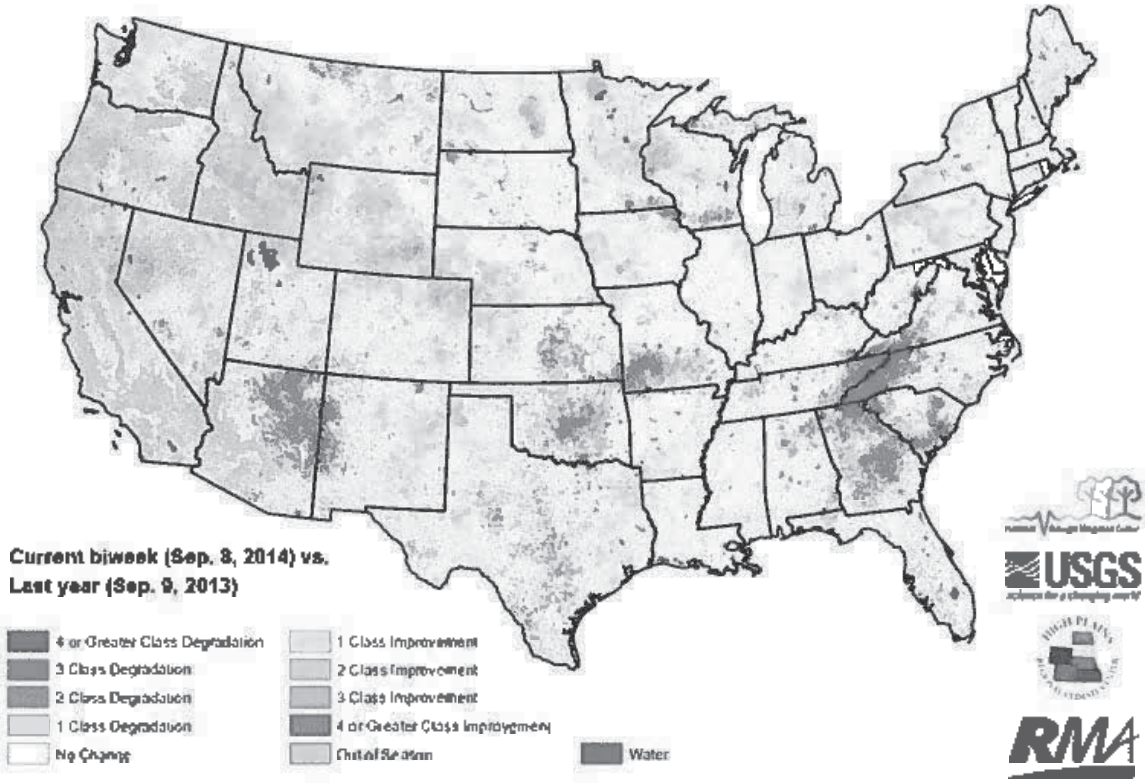
http://droughtmonitor.unl.edu/

Vegetation Drought Response Index (VegDRI) Change





Vegetation Drought Response Index (VegDRI) Change



These examples above place ranchers in the often untenable position of not being able to provide for the needs of their livestock at the right time of the year. Also, in some examples, these restrictions could be seen as a taking since the grazing season-of-use is not in line with the permitted use of the water right appurtenant to riparian areas.

We have found that under the above circumstances, any real resource burden is often shifted to private lands. Much of the prime and invaluable wildlife and riparian habitat in the State is under private control. Anytime grazing restrictions are placed upon the federally administered land, it only increases the possibility of land degradation on private lands—these restrictions do not solve the resource issues on a regional or global scale.

Request for the Drought Forum's Consideration

We ask for assistance in exhorting federal land management agencies, primarily BLM, to quit misusing drought as an umbrella excuse to reduce grazing when drought is truly not impacting rangeland conditions and to avoid unjustified, arbitrary and subjective grazing restrictions on federally administered lands. We ask the Drought Forum to assist with the following to address grazing and vegetative drought on federally administered land:

1. Help ensure agencies separate hydrologic and vegetative drought and do no rely on USDM for drought determinations regarding vegetation. Instead, properly use VegDRI and incorporate other indices such as the Evaporative Demand Drought Index (EDDI) being researched by DRI and Dr. Huntington.
2. Federal agencies in coordination with grazing permittees must ensure that management decisions are based upon the best rangeland science, that flexibility is built into grazing permits to allow for adaptive management as issues and concerns arise, and that that quality and quantity of data collected can support all decisions made;
3. Before imposing grazing restrictions or seeking changes in livestock stocking rates or seasons of permitted use, federal agencies in coordination with grazing permittees must identify and implement all economically and technically feasible livestock distribution, forage production enhancement, weed control programs, prescribed grazing systems, off-site water development by the water rights holder, shrub and pinyon/juniper control, livestock salting/supplementing plans, and establishment of riparian pastures and herding;
4. Federal agencies in coordination with grazing permittees must assure that all grazing management actions and strategies fully consider impact on property rights of inholders and adjacent private land owners and consider the potential impacts of such actions on grazing animal health and productivity.

If you have any questions or would like to discuss this matter in more detail, we can be reached at 775-237-6010 or at natresmgr@eurekanv.org. Thank you for your time and consideration.

PERSHING COUNTY WATER CONSERVATION DISTRICT OF NEVADA

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August 24, 2015

Leo Drozdoff, Chairman
Nevada Drought Forum
c/o Nevada Department of Conservation and Natural Resources
901 S. Stewart St., Ste 1003
Carson City, NV 89701
Contact Email: Gail Powell (gpowell@dps.state.nv.us); Jo Ann Kittrell (jkittrell@dcnr.nv.gov).

Dear Chairman Drozdoff:

The Pershing County Water Conservation District ("PCWCD" or "District") is an irrigation district located in Lovelock Nevada, formed under Chapter 539 of the Nevada Revised Statutes. PCWCD is a quasi-municipal agency that is led by a Board of Directors with myself as District Manager. While the District provided public comment at the August 19, 2015 Governor's Drought Forum, the District submits the following detailed written comments.

Overview

PCWCD owns, controls, and operates a water conveyance system that provides water to approximately 100 constituents with approximately 37,506 acres of irrigated agricultural lands within the District boundaries. PCWCD operates diversion structures and dams along the Humboldt River, as well as diversion structures within the District's delivery system. The District controls a significant number of the senior decreed surface water rights to the waters of the Humboldt River, with storage rights in Rye Patch Reservoir, as well as the Upper and Lower Pitt-Taylor Reservoirs.

In recent years, the Humboldt River's flow to its terminus ceases long before any water reaches the District's farmers. While the District holds very senior decreed water rights, little water is making it to the District. The District is currently enduring its second consecutive year with 0% water allocation to its constituents.

Hydrologic Connectivity

The Humboldt River Basin groundwater aquifers are greatly over-appropriated. Studies show that groundwater pumping, likely increased with drought, and in the vicinity of the river, is

pulling water away from the river. This hydrologic connectivity is a large factor contributing to the District's lack of water.

The Humboldt River Basin is comprised of 34 separate and distinct hydrographic groundwater basins. According to the Nevada Division of Water Resources, there are 1,852 wells within the Humboldt River Basin, and 1,291 groundwater permits with their point of diversion within 5 miles of the Humboldt River and its tributaries, of which 273 capture 10% or more of their water from the Humboldt River. The total combined perennial yield of all collective groundwater basins in the Humboldt River Basin is 476,400 AFA. However, the total combined permitted groundwater allocation is 753,394 AFA. Of the 34 hydrographic basins within the Humboldt River Basin, 23 are over-appropriated.

Evidence supports the conclusion that groundwater users have lowered the water table in the basins surrounding the Humboldt River to a depth that is causing a dewatering of the Humboldt River, as surface waters are flowing away from the river to service groundwater withdrawals. It is clear that these groundwater withdrawals are junior in priority to the Humboldt River Decree. Groundwater withdrawals are causing a severe and detrimental impact to the surface water Decree users whose priority entitlement is unavailable due to lack of regulation of the groundwater sources.

Water Use for Mining and Milling

The majority of groundwater appropriation in the Humboldt River Basin is used for irrigation and mining purposes. Water use for mining and milling is most significantly used to dewater open pit mines, which is the current practice of extracting minerals in the Humboldt River Basin. This practice often seeks to extract ore from below the water table, which requires the mining area to be "dewatered." Generally, the mine drills a number of wells around the mining pit, then pumps water to create a cone of depression under the pit, thereby drying up the mining area. When the pit is not being dewatered, the pit fills up to the level of the water table, creating a pit lake.

In Nevada, the State Engineer grants permits for mining and milling on a "temporary" basis. However, rather than issuing one-year temporary permits as allowed for under statute, historically, the State Engineer issues permits for mining and milling akin to permanent water rights, while side-stepping an analysis as to whether water is available for appropriation. The Humboldt River Chronology states that "mine dewatering and mine pit lake formation, and their potential near-term and long-term effects on groundwater levels and surface-water flows" has been identified as a principal water-related issue plaguing the Humboldt River Basin.

In an article entitled *Nevada's Pit Lakes: Wasted Water*, published in the December 2012 issue of the *Desert Report*, Nevada's pit lake problem was discussed in detail. Nevada has more precious metal pit lakes than any other state in the country. The majority of pit lakes in the State of Nevada are in the Humboldt River Basin, and when filled, hold over 1 million acre-feet of water. Evaporation from these pit lakes is also staggering. It has been estimated that such evaporation will "remove the equivalent of five percent of the flow of the Humboldt River at Winnemucca each year."

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Action Taken by PCWCD

After feeling the effect of groundwater pumping that decreases flows within the Humboldt River, coupled with the ongoing drought in the West, the District sought the assistance of the State Engineer to develop a collective plan to ensure PCWCD's senior water rights are delivered, while at the same time attempting to allow junior users to continue to allocate water to the greatest extent possible. On August 21, 2014, PCWCD prepared a report for the State Engineer to assist in the development of such a plan.

The report provided the State Engineer with a list of requested "Action Items" and asks the State Engineer to take action to: 1) develop a system of conjunctive management; 2) regulate mine dewatering under statutory code; 3) account for "temporary" permits in the hydrographic basins' annual budget; 4) regulate mining pit lakes under statutory code for water storage; 5) curtail junior groundwater rights in basins surrounding the Humboldt River, until perennial yield equilibrium is met; 6) require mandatory metering on groundwater wells in the Humboldt River Basin; 7) create an enforcement officer to regulate groundwater use; and 8) bring groundwater basins back to sustainability. On September 9, 2014, the PCWCD Board Members and Manager met with the State Engineer to discuss the report and request action. The report also discussed water management strategies utilized by other western states. While the District understands that not all actions taken by other states are applicable to the difficulties effecting Nevada, the point was to start the conversation to develop a system of water management that will work for Nevada. PCWCD received no written response to their report or otherwise.

On January 14, 2015 and January 15, 2015, the State Engineer held a series of workshops on the Humboldt River stating their intent to prepare a capture model in the basin, to be completed within 4 to 5 years. The State Engineer also demonstrated a simple "Glover" analysis capture model illustrating that groundwater pumping curtailment would supply additional water to the Humboldt River, but determined that the "Glover analysis shows that curtailment of pumping over one irrigation season will not cause an appreciable gain in Humboldt River flows."

On March 24, 2015, with a second irrigation season with 0% allocation looming, the PCWCD Board Members again met with the State Engineer, this time presenting data through a District retained hydrogeologist. The District provided to the State Engineer a Request for Implementation of Water Management Strategies. PCWCD expressly asked for a written response to their letter and presentation. No response was received.

On August 12, 2015, PCWCD filed a Writ of Mandamus against the State Engineer seeking action be taken to bring the groundwater basins surrounding the Humboldt River back to sustainability. While the District hoped to avoid litigation, inaction is affecting the livelihoods of all those in agriculture, as well as their economic impact in the Lovelock area. The hope is that the Writ will help combat the increasing interference groundwater pumping has on the Humboldt River.

State Action Needed

First and foremost, the doctrine of Prior Appropriation, the law governing all water resource management in the State of Nevada, must be complied with. Before any new

legislation, or any new management practices are established to better manage drought, the law must be followed, and senior rights must be served before junior rights.

Beyond that, sustainability of groundwater must be a key priority in confronting the effects of drought, and water management as a whole. Decades of over-appropriation of the groundwater resources in this State has created a detrimental effect on the surface water sources in the state, including an unknown effect on the future of groundwater availability. The State Engineer is now faced with the task of trying to right the years of abuse. PCWCD believes the tools for sustainable management are available, however, providing the State Engineer, the Nevada Division of Water Resources, and the Department of Conservation and Natural Resource, with further power to develop sustainability based programs, may be necessary for real action to take place.

As previously provided to the Nevada Division of Water Resources, PCWCD proposes managing water use in the Humboldt River Hydrographic Region in the following manner, and proposes the following action be taken:

1.) Bring each groundwater basin along the Humboldt River that is pumping in excess of its perennial yield into balance via a sustainable annual yield concept. This may include and require curtailment based on priority.

2.) Initiate Rulemaking now to allow for the future management of the groundwater and surface water basins along the Humboldt River to be managed as one system, to correct the current imbalance in the surface water system.

3.) Identify and establish "indicator wells" in each basin along the Humboldt River to evaluate the water table aquifer within 7 miles of the Humboldt River corridor, as well as along the major tributaries to the Humboldt River. These indicator wells can then be used for additional monitoring to track hydraulic gradients to surface water discharge in each basin within the Humboldt River Hydrographic Region. PCWCD proposes indicator wells for, at minimum, the Winnemucca, Paradise Valley and Grass Valley hydrographic basins.

4.) Curtail groundwater permits, if prior to the irrigation season (i.e. March 1) the "indicator wells" show that the hydraulic gradient between the indicator well and the Humboldt River is less than 90% of the pre-pumping hydraulic gradient, and thus would pull water from the surface source once the pumps turned on. Historic well and/or surface water elevation data are to be utilized for determining the initial hydraulic gradients.

The District welcomes the opportunity to aid in the State's drought response, and share its insights and experiences, as well as information it has collected, in its effort to keep water

flowing to the District's constituents. If you have any questions regarding that discussed above, please contact the District.[1]

Very truly yours,

PERSHING COUNTY WATER CONSERVATION DISTRICT

Bennie B Hodges

Bennie B. Hodges
District Manager
Pershing County Water Conservation District

[1] Letter prepared at direction of Bennie B. Hodges, by Schroeder Law Offices, P.C., 440 Marsh Avenue, Reno, NV, 89509.

[illegible]

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August 19, 2015

Marianne Leinassar asked me to attend today's conference for FIM Corporation. Marianne, her father Fred Fulstone, and son Kris own and operate their family's sheep ranch with irrigated croplands producing hay in Smith Valley, pasture in Bridgeport Valley, and extensive rangeland grazing allotments on BLM and Forest Service controlled areas.

1. Western Nevada ranches suffer drought in two possible ways. First is the obvious lack of snow pack that normally produces the water needed for irrigation of crops and for livestock water from springs or creeks on rangelands. Second is lack of rainfall in April and May that is needed for production of range forages.

2. Churchill County farms received less than 20% of average water which provided a single irrigation for most producers. Unusual amounts of rainfall kept many alfalfa and pasture fields productive into July. April and May rainfall resulted in average or above average range forage production.

3. Pershing County farms received no irrigation water from the Humboldt River. Some areas received rainfall that produced rangeland plants as forage but other areas only received May and June rainfall which favored certain weeds such as Russian thistle and Halogeton.

4. Lyon County received a fraction of normal water for irrigation from both forks of the Walker River.
    - Smith Valley farms had a small amount of water from storage and decree from the Walker River.
    - State Engineer threatened to also cut off irrigation from "supplemental" wells.
    - Rangelands received spring rainfall that produced abundant forages so there is no detrimental affect of drought on rangeland forages.
    - However springs and streams dried up and water has to be hauled to livestock at great expense.

5. Mismanagement of upstream watersheds has greatly reduced the amount of water yield that used to flow into our reservoirs and recharge our valley aquifers. Forest Service and BLM have failed to restrict the spread of Pinyon-Juniper trees and have allowed willows and other species to plug up the streams so badly that even without the drought we did not receive the normal water flow. This drought has made the effect of badly managed rangelands all the worse.

6. Water for irrigation in Lyon County comes from irrigation reservoirs built in Bridgeport and Topaz. Those reservoirs and others have been assigned a minimum pool for the frivolous purpose of providing fish and wildlife for recreation. When water is abundant that is not an issue but with drought the water rights for agriculture need to take first place.

7. For years requests that BLM and Forest Service spend some money to drill wells, develop springs, and other water developments have either been ignored or have been answered with statements about how NEPA will take a long time to complete so nothing can be done for a long time. If new developments and needed repairs had been done when requested the water resources for both livestock and wildlife may have been adequate for this drought.

8. Nevada has the best water law in the West. Our law protects citizens as owners of permitted (statutory) water rights and protects the owners of pre-statutory vested water rights as well. This drought is inconvenient but it is not worth compromising Nevada Water Law for some short-term gain. Please work through this situation starting from the fact that water rights and other private existing rights on federally controlled lands and on patented lands must be protected and must be intact when the drought ends.

Talking Points: Legal Uncertainties and Drought Response

1. How has drought affected the livestock industry

From a range grass production stand point not much. Rangelands are in good condition and grass production for the past two years have actually been very good thanks to well timed spring and summer rains.

Pastures relying on snow pack and runoff are deficient and way below normal.

Stock water is an issue on many allotments.

Irrigation water for hay production is deficient due to the reduced snow pack.

A lot of legal uncertainties are present if this drought situation continues. Conflicts between users will intensify.

- Surface water sources with senior water rights may be impacted by junior groundwater pumping. As surface water flows decline, surface water users may switch to groundwater and the increased pumping levels could impact other groundwater users. More straws in the ground.

- While conflicts between water users will first be addressed by the State Engineer's office, eventually the issues will reach the court system. Many of the issues related to water use conflicts will concern areas of law that have not been interpreted or enforced before. The effects of drought will test the completeness and complexity of Nevada's water law.

- Steps should be taken now to improve the clarity of certain key aspects of Nevada's water law so that all water users can be treated fairly when they are faced with responding to water supply limitations caused by drought.

- The areas of law that should be clarified are:

    - Recognizing in statute that impacts to other water rights is an acceptable part of sharing a water resource, but that when an impact rises to a level that cannot be mitigated, a conflict exists and the prior appropriation system prevails.
    - Monitoring, management, and mitigation plans ("3M Plans") that rely on adaptive management principles are appropriate tools for the State Engineer to use and consider, both in deciding whether to grant a water rights application and in managing competing water uses and protecting the environment.
    - The State Engineer has the inherent authority to require 3M Plans, but the legislature can confirm this and add detailed requirements like the appropriate

contents of a 3M Plan and the timeframe for setting mitigation triggers, including whether performance bonds should be required.
    - When mitigation is necessary, water right users should expect to receive the same amount of water, in the same place, and at the same time as provided for in their water right, but do not have an entitlement to water from a specific source.
    - In a drought, conservation should be rewarded and not punished by the "use it or lose it" system. Conserved water can be used by junior water users and the junior water rights retired in order to benefit the system.

- Legislative ambiguities lead to economic uncertainties.

- The Nevada Drought Forum should be used to identify specific statutes that can be amended and clarified, and the Governor should consider these recommendations in the bill draft request process for the 2017 legislative session.

Nevada Farm Bureau Federation
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1-800- 992-1106 | www.nvfb.org

Nevada Drought Forum Sector Meeting
Wednesday, August 19, 2015

Mr. Chairman and members of the Nevada Drought Forum, my name is Darrell Pursel. I'm here this morning representing Nevada Farm Bureau Federation. Nevada Farm Bureau Federation is the largest general agriculture organization in Nevada, representing over 18,000 member families. I am the president of the Lyon County Farm Bureau and a 5th generation Nevada farmer. I farm 320 acres and have a small cow-calf operation in Yerington.

The total economic impact of Nevada's agriculture cluster is $5.3 billion. Our industry is one of the largest and most valuable in Nevada, and it is one that is greatly affected by the drought. Lack of water for farmers and ranchers has resulted in cutbacks across our industry. To some Nevada farmers, the current drought is devastating, and to others, it is just another challenge. Each farmer has different problems due to their individual circumstances and location even though they may be next door to one another. Farmers have fallowed valuable farmland because there is not sufficient water to grow the crops they would normally grow. In counties like mine, farmers have been allocated 3 percent of their normal surface water rights and must rely on supplemental pumping rights to grow crops. Without a wet winter, farmers will not receive any surface water rights and may be forced to cut back their supplemental and primary pumping rights by as much as 75% or more by priority. Further, the lack of well water pumping for irrigation may fallow 75% or more of farms in the two valleys. That means only 25% of agriculture wells will be allowed to be pumped in the coming year in Mason and Smith Valley's . The total economic impact of food and agriculture is $338 million in Lyon County. Drastic cutbacks to our water use due to drought will be detrimental not only to our farmers but also the local communities on which agriculture has a positive economic effect.

Some livestock producers have had to sell off some of their herds, buy or lease more pastureland or grazing allotments and feed more hay. Many have been forced to take their livestock out of state for pasture. In range operations, many producers have had to drill livestock wells, purchase water trucks and haul water for livestock to drink. Ranchers in counties like Lander have been forced off of their permitted land early because drought environmental assessment triggers have been met. They have been

forced to sell their animals because they are not permitted to graze all of the livestock they own. The drought directly affects Nevada agriculturists' livelihoods, and in some cases, it has forced farmers and ranchers out of business dispalcing generations old farming and ranching operations.

This is not the first drought affecting our industry. Agriculture in Nevada has always tried to become more efficient at using our water resources because we face drought often. There are many examples of what the agriculture industry has done to conserve water for irrigation. Starting in 1920 Topaz and in 1923 Bridgeport reservoirs were built by farmers on the East & West Walker River to help limit the effects caused by drought by being able to store water in the good years for use in drought years. In the 1960s and 70s, many of the farmers put in irrigation wells to help survive droughts when water was short. In the late 70s to today, they have put in concrete ditches, underground pipelines, sprinkler irrigation and laser leveling fields. In the recent years, drip tape, variable drives and GPS control and leveling systems have been employed all to help use water more efficiently. Each and every one of these pieces of technology increases efficiency and reduces water consumption especially in drought conditions and can be the difference between producing a crop and not. As better and more efficient technology becomes available, farmers will be the first to adopt their use.

Our ranchers also continue to use efficient methods to preserve the rangeland in years of drought. They practice holistic management of the land to graze large numbers of cattle while preserving and improving the vegetation for animals and wildlife in the future. They rely on sound grazing practices, ensuring that public lands are properly grazed to prevent wildfires, which are more common in years of drought.

Several big obstacles exist to overcoming additional levels of water efficiency. Often times, uninformed government officials and individuals make decisions regarding the agriculture industry and drought. While agriculturists in Nevada are dedicated to conserving water, they often face misplaced restrictions that will not conserve water or protect the rangeland that needs to be conserved and protected. In the last year, the BLM closed grazing allotments because of antiquated drought environmental assessments even though the area in question had lots of vegetation due to spring rains. The Nevada Division of Water Resources attempted to implement a well water pumping curtailment without doing sufficient research to identify which parts of the valley needed to be curtailed.

The other obstacle that our industry faces is one that cannot be eliminated. Agriculture needs water to operate. Forcing our agriculturists to cut their water use back more than they currently do will result in a reduction in the availability of local

fruits, vegetables, meat and animal by-products. It has been said that by the year 2050, the Earth's population will have doubled. Where do you think your food will come from? Agriculture will have to produce twice as much food and fiber than we do now and more than likely with less water and less land than we currently use. Today, each farmer produces enough food and fiber for 155 people. In 2050, each farmer will have to produce for 310 people or more.

In closing, I would like to end with a short personal story. Due to the drought this year and loss of production, I began raising pheasants and mallard ducks. I fed the wheat in a grain bin that I couldn't use for other purposes to my new birds and plan to start a pheasant hunting preserve to increase income in the future. I am sure you are wondering who in their right mind would raise ducks in a drought. I'll tell you who, agriculturists. In hard times like these, we will adapt to persevere because we have adapted since the beginning of civilization to feed a growing population. We are farmers and ranchers, and we will continue to feed the world even when we face challenging times like these.

Thank you.

Good morning Chairman Drozdoff and the rest of the Committee. We appreciate you taking the time today to hear testimony from a variety of agricultural and conservation interests. My name is Joe Sicking, and I'm the Chairman of the State Conservation Commission. As many of you know, the Commission works with and assists the 28 Conservation Districts throughout the state; all of them provide locally elected leadership on renewable natural resources in Nevada. They all serve as volunteer Supervisors, but they do their best to help their communities address some of the most important issues of our day.

Of course water, and the related use of it, is always one of the most important natural resources there is, particularly in Nevada. The current level of drought, stretching now well over ~~the past~~ four years, has led many of its traditional users to conserve, use less, and for some not even have any to use ~~currently~~.

In order to remain productive in a drought-stricken state such as Nevada is currently, most agricultural producers have done everything they can to continue their operations and yet remain economically viable. With the help of NRCS, some producers have been able to convert from flood irrigation to center pivot. This option, although a large investment for the producer, does provide significant water savings as well.

Laser Level. Their fields or Retrofit ~~on~~ existing Pivots

Some operators are leaving some of their fields fallow – others have done so not by their choice but due to the fact they simply don't have water to use. It's not uncommon these days for producers to leave their grain crops in a year or two longer during their normal rotation between alfalfa and grain, since this allows for a lower use of irrigation water. Others are trying different crops that are water efficient or use less water as well. Grains such as Teff, as well as others, use significantly less water, provide a cash grain crop, as well as useable forage if the producer chooses to use it as such. Some simply ~~farm~~ till it into the soil which provides for less water usage the next few years on that field due to higher levels of organic matter.

The Conservation Districts themselves have been actively working on developing projects that could help Nevada's waterways to be more efficient and effective, store water on the land longer, and help in putting those waterways into proper functioning condition. The District I serve on, Paradise-Sonoma in Humboldt County has partnered with the Owyhee Conservation District in Elko County and applied for a Conservation Innovation Grant through NRCS. If we are successful in obtaining this grant – we won't know for sure until next month sometime – it will allow us to put many miles of the Little Humboldt River, portions of both the North Fork and South Fork, into proper functioning condition. This project will help keep what little water we

receive in those drainages in time of drought, on the land longer and allow it to be used more efficiently. It also has a side benefit of improving habitat for the Greater Sage-grouse which as we all know is a big issue these days.

The State Conservation Commission, in partnership directly with the Nevada Association of Conservation Districts, as well as many others including BLM, USFS, and NDF, just to name a ~~couple~~ few, has also applied for another grant known as the Regional Conservation Partnership Program through NRCS. This five year grant, again if we're successful, will provide about $19 million dollars worth of planning and work to be done throughout the state. The first couple of years will be spent developing Conservation Resource Management Plans, known throughout the country as an extremely collaborative process, for each of the 28 Districts. The following few years will be spent putting the projects developed through the planning process on the ground. We anticipate that with water issues being front and center, that many of the top ranking projects will be water conservation related.

All of these management tools are effective in reducing water consumption for irrigation. However, there is a legal issue that arises in Nevada water law. Producers have come to refer to this issue as "use it or lose it" regarding water rights. The current statutes provide that if a producer doesn't use their adjudicated water rights for a period of time,

the state can regain the right to re-appropriate those rights. Therefore, if a producer uses good, efficient management techniques such as some of those mentioned above, and reduces his water use by, as an example 20%, he could legally lose that amount of his water right. For a field that has been permitted for 20 acre feet of water, this could be the loss of four acre feet of water on an annual basis. This reduces the value of the overall operation, and if he does that on a number of fields the negative effect of that value adds up quickly. This needs to be changed as soon as possible. It is a very significant issue throughout the Nevada agricultural community as they stand to lose significant amounts of their rights and value to their operation if they do the right thing.

I would like to close by thanking the members of the Committee for their service and attention to this critical issue on everyone's mind. I would also like to thank Governor Sandoval for his work in bringing this forward as an important issue for his administration. I would offer the assistance of the Conservation Commission, as well as the individual Districts, in addressing this issue. Thank you Chairman Drozdoff and I would be happy to take any questions you or the Committee may have.

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(775) 881-8304

GREAT BASIN WATER NETWORK

info4gbwn@gmail.com
GreatBasinWaterNetwork.org

August 19, 2015

Mr. Chairman, Members of the Drought Forum Board:

My name is Abby Johnson, President of Great Basin Water Network. We are a regional, nonpartisan, non-profit organization dedicated to preserving rural water at its source. Counties, Tribes, ranchers and farmers, irrigation districts, small businesses, conservationists, and community members are part of our network. Thank you for inviting us to participate in this meeting. For this process to succeed, we believe it is important for the public and stakeholders to understand what the final work products from the Forum will be, how they will be developed, and how they will be implemented after the Summit in an inclusive and effective way.

1. How has the drought in Nevada affected the environment?

Drought has put all of Nevada on notice: as the driest state in the nation we cannot afford to be complacent. The natural environment is struggling to stay in balance in the face of declining precipitation and rising water use. Our message is simple: Drought should not be used as an excuse to sacrifice one part of the state for another. We are one Nevada and must find solutions so that all parts of the state, including rural areas, can survive and thrive.

It should be clear that there is no “new” water to develop in the West. Many water rights are little more than slips of paper in basins that were overallocated even before the drought took hold. Major water exportations like the Las Vegas Water Grab are not viable solutions. They depend on exploitation of the target area by depleting its water supply. This has never been acceptable, and the drought makes this even clearer. Pump-and-pipe groundwater projects will exacerbate impacts of water shortages from where water is taken, while subjecting urban ratepayers to exorbitant rate increases.

One question we should be asking is: is this a drought or a more long-term climate change where drier is the new normal? The smart thing to do either way is adapt with short-term, mid-term and long-term changes in our water use and management. Will a wet winter deter policy makers from carrying out the systemic changes to sustain Nevada through future adversity? We hope not.

Local agricultural producers are already experiencing the challenges of farming and ranching with a declining water table. Lovelock's farmers are experiencing a fourth year without irrigation water. Sustaining the agricultural base, economy and way of life in Nevada is a necessary part of Nevada's twenty-first century economy, culture, and survival.

2. What has your organization done to address drought?

We oppose the SNWA Groundwater Development Project, better known as the Water Grab, which would bring unacceptable harm to the environment and would poach senior water rights. We have many objections to that project. First among them is that the water is not available long term for massive exportation, rendering it destructive, unaffordable and unacceptable as an option to address drought or expand supply. So far the state's high courts have agreed with that assessment.

We have urged SNWA to pursue alternatives to future water supply needs including desalination and more aggressive conservation, but our efforts and suggestions have not been welcomed.

We supported the Nevada State Engineer's legislative proposals to address overpumped basins as proposed in SB 65 and 81 of the last legislative session. We continue to support changes in Nevada water law that recognize the need for conservation and the importance of water to sustain a healthy environment for wildlife, fish, plants, residents, and tourists.

3. What major obstacles do you believe exist to overcoming additional levels of water efficiency?

Southern Nevada Water Authority has made admirable progress in water conservation. But in the largest city of the driest state, per person water use should be the lowest in the west, and it isn't. In fact, it's about double that of many other Western cities. SNWA points out that its use is much lower once return flow is factored in, but imagine if they used 100 gallons per person per day instead of 205. With return flow they'd be the clear leader in the region and be able to support double the population on today's water use.

Ratepayers in Southern Nevada typically face across-the-board flat rate water increases, removing the conservation incentives that come with tiered rate increases. Conservation pricing works, and it funds investments in enforcement and incentive programs. Large water users shouldn't be given a "bulk rate." The mixed missions of a water authority to both sell and conserve is not lost on us, and we believe it contributes to mixed messages and actions on conservation.

The only option for increasing freshwater supplies is desalination. Outside of this, we can increase the efficiency of using our existing water resources to restore balance to stressed systems. The reuse of wastewater has challenges, but should be part of statewide conservation policies. Gray water and rainwater collection and utilization should be legal and invested in throughout the state. It was brought up in the last meeting, but the treatment and movement of water uses energy, and that energy has a water cost. Gray water systems save consumers money and save communities energy and water. More aggressive indoor conservation retrofits would mean less demand, resulting in more people being able live sustainably on the water supplies that exist today. Every locality should be setting bold yet reasonable conservation goals. Southern Nevada's is due for a revision.

The "use it or lose it" caveat embedded in Nevada water law does not provide flexibility for agricultural producers who want to conserve by pumping less in a drought crisis. Change water law to incentivize water savers and exempt them from "use it or lose it" requirements.

The evaporation rates of Lake Mead and Lake Powell are astounding. Pursuing technology to store more water underground is essential. And how about phasing out the ornamental lakes that serve no purpose for the vast majority of residents or tourists, but lose many acre feet of water to evaporation?

Nevada law allows the die-off of plants to capture the water they would use. But this extermination has consequences too, including erosion, subsidence, and fugitive dust. This policy should be re-examined to ensure we do not become overzealous in taking the water our environment needs.

Finally and foremost, it is past time for all parts of Nevada to have water-smart growth management ordinances. It is unacceptable, unsustainable and yes, unhealthy, to set no limits on growth in the desert. The public perception is that water conserved will simply be used by developers to support new growth instead of protect the environment and preserve quality of life. As in other areas, let's adapt successful approaches by other arid communities to make it work in Nevada. We should be able to, but can't, answer a simple question: how many people can today's proven water supplies and conservation techniques support?

Nobody has a spotless record on water use, but now we have enough information in front of us to make a clear choice between gambling the future of our environment and economy on growth and water theft, or showing the responsible restraint needed to guarantee that future generations can enjoy a Nevada whose character is largely preserved. We hope this Forum will help our state make the right choice.

Delaine Spilsbury
P O Box 1055
McGill, NV 89318
775-235-7557
mssquaw@hotmail.com

08/21/15

TO: NV Drought Forum

RE: Submit an Idea

Nevada needs to protect our underground clean water supply:

Industry is permitted to withdraw tremendous amounts of pure water. When the projects are completed, the resulting polluted water is dumped and can contaminate pure water.

Industry also uses great quantities of fresh water to drill underground, where it becomes contaminated. The contaminated water can mix with well water and poison our aquifers. This is simply ridiculous!

Industry also dumps poisonous used water into holding ponds resulting in poison ponds that do not go away. Industry should be compelled to purify water before it is dumped.

Also, during the Drought Forum meeting held Aug. 19 a knowledgeable person stated that there is no time limit or deadline for "Temporary" water permits for mining. This situation needs to be assessed and revised.

Please protect our water. "This is a desert, Dammit!" Thank You,

Nevada Drought Forum
Talking Points
Mike Baughman, Ph.D.; CEcD
Executive Director
Humboldt River Basin Water Authority
August 19, 2015

I. Overview of Humboldt River Basin Water Authority (HRBWA).

a. Established in early 1990's by Elko, Eureka, Lander, Humboldt and Pershing counties in response to a proposal to export in excess of 300,000 acre feet of groundwater from the upper Humboldt River Basin to the lower Carson River Basin. Related water right applications were denied by the Nevada State Engineer as being speculative in nature.
b. For the past 20 years, HRBWA member counties have continued to meet quarterly to address surface and groundwater water quantity and quality issues of common concern.

II. Humboldt River Basin Characteristics

a. Annual average flow of the Humboldt River is approximately 296,000 ac. ft.
b. There are approximately 690,000 ac. ft. of decreed surface water rights within the Humboldt River Basin.
c. Highly efficient reuse of agricultural irrigation water runoff is key to meeting demand which greatly exceeds annual average flows.
d. Annual variations in surface water flow produce economic and environmental uncertainty.
e. Approximately 469,900 acre feet of perennial groundwater yield in Humboldt River Basin.
f. Approximately 757,758 acre feet of committed groundwater rights in Basin.
g. All groundwater basins within the Humboldt River Basin have been designated as requiring special management by the Nevada State Engineer.
h. Very little unappropriated groundwater remains available, 23 of 34 groundwater basins are over-appropriated.
i. Long-term over-pumping of groundwater basins is impacting base flow of the Humboldt River.
j. Climate change is resulting in less precipitation falling as snow and greater frequency of rain on snowpack.
k. Storage in upper and middle Humboldt River Basin is not available for consumptive uses such as irrigation.
l. Storage in lower Humboldt River Basin requires adequate upper and middle-Humboldt River flow to move water to Rye Patch Reservoir.
m. During years of average and better flows, lack of upstream storage results in significant losses of water to evaporation in the Humboldt Sink.
n. Little to no storage capacity results in little to no drought reserve within the Humboldt River Basin.
o. Unpermitted consumptive use of water through evaporative losses from ever-expanding number of pit lakes is a growing problem.

III. On-Going Drought Impacts

a. Loss of soil moisture – impacts to vegetation for wildlife and domestic livestock.
b. Loss of vegetative moisture – increased risk of wildfire and changing plant compositions.
c. Loss of bank storage – reduced base flow and loss of riparian habitat.
d. Reduced progress to recovery of Lahontan Cutthroat Trout.
e. Impacts to sage grouse habitat – wildfire, invasive species, reductions in spring flow.
f. Water level declines – reduced surface water recharge of aquifers.
g. Reductions in Animal Unit Months (AUMs) of private and public land grazing (voluntary and in-voluntary reductions).
h. Significant reductions in surface water irrigated acreage (zero water delivered in Pershing County Water Conservation District during past two years).
i. Continued groundwater pumping exacerbating drought impacts to Humboldt River base flows.
j. Reduced flows and higher air and water temperatures resulting in increasing exceedance of Nevada water quality standards and ever-increasing numbers of stream segments within Humboldt River Basin being listed as "impaired" by the Nevada Division of Environmental Protection.
k. Intrabasin conflict between Senior and Junior surface irrigation water rights holders; between surface and groundwater irrigation right holders and between upper, middle and lower Humboldt River water rights holders.
l. Economic (employment and income) and fiscal (state and local tax revenue) impacts resulting from reduction in agricultural production, Lovelock area particularly hard hit.
m. Economic and fiscal impacts resulting from reduced recreation at South Fork and Rye Patch reservoirs in particular.

IV. Drought Recovery/Management

a. Two to three years of above-average snowpack required.
b. Design, implement and institutionalize a comprehensive and cost-effective cloud-seeding program (with generators located in upper, middle and lower Humboldt River Basin) for FY 16 and beyond.
c. Curtailment of groundwater pumping to facilitate recovery of over-pumped groundwater basins.
d. Design and construct additional storage capacity – new reservoirs and/or aquifer storage and recovery, particularly in upper and middle Humboldt reaches.
e. Compensation of lower basin senior surface water right holders by upper basin junior surface water rights using water not otherwise deliverable to lower basin.
f. Design and implement economic and fiscal incentives to assist agricultural producers to maintain agricultural production capacity (an aggressive agricultural industry retention initiative is needed, perhaps spearheaded by the Governor's Office of Economic Development).
g. Condemnation of water rights should not be an option.
h. Prohibit the filing of new supplemental groundwater applications which are proximate to decreed surface water sources.

i. Prohibit the filing of change applications to move existing supplemental rights proximate to decreed surface water sources.

For Additional Information:

Mike Baughman, Ph.D., CEcD
Executive Director
Humboldt River Basin Water Authority
(775) 315-2544
mikebaughman@charter.net

TO: Leo Drozdoff, Chairman, Nevada Drought Forum

FROM: Steve Bradhurst, Executive Director, Central Nevada Regional Water Authority

DATE: August 17, 2015

RE: Central Nevada Regional Water Authority statement to the Nevada Drought Forum

On behalf of the Central Nevada Regional Water Authority I would like to thank you for inviting the Authority to participate in the August 19, 2015 Nevada Drought Forum Sector Meeting. The purpose of this statement is to 1) provide the Nevada Drought Forum information on the Authority, 2) bring attention to Nevada's water supply problem, and 3) respond to the three questions the Forum posed to the Authority.

What is the Central Nevada Regional Water Authority?
The Central Nevada Regional Water Authority is a unit of local government established by agreement of its member counties in the fall of 2005. The agreement is pursuant to the provisions of Nevada's Interlocal Cooperation Act (Chapter 277 of NRS).

The Authority has eight member counties (Churchill, Elko, Esmeralda, Eureka, Lander, Nye, Pershing and White Pine Counties), and together they cover approximately sixty three percent of Nevada's land area. The Authority has a twenty three member board of directors, including ten county commissioners and six former county commissioners.

The Authority's conferred functions include the following: 1) be a forum to discuss and formulate positions on critical water and water-related issues pertaining to the eight member counties, 2) provide technical and policy advice necessary for sound water resource decisions, 3) assess and respond to proposals/plans that would export water resources from member counties, and 4) facilitate the development and implementation of a groundwater monitoring program in member county water basins. The Authority is not in the water utility business (wholesale and/or retail). Given the Authority's large geographic footprint, and the fact that most Nevada water issues impact urban and rural Nevada, the Authority is by necessity interested in all Nevada water issues (federal, state and local).

Are we "whistling past the graveyard?"
"Whistling past the graveyard" is when you do something to keep your mind off your worst fear. Nevada's worst natural resource fear has to be the real possibility of a water supply crisis in the near term (within the next 30 years). The Nevada Drought Forum is "doing something" in the water arena, but it is not addressing Nevada's worst natural resource fear. The Authority feels a Nevada water supply crisis will be caused by five interrelated realities: 1) limited traditional in-state water supply sources (surface water and groundwater), 2) drought, 3) climate change, 4) population growth, and 5) indifference or inattention.

Since 2008, the Central Nevada Regional Water Authority has asked the Nevada Legislature to consider Nevada's limited and possibly diminishing water supply a critical issue for Nevada's economic well-being, valued quality of life and natural environment. In the 2013 Nevada Legislative Session the Authority asked the Legislature, via Assembly Bill 301, to have the Legislative Committee on Public Lands conduct a study during the next interim (2014) on alternative sources of water for Nevada communities. The Authority's testimony on AB 301 included a statement that a number of Nevada communities do not have an identified, sustainable water supply within their control to accommodate projected population growth over the next 30 years. AB 301 was not approved by the 2013 Session. Fortunately, AB 301 became AB 198 in the 2015 Session, and AB 198 was approved by the Legislature and signed by Governor Sandoval. Therefore, it is hoped during the next year the Legislative Committee on Public Lands will conduct a study that will focus on the real possibility of a Nevada's water supply crisis in the not-to-distant future, including what to do about it.

The AB 198 study, the Nevada Drought Forum and the Nevada Drought Summit should be the foundation to have a meaningful statewide Nevada water future discussion, as well as a follow-on development of a Nevada water future strategy. The Central Nevada Regional Water Authority recommended a Nevada water future discussion and strategy in the spring of 2014. Please see the attached Central Nevada Regional Water Authority April 2014 position paper entitled "Is It Time for a Nevada Water Future Discussion and Strategy?" It is critical that the water future discussion and strategy involve all interested parties (e.g., State of Nevada, Nevada Legislature, Nevada's local governments, Nevada's business community, the environmental community and the general public).

The Authority's response to the three questions posed by the Nevada Drought Forum.
The first question is *"How has the drought affected the Central Nevada Regional Water Authority*?" The short answer is the drought made the Authority more acutely aware that Nevada is facing a water supply crisis, maybe sooner than thought. Climate change, population growth and limited traditional in-state water supply sources would eventually make water supply a critical issue in Nevada, but the prolonged drought in the Colorado River Basin and the Great Basin should convince state and local government decision-makers it is time to address the water supply problem now. Another impact of the drought that concerns the Authority is the thinking on the part of some local government officials and entrepreneurs that the solution to the water supply problem in Nevada's urban areas is groundwater from rural Nevada. At a minimum, it is expensive, controversial and risky for a Nevada urban area to stake its future on unrevealed and speculated groundwater from rural Nevada.

The second question posed by the Nevada Drought Forum to the Authority is *"What has the Central Nevada Regional Water Authority done to respond to the drought?"* Most certainly the Authority's efforts to have state decision-makers focus on Nevada's impending water supply crisis, via AB 301, AB 198, and the Authority's April 2014 position paper is a response. Also, in 2009 the Authority signed a memorandum of understanding with two counties in Utah and three counties in California to hold an annual Great Basin Water Forum to discuss Great Basin

water issues. The Authority hosted the first five Great Basin Water Forums (2009, 2010, 2011, 2012 and 2013), and the focus of the Forums was on water supply problems in the Great Basin. In 2014 the Authority held a joint meeting with the Nevada State Land Use Advisory Council to hear how the states of Arizona, California and Utah are addressing their impending water supply problem. These states have acknowledge a projected gap or shortfall between water supply and demand in the not-to-distant-future, and they are doing something about their worst natural resource fear.

The third question posed by the Nevada Drought Forum to the Authority is *"What major obstacles exist to overcoming additional levels of water efficiency in your region?"* In light of the preceding statements the question to the Authority should be "What major obstacles exist to addressing Nevada's water supply problem?" The short answer is indifference or inattention. The famous English author G.K. Chesterton wrote "Of all the sins, indifference is the worst." Nevadans, as well as most Americans, have a dysfunctional relationship with water; that is, clean drinking water is taken for granted. It is possible there will come a time when it will be hard to ignore Nevada's water supply problem. And, at such a stressful time sound decision-making will be difficult. The Nevada Drought Forum, the Nevada Drought Summit and the AB 198 study should provide some momentum in addressing Nevada's water supply problem; assuming these efforts are more than just a feel good, bureaucratic exercise. State and local government decision-makers need to acknowledge there is a real possibility of a water supply problem in the future, and they need to be actively involved in addressing the problem. Another obstacle to addressing Nevada's water supply problem is the less than honest statement made by some that a community has plenty of water because it has water rights to surface water and/or groundwater that will accommodate growth. Water rights do not equal wet water. Communities should make every effort to develop land use plans based on identified and sustainable water resources within their control, not on the use of all paper water rights and/or wished-for new water supplies.

Closing recommendation.
In closing, the Central Nevada Regional Water Authority recommends the Nevada Drought Forum include a discussion of Nevada's water supply problem at the September Nevada Drought Summit. It is time for state and local government decision-makers to discuss the problem and not just whistle it away.

Attachment

c: Central Nevada Regional Water Authority Board of Directors

Is It Time for a Nevada Water Future Discussion and Strategy?

By

Central Nevada Regional Water Authority

April 2014

BACKGROUND

On May 2, 2003 the U.S. Department of Interior released a report entitled "Water 2015: Preventing Crises and Conflict in the West." The report states "Today, in some areas of the West, existing water supplies are, or will be, inadequate to meet the demands of the people, cities, farms, and the environment even under normal water supply conditions." The report says five interrelated realities of water management are creating crises in the West: 1) explosive population growth, 2) water shortages exist, 3) water shortages result in conflict, 4) aging water facilities limit options, and 5) crisis management is not effective." Today, it appears two additional interrelated realities exist, and they are extended drought and climate change.

Over the last few years many articles have been written about the existing and/or impending water supply crisis in the West. The titles of a few of these articles are: 1) "Warning: Water policy faces an age of limits," 2) "Growth top threat to water supply," 3) "Dramatic water changes coming to the Southwest," 4) "Study: Climate Change May Dry Up Important U.S. Reservoirs Like Lake Powell and Lake Mead," 5) "Where Will All the Water Come From?," 6) "Worst Drought in 1,000 Years Could Begin in Eight Years," and 7) "A new report confirms what we should already know: The Colorado River is in deep trouble."

The new report that confirms the Colorado River is in deep trouble is the December 2012 U.S. Bureau of Reclamation report entitled "Colorado River Basin Water Supply and Demand Study." The Study's primary finding is significant shortfalls between projected Colorado River water demands and supplies will likely exist in the coming years. The median shortfall is projected to be 3.2 million acre-feet per year by 2060, and the worst case shortfall is projected to be close to 8 million acre-feet per year by 2060. To put this in perspective, consider the fact that the average Colorado River flow of late has been approximately 15 million acre-feet per year, and the Law of the River allocates 17 million acre-feet of Colorado River water per year to seven Colorado River Basin states and other

parties (including Mexico). Therefore, on paper there is already a shortfall between Colorado River water allocation and supply.

At the December 2013 Colorado River Water Users Association conference in Las Vegas the Secretary of Interior, Sally Jewell, said decreasing Colorado River water supplies is the "new normal on the river that we all had to deal with."

If Secretary Jewell's statement and the Bureau of Reclamation's report are accurate, or even close to accurate, then Las Vegas Valley is facing a water supply dilemma. Las Vegas Valley receives 90 percent of its water supply from the Colorado River, and it appears there may be significant curtailments in Colorado River water to the Valley in the years to come. In addition, Nevada's traditional in-state sources of water – surface water and groundwater – are at best limited, and at worst diminishing. Also, it is clearly expensive, controversial and risky for Nevada's urban areas to stake their future on unrevealed and uncertain groundwater from rural Nevada.

The Central Nevada Regional Water Authority feels all of Nevada is facing a water supply crisis. In fact, since 2008 the Authority has asked the Nevada Legislature to consider Nevada's limited and possible diminishing water supply a critical issue for Nevada's economic well-being, valued quality of life and natural environment. In the 2013 Nevada Legislative Session the Authority asked the Legislature, via Assembly Bill 301, to have the Legislative Committee on Public Lands conduct a study during the next interim (2014) on water supply for Nevada communities. The Authority testified that Nevada is the most arid state in the union, and the Colorado River Basin and the Great Basin have experienced severe drought over the last decade. For example, 2000 to 2013 was the driest 14-year period in the 100-year historical record for the Colorado River Basin. Also, some scientists believe the Sierra Nevada snowpack that is the basis for western Nevada's water supply could decease as much as 40 percent by 2050. The Authority's AB301 testimony included a statement that there is no question that a number of Nevada communities do not have an identified, sustainable water supply within their control to accommodate projected population growth over the next 30 years. The Authority asked that the AB301 study focus on alternative sources of water for Nevada communities since Nevada's surface water resources are scarce and fully appropriated, and its groundwater resources are scarce, uncertain and fully appropriated in many areas. Alternative sources of water include water

conservation, water recycling, desalination, conjunctive use and rain water capture. AB301 passed the Assembly by unanimous vote of approval, but it was not voted on by the Senate.

As would be expected, the States of Arizona, California, Colorado and Utah are also confronted with projected water supply shortfalls in the near future. These states are actively addressing the problem by way of programs focused on ensuring a secure water future. In Arizona, the Arizona Department of Water Resources, in partnership with Arizona's water community, produced a comprehensive water supply and demand analyses that identified a potential water supply and demand imbalance if no action is taken to secure future water supplies. In an effort to deal with the projected imbalance, Arizona Governor Jan Brewer asked the Arizona Department of Water Resources to conduct a comprehensive analysis of how to address the projected imbalance. The Department did that, and in January 2014, the Department released a report entitled "Arizona's Next Century: A Strategic Vision for Water Supply Sustainability."

The State of California's program to address a projected water supply shortfall is called "California Water Action Plan," and a draft was released in late 2013. The State of Colorado's program to address a projected water supply shortfall is called "Colorado's Water Plan," and the first draft of the plan was also released in late 2013. The State of Utah's program to address a projected water supply shortfall is called "Utah's Water Future – Developing a 50-Year Water Strategy for Utah." Utah Governor Gary Herbert initiated the program in the spring of 2013. He said "We are at a crossroads for our future here," and he cited the challenges of ensuring adequate water supplies in the face of demand brought by population growth, the outdoor economy and environmental concerns. In July and August of 2013 the Utah water future program had eight listening sessions, held across the state, to begin mapping out a water strategy for the future. In addition to public comments at the listening sessions, the State of Utah received more than 800 online comments during the summer. On October 30, 2013 Governor Herbert convened a water summit to review what the public said about Utah's water future and announce the next steps in the process to develop the 50-year water strategy. At the water summit Governor Herbert announced the creation of a 38-member Utah Water Strategy Advisory Team to help develop the 50-year water strategy.

At the December 13, 2013 Central Nevada Regional Water Authority meeting the Authority received a presentation from Steve Erickson, a member of the Utah Water Strategy Advisory Team. He said the Team will solicit and evaluate potential water management strategies, frame water management options for public feedback, and develop a set of recommended strategies to be considered by the State of Utah as part of the 50-year water strategy. Mr. Erickson said the critical component of the Utah water future program has been the effort by Governor Herbert to involve the public in the program, and the tremendous response by the public to participate in the program.

RECOMMENDATION

The question that begs an answer is what can be done to avoid a Nevada water supply crisis stemming from population growth, limited in-state water resources, drought and climate change? Ensuring a secure water future for the State of Nevada has to be a top priority for the State, the Nevada Legislature and Nevada's local governments. The Authority feels the State of Nevada, the Nevada Legislature, Nevada's local governments, Nevada's business community, the environmental community and the public should come together in a partnership to develop a meaningful statewide water supply strategy.

At the December 13, 2013 Central Nevada Regional Water Authority meeting the Authority asked its executive director to look into the development of a Nevada water future program similar to the Utah water future program. In early 2014 the Authority's executive director discussed the concept of a Nevada water future program with the directors of eight Nevada water entities and asked them if they would be amenable to attending a meeting to discuss the merits of a Nevada water future program. The response was yes. The Authority feels a possible next step is to have a meeting to 1) receive presentations from the States of Arizona, California and Utah on their water future programs, 2) receive presentations from water resource research organizations (e.g., Bureau of Reclamation, USGS, Natural Resources Conservation Service, etc.) on water supply challenges facing Nevada, and 3) discuss whether or not to have a Nevada water future program, and if there is support for the program, develop a program outline. For example, a Nevada water future program could include the following steps: 1) initial discussion of Nevada's water future and a Nevada water future program at a water future meeting, 2) listening sessions throughout the state to discuss

Nevada's water future and potential water management strategies, and 3) the development of a Nevada water future strategy by a water strategy advisory team for consideration by the State of Nevada, the Nevada Legislature and Nevada's local governments.

CLOSING COMMENT

The answer to the title of this paper is yes; that is, it is time for a Nevada water future discussion and strategy. One should keep in mind the old Chinese proverb: "If we are not careful we will end up where we are going." Also, it has been said one should not waste a crisis since it presents an opportunity to do good.

NOTICE OF PUBLIC MEETING
of the
NEVADA DROUGHT FORUM

MONDAY, SEPTEMBER 28, 2015 – 8:30 AM

The Nevada Drought Forum will conduct a public meeting on MONDAY, SEPTEMBER 28, 2015, beginning at 8:30 a.m. at the Nevada Legislative Building, Room 4100, 401 South Carson Street, Carson City, Nevada, and will video conference to the Grant Sawyer State Office Building, Room 4401, 555 East Washington Avenue, Las Vegas, Nevada, and Great Basin College, Berg Hall Conference Room, 1500 College Parkway, Elko, Nevada. The public is invited to attend at all locations.

NOTICE

(1) Items may be taken out of order; (2) Two or more items may be combined; (3) Items may be removed from the agenda or delayed at any time; (4) Public comment may be limited to three minutes per person at the discretion of the Chair; comment will not be restricted based on viewpoint; (5) Reasonable efforts will be made to assist and accommodate physically handicapped persons desiring to attend the meeting. Please call (775) 684-5670 in advance so that arrangements for attendance may be made.

AGENDA

Action may be taken only on those items denoted "For possible action."

1. Call to Order & Roll Call – *For possible action*

2. Public Comment

Public comment will be taken at the beginning and end of the meeting, and may be taken at the discretion of the Chair on agenda items listed for possible action. Public comment may be limited to 3 minutes per person at the discretion of the Chair. Comment will not be restricted based on viewpoint. No action will be taken on any matters raised during the public comment period that are not already on the agenda. Persons making comment will be asked to begin by stating their name for the record.

3. Review and Consideration of Approval of Agenda – *For possible action*

4. Review and Consideration of Approval of Minutes – *For possible action*

A. Approval of minutes from the meeting held August 19, 2015.

5. Presentation on Potential Federal Legislation – *Discussion*

The Forum will receive a presentation from Samuel Crampton, Regional Representative for U.S. Senator Dean Heller, regarding potential federal legislation related to the drought.

6. Forum Members Discuss Information Generated at July and August Drought Forum Meetings - *Discussion and Possible Action*

The Forum will discuss information presented at the July 17, 2015, and August 19, 2015, meetings of the Nevada Drought Forum, including comments received from sectors such as Gaming and Hospitality, Mining, Development, Energy, Commercial and Industrial, Tourism and Recreation, General Business and Agriculture, as well as from Tribal Interests, Non Governmental Organizations, Public and Private Water, Water Authorities and the General Public.

7. Forum Members Discuss Information Generated at the Governor's Drought Summit – *Discussion and Possible Action*

The Forum will discuss information presented at Governor Brian Sandoval's Drought Summit held September 21-23 in Carson City, Nevada.

8. Forum Members Discuss Additional Information and Ideas – *Discussion and Possible Action*

The Forum will discuss additional information and ideas presented to the Drought Forum, as well as possible recommendations individual Forum members wish to make based on information they have been provided and/or their professional experience.

9. Forum Members Discuss Drought Information Gathered in Relation to Recommendations of the Western Governors' Association Drought Forum – *Discussion and Possible Action*

The Forum will discuss Nevada information presented at Drought Forum Meetings and the Governor's Drought Summit relative to the seven key themes of the Western Governors' Drought Forum: data and analysis; produced, reused and brackish water; forest health and soil stewardship; water conservation and efficiency; infrastructure and investment; working within institutional frameworks; and communication and collaboration.

10. Review of Discussion, Future Meetings and Agenda Items – *For Possible Action*

The Forum will review items discussed and identified for possible inclusion in its report, and also identify areas for further consideration and staff work. The Forum will also discuss scheduling a future meeting.

11. Public Comment - *Discussion*

Public comment will be taken at the beginning and end of the meeting, and may be taken at the discretion of the Chair on agenda items listed for possible action. Public comment may be limited to 3 minutes per person at the discretion of the Chair. Comment will not be restricted based on viewpoint. No action will be taken on any matters raised during the public comment period that are not already on the agenda. Persons making comment will be asked to begin by stating their name for the record.

12. Adjournment – *For action*

This notice and agenda has been posted on or before 9 a.m. on the third working day before the meeting at the following locations:

(1) Nevada State Capitol, 101 North Carson Street, Carson City, Nevada
(2) Legislative Building, 401 South Carson Street, Carson City, Nevada
(3) Grant Sawyer Building, 555 E. Washington Street, Las Vegas, Nevada
(4) Department of Conservation & Natural Resources, 901 S. Stewart Street, Carson City, Nevada
(5) Department of Agriculture, 405 South 21st Street, Sparks, Nevada
(6) Department of Wildlife, 1100 Valley Road, Reno, Nevada

Notice of this meeting has been included on the Nevada Public Notices website at http://notice.nv.gov/ *Notice of this meeting was also posted on the Nevada Drought Forum website at http://drought.nv.gov. Please contact Andrea Sanchez-Turner at 775-684-2705 (direct) or asanchez@dcnr.nv.gov to obtain support material for the agenda. Any materials will also be posted at http://drought.nv.gov.*

We are also pleased to make reasonable accommodations for individuals with disabilities who wish to attend the meeting. If special accommodations or assistance at the meeting are requested, please notify Andrea Sanchez-Turner in writing at 901 S. Stewart Street, Suite 1003, Carson City, Nevada, 89701, or by email at asanchez@dcnr.nv.gov, no later than two (2) working days prior to the scheduled meeting.

Summary of Minutes of the

Nevada Drought Forum

Meeting of September 28, 2015, 8:30 AM

Nevada Legislative Building, Room 4100
401 South Carson Street
Carson City, NV

Video Conference:

Grant Sawyer State Office Building, Room 4401
555 East Washington Avenue
Las Vegas, NV

Members Present:

Leo Drozdoff, P.E., Chair

John Entsminger, Vice Chair

Dr. Doug Boyle

Dr. Justin Huntington

Jason King, P.E.

Dr. Mark Walker

Jim Barbee

Caleb S. Cage

Forum Staff Present:

Micheline Fairbank, Senior Deputy Attorney General

Andrea Sanchez-Turner, Administrative Support

BEGIN SUMMARY MINUTES

1) Call to order and Roll Call

Chair Drozdoff called the meeting to order at 8:42 a.m. Andrea Sanchez-Turner conducted the roll call.

Chair Drozdoff reviewed the meeting process and the goals of the meeting.

2) Public Comments: (Discussion)

Carson City Public Comment:

Jonas Sipaila, Evaporative Control Systems (ECS), provided background on his company. He spoke about Truckee Meadows receiving 10,000 acre feet of distilled water (over three billion gallons), however because of outdated regulations, policies, etc., the water became contaminated and was dumped in the Truckee River where it went to Pyramid Lake perhaps creating a rise of a ¾ inch in the lake and

ultimately the water evaporated. The reality of water management is the constancy of the plan. The dependence on snowpack is unreliable. He spoke about Community Water Harvesting, capturing rainwater and the legality of this process. There are technologies available to capture, filter and store captured rainwater for reuse.

Tina Nappe, spoke about population growth in Nevada. As a state, Nevada has allocated and over-allocated the "easy" water and is now focused on transferring existing uses to serve an anticipated population increase. This can be done partly by purchasing ranches and by raising the costs on domestic water users. More wells can be built and existing wells can be deepened. She spoke about the Washoe Valley and how it has changed because of the drought and low snowfall. Agricultural lands are the receivers of critical surface water and many groundwater rights. Many wildlife species are now dependent on agricultural waters and lands. Purchases for agricultural water rights to serve urban homes will continue and further erode wildlife values. She asked Forum members to include nature in future plans as they move forward.

David Barrett, Dedicated to You, spoke about a project that his organization is bringing to Nevada. It concerns indoor agriculture. This type of business is growing rapidly. This industry offers solutions when it comes to technology. There is technology currently being used in greenhouses that will reduce water consumption by 80 percent. He spoke about the ability to store and capture rainwater, which is currently illegal in Nevada. This law needs to be changed. If they could capture rainwater, they would not need to pump from reservoirs or underneath the ground-table. Mr. Barrett's system is a closed looped system and does not contaminate the groundwater. Once they get water into the system, they are constantly using it and recirculating it. This is what they would like to see and encourage in the State of Nevada. Zoning laws need to be reevaluated for this to be successful.

Las Vegas Public Comment:

Mike Baughman, Humboldt River Basin Water Authority, spoke about accomplishing some short-term drought recovery in the Humboldt River Basin. In the lower part of the Basin there have been no deliveries of water to senior rights holders or surface rights holders for the past two years and they are looking at the possibility of an El Nino event this winter. If this does happen and there are flood flows the water typically moves through the system quickly to avoid damage from flooding and ends up out in the Humboldt sink and evaporates. Mr. Baughman's recommendation to the Forum is to come up with a short-term operating plan for the river that would allow diverted flows outside the normal irrigation season. Rye Patch Reservoir would be filled quickly early in the season to provide storage. There would be diversions of water off the river and water spreading out into the irrigated lands. Perhaps this should start with senior rights holders to allow the soil moisture to be increased, because if it has not been irrigated for two years, it will take extra water to flush out the salts that have accumulated in the soils. This would help with drought recovery and would be a short-term operating plan for the river that would allow them to do some things that they may not be able to do under the Decree as it is specifically laid out.

Member King asked Mr. Baughman if he would petition the Decree Court to move forward with this plan. Institutionally and legally, Mr. Baughman noted, he is not sure how to proceed, however, there is no doubt they could figure it out and move forward.

A full account of public comments were captured in the audio recording, available on the Forum's website (*www.drought.nv.gov*).

3) Review and Consideration of Approval of Agenda (Action Item)

Member Barbee moved to approve the agenda; second by Member Huntington; motion passed unanimously. ***ACTION**

4) Review and Consideration of Approval of Minutes (Action Item)

Member Barbee moved to approve the minutes from the August 19, Drought Forum meeting; seconded by Member Walker; motion passed unanimously. ***ACTION**

5) Presentation on Potential Federal Legislation (Discussion)

Samuel Crampton, Senator Dean Heller's Office, spoke about working with local stakeholders to find potential solutions via federal legislation for some of the problems faced by Nevada, including drought. There are two of pieces of competing legislation relative to drought in the United States Congress. The House passed the Western Water and American Food Safety Act. On the Senate side, the California Delegation, Senator Dianne Feinstein and Senator Barbara Boxer, has a piece of legislation focused on California. Senator Lisa Murkowski of Alaska is offering a hearing on this piece of legislation as long as the California Delegation is willing to take amendments for other states. Senator Heller's Office is reaching out to stakeholders to garner possible solutions to ensure Nevada has an opportunity to be a part of this legislation. Mr. Crampton spoke about funding and the possible bureaucratic red tape that may be an obstacle to receiving money. The Senator's Office would like to know about these obstacles and perhaps they can expedite a process to assist with this issue. Senator Murkowski would like to have the legislation done in October. Senator Heller's deadline for receiving comments and suggestions for this legislation is no later than the second week in October.

Member Walker asked if the Senator's Office had received any ideas so far. Mr. Crampton noted they have received some responses as a result of an email that was distributed via a listserve.

Chair Drozdoff noted that as the Drought Forum works through their process for recommendations to the Governor, there may be some ideas put forward that could be included in this federal legislation.

Mr. Crampton noted they are also working with federal agencies to come up with ideas.

Member King asked if any of the suggestions received so far have included the idea of storage and getting some funds earmarked for storage in Nevada. Mr. Crampton acknowledged it is difficult to get funding. There have been a number of potential solutions suggested, including water banks and getting water into more controlled storage. Nevada has capacity. It is just not being filled right now. There have been recommendations that there is a need to increase funding through USDA and NRCS programs for updating water delivery systems, however, this is a slow process.

A full account of the discussion is captured in the audio recording, available on the Nevada Drought Forum's website (*www.drought.nv.gov*).

6) Forum Members Discuss Information Generated at July and August Drought Forum Meetings (Discussion and Possible Action)

Chair Drozdoff described the process for listing recommendations on flipcharts for possible inclusion in the final report to the Governor.

Member King proposed Water Law be listed. He noted he supports prior appropriations and believes Nevada Water Law is solid, however, he does believe there needs to be some modernization done with it. He proposed adding "Water Law Issues" to the flipcharts. There was discussion about this. Member Barbee suggested listing items as they come up and then the Forum can come back to them to address them more in depth.

Member King proposed the following items be added under Water Law Issues: "Use It, or Lose It," exploring the idea of capturing rainwater, critical management areas (CMAs)/Groundwater Management Plans (GMAs), and the surface-water/groundwater relationship.

Member Huntington noted the idea of having the ability to spread water when you have it should be explored more. This will involve federal decrees. Chair Drozdoff advised in reference to this item, "Decrees" should go under the heading "Other".

Member King noted storage is another topic that needs to be addressed. Chair Drozdoff stated this should also be listed under "Other."

Vice-Chair Entsminger suggested the Forum come up with categories, suggesting sub-categories for Water Law Issues. There was discussion the name of categories and what should be listed under each. The categories included: Over-appropriated Basins, Other Water Law (3 M Plans, idea of defining terms (will help with the effort of flexibility), CMAs and Use It, or Lose It (should also be listed under Over Appropriated Basins), Drought Response and Other Authorities to Respond to Drought.

Member Cage noted the Nevada Division of Emergency Management (NDEM) is a coordinating agency not a response agency. The NDEM commonly helps jurisdictions throughout the state through a grants process that they administer from FEMA or the Department of Homeland Security to conduct studies, training, and other research. He suggested having the NDEM identify grant opportunities for resiliency plans for drought and water and have NDEM engage with the Department of Homeland Security to conduct some critical infrastructure analysis as it relates to water throughout the state to see what Nevada's threat assessment is for manmade or natural disasters, identifying Nevada's preparedness level and ability to respond to the threat.

There was discussion about the issues being brought up, including the idea of flexibility which is supported by some, but feared by others, and how to organize them.

Water Law is not limited to state law, but could include federal law, funding programs, etc. Member Walker proposed adding "Education" concerning helping others understand the Nevada Water Law and informing others of what is available for relieve during times of need.

Member Barbee noted there are federal programs, grants and subset programs available for funding. Department of Agriculture has seen a tremendous amount of use of them. The difference in sizes of operations on the capital investment and the pay off in capital investment affects the ability to bring in technology. There are agriculture investments on the state side through general fund that could help some of the smaller producers be more effective in efficiencies. Member Walker stated there are federal programs available, however, one of the limitations in getting the programs to the people who need them is income.

Chair Drozdoff noted there were a few points brought up during the discussion that should be discussed further: technology transfers, education to make information known, what can be done to compete better in existing programs, and there is money that can be spent to increase efficiency for smaller farms. "Federal Programs" became a category for the flipcharts with areas for enhancement and ability to

compete better with the existing programs listed underneath. Member Barbee noted it would "Education and Outreach" to better inform those producers that exist of the programs that currently exist. He also stated that the creation of a state granting system that could be utilized to enhance operations and bring efficiency in needs to be discussed.

Chair Drozdoff brought up the topics of "Homeowners' Associations" (HOAs), "Water Reuse," and "Wastewater Affluent." Member Walker noted the topic of Homeowners' Associations should be broader and perhaps called "Urban Residential Water Use."

Member Boyle suggested the topics "Defining Drought," "Drought Monitor," and "Predicting Drought." Defining Drought should include: identifying and communicating drought. The Drought Monitor is an operational product and a good way to state the current conditions of a drought. Although it has challenges, it is the best tool available and is being linked to policy and it is important to make sure it as accurate as possible. Under Drought Monitor the topics are: is it being used correctly, are we spending as much time as we need given its importance, what does the drought monitor represent in terms of drought conditions (subcategories: vegetative versus hydrologic drought, policy implications, drought declarations, grazing restrictions, opportunity to develop other tools in addition to the drought monitor that federal agencies can use).

Member Huntington noted the importance to identify how a drought is declared in Nevada. It is based upon the USDA, which is based upon Drought Monitor conditions and time. There was discussion on these topics and why they should be included. Member Huntington stated the tools have been developed, however, we need to educate people on them. Member Barbee suggested the recommendation that the current drought monitoring system be expanded to also include, at a minimum, multiple indicators of drought (e.g. vegetation and hydrologic). Member Walker proposed adding a topic about trying to make the best use of on-the-ground observations by people who are qualified to assess vegetation condition. Member Boyle noted this should include the individual farmers and ranchers as well. Chair Drozdoff noted this topic may be critically important. Member Boyle stated there is a need to better communicate and educate stakeholders and decision makers on some basic weather and climate issues. Also, there is an idea of a drought early warning system.

Member Huntington spoke about the National Integrated Drought Information System (NIDIS) and an offer to expand what they are doing in California in terms of the early warning system called the DEWS (Drought Early Warning System). Chair Drozdoff stated he would prefer developing a Nevada early warning system that works. Member Huntington noted the intent is to have a Nevada DEWS and not just an expansion of ongoing efforts in California. The topic "DEWS" was added to the flipcharts. Member Boyle noted he would like the DEWS to be based upon three impacts: Hydrologic (irrigation for crops), Vegetation (rangeland) and the Impact to the Municipal, Industrial and Residential Water Supply. Member Huntington added Seasonal Forecasts, Funding, Outreach and Education.

Member Drozdoff stated a website could help be a conduit of the things being discussed by the Forum, including communication, technology transfer, etc. "Website" was listed on the flipcharts. Member Walker noted there are a few good sources on drought, but the challenge is how to get people to use them. This idea was added under the Website list.

Member Drozdoff stated another category is Additional Monitoring. There was discussion on this with Member Huntington stating there needs to be more monitoring/weather stations to be able to subdivide drought into subcategories. The weather stations could be listed as different categories, Cooperative Observer Weather Stations, Agricultural Weather Stations, Snotel/High Elevation Weather Stations, Soil Moisture, Streamflow and Groundwater. There was discussion on adding weather stations to elementary schools.

The Forum discussed the topic of Education with Member Barbee suggesting the Forum identify a high level message that should be delivered statewide and look at how to spread this message across different educational boundaries.

Member Walker noted the need to educate the judges and lawyers on how to understand Nevada Water Laws. This should include enhancing additional programs the currently exist. He also mentioned sharing success stories from industries to educate others on how to conserve. Member Walker discussed using the education system to get information out about water and voiced his concern that some educational materials may not be tailored for Nevada's climate. He suggested adding a topic on how to adapt what material is available for use in the State of Nevada. The topic listed under Education is: need to adapt the best curricula for use in K through 12 to look like Nevada.

Chair Drozdoff noted other topics for the flipcharts: "Areas to Augment Water" (desalinization and cloud seeding) and "Water Meters" (state agencies in a position to lead, areas in the state that don't have water meters that could). Member Boyle noted the unbundling of water rights should be added to the list and the impact of drought financially on Nevada. Member King clarified that "Reuse" should include: recharge of affluent.

Chair Drozdoff offered an opportunity for Public Comment.

Carson City:

Steve Walker spoke about federal programs particularly in reference to agriculture enhancement and specifically to increase efficiencies. He spoke about Conservation Districts. He noted the federal government helps those who help themselves. He recommended this message be shared with the Conservation Districts and agricultural producers. If they provide seed money this is the best access to the USDA, NRCS money.

Mr. Barrett noted the water laws with respect to Use It or Lose It and storage are paramount in his opinion. Using water and metering of water resources is also important. He also noted that capital is drawn to where the best returns are. Education is very important.

Tim De Turk, Douglas County Utilities, stated the future of our children should be included in the discussion the Forum is currently having. Use It or Lose It is an oxymoron and encourages waste. The hydrologic cycle can be used to benefit the situation. Ecosystems can be created to benefit everyone. He encouraged the Forum to recommend the identification of areas that will have surplus water that may be collected, such as floods, then identify the unused aquifer type basins or storage facilities to utilize them to collect floodwaters or surplus waters. He noted that conveyance is a problem. The creation of programs that cost dollars should not be the goal. Water meters for public systems and low flow toilets should be implemented.

Cathy Bowling spoke about her appreciation of the comments in regard to Education. She is concerned about the next generation. Our youth does not understand how important the current drought is. She recommended the Forum work with the Nevada Department of Education to provide better courses to be incorporated into the schools, especially at the high school level. She also spoke about Homeowners' Associations stating they should not be grouped with urban residential users as they could be abusive to their residents. They make requirements to use water that is not being used in the most beneficial way.

Chair Drozdoff reviewed the listed items on the flipcharts.

Member Walker spoke about urban residential water use. He noted the Southern Nevada Water Authority (SNWA) has a great plan in place and people are taking advantage of the opportunity. In northern Nevada, homeowners have little contact with their own sprinkler/irrigation systems. He recommended the topic of "Homeowner Education" be added to the list. There is a simple message, reduce your water usage by 10 percent. He mentioned a number of opportunities from SNWA.

Chair Drozdoff clarified his idea on HOAs concerns where their authority lies to require water use and how to address it. Vice-chair Entsminger stated that during a past legislative session there was a change to NRS to prohibit HOAs from requiring spray irrigation. It is currently in state law that new HOAs could not require that. However, concerning CCNRs that existed prior to this change in state law are not bound by that ruling and there are issues of legislatively violating contracts, and property rights, etc. It would be impossible to change this without some significant legal battles.

Vice-chair Entsminger spoke about desalination noting that it is listed in the SNWA water resource portfolio under the Future Resources category. He described what SNWA has done with this issue. They are in a situation right now where they do not need the water. They will not work on this until their community needs it. He is not sure what this recommendation to the Governor would look like. He also noted that in regards to cloud seeding, SNWA has participated with other states in funding this. If you get a good system running through, cloud seeding will add 10 to 15 percent to the snowpack, however, you need the weather systems to move through. As a drought measure, you probably will not get a lot of water out of it during drought years as you do not have the weather systems moving through to utilize it. You can use this during good weather years to store water.

Member King asked Vice-chair Entsminger if the power costs were greatly reduced for desalination and it did not have to rely on gas-fired power plants, would it become a bigger part of SNWA's portfolio. Vice-chair Entsminger noted that even with the current technology they believe that over the intermediate term adding desalination to their portfolio is realistic. The more the costs can be driven down, the more attractive it will be, however, you will have three significant challenges: power, because of physical location, what to do with the salt, and the need for a partner to take direct delivery of desalinated water. It will take some time to bring all three of the variables in line. The rate base in southern Nevada will support desalination at the appropriate time. They will not want to see an increase in rates until SNWA verifies there is foreseeable need for these water resources.

Member Huntington noted there needs to be better information on the effectiveness of cloud seeding in Nevada. Cost per acre foot of groundwater recharge or surface water flows would be helpful. There was discussion on cloud seeding.

Chair Drozdoff noted that NDEP has a committee working on a process concerning reuse. The Forum should get information on where they are and what timeframe they are looking at.

Member King spoke about storage and how during wet years in Nevada, we need to capture water. This is a challenge as there are a lot of systems that have water rights on flood waters. Member Boyle brought up the use of reservoirs and policies for flood control, and the possibility of operating the reservoirs differently to capture early runoff. It was noted this can be done through the Decree court. There was discussion. "Develop a process to capture flood water" was added to the flipcharts.

Member King spoke about water metering and one barrier being the idea of the government looking in on what people are using. He believes this not a barrier, but a possible solution to conflict as being able to prove how much water people are using defends them from anyone else asserting they are over-pumping or illegally using water. If you can't measure it, you can't manage it. He would like to see meters on every use of water in the state. He noted that his office has ordered mandatory meters in a number of

basins on all manners of use, except for domestic and uses of five acre feet or less. It can require through current statutes. "Look at providing more opportunities to provide metering data" was added to the flipcharts. Member Huntington noted opportunities should include: new technology that can augment or support physical meters (remotely sensed metering).

Member King also noted that some people are concerned if they have to report their usage to the state then the State Engineer's Office will use the data to take their water away from them. This ties into the Use It or Lose It issue. Water rights are not taken away often however it is possible within the current water law.

Chair Drozdoff added topic concerning: an opportunity for the state to lead in terms of water meters and landscaping.

A full account of the discussion is captured in the audio recording, available on the Nevada Drought Forum's website (*www.drought.nv.gov*).

7) Forum Members Discuss Information Generated at the Governor's Drought Summit (Discussion and Possible Action)

Chair Drozdoff noted Claudia Vecchio, Nevada Department of Tourism and Cultural Affairs, offered to have her agency do more research on drought and visitation. The Forum should take advantage of this offer. This was included as element of "Economic Impact."

Chair Drozdoff also noted even within BLM there are some districts that do more watershed NEPA approvals and some that do not, this recommendation is to encourage federal agencies (BLM and US Forest Service) to complete broader (watershed) NEPA approvals, which could result in more expedited work.

Chair Drozdoff stated another topic that came up is the State Engineer Office having more resources and more enforcement authority to make sure that monitoring is occurring and in areas where violations are occurring they have the requisite tools to fix the problem.

Chair Drozdoff asked if there is anything to be done or recommended at the state level with regard to local land use decisions. Asking if there is an element of water planning that would help local authorities benefit from activities at the state level that would inform their own decisions.

Chair Drozdoff added another top as "Why Are We Doing This Drought Work."

A full account of the discussion is captured in the audio recording, available on the Nevada Drought Forum's website (*www.drought.nv.gov*).

Lunch 12:17 p.m. to 1:23 p.m.

8) Forum Members Discuss Additional Information and Ideas (Discussion and Possible Action)

Chair Drozdoff asked Forum members if they would like to add ideas under this agenda item. There were none.

9) Forum Members Discuss Drought Information Gathered in Relation to Recommendations of the Western Governors' Association (WGA) Drought Forum (Discussion and Possible Action)

Chair Drozdoff asked Forum members for direction on what they would like to spend time on concerning the ideas brought up earlier in the meeting.

Member King reviewed the facilitator recommendations from the Governor's Drought Summit, including measurement, creating more water (e.g. desalination and cloud seeding), use water more efficiently, local control specific to area, don't go too far too fast with water law changes, adaptive management (3M plans). The facilitator also mentioned there is a mood for change. Member King agreed with this sentiment. There needs to be collaboration and communication.

Member King reviewed some of the seven issues listed by the WGA's Drought Forum: data and analysis, reuse of water, water conservation, working with institutional frameworks to manage drought, communication and collaboration and forest health and soil stewardship. Member King noted the Forum has discussed and listed items pertaining to many of these issues. It lines up well with the WGA's recommendations and what the facilitator from the Drought Summit listed.

Member Huntington noted that technology is a low hanging fruit that can be addressed and expanded based upon the current work that being done.

Member Walker stated there is an element of education concerning data and data analysis as people are not aware of available information and do not know how to utilize the information.

Member Huntington suggested the Forum make a recommendation to add staff to the State Engineer's Office in respect to water use monitoring and hydrology.

Member Boyle stated it is important to make information available easily and quickly.

A full account of the discussion is captured in the audio recording, available on the Nevada Drought Forum's website (*www.drought.nv.gov*).

10) Review of Discussion, Future Meetings and Agenda Items (Discussion and Possible Action)

Chair Drozdoff provided a brief review of the meeting and the topics discussed and listed on flipcharts. He noted that when completing the report to the Governor the Forum may need to make a distinction between northern and southern Nevada. He discussed getting the information listed today to Forum Members to digest and review and then come together to discuss at a future meeting. Vice-chair Entsminger stated he agreed with the thoughts of Chair Drozdoff and noted that in the Executive Order the deadline for a report is by the end of the year. The Forum Members can review the provided information and come together in October to come up with initial recommendations to make in the report.

Member King stated the proposed process is a good one, however, the deadline is November 1 for the report to be submitted to the Governor. Chair Drozdoff stated he would discuss moving the deadline with the Governor's staff.

Member King also brought up AB 198, which will look at alternative sources of water and if the Forum should consider this in their discussions. Chair Drozdoff noted this was a good idea and the Forum should consider any connections that can be made between the two.

Chair Drozdoff asked JoAnn Kittrell, Nevada Department of Conservation and Natural Resources, what the timeline would be to get the information together and send it out to Forum Members to review before their next meeting. Ms. Kittrell noted it would take approximately two to three weeks to distill the information and provide as much detail as possible for Forum Members.

Chair Drozdoff discussed assigning certain Forum Members certain topics because of their expertise to review and bring back recommendations to the other members at a subsequent meeting. There was discussion on this, including creating working groups. Micheline Fairbank, Nevada Attorney General's Office, reminded the Forum Member about the requirements of Nevada's Opening Meeting Law and stated that each member has been selected to be a part of the Forum because of their expertise and experience in certain areas, and based upon what they bring to the table in this capacity is the intent behind their participation. If there are individual forum members meeting to collaborate and digest information and then bring recommendations back to the full forum, it would could be subject to the Nevada Open Meeting Law. To the extent that each member is bringing their recommendations individually during a forum meeting is okay.

Chair Drozdoff asked Member Barbee if his facility would be available for the future meetings of the Nevada Drought Forum. Mr. Barbee noted he would check on availability.

Chair Drozdoff stated the information from today's meeting will be distributed to Forum Members the week of October 11.

The Forum discussed the dates of future meetings. It was decided the next two meetings would be held on Monday, October 26, and Friday, November 20.

Member Huntington noted that Mr. Baughman stated that when the Forum outlines their recommendations, they should identify the mechanisms to implement the proposed actions, identify barriers, and provide some level of cost-estimates, including additional staff to accomplish things. Chair Drozdoff agreed with Member Huntington's comments.

Chair Drozdoff asked for Public Comment concerning this Agenda Item.

Carson City:

Mr. Walker spoke about the "other law" component, including NRS 278. He discussed urban planning and commercial landscape and recommended these should be revisited. Chair Drozdoff stated in addition to NRS 278 the Forum should consider emergency management statutes.

Steve Bradhurst, Central Nevada Regional Water Authority, spoke about AB 198. The AB 198 study is to be conducted by the Public Lands Committee. There may be a subcommittee created within the Public Lands Committee to focus in on AB 198. At the Summit, there was a recommendation to create a Blue Ribbon Taskforce on water. This is difficult to do and he suggested the Forum utilize the subcommittee of the Public Lands Committee for any recommendations they may have on legislation.

Chair Drozdoff noted the Forum needs to spend some time on AB 198 and acknowledged the SNWA's experience concerning local land use plans. Vice-chair Entsminger provided background on SNWA's process. They created a citizen advisory group ensuring input from across their community. They then convened the Principles Group of the SNWA, which consisted of local utility managers and senior staff of the member agencies of the water authority to agree to one plan that could be implemented throughout the region through numerous codes and ordinances. The water authority then adopted a conservation plan that went before local boards (e.g. city councils) to modify ordinances to codify the conservation rules and

have one uniform conservation plan throughout southern Nevada. They are now facing the need to stay ahead of the curve. They are going through the process again to update their current conservation plan. Chair Drozdoff noted that this process provides better coordination with the different parties involved. Chair Drozdoff stated his staff will contact SNWA staff to get this process down into a template that can be a model and distributed to Forum Members.

Mr. Sipaila spoke about new, not so new, and emerging technologies available that the Forum should review and consider. He spoke about water storage and the different methods and the challenges of certain methods.

A full account of the discussion is captured in the audio recording, available on the Nevada Drought Forum's website (*www.drought.nv.gov*).

11) Public Comment: (Discussion)

Chair Drozdoff asked for public comment. There was none.

12) Adjournment:

Meeting adjourned by acclamation at 2:17 p.m.

NOTICE OF PUBLIC MEETING
of the
NEVADA DROUGHT FORUM

MONDAY, OCTOBER 26, 2015 – 9 AM

The Nevada Drought Forum will conduct a public meeting on MONDAY, OCTOBER 26, 2015, beginning at 9:00 a.m. at the Nevada Department of Agriculture, Main Office, 405 South 21st Street, Sparks, Nevada, and will video conference to the Nevada Department of Agriculture offices at 2300 McLeod, Las Vegas, Nevada, and at Great Basin College, McMullen Hall #102, 1500 College Parkway, Elko, Nevada. The meeting will also be accessible via videoconference to Cooperative Extension Offices in the following locations: Caliente, Carson City, Eureka, Gardnerville, Lovelock, Pahrump, Winnemucca and Yerington. The address for each of these locations is available at the bottom of this agenda. The public is invited to attend at all locations.

NOTICE

(1) Items may be taken out of order; (2) Two or more items may be combined; (3) Items may be removed from the agenda or delayed at any time; (4) Public comment may be limited to three minutes per person at the discretion of the Chair; comment will not be restricted based on viewpoint; (5) Reasonable efforts will be made to assist and accommodate physically handicapped persons desiring to attend the meeting. Please call (775) 684-5670 in advance so that arrangements for attendance may be made.

AGENDA

Action may be taken only on those items denoted "For possible action."

1. Call to Order & Roll Call – *For possible action*

2. Public Comment

Public comment will be taken at the beginning and end of the meeting, and may be taken at the discretion of the Chair on agenda items listed for possible action. Public comment may be limited to 3 minutes per person at the discretion of the Chair. Comment will not be restricted based on viewpoint. No action will be taken on any matters raised during the public comment period that are not already on the agenda. Persons making comment will be asked to begin by stating their name for the record.

3. Review and Consideration of Approval of Agenda – *For possible action*

4. Review and Consideration of Approval of Minutes – *For possible action*

A. Approval of minutes from the meeting held September 28, 2015.

5. Climate Forecast Update – *Discussion and possible action*

The Forum will receive an update from Dr. Doug Boyle, Nevada State Climatologist, on current and forecasted conditions related to the drought.

6. Forum Member Review and Recommendations – *Discussion and possible action*

The Forum will engage in a facilitated review of recommendation areas discussed at its September 28, 2015, meeting, along with additional topics based on staff's review of all Forum meetings and the Governor's Drought Summit, as well as the suggestions and work of individual Forum members. Based on this information and through

facilitated discussion, the Forum will begin to narrow and identify the specific recommendations the body will include in its report to the Governor.

7. Discussion of November Meeting and Possible Agenda Items – *For possible action*

The Forum will discuss its expectations for the November meeting and the work and steps necessary to complete the body's "report of recommendations" due to the Governor on or before December 15, 2015.

8. Public Comment - *Discussion*

Public comment will be taken at the beginning and end of the meeting, and may be taken at the discretion of the Chair on agenda items listed for possible action. Public comment may be limited to 3 minutes per person at the discretion of the Chair. Comment will not be restricted based on viewpoint. No action will be taken on any matters raised during the public comment period that are not already on the agenda. Persons making comment will be asked to begin by stating their name for the record.

9. Adjournment – *For action*

This notice and agenda has been posted on or before 9 a.m. on the third working day before the meeting at the following locations:

(1) Nevada State Capitol, 101 North Carson Street, Carson City, Nevada
(2) Legislative Building, 401 South Carson Street, Carson City, Nevada
(3) Grant Sawyer Building, 555 E. Washington Street, Las Vegas, Nevada
(4) Department of Conservation & Natural Resources, 901 S. Stewart Street, Carson City, Nevada
(5) Department of Agriculture, 405 South 21st Street, Sparks, Nevada
(6) Department of Wildlife, 1100 Valley Road, Reno, Nevada

Notice of this meeting has been included on the Nevada Public Notices website at http://notice.nv.gov/

Notice of this meeting was also posted on the Nevada Drought Forum website at http://drought.nv.gov. Please contact Andrea Sanchez-Turner at 775-684-2705 (direct) or asanchez@dcnr.nv.gov to obtain support material for the agenda. Any materials will also be posted at http://drought.nv.gov.

We are also pleased to make reasonable accommodations for individuals with disabilities who wish to attend the meeting. If special accommodations or assistance at the meeting are requested, please notify Andrea Sanchez-Turner in writing at 901 S. Stewart Street, Suite 1003, Carson City, Nevada, 89701, or by email at asanchez@dcnr.nv.gov, no later than two (2) working days prior to the scheduled meeting.

University of Nevada Cooperative Extension – Lincoln County
360 Lincoln Street
Caliente, NV

University of Nevada Cooperative Extension – Carson City
2621 Northgate Lane, Suite 15
Carson City, NV

University of Nevada Cooperative Extension – Eureka County
701 S. Main Street
Eureka, NV

University of Nevada Cooperative Extension – Douglas County
1329 Waterloo Lane
Gardnerville, NV

University of Nevada Cooperative Extension – Pershing County
810 Sixth Street
Lovelock, NV

University of Nevada Cooperative Extension – Nye County
1651 E. Calvada Blvd
Pahrump, NV

University of Nevada Cooperative Extension – Humboldt County
1085 Fairgrounds Road
Winnemucca, NV

University of Nevada Cooperative Extension – Lyon County
504 South Main Street
Yerington, NV

Summary of Minutes of the

Nevada Drought Forum

Meeting of October 26, 2015, 9:00 AM

Nevada Department of Agriculture
405 South 21st Street
Sparks, NV

Video Conference:

Nevada Department Agriculture
2300 McLeod
Las Vegas, NV

Great Basin College
1500 College Parkway
McMullen Hall #102
Elko, NV

Members Present:

Leo Drozdoff, P.E., Chair

John Entsminger, Vice Chair

Dr. Doug Boyle

Dr. Justin Huntington

Jason King, P.E.

Dr. Mark Walker

Jim Barbee

Caleb S. Cage

Forum Staff Present:

Bryan Stockton, Senior Deputy Attorney General

Andrea Sanchez-Turner, Administrative Support

BEGIN SUMMARY MINUTES

1) Call to order and Roll Call

Chair Drozdoff called the meeting to order at 8:59 a.m. Member Barbee noted there were technical difficulties concerning the videoconferencing equipment, however, the teleconference equipment is working for connecting with the satellite locations.

Chair Drozdoff contacted the remote locations to see if anyone was in attendance. The Las Vegas location was the only location with people in attendance.

Andrea Sanchez-Turner, Department of Conservation and Natural Resources (DCNR), conducted the roll call.

2) Public Comments: (Discussion)

Sparks, Nevada

Susan Lynn, Great Basin Water Network, requested the Forum develop a process for declaring a drought with measurable standards. She also stated that Phreatophytes are not available as a water source, especially during drought and this idea needs to be reviewed. Chair Drozdoff stated objective standards were discussed at the Governor's Drought Summit held in September.

Connection was lost to the satellite locations. The meeting was stopped until the technical difficulties were resolved.

Bryan Stockton, of the Nevada Attorney General's Office, stated that he contacted the Attorney's General's Office to see if it would be okay to move forward with the meeting without the connection to the satellite locations. He is waiting for a call back. There was discussion about the technical difficulties with Mr. Stockton noting that since the Las Vegas location was the only location with participants, the Forum could conference call with only that location, letting the other locations know about the technical difficulties and giving them the number to call if participants show up.

Las Vegas, Nevada

Yuzhen Feng and Crystal Dubose, University of Nevada Las Vegas, noted the use of a significant amount of water to produce electricity in Nevada. The majority of Nevada's electricity is produced from thermal electric plants, which uses millions of gallons of water per year. In comparison, PV Solar uses little to no water to produce electricity. With Nevada's abundance in solar resources, PV Solar has the potential to serve much of the state with electricity and save huge amounts of water. Ms. Feng and Ms. Dubose look forward to hearing from the Forum on addressing the solutions the electricity sector can provide concerning the drought within Nevada.

A full account of the discussion is captured in the audio recording, available on the Nevada Drought Forum's website (*www.drought.nv.gov*).

3) Review and Consideration of Approval of Agenda (Action Item)

Vice-chair Entsminger moved to approve the agenda; second by Member Barbee; motion passed unanimously. ***ACTION**

4) Review and Consideration of Approval of Minutes (Action Item)

Member King moved to approve the minutes from the September 28, Drought Forum meeting; seconded by Member Huntington; motion passed unanimously. ***ACTION**

5) Climate Forecast Update (Discussion and Possible Action)

Member Boyle noted this summer there was above-average precipitation within much of Nevada, as well as above average temperatures. Precipitation helped range-lands, however, did little to help the water supply, particularly in area reservoirs. Long-term deficits throughout the state remain. The drought status

in the northern area of Nevada has improved on the Drought Monitor. The new water year started October 1, beginning water year 2016. Most of Nevada is ahead of normal at this time in terms of precipitation, however, it is not enough to change the drought status. The hope is there will be strong El Nino this year. The most recent forecast stated there is a 95 percent chance it will remain strong throughout the winter into the spring. The anticipation is a strong El Nino will affect the lower half of the state. The middle of the state has an equal chance and the northern part of the state should expect less precipitation. The forecast for temperatures are above normal.

Member Walker asked about Nevada's dependence on snowpack for a gradual release of the water to replenish the reservoirs and if the above-average precipitation does the same thing. Member Boyle noted there are three reservoir systems, groundwater, man-made surface reservoirs, and snowpack (the seasonal reservoir). As seen last year, Nevada had high snow levels so it did not build the snow pack that was expected even though there was a limited amount of precipitation, because it was warm and snowpack was meager. Then there were the warm temperatures early in the spring. The expectation is 2016 will be similar to last year when it comes to the reservoirs and snowfall.

6) Forum Member Review and Recommendations (Discussion and Possible Action)

Chair Drozdoff reviewed the process for discussing and determining recommendations concerning the final report to the Governor. He introduced Lewis Michaelson who will be facilitating this part of the meeting.

Mr. Michaelson noted the success of the Governor's Drought Summit and acknowledged the difficulty of integrating all of the information and ideas brought forward. He spoke about the process for discussion and recommendations, including specific categories. The goal is for the Forum to draft recommendations, including timeframes and who will take the lead for the recommendations.

Chair Drozdoff noted the Governor's Office has extended the Executive Order report due date to December 15, 2015.

<u>Category: Water Conservation</u>

Vice-chair Entsminger spoke of the requirement in the existing NRS to have a water conservation plan and how some lack specificity. He believed this should be explored, including requiring minimum requirements as part of the conservation plans (he provided examples that are done by the Southern Nevada Water Authority [SNWA]). There was discussion about this among the Forum members, including measuring water use with metering.

Member King noted NRS 540.141 is the statute that outlines what has to be included in a water conservation plan when it is sent to the State Engineer's Office. He reviewed some of the requirements and spoke about the Forum possibly needing to make this statute more specific.

Member King supported having every water use within the state metered. This will make it easier for the state to manage it and will let water rights users know it is to their benefit to know how much water they are using. They will be able to defend themselves against anyone that alleges they are over-pumping, etc. There is a concern by some that the State Engineer's Office will use this information to take away the unused amount of water (e.g. "use it, or lose it").

Water conservation plans are required to be updated every five years. Some of the small purveyors of water may not be up-to-date, however, all of the large purveyors are compliant with this requirement.

There was discussion concerning the enforcement of keeping plans current and within the statute regulations.

Member King noted that the State Engineer's Office, during the last legislative session, pursued attempting to have NRS 540 to have fines and penalties included. This was included in a bill that did not pass the last session. The State Engineer's Office does not have a mechanism to penalize violators, except for sending a letter.

There was a discussion concerning the availability of technical help for those individuals requesting it concerning water conservation plans. Technical assistance is something to consider when working through the categories and recommendations for the final report.

Member Walker noted the Nevada Rural Water Association has circuit writers that go out and provide technical assistance on a number of things. This could be an opportunity on how to reach out to the smaller purveyors of water.

There was discussion about how to handle these issues with Mr. Michaelson reviewing the three things he heard could be a minimum threshold for a municipal's water conservation plan. They are: metering, tiered rates, and time of day restrictions.

Mr. Michaelson stated language for a possible motion to review NRS 540.141 concerning requirements of a water conservation plan that are currently aspirational but deserve to be actual requirements such as: metering, tiered rates, and time of day restrictions. The NRS should also be associated with an enforcement mechanism capable for supporting these requirements that includes consequences for violation. The section should include a program for technical assistance to provide help in developing water conservation plans.

Vice-chair Entsminger made a motion to have language drafted similar to this wording and have it included in the draft report that will be reviewed at the next meeting; seconded by Member Walker; motion passed unanimously. ***ACTION**

PUBLIC COMMENT: Mr. Steve Walker, Lobbyist, Truckee Meadow Water Authority (TMWA), Lyon County and Douglas County, asked if there would be an opportunity for public comment as motions are made. He spoke about the NRS Statutes for water conservation in Senate Bill (SB) 62 of the last session, both SNWA and TMWA requested a certain section that required, gallons per capita per day per each conservation practice be removed and made, gallons per capita per day per the conservation plan be applicable. He suggested this be added.

The Forum discussed water efficiency standards for new residential and commercial development located in the NRS such as low-flow toilets, etc.

PUBLIC COMMENT: Julie Wilcox, SNWA, spoke about current residential and commercial efficiency standards, the process followed in Las Vegas, and how these standards are determined by each county and each city.

There was discussion concerning the legality of the state to set these standards. Mr. Stockton noted the legislature has all the state legislative power, they do delegate some to the counties, through the counties zoning ordinances, although there are some supreme court decisions that could affect this, the state is the source of this power. There could be a state-wide set of efficiency standards.

PUBLIC COMMENT: Mr. Walker noted typically in local governments the uniform plumbing code handles efficiencies and fixtures. The uniform plumbing code is revised by local governments through ordinances. This is the mechanism that currently addresses fixture efficiencies. Ms. Wilcox noted this is included in state law.

Mr. Michaelson repeated language for a motion, as part of revising the statute dealing with the water conservation plans it be specifically mentioned they should include the elements of how they are addressing water efficient fixtures and landscape development codes. Member Barbee moved to made this motion; seconded by Vice-chair Entsminger; motion passed unanimously. ***ACTION**

The Forum discussed technology and agriculture, noting there are opportunities available, however the cost of using some technology makes it difficult for some agricultural operations, especially the smaller ones.

Member Barbee noted agriculture is a business entity therefore efficiency is always a driving factor at some level and this depends on the size and the organization itself. Efficiency garnered through agriculture equates in greater production and equates to greater food production, which is the output of this industry. There had been discussion about putting together a state funding mechanism where it would help a producer increase their efficiency, and if the state could garner some of that water right as part of the buy-in on the financial granting system, meaning part of that water right efficiency would then come back to the state. There was discussion about this idea. Member Barbee noted that in the places where there is an over-allocation of water, this idea would make sense, however the state could also simply go out and buy back these water rights, which may be a better use of state money. Member Barbee also commented on the idea of investing in higher labor agriculture productions that have lower water inputs. There are only a few areas in Nevada where this will work.

Member King spoke about "use it, or lose it," and how people will use more water than they need to keep their water rights intact. There is no incentive to conserve. This needs to be addressed. Member King noted it should be abundantly clear in statute that in times of drought people should not be pumping their water simply so they do not lose the water right. Member King also noted water permits are issued subject to existing rights, if the State Engineer's Office has to curtail, they will curtail and they do not have to buy water rights.

Member Huntington discussed consumptive use and the relationship with water efficiency, including the ideas being discussed by the Forum. There may be unintended consequences.

Member King suggested language for a motion, stating to make it more explicit in statute that the State Engineer's Office has the ability to require meters on all water use in the state, including domestic wells.

Mr. Michaelson repeated the motion to be clear that the law be strengthened to make it explicit that the State Engineer has the ability and the right to require metering of all uses, including domestic wells. Vice-Chair Entsminger made this motion; seconded by Member King; Member Walker asked if this would be one of the recommendations under the Water Law Category. It was decided it would not be. Motion passed unanimously. ***ACTION**

There was discussion on the Drought Monitor, how it monitors, the information that it receives and how it distributes information. Member Boyle noted there are two things to consider. One, is it adequately and accurately assessing the current state of where the water is each week and two, is the correct information getting to the Drought Monitor authors. It was decided to discuss this further under the Monitoring and Research Data Category.

There was additional discussion on technology as it pertains to agriculture. Member Huntington noted it is important to try to reduce the non-beneficial consumptive use from agriculture.

Member Barbee made the motion to encourage development and use of water saving technology and/or best management practices by agricultural and livestock producers (including but not limited to crop covering, drip irrigation, variable rate irrigation, center pivot irrigation, laser leveling and crop selection); seconded by Member Huntington; motion passed unanimously. ***ACTION**

Member King made a motion to review changes to the "use it, or lose it" doctrine in order to increase water conservation during drought and otherwise; seconded by Member Barbee; motion passed unanimously. ***ACTION –** *Moved from the category below per Forum agreement.^*

Category: Water Law

There was discussion concerning the "use it, or lose it" concept and how to address this it. Mr. Stockton noted this is in reference to the forfeiture provisions.

Member King noted his recommendation would be to review potential changes to "use it, or lose it" to encourage water conservation. There was discussion about the wording of this motion and if it should include language pertaining to drought and non-drought situations and when and how the Governor declares drought.

Member King made a motion to review changes to the "use it, or lose it" doctrine in order to increase water conservation during drought and otherwise; seconded by Member Barbee; motion passed unanimously. ***ACTION^**

There was discussion concerning monitoring, mitigation, and management plans (3M Plans).

Mr. Stockton noted the connection with Las Vegas was lost. There was a break taken until the issue was resolved.

Chair Drozdoff stated the motion regarding "use it, or lose it" should be listed under Water Conservation. The Forum agreed to have it listed under Water Conservation.^

Member Barbee made a motion to change the law to clarify and confirm the long-standing practice of the Nevada State Engineer to implement monitoring, mitigation and management plans (3M Plans); seconded by Member Boyle; motion passed unanimously. ***ACTION**

There was discussion concerning recovery of impacted river storage and groundwater systems. Member Huntington mentioned a possible feasibility assessment with specific focus on which areas where storage can be enhanced, depending on the types of storage.

Member Barbee made a motion to explore the feasibility of additional management measures that can help to expedite the recharge and recovery of impacted rivers and groundwater systems and enhance storage; seconded by Vice-chair Entsminger. There was discussion where this motion should be listed with the Forum noting it should be listed under the Infrastructure, Supplies, and Long Range Planning Category. ^^ There was a vote on the motion; motion passed unanimously. ***ACTION**

Member King spoke about the legality capturing rain water in rain barrels. There was discussion about this issue, including if it should be specified how the captured water will be used. Member King noted the water should be use for beneficial use.

Member Barbee made a motion to examine potential changes to water law to allow the use of small scale water precipitation capture devices; seconded by Member Huntington.

PUBLIC COMMENT: Mr. Walker noted there may be an unintended consequence when there is development in commercial areas where you have to retain the impervious area generated water into retention basins. He asked if this was considered a large-scale rain-barrel. Chair Drozdoff stated it was not because they capturing it to ensure that pre-development and post-development water use match up. Mr. Walker wondered if it would create an opportunity for the developer to capture water and use it for other intentions and the need for the rain barrel to be defined as small scale. Chair Drozdoff noted the Forum should keep in mind Mr. Walker comments.

There was a vote on the motion; motion passed unanimously. ***ACTION**

Member King brought up the issue of groundwater management plans within the state. The State Engineer's Office is currently in the middle of efforts to work with stakeholders in the basin to come up with a groundwater management plan and how best to develop the water and to curtail it in times of drought. The Nevada statutes are limited on this issue. There was a bill drafted for the last session that did not pass. It is necessary to provide more tools in statute for the State Engineer's Office to deal with groundwater management plans. The Forum could pursue some statutory changes concerning what is acceptable in a groundwater management plan. There was discussion about this issue. Chair Drozdoff asked Member King if this should pertain to all basins or just in over-appropriated basins. Member King noted it was for use only in areas with critical management issues, only in basins that are severely over-appropriated. Chair Drozdoff noted there should possibly be a two part recommendation. There was discussion concerning the language for a recommendation. Chair Drozdoff noted the Forum will be able to review any recommendations at the next Forum meeting before they are included in the report to the Governor, therefore, the Forum is not expected to get the wording exact at this time.

Vice-chair Entsminger made a motion to direct DCNR staff and the State Engineering staff to draft language on critical management areas and groundwater management plans for review by Forum Members at their next meeting; seconded by Member Boyle; motion passed unanimously. ***ACTION**

Chair Drozdoff and Vice-chair Entsminger both noted the motions made during this meeting are considered language for staff to draw from for more detailed recommendations to be reviewed during the next Drought Forum meeting. The wording may change through the process of developing the final report to be submitted to the Governor, stating nothing is final until the Forum votes on a final report.

Member King brought up issues concerning thermal plants and if it should be a statewide policy that all thermal electric power plants in the state, from this point forward, are air-cooled and not water-cooled, because of the amount of water that is used for water cooling. There was discussion about this.

Member King made a motion to adopt a statewide policy that all new thermal electric power plants use dry-cool or other similar water efficient technologies; seconded by Member Barbee; motion passed unanimously. ***ACTION**

Break for Lunch 12:17 p.m. to 12:51 p.m.

<u>Category: Water Law</u>

Member King noted domestic wells in the State of Nevada have a priority of the date that those wells were completed, which makes them the most junior user in a basin in the times of curtailment, like

drought. They would be one of the first ones shut off. Member King thought it would be prudent to pursue statutory change that would allow for indoor watering of domestic wells in times of curtailment.

Member King made a motion to pursue language that allows for indoor use for those on domestic wells in times of curtailment; seconded by Member Huntington; motion passed unanimously. ***ACTION**

Category: Other Laws / Regulations

Chair Drozdoff noted there may be other tools available for Nevada to use rather than amending/adjusting water law. If there were objective criteria established similar to public safety statutes that certain things would occur in times of drought or other natural emergencies, it would allow greater flexibility by the State Engineer's Office and others where more strategic decisions can be made. Chair Drozdoff provided examples of where the flexibility would be helpful. There was discussion on this issue.

Member Cage noted the powers stated in NRS 416.060 are currently broad. Member Cage read a portion of the NRS for the Forum and noted the powers are the same as the Governor's emergency powers under any other declaration. Member Cage noted one thing the Forum may consider is requiring, in times of a declaration, establishing a group to make recommendations for improvement moving forward. There was discussion concerning this idea and the Governor's authority, NRS 416.060, and the wording included in the statute, including the definition of a drought.

Member Cage made a motion to revise NRS so that during a Governor declared water emergency, based on objective criteria, state agencies are given the authority to take appropriate measures to ensure the availability of water resources for basic needs, such as: "use it, or lose it" tolling; ability to curtail in ways other than prior appropriation; and to objectively look at water quality standards that may be restricting the amount of water that can make its way into a river system; seconded by Member Walker.

PUBLIC COMMENT: Kay Scherer, DCNR, noted the two concepts being discussed. One, the ability for the Governor to declare a drought and at what point is the drought is declared. The second is the emergency statutes and when a declaration of a drought condition becomes a water emergency where the Governor has the power to lift everything. The declaration of a drought invokes certain types of actions that do not necessarily rise to the level of the Governor declaring a state of emergency related to water, which is a higher bar and would give higher powers.

Member Cage read sections of NRS 416.050 to the Forum. There was discussion about what Ms. Scherer's comments and possibly amending the motion by Member Cage. Member Cage read the definition of "emergency" from NRS 414.0345. There was discussion concerning the difference between an emergency declaration and a drought declaration. Mr. Michaelson noted perhaps the Forum should simply capture the concept rather than determining which statute the recommendation would be under, which will be left open for now. Forum members agreed. After hearing the amended language purposed to the motion, Member Cage noted that he believes a drought equals a water emergency based upon existing statutes.

Member Cage agreed to the amended language to the original motion, the new motion is: revise NRS so that during a Governor declared drought, based on objective criteria, state agencies will be given the authority to take appropriate measures to ensure the availability of water resources for basic needs, including the following measures: "use it, or lose it" tolling; ability to curtail in ways other than prior appropriation; to objectively look at water quality standards that may be restricting the amount of water that can make its way into a river system; plus any others to be identified before adoption. Member Walker (as the second) noted his agreement with the amended wording. Member King asked for clarification on the wording. Member Boyle read sections of the California Governor Drought Declaration

for Forum Members. Member Cage told the Forum that he contacted his Deputy Attorney General Representative concerning regulation language and she noted it depends on how you define orders, but other states do list it specifically as statute. There was discussion about this. Chair Drozdoff asked for a vote; motion passed unanimously. ***ACTION**

Member King stated there currently is a state-wide working group that is trying to promulgate regulations dealing with indirect potable reuse. This working group needs the Forum's support. There was discussion about the steering committee and its membership and background.

Member King made a motion to support the efforts of the state water reuse steering committee in exploring changes to laws and regulations to expand the reuse of waste water in areas where appropriate; seconded by Member Barbee; motion passed unanimously. ***ACTION**

There was discussion concerning Homeowners' Associations and their possible disregard for state law regarding drought tolerant landscaping.

Vice-chair Entsminger made a motion to explore the potential for political subdivisions to implement water conservation in situations where there are Covenants, Conditions, and Restrictions (CC&Rs) to the contrary; seconded by Member Walker; motion passed unanimously. ***ACTION**

Category: Monitoring and Research Data

There was discussion concerning establishing a committee concerning monitoring recommendations and more weather stations.

Member Boyle made a motion to establish a committee to establish goals and assess monitoring recommendations, including cost identification and funding strategies, network gaps, prioritization of efforts and development of implementation strategies; seconded by Member Huntington; motion passed unanimously. ***ACTION**

There was discussion about the need for an enhanced and robust data collection monitoring system.

Member Barbee made a motion to partner with other organizations to increase and enhance the accuracy of data reporting; include: monitoring stations in both high and low level elevations; centralized monitoring data for ease of access by stakeholders; and established standards for the collection of data and reporting; seconded by Member Huntington. Member Cage noted this discussion includes immediate actions that can be taken by the Governor and not long-term items, like changing statute and beyond. The Forum may want to consider recommending the Governor declare a water emergency through proclamation and embedding these recommendations under that or a separate Executive Order, but in relation to the proclamation. Member Cage stated there seems to be a distinction being made that there is a difference between a drought and a water emergency. He contends that that is a distinction without a difference, and felt everything being discussed falls under NRS 416. He read from NRS 416.030 and noted the Forum may want to consider giving the Governor the option of making an affirmative step toward declaring a drought. There is a fundamental disagreement on the Forum about the definition of an emergency. After additional discussion, Chair Drozdoff asked for a vote; motion passed unanimously. ***ACTION**

Member Huntington brought up the early drought warning system issue that came up as a result of a discussion had with the National Integrated Drought Information System (NIDIS) and their desire to develop a Nevada drought early warning system. It would be a California/Nevada drought early warning system. There are a lot of moving parts to an early warning system. Member Huntington reviewed several

aspects and provided background and updates on this process and request. There was a discussion of a possible motion and the language for the motion.

Member Boyle made a motion to partner with other organizations such as the National Integrated Drought Information System (NIDIS) and/or implement new technologies to improve forecasting (including early drought warning systems and seasonal forecasting), monitoring, including place-based remote sensing and enhanced monitoring networks; seconded by Member Huntington; motion passed unanimously. ***ACTION**

Chair Drozdoff stated the Drought Monitor has been coupled with many different decision-making tools; however, it needs a greater level of support, or perhaps a different tool needs to be developed. Member Boyle noted if there were a higher level of participation in the state on the evaluation of the accuracy of the Drought Monitor and what the communication should be like it would suit Nevada's needs. He reviewed the process and provided an example of how it can be done. There was discussion including possible language for a recommendation.

Member Boyle made a motion to recommend the use of diverse sources of information to complement and enhance the applicability, value, and effectiveness of the U.S. Drought Monitor; seconded by Member Huntington; motion passed unanimously. ***ACTION**

Category: Information Sharing and Outreach

Member King made a motion to work with federal partners to establish triggers for management actions to enhance predictability of operational needs for asset managers and allow for a more flexible response to evolving drought conditions; seconded by Member Barbee; motion passed unanimously. ***ACTION**

Member Barbee made a motion that the Western Governors' Association ask for a western drought monitor author and for the drought monitor to cover broad information including impact reporting; seconded by Member Walker; motion passed unanimously. ***ACTION**

Chair Drozdoff noted that during his panel at the Governor's Drought Summit, Claudia Vecchio, Director, Department of Tourism and Cultural Affairs, proposed having her agency conduct specific research on drought and visitation.

Member King made a motion to support the efforts of the Commission on Tourism to do specific research on impacts of drought on visitation; seconded by Member Boyle; motion passed unanimously. ***ACTION**

Category: Financial/Technical Assistance and Incentives

Member Barbee noted this discussion should include incentives to encourage greater efficiency, including agriculture. There was discussion concerning a possible recommendation on this issue and if it should include a list of specific items such as cloud seeding or be more general.

Member Barbee made a motion to direct relevant state agencies to formulate statewide incentive programs and funding resources to help offset costs associated with high priority programs to improve drought response and resiliency for inclusion in FY 2017 budgets; seconded by Member Walker; motion passed unanimously. ***ACTION**

There was discussion on investment tax credit for implementation of water saving technologies. There was not a lot of support for a recommendation. There was discussion on pursuing federal grants and other

funding credits, staffing for the Division of Water Resources, and how to make a recommendation to possibly include a budget proposal.

PUBLI COMMENT: Ms. Lynn noted that 3M Plans would require more budgeting and funding. It would be helpful if the Division of Water Resources had a biologist on staff.

Member Walker made a motion to increase the Division of Water Resources staffing for enhanced metering, water use reporting, other monitoring needs, and technical assistance; seconded by Member Huntington; motion passed unanimously. ***ACTION**

Chair Drozdoff noted in the past there was discussion about the AB 198 Program, which has not been funded historically. He noted there is aging infrastructure and infrastructure that is being relied upon more. Part of effective drought management is having infrastructure programs that can be relied upon. It needs to be funded. There was discussion about this with the Forum determining the issue was covered in a prior motion.

Category: Information Sharing and Outreach

There was discussion about increased staffing and making a broader recommendation from the motion concerning Division of Water Resources Staffing.

PUBLIC COMMENT: Ms. Scherer noted that through this process the Governor has given the Forum the opportunity to say what Nevada needs to deal with a drought in such a way that what is needed for drought is not competing with other agency priorities. No state agency should be put in a position of picking or choosing between something that's imposed outside of their budgets by the Governor. There was discussion about Ms. Scherer's comments and the acknowledgment that information sharing is a topic discussed at meetings and at the Drought Summit. Coordinated and consistent messaging and technical assistance from state agencies is important. There was discussion about developing a statewide communication, education and outreach program that addresses drought response and the Forum determining who leads and coordinates that effort.

There was discussion about determining who should be in charge of the coordinated effort.

Member Walker noted that the current discussion is stuck on who is the leader of the process, what agency has the appropriate leadership for dealing with drought at this point. This seems like an issue that the Forum will not be able to resolve. This is an issue that needs to be resolved at the Governor's level, designating a lead agency. Member Walker noted that perhaps the Forum can include in its recommendation a provision that addresses the need to designate or identify a lead agency for drought response as part of the process.

There was discussion about this idea. Chair Drozdoff suggested the Forum take this issue and think about it to be addressed at the next meeting. He also proposed directing staff to create a possible recommendation keeping this discussion in mind to be considered by the Forum at the next meeting.

Mr. Michaelson asked the Forum members if there was anything that was missed during the day's discussion that needs to be addressed.

Member King spoke about working with the judicial college to try and educate judges on Nevada Water Law. Also, perhaps there should be a Water Court, a specific court where the judges that work this court know water law. There would be consistency in decisions. There was discussion about this issue. It was

decided to direct staff to create a possible recommendation keeping this discussion in mind to be considered by the Forum at the next meeting.

Category: Infrastructure, Supplies, and Long Range Planning

There was discussion about this category, including resources and what type of recommendations the Forum would make.

PUBLIC COMMENT: Mr. Walker noted that in the next list of BDRs scheduled to come out in the legislative session for 2017, there will be one or two that will include State Water Plan. He provided background on how this has been dealt with in the past. A possible option for the Forum is to let the Governor know he will get legislative pressure, particularly under the drought scenario, for a state water plan.

There was discussion about this.

Chair Drozdoff acknowledged the accomplishments of the Forum during the meeting and noted the Forum covered many important issues and items. Members will have an opportunity to think more about the discussions and recommendations and can bring issues up at the next meeting. Staff will put together recommendations to be reviewed at the next meeting. The Forum members agreed.

Category: Infrastructure, Supplies, and Long Range Planning

Member Barbee made a motion to explore the feasibility of additional management measures that can help to expedite the recharge and recovery of impacted rivers and groundwater systems and enhance storage; seconded by Vice-chair Entsminger. There was discussion where this motion should be listed with the Forum noting it should be listed under the Infrastructure, Supplies, and Long Range Planning Category. There was a vote on the motion; motion passed unanimously. ***ACTION -** *Moved from the Water Law Category per Forum agreement* ^^

A full account of the discussion is captured in the audio recording, available on the Nevada Drought Forum's website (*www.drought.nv.gov*).

7) Discuss of November Meeting and Possible Agenda Items (Discussion and Possible Action)

Chair Drozdoff noted the next meeting is scheduled for November 20, at this same location. Pam Robinson, Nevada Governor's Office, will be working on securing a new location and a possible new date. As soon as that has been finalized, the Forum members will be informed.

A full account of the discussion is captured in the audio recording, available on the Nevada Drought Forum's website (*www.drought.nv.gov*).

8) Public Comment: (Discussion)

Chair Drozdoff asked for public comment. There was none.

9) Adjournment:

Meeting adjourned by acclamation at 4:00 p.m.

NOTICE OF PUBLIC MEETING
of the
NEVADA DROUGHT FORUM

FRIDAY, NOVEMBER 20, 2015 – 9 AM

The Nevada Drought Forum will conduct a public meeting on FRIDAY, NOVEMBER 20, 2015, beginning at 9:00 a.m. at the State Capitol Building, Guinn Room, 101 N. Carson Street, Carson City, Nevada, and will video conference to the Grant Sawyer State Office Building, Governor's Office Conference Room, at 555 E. Washington Street, Las Vegas, Nevada. The public is invited to attend at both locations. There will also be a telephonic connection available at 1-888-808-6929. Please enter code 3678844 when prompted.

NOTICE

(1) Items may be taken out of order; (2) Two or more items may be combined; (3) Items may be removed from the agenda or delayed at any time; (4) Public comment may be limited to three minutes per person at the discretion of the Chair; comment will not be restricted based on viewpoint; (5) Reasonable efforts will be made to assist and accommodate physically handicapped persons desiring to attend the meeting. Please call (775) 684-5670 in advance so that arrangements for attendance may be made.

AGENDA

Action may be taken only on those items denoted "For possible action."

1. Call to Order & Roll Call – *For possible action*

2. Public Comment

Public comment will be taken at the beginning and end of the meeting, and may be taken at the discretion of the Chair on agenda items listed for possible action. Public comment may be limited to 3 minutes per person at the discretion of the Chair. Comment will not be restricted based on viewpoint. No action will be taken on any matters raised during the public comment period that are not already on the agenda. Persons making comment will be asked to begin by stating their name for the record.

3. Review and Consideration of Approval of Agenda – *For possible action*

4. Review and Consideration of Approval of Minutes – *For possible action*

A. Approval of minutes from the meeting held October 26, 2015.

5. Climate Forecast Update – *Discussion and possible action*

The Forum will receive an update from Dr. Doug Boyle, Nevada State Climatologist, on current and forecasted conditions related to the drought.

6. Discussion of Nevada Drought Forum Recommendations Report – *Discussion and possible action*

The Forum will discuss and finalize its recommendations for inclusion in the report, and will also provide general approval of the report's overview content as prepared by staff.

7. Next Steps – *For possible action*

The Chairman will discuss with members various aspects related to delivery of the final report.

8. Public Comment - *Discussion*

Public comment will be taken at the beginning and end of the meeting, and may be taken at the discretion of the Chair on agenda items listed for possible action. Public comment may be limited to 3 minutes per person at the discretion of the Chair. Comment will not be restricted based on viewpoint. No action will be taken on any matters raised during the public comment period that are not already on the agenda. Persons making comment will be asked to begin by stating their name for the record.

9. Adjournment – *For action*

This notice and agenda has been posted on or before 9 a.m. on the third working day before the meeting at the following locations:

(1) Nevada State Capitol, 101 North Carson Street, Carson City, Nevada
(2) Legislative Building, 401 South Carson Street, Carson City, Nevada
(3) Grant Sawyer Building, 555 E. Washington Street, Las Vegas, Nevada
(4) Department of Conservation & Natural Resources, 901 S. Stewart Street, Carson City, Nevada
(5) Department of Agriculture, 405 South 21st Street, Sparks, Nevada
(6) Department of Wildlife, 1100 Valley Road, Reno, Nevada

Notice of this meeting has been included on the Nevada Public Notices website at http://notice.nv.gov/

Notice of this meeting was also posted on the Nevada Drought Forum website at http://drought.nv.gov. Please contact Andrea Sanchez-Turner at 775-684-2705 (direct) or asanchez@dcnr.nv.gov to obtain support material for the agenda. Any materials will also be posted at http://drought.nv.gov.

We are also pleased to make reasonable accommodations for individuals with disabilities who wish to attend the meeting. If special accommodations or assistance at the meeting are requested, please notify Andrea Sanchez-Turner in writing at 901 S. Stewart Street, Suite 1003, Carson City, Nevada, 89701, or by email at asanchez@dcnr.nv.gov, no later than two (2) working days prior to the scheduled meeting.