



STAFF REPORT

TO: Chairman and Board Members
FROM: Mark Foree, General Manager
DATE: January 12, 2016
SUBJECT: **General Manager's Report**

Attached please find the written reports from the Management team including the Operations Report (*Attachment A*), the Customer Services Report (*Attachment B*), the Web Usage and Social Media Report (*Attachment C*), and the Water Resource and the Annexation Activity Report (*Attachment D*).

Also included in your agenda packet are press clippings from December 10, 2015 through January 12, 2016. Also, attached are *Tell the Board* submissions from a TMWA customer commending members of the TMWA crew on a job well done. Mr. Baerresen thanked Chris Hires, Steve Welch, Joe Brown and Matt White on their work in fixing a low flow issue.

The Reno-Sparks Chamber has appointed Bill Hughes, to represent them as an alternate representative on the TMWA Standing Advisory Committee.

Board members had previously inquired about the final results of TMWA's request for customers to reduce their water use by at least 10%, including details about how much each customer group saved. *Attachment E* shows the 2015 results (May through September) which are based on actual end use meter readings for accounts that used water during this period (May through September) in both 2013 and 2015. As you can see, our customers did an outstanding job of producing significantly more savings than requested. Congratulations to TMWA staff and consultants, the Board and our customers for these very successful results.

The Nevada Drought Forum Recommendation Report of December 2015 is included here as *Attachment F*. TMWA participated in many of the meetings held by the Nevada Drought Forum and made several presentations including presentations by Andy Gebhardt and Mark Foree at the Governor's Drought Forum in Carson City in September. In reviewing the recommendations, you will note that TMWA is currently doing virtually everything that is recommended in the report.

Follow up to questions related to the Golden Valley agreement

I wanted to follow up with the Board regarding questions about the Golden Valley agreement that were raised at the December meeting.

First, none of us remembered to mention that any and all parcel maps in many (over appropriated) groundwater basins in Washoe County and in other basins within the state (including the East Lemmon Valley basin that Golden Valley is within) require dedication of 2 acre-feet of groundwater rights for each new parcel that is created by a parcel map. According to Vahid Behmaram, Washoe County Water Management Planner Coordinator, groundwater rights availability in the East Lemmon Valley basin is extremely limited. He knows of only about 10-15 acre-feet that are not already committed for service and he doesn't know if those are even for sale.

If never served by a water system, those dedicated groundwater rights end up being relinquished to the state (can never be used). If the lot is later connected to a water system, a domestic well credit is available and is used for service.

As part of the merger TMWA asked the County to amend Chapter 422 of their development code with respect to water rights dedication requirements. Included in those changes (adopted by the County in October 2015), were provisions which deferred to TMWA's water resource dedication requirements for any development (which is defined as any new residential, commercial or industrial development of land, including the division of land into two or more parcels) within TMWA's service area. WCC 110.422.15 now states that "Developments to be served by the Truckee Meadows Water Authority shall be required to satisfy the water resource dedication requirements of the Truckee Meadows Water Authority." That section further states that no building permit, special use permit, or recordation of a parcel map or subdivision map shall be granted until the dedication or the proof of relinquishment of water rights is accepted by the Washoe County Community Services Department, proof of which in the case of service within TMWA's service area is established by a TMWA will serve.

At TMWA's request, the County also revised their development code to provide that any development within hydrographic basins which contain a TMWA owned and operated water delivery system be required to design and construct all water delivery facilities to TMWA standards and specifications and submit an irrevocable offer of dedication of such facilities to TMWA, regardless of whether TMWA will initially be providing water service to the development. See [WCC 110.422.25](#). The purpose of this requirement was to facilitate an orderly integration of water systems in the future as TMWA's service area may expand.

Based on Board member concerns about parceling of land and about the private water systems being created or expanded, these are good topics to address in the upcoming Board Strategic Planning process.



STAFF REPORT

TO: Board of Directors
THRU: Mark Foree, General Manager
FROM: Scott Estes, Director of Engineering
BY: Bill Hauck, Sr. Hydrologist
DATE: January 11, 2016
SUBJECT: **Operations Report for January 2016 Board Meeting**

(A) Water Supply

Snowpack - The 2016 water year is off to a solid start especially when compared to last winter. Snowpack as of today is 105% of average in the Truckee River Basin, and 134% of average in the Lake Tahoe Basin. Snowpack on this same day last year was just 51% of average in the Truckee Basin and 35% of average in the Tahoe Basin. In fact, there is 40% more water content in the snowpack right now in the Truckee Basin than at the peak of last winter. Our region has seen multiple series of smaller-type winter storms lately which have kept us above-average in terms of snowpack, and it appears (according to NOAA) that this stormy pattern is going to continue at least in the short-term as the effects of this strong El Nino continue to unfold.

Reservoir Storage - The elevation of Lake Tahoe is 6221.58 feet. This is 1.42 feet below the invert of the outlet channel (6223.00 feet). Storage is -172,000 acre-feet (AF) and releases have not been possible from the lake into the Truckee River since October 2014. Boca Reservoir has approximately 9,500 AF of water in storage, and is currently at 23% of capacity. Donner Lake storage is 3,800 acre-feet, and is 40% of capacity. Independence Lake is at 80% capacity with 13,975 AF in storage. Prosser Reservoir storage is currently 6,990 AF which is 23% of its maximum storage capacity of 29,800 acre-feet. Stampede Reservoir's storage is currently at 27,050 AF which is 12% of its maximum capacity of 226,000 acre-feet. Since December 1st, TMWA has been credit storing available surface water in Boca, Stampede and Prosser reservoirs according to the terms of the new Truckee River Operating Agreement. Through the first (42) days TMWA has been able to accrue approximately 3,600 acre-feet of storage between those three reservoirs that would not have been possible before TROA superseded the 1935 Truckee River Agreement.

Truckee River Flows - Discharge averaged 150 cubic feet per second (cfs) today at the CA/NV state line. The required rate of flow for the month of January is 400 cubic feet per second. Required rates of flow (Floriston Rates) haven't been met since the middle of April last year.

Since reservoir storage is depleted, there is no water that can be released to support Floriston Rates.

Outlook - Current snowpack conditions in both the Truckee and Tahoe basins provide optimism for a reversal in springtime streamflow runoff volumes after four straight years of drought. Conditions are slightly above normal at the moment. Early modeling indicates that normal runoff conditions would provide for normal Truckee River flows through about the end of August (which is significantly better than last year), but would still have TMWA using drought supplies to meet customer demand later in the summer-early fall timeframe. It is still very early in the snowpack building season (and anything can still happen), but the signs are all still pointing towards continued snowstorms for our region over the next several months which would lend support to or even improve this water supply outlook. If however, for some reason the storms (as forecasted by NOAA) don't come our way and we are left with an average or even below average snowpack when it is all said and done, then the fact that TROA is now in effect becomes all the more important for TMWA. TMWA has been able to (through the first 42 days) credit store approximately 3,600 AF and should be able to store an additional 10,700 AF under TROA by the start of summer, which puts the utility in great shape from a drought supply perspective regardless of how this winter ends up. It is projected that TMWA will go into summer 2016 with over 35,000 AF of upstream drought reserves in place and available to meet customer demand if needed. This is approximately 10,000 acre-feet more drought reserve storage than TMWA had going into the summer of 2015.

(B) Water Production

Demand - System demands are at their typical wintertime lows. Customer demand averaged approximately 33 million gallons per day (MGD) last week which is what you would expect for this time of the year. Ninety three (93) percent of TMWA's customer demand is currently being met with surface water from the Chalk Bluff water treatment plant, and the remaining seven (7) percent from groundwater. TMWA is currently recharging about 8 MGD through numerous well sites located throughout our service territory.

(C) Hydro Production

Generation - Average Truckee River flow at the CA/NV state line was approximately 150 cubic feet per second (cfs) this morning. This is still not enough water to be able to turn the plants back on and generate power with. River flows have not picked up to a high enough point and on any kind of consistent basis to warrant bringing them back on-line. It is projected that TMWA's hydro plants will remain off-line through the end of this month and may possibly not be turned back on again until the springtime, when there is a sufficient amount of water once again in the river due to snowmelt runoff.



STAFF REPORT

TO: Chairman and Board Members
THRU: Mark Foree, General Manager
FROM: Kim Mazeres, Customer Relations Director
DATE: January 11, 2016
SUBJECT: **Customer Service Report**

The following is a summary of Customer Service activity since the December Board meeting.

Ombudsman

There were four (4) calls to the Ombudsman in December. They were: a customer concerned with water underneath her house, who we put in touch with our lab for testing to ensure it was not coming from TMWA pipes; a customer with a very ill brother who has a large yard line leak and needed assistance to get it fixed, who we put in touch with 2-1-1 as well as let him know we would work with his brother regarding the bill once the leak was fixed; a customer who was shut-off-for-non-payment who felt it took too long to get reconnected after her payment; and, a customer who did not realize he had an unpaid, old final bill with us who apologized and paid the collections agency.

Communications

Attached is the calendar year-to-date website / social media report.

Since the December Board meeting there were numerous media articles including: the successful implementation of the Truckee River Operating Agreement, including the hundreds of millions of gallons of water we have stored in just the first month of modified river operations; the sale of the TCID half of Donner Lake to TMWA; early winter storms impact on snowpack and water supply; and, how to protect your water pipes from freezing. Dr. Shawn Stoddard had the article "*Length of Residency and Water Use in an Arid Urban Environment*" published in The Journal of Water Resources and Economics.

Customer outreach included:

- A presentation on the draft Water Resource Plan by Bill Hauck to 10 members of the Northern Nevada Claims Association.
- One tour of the Chalk Bluff Water Treatment Plant given by Water Treatment Plant Operator Michael Nevarez to 7 members of the UNR Hydrology Club.

Conservation

The drought communications planning team is continuing to meet to discuss plans for communications and advertising for next year's watering season should the drought continue.

Customer Calls – December

- 8,869 phone calls handled
- Average handling time of 4 minutes, 53 seconds a call
- Average speed of answer – 33 seconds

Billing – December

- 122,454 bills issued
- 171 (.1%) corrected bills
- 10,706 customers (8.8%) signed up for paperless billing

Service Orders – December

- 7,572 service orders taken
- 3,702 (49%) move-ins / move-outs
- 910 (12%) cut-out-for-non-payment and cut-in after receiving payments, including deposits and checks for tamper
- 766 (10%) zero consumption meter checks
- 723 (10%) re-read meters
- 715 (9%) new meter sets and meter/register/ERT exchanges and equipment checks
- 379 (5%) problems / emergencies, including cut-out for customer repairs, dirty water, no water, leaks, pressure complaints, safety issues, installing water meter blankets, etc.
- 127 (2%) high-bill complaints / audit and water usage review requests
- 58 (1%) various collection actions, including hanging 48-hour notices for elderly and disabled customers, returned mail and/or unpaid deposits, and handling of additional deposits

Remittance – December

- 32,433 mailed-in payments
- 29,018 electronic payments
- 25,001 payments via RapidPay (EFT)
- 16,000 one-time bank account payments
- 6,246 credit card payments
- 4,019 store payments
- 3,466 payments via drop box or at front desk

Collections – December

- 19,745 accounts received a late charge
- Mailed 10,096 10-day delinquent notices, 8.3% of accounts
- Mailed 2,295 48-hour delinquent notices, 1.9% of accounts
- 352 accounts eligible for disconnect
- 294 accounts actually disconnected (including accounts that had been disconnected-for-non-payment that presented NSF checks for their reconnection)
- 0.18% write-off to revenue

New business / New Construction – December

- 138 active jobs currently in process
- Collected over \$1,100,000 in new business fees/facility charges

Meter Statistics – Fiscal Year to Date

- 10 meter retrofits completed
- 258 meter exchanges completed
- 776 new business meter sets completed
- 120,415 meters currently installed



STAFF REPORT – Web & Social Media

TO: Chairman and Board Members
THRU: Mark Foree, General Manager
FROM: Robert Charpentier
DATE: January 11, 2016
SUBJECT: Web & Social Media Overview for January 1 – December 2015

Web & Social Media Overview – YTD 2015

Highlights

- **Website Overview – 2015:** Visitor numbers have increased 24% over the same period last year. Pageviews also jumped 21% from 624,277 to 758,466 for the year.
- **Conservation Awareness Grows:** visits to TMWA’s Assigned Day Watering and Lake Levels webpages grew 58% and 26% respectively. Also, the Report Water Waste page saw an increase of 165%.
- **Mobile Use Continues to Outpace Desktop in user-segment growth:** Visitor numbers increased for desktop (18%), and tablet access (24%) but mobile phone use far outpaced both with an increase of 50% over 2014. Mobile devices now account for 31% of tmwa.com’s total visitors.
- **Social Media Engagement Growth:** TMWA’s Facebook and Twitter followers have increased by 146% and 20% respectively since the end of 2014.

Website Results for January 1 – December 31, 2015

During 2015, the TMWA website experienced a steady increase in traffic over the same period in 2014, with visitor numbers ticking up over 24%. Of this number, 52% were returning visitors and 48% came to tmwa.com for the first time ever. The average visit duration was just under a minute and a half, with the majority of visitors focused on employment, contact information, and payment information.

Conservation topics were clearly much on our visitors’ minds in 2015. There was a 125% increase in visits to our Conservation page, assigned-day watering (+59%), report waste (+164%), conservation checklist (+77%) and sprinkler controller instructions (+160%). The overall number of page views also increased 21% year over year from 624,277 to 758,446.

tmwa.com — Website Traffic Review – YTD 2015

Traffic to the tmwa.com website for 2015 has grown 25%, from 377,618 visitors in 2014 to 471,014 in 2015. 2015 saw 22% more pageviews than the same period in 2014. The average visit duration was 1.22 minutes, with the majority of visitors focused on employment, payment options, contact information, and our Assigned-Day Watering page.

Year	Visitors	New	Returning	Pages/Visit	Avg. Visit Duration	Bounce Rate
2014	377,618	47.4%	52.6%	1.65	1:36 min	39%
2015	471,014	48.2%	51.8%	1.61	1:23 min	25%

Top Content (January 1 – December 31, 2015)

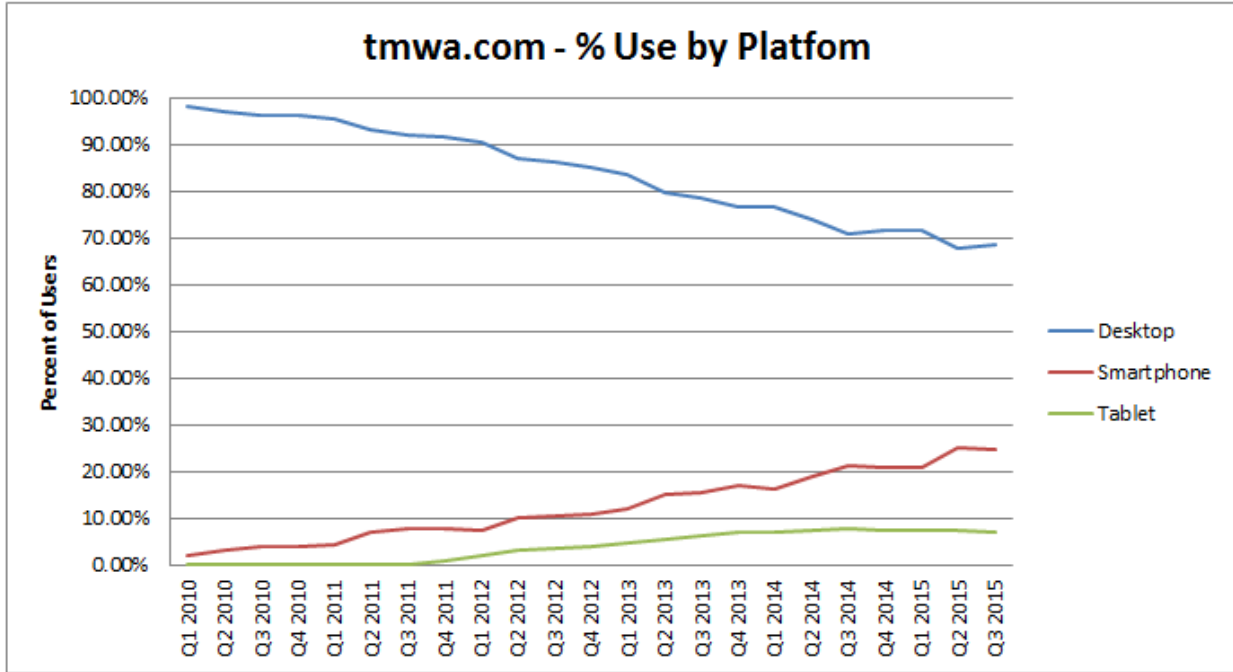
The most visited pages on tmwa.com (listed below) are similar what we have seen in the past. After the homepage—our most visited page—traffic went mostly to our employment, residential payment, and “contact us” pages. Interest in conservation materials has followed a predictable seasonal decrease.

Rank	Page	Pageviews	Change
1	Homepage	346,775	+25%
2	Employment	50,290	+15%
3	Residential/Payment Options	45,399	+1.3%
4	Contact Us	23,829	-17%
5	Assigned-Day Watering	16,465	+59%

Traffic Growth by Platform 2015 vs. 2014:

Desktop Users	+18%
Mobile Phone	+50%
Tablet Use	+24%

The chart below shows a quarterly breakdown of platform-use trends since Jan 1, 2010. Mobile access to tmwa.com now accounts for over 30% of user sessions while desktop sessions fell under 70% for the first time in Q2 of 2015. Tablet use, though increasing slightly, has more or less leveled off since Q3 of 2013. This trend may be attributable to users opting for larger smartphones rather than tablets.



Traffic to tmwa.com is coming from the following sources in 2015:

	471,014 % of Total: 100.00% (471,014)
1. (direct) / (none)	205,699 (43.67%)
2. google / organic	159,162 (33.79%)
3. yahoo / organic	24,055 (5.11%)
4. bing / organic	22,887 (4.86%)
5. reno.gov / referral	15,786 (3.35%)
6. tmwa.com / referral	9,575 (2.03%)
7. indeed.com / referral	4,765 (1.01%)
8. jobs.tmwa.com / referral	2,406 (0.51%)
9. bing.com / referral	1,949 (0.41%)
10. 4webmasters.org / referral	1,681 (0.36%)

TMWA Social Media



Currently TMWA has **1,267 Twitter followers** and **1,296 Facebook followers**. There is a current Twitter feed on the *tmwa.com* homepage that is updated daily to reflect current topics.

TMWA's YouTube Channel: <http://www.youtube.com/user/truckeemeadowswater>



TMWA videos are intended to provide tips for addressing issues they may face with their water supply, as well as give customers a window into TMWA's everyday operations, showing everything from infrastructure improvements to water-main repairs.

“About TMWA” Videos:

- [A Day in the Life of a Water Conservation Consultant](#)
- [TMWA Takes it Personally](#)

“TMWA How-to” videos:

- [Household Winterization – Get Ready for the Cold](#)
- [How to Reduce Your Water Use 10%](#)
- [Spring Sprinkler System Start-Up](#)
- [How to Shut off Your Home's Water in an Emergency](#)
- [How to Use Your Water Meter to Determine if you have a Leak](#)
- [How to Test for and Fix a Leaky Toilet Flapper](#)
- [How to Make an Online Bill Payment from Your Checking Account](#)

“TMWA at Work” videos:

- [Stead Water Tank Rehabilitation](#)
- [Partnership For Safe Water Award](#)
- [Idlewild Pump Station Improvements](#)
- [Steamboat Spillway, Flume Repair](#)
- [Fleish 'Railcar Bridge](#)
- [Water Main Repair on Haskell St.](#)
- [Highland Canal Improvement Project](#)
- [Ice Fighting](#)

TMWA also manages the following informational websites:

- www.communityforestry.org:
- www.howdoyousave.org:
- www.tmwastorage.com:

- www.tmwaacademy.com:
- www.tmwandscapeguide.com:
- www.truckeeriverfund.org:



STAFF REPORT

TO: Chairman and Board Members
THRU: Mark Foree, General Manager
FROM: John Erwin, Dir Natural Resources
DATE: 11 January 2016
SUBJECT: Report Water Resource and Annexation Activity

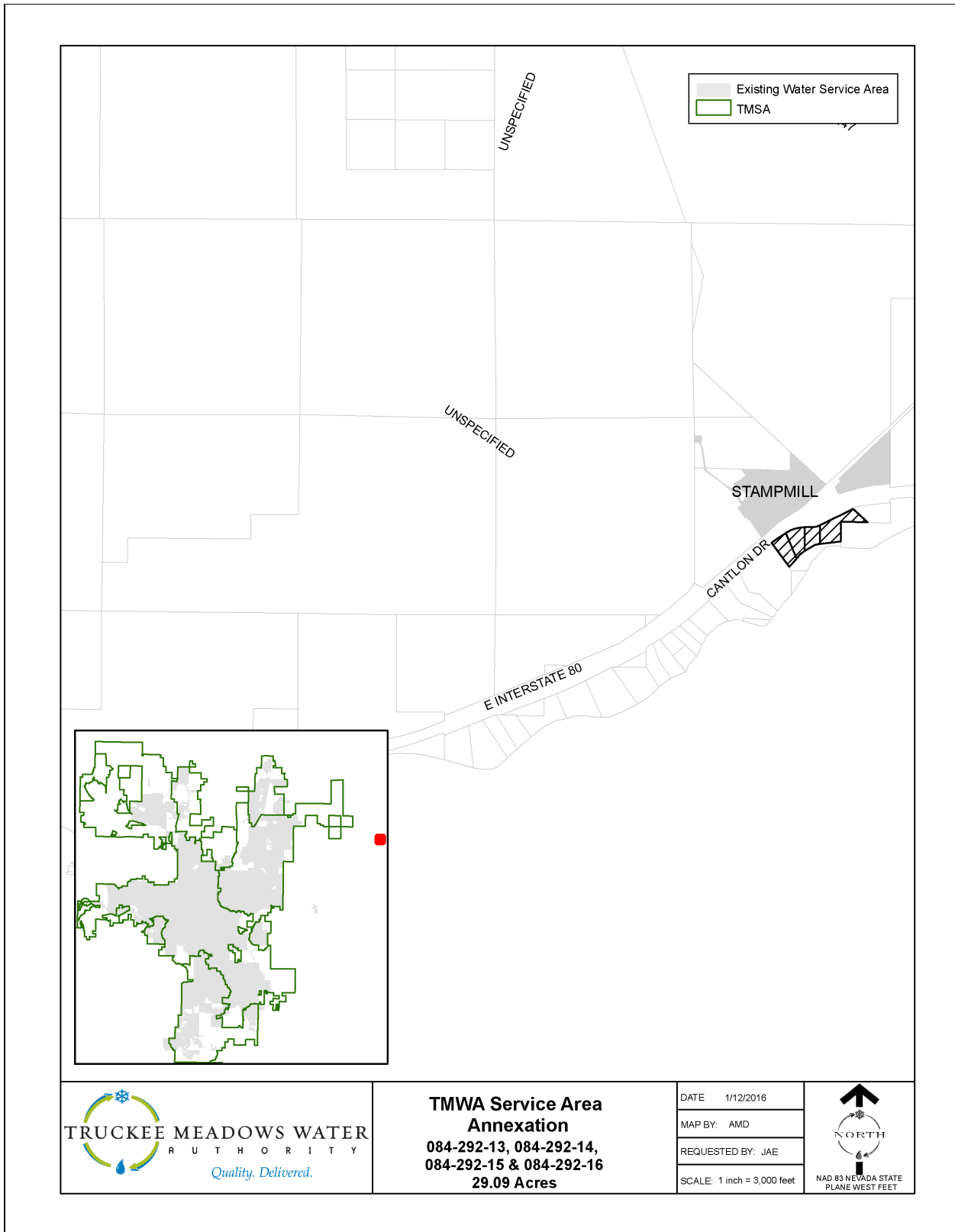
RULE 7

Rule 7 water resource purchases and will-serve commitment sales against purchased water resources through this reporting period:

Beginning Balance		7,210.07 AF
Purchases of water rights	0.00 AF	
Refunds	0.00 AF	
Sales	- 5.09 AF	
Adjustments	0.00 AF	
Ending Balance		7,204.98 AF
Price per acre foot at report date:		\$7,500

WATER SERVICE AREA ANNEXATIONS

Annexation of potential commercial development adjacent to the Stampmill system is shown in the attached map.



ESTIMATED RATES OF CONSERVATION, SUMMER 2015

Estimated Rates of Conservation, Summer 2015

Study Periods: May to September

Customer Class	Services	2013 Use		2015 Use		Percent Change	
		Median	Mean	Median	Mean	Median	Mean
Single Family Metered - TMWA	68,193	78	88.90	61	69.80	-19.70	-16.40
Single Family Metered - DWR	16,999	98	111.80	78	89.20	-19.10	-16.00
Single Family Metered - STMGID	3,164	146	160.40	112	125.10	-20.30	-18.50
Single Family Flat Rate - TMWA	3,473	185	219.60	137	165.40	-23.10	-21.60
Single Family Flat Rate - DWR	103	140	139.40	107	101.10	-24.60	-27.00
Single Family Flat Rate - STMGID	78	154	153.40	103	109.70	-29.10	-27.30
Commercial	4,945	92	423.20	71	368.20	-10.00	-8.70
Metered Irrigation	2,398	437	853.50	350	681.50	-18.00	-15.10

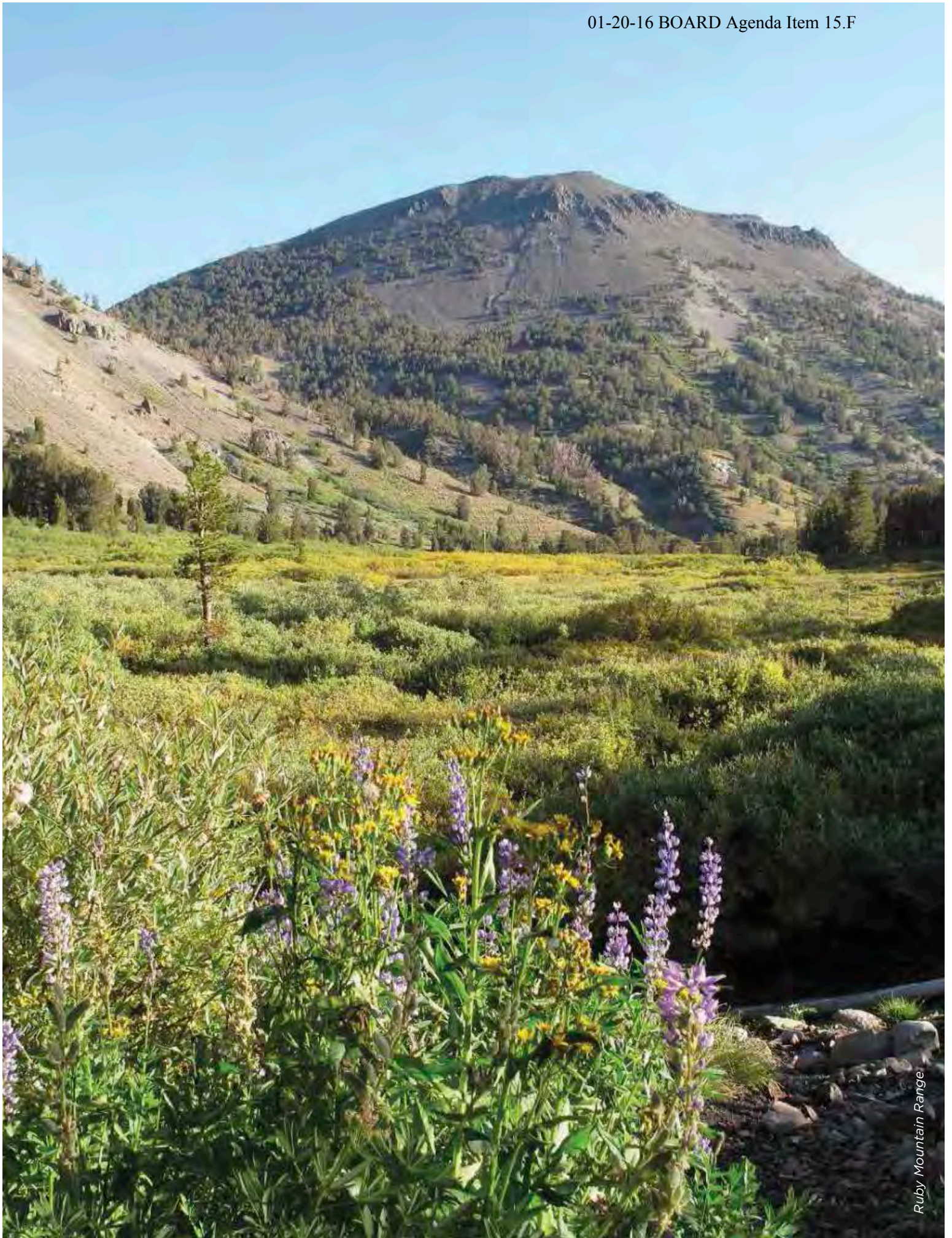
Note: this study looks only at water services with 2013 & 2015 data.



Nevada Drought Forum: *Recommendations Report*

Presented to Governor Brian Sandoval • December 2015





Nevada Drought Forum Members

Leo Drozdoff, P.E. (Chairman)

Director, Nevada Department of Conservation and Natural Resources

John Entsminger (Vice Chairman)

General Manager, Southern Nevada Water Authority

Jim Barbee

Director, Nevada Department of Agriculture

Jason King, P.E.

State Engineer, Nevada Division of Water Resources

Dr. Douglas Boyle

Nevada State Climatologist, University of Nevada, Reno

Dr. Mark Walker

Dean, University of Nevada Cooperative Extension

Dr. Justin Huntington

Associate Research Professor, Desert Research Institute

Caleb Cage

Chief, Nevada Division of Emergency Management

The Nevada Drought Forum would like to express its sincere gratitude to the many stakeholders who helped the Forum to better understand the issues, challenges and opportunities related to drought response in Nevada.

Brian Sandoval, Governor



Wheeler Peak

Executive Summary

The Nevada Drought Forum (Forum) was formed by Governor Brian Sandoval in April 2015 through Executive Order 2015-03 to address water resource challenges related to severe and sustained drought conditions that have affected much of the state. The Forum was directed to facilitate a statewide dialogue among interested stakeholders and identify best practices for drought policy, preparedness and management.

As part of its responsibilities, the Forum prepared a Summary of Current and Future Actions, received a monthly Statewide Situation Report, participated in the 2015 Governor's Drought Summit, reviewed and considered the Western Governor's Association (WGA) Drought Forum Final Report, and met with stakeholders throughout the state to better understand issues and challenges, as well as to identify opportunities to enhance Nevada's drought response efforts.

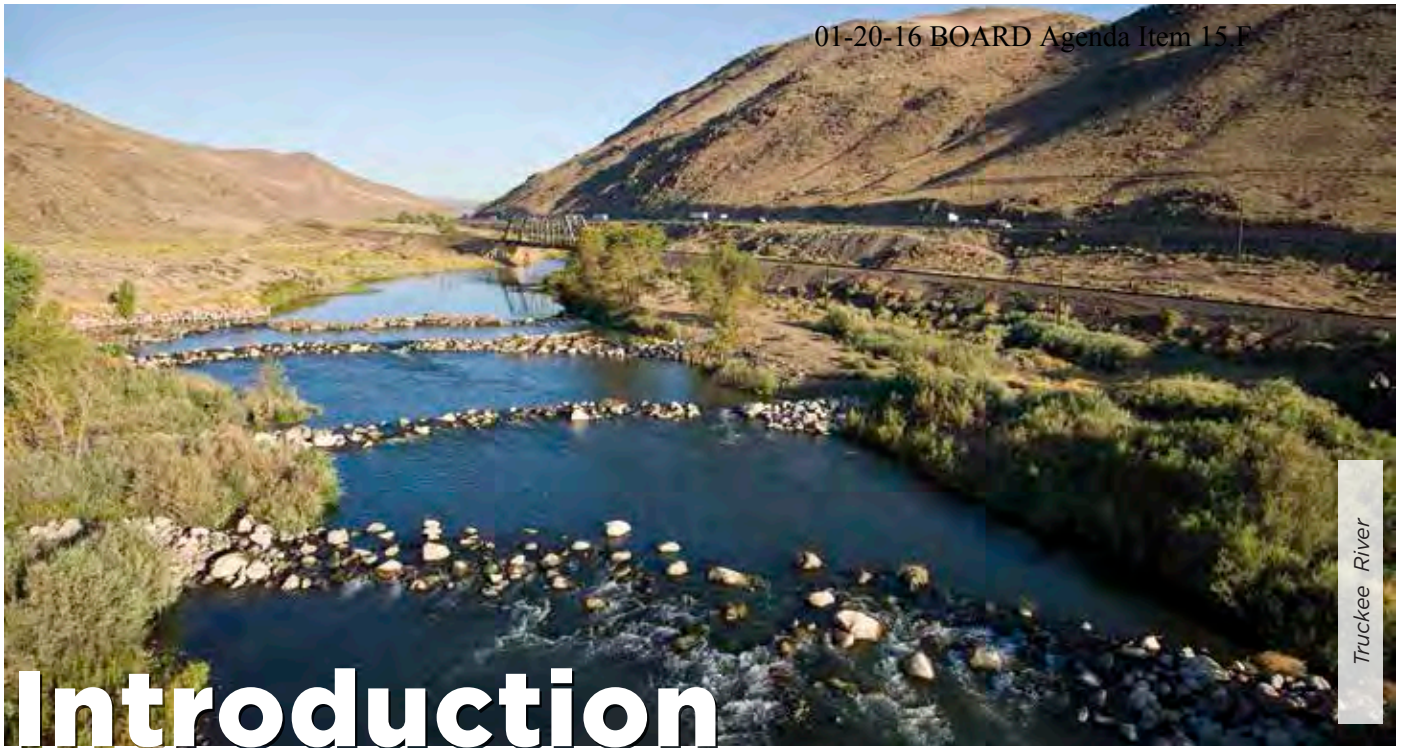
The Forum met six times from June through November 2015. Meetings were broadcast to multiple locations throughout the state to provide transparency and encourage public involvement. As part of its meeting process, the Forum invited representatives from various stakeholder groups to share information on drought impacts, mitigation efforts and current or anticipated obstacles to doing business during drought. Additionally, Forum members participated individually in the Governor's Drought Summit, which further explored stakeholder drought response efforts, water conservation efforts, conservation barriers, and opportunities to improve conditions and/or Nevada drought resiliency moving forward. These efforts are detailed more fully herein, with supporting information available in the appendices and online at drought.nv.gov.

Together, these discussions provided a strong foundation for deliberations by the Forum. As the Forum worked to develop recommendations, members agreed that meaningful investments in time, coordination and funding in the following key areas could improve Nevada's overall drought response and long-term resilience:

- Water Conservation
- Nevada Water Law
- Monitoring and Research Data
- Financial and Technical Assistance
- Supply Augmentation and Long-Range Planning
- Information Sharing and Outreach
- Drought Declarations/Emergency Actions

As described within the balance of this report, the Forum recommended specific actions that allow for consideration of next steps. The Forum believes that the Governor's leadership in addressing water conservation and drought for the long-term benefit of the state and its residents, together with further consideration and possible implementation of some or all of these recommendations, will provide a substantial and meaningful step toward managing statewide drought impacts and maintaining sustainable water supplies.





Truckee River

Introduction

Nevada is known for its rich and diverse landscape; it is also known for its harsh climate and hydrological extremes. The state is characterized as semi-arid to arid, with precipitation varying widely across its more than 500-mile stretch from northern to southern boundary. Temperatures can reach -40° F in some parts of the state and exceed 120° F in others. With nine inches of average precipitation annually, Nevada is the driest state in the nation.

Droughts and floods are common in the state—a place where water users have long coped with the dramatic changes that can occur from year to year. Despite its hardiness in responding to difficult water resource challenges, current conditions have tested Nevada's drought resiliency and are requiring unprecedented levels of action.

Four years of extremely dry conditions and below average snowpack in northern Nevada's mountain ranges have resulted in significant impacts to the Humboldt, Carson, Walker and Truckee river systems, as well as associated surface and groundwater water supplies. In the southern portion of the state, a 15-year drought in the Colorado River Basin has caused Lake Mead to drop by more than 130 feet. The reservoir is at its lowest point since it began filling during the 1930s, and further water level decline is expected. Central portions of the state have also experienced drier conditions. This has resulted in reduced recharge to groundwater basins, as well as inflow reductions to springs, seeps and streams that support healthy rangeland conditions and provide habitat for Nevada wildlife.



Nevada Drought Forum

To address the state's evolving water supply and demand challenges brought upon by severe drought, Governor Brian Sandoval established the Nevada Drought Forum (Forum) in April 2015 by Executive Order 2015-03 (Appendix A). The Forum was created to facilitate a statewide dialogue among interested stakeholders and to help identify best practices for drought policy, preparedness and management.

As part of its responsibilities, the Forum prepared a Summary of Current and Future Actions, which describes the current and planned activities of local, state and federal entities (Appendix B). The Forum also received a monthly Statewide Situation Report (Appendix C); participated in the September 2015 Governor's Drought Summit (Appendix D); reviewed and considered the Western Governors' Association (WGA) Drought Forum Final Report (Appendix E); invited stakeholders throughout the state to participate in Forum meetings (Appendix F) and received communications through the Drought Forum website (Appendix G).

These efforts helped establish a better understanding of how drought-related issues are affecting water users, industry and the environment, and informed the development of recommendations as presented in the latter portion of this document. The following provides a brief overview of the Drought Forum and key efforts since its formation.

DROUGHT FORUM REPRESENTATION

As established in the Governor's Executive Order, the Nevada Drought Forum is comprised of the following members:

- The Director of the Nevada Department of Conservation and Natural Resources
- The Director of the Nevada Department of Agriculture
- The State Engineer of the Nevada Division of Water Resources
- The Chief of the Nevada Division of Emergency Management
- The Nevada State Climatologist
- The Dean of the University of Nevada Cooperative Extension
- A representative of the Desert Research Institute
- A representative of the Southern Nevada Water Authority

SUMMARY OF CURRENT AND PLANNED ACTIONS:

In May 2015, the Forum issued a questionnaire to local, state and federal stakeholders. Respondents were asked to provide information on: water supply sources (groundwater, surface water, other); area of service (size, number of customers served, location); drought impacts on operations, resource availability and/or planning activities; actions taken, underway or planned; and, topics/issues for possible future discussion by the Forum.

The questionnaire was issued to more than 235 water users throughout Nevada, including municipal, state and federal agencies as well as private and other water users. Respondent information was summarized and posted to the Nevada Drought Forum website, drought.nv.gov, in August 2015.

The following describes reported impacts as well as current and planned drought response measures by user type.

Local Agencies:

Local agencies reported drought impacts that range in nature from no impact to significant impact. Several respondents noted higher customer water use due to drought conditions,

as well as declining ground and/or surface water levels. For some, declining water levels do not have an immediate impact, but have the potential for impact if conditions persist. Others indicated that declining water levels have significantly affected water supply availability, facilities and operations.

Drought response measures vary by agency to include one or more of the following: water conservation plans, education/outreach, landscape development codes, irrigation audits, water budgets, watering restrictions, water waste prohibitions/enforcement, leak detection/repair, metered use/rates, incentive/rebate programs, industry partnerships, facility modifications/new facilities, new supply acquisition/development and other actions.

Other Water Purveyors:

Other water purveyors, including irrigation districts and private water companies, reported financial impacts due to decreased water use and declining groundwater levels.

Current and planned drought response measures varied to include one or more of the following: water conservation plans, outreach, landscape development codes, watering restrictions, water waste restrictions, cooling system restrictions, leak detection/repair, rebate programs, facility modifications and vegetative management.

State Agencies:

State agencies reported impacts that include water supply disruptions and facility failures due to reduced precipitation and/or inflow to surface and groundwater systems; impacts/potential future impacts on wildlife and environmental resources, recreation (boating), game (hunting and fishing) and park visitation; increased potential for wildfire; and drought-related impacts to finances/operations.

Current and planned drought response measures vary by agency to include one or more of the following: new/improved storage, stabilization of water levels, securing new resources/facilities, outreach, increased irrigation/watering restrictions, plumbing/infrastructure improvements, monitoring and mitigation, and drought-related assistance.



Governor Sandoval announces formation of Drought Forum and discusses Nevada's changing landscape in the face of persistent drought conditions.

Federal Agencies:

Federal agencies reported drought impacts to wildlife, recreation, cultural resources, success and magnitude of restoration efforts, minerals, rangeland/livestock forage (including impacts to grazing allotments), loss of agricultural production, livestock herd reductions and tree health. Potential impacts reported include health and resiliency of timber stands due to insects/disease, as well as fire hazards.

Current and planned response measures vary by agency to include one or more of the following: education/outreach, monitoring/mitigation, financial assistance, conservation compliance and other efforts.

The Summary of Current and Planned Actions is provided in Appendix B. Individual response forms submitted by agency/respondent are available at drought.nv.gov.

STATEWIDE SITUATION REPORT:

Between March and June 2015, the Nevada State Emergency Operations Center issued a monthly Statewide Drought Emergency Situation Report (Appendix C). Each report included a copy of the month's current U.S. Drought Monitor, which contained a listing of severity designations by

county; information on emergency disaster programs; water level data; wildfire information; and other drought-related information and resources.

DROUGHT FORUM MEETINGS:

The Nevada Drought Forum held a total of six meetings between June and November 2015. Meetings were open to public and noticed in accordance with Open Meeting Law. Meetings were also broadcast to multiple locations throughout the state to provide transparency and encourage public involvement in the Forum's discussion and deliberations.

As part of its July 17, 2015 meeting, the Forum invited sector representatives from gaming, hospitality, mining, development, energy, commercial, industrial, tourism, recreation and general business to share information on drought impacts to operations, drought mitigation efforts, and current or anticipated obstacles to doing business because of drought conditions. The Forum continued this discussion at its August 19, 2015 meeting as it considered information from agricultural producers, tribal nations, non-governmental organizations, and public and private water providers/water authorities.

Meeting agendas and minutes, including a summary from presenters at the July and August Forum meetings, are included in Appendix F. Letters, comments and other meeting materials are available by meeting date at drought.nv.gov.

GOVERNORS DROUGHT SUMMIT:

Forum members attended and individually participated in the Governor's Drought Summit, September 21 – 23, 2015, at the Nevada State Legislative Building in Carson City. The Summit was opened by Governor Sandoval and included facilitated discussions involving more than 50 presenters, many of whom are national and state experts. The Summit also featured an evening at the Governor's Mansion that further advanced the valuable cross-sector discussions and idea sharing that occurred throughout the three days of meetings.

The Summit's panel discussions included such topics as defining and predicting drought; water history, law and past/current users; Nevada challenges; conservation success stories, which included participation by the media; water conservation communications/messaging; and a case study on regional water partnerships and solutions.

Participants were asked to share information on drought impacts, water conservation efforts, conservation barriers, and opportunities to improve conditions and/or Nevada drought resiliency moving forward. Members of the public were encouraged to submit questions and comments. Video recordings of the Summit are available at drought.nv.gov. The Summit program, together with comment cards submitted by attendees, is provided in Appendix D.

under Governor Sandoval's leadership to provide a framework for states, industries and communities to share best practices and policy options for drought response. Key themes identified for future exploration of the WGA Drought Forum include data and analysis; produced, reuse and brackish water; forest health and soil stewardship; water conservation and efficiency; infrastructure and investment; working within institutional frameworks to manage drought; and communication and collaboration.

The Forum discussed the report during its deliberations and agreed that most of the topics identified in the report generally correspond with many of the Forum's recommendations, as well as Nevada's challenges and opportunities. The WGA Report is provided in Appendix E.

WESTERN GOVERNORS' ASSOCIATION DROUGHT FORUM FINAL REPORT:

Forum members received and reviewed the Western Governors' Association (WGA) Drought Forum final report released in June 2015, an initiative of 2015 WGA Chairman, Governor Sandoval. The WGA Drought Forum was created





Drought Forum Recommendations

The Forum listened to and considered numerous perspectives as part of its meeting process. Strong and sometimes conflicting views were presented on how to address the state's water resource challenges. Within this continuum, the Forum agreed there existed both opportunity and common ground—places where investments in time, coordination and funding could vastly improve Nevada's overall drought response and resilience.

The recommendations provided herein detail actions that the Forum believes can be taken now to bring about necessary and meaningful change. Governor Sandoval's leadership in addressing drought for the benefit of the state and its residents, along with further consideration and implementation of the Forum's recommendations, provide substantial and significant steps to help secure Nevada's water future.

1 WATER CONSERVATION

Water conservation is an important tool to help water users manage demands and extend the use of available resources. In many cases, conservation can help to ease the impact of water supply shortages during drought and reduce needs for additional water supplies.

In 1991, the state enacted laws requiring municipal, industrial and domestic water suppliers to adopt water conservation plans based on the climate and living conditions of their service area. For public water systems, NRS 540.121 through 540.151 was added to specify content requirements of the plans and the process and timeframes to be followed. NRS 704.662 through 704.6624 was also added to establish conservation plan requirements for those utilities regulated by the Public Utilities Commission of Nevada.

The Forum reviewed existing statutes and agreed that additional provisions could be enacted to increase water efficiency, while still recognizing regional differences in climate and other factors. The Forum recommended changes to water conservation plan requirements that include new provisions for watering restrictions, metering, conservation water rate structures and water efficiency standards for new development. The Forum agreed that technical support should be provided to help water suppliers develop meaningful and actionable plans (see also “Financial and Technical Assistance”), and compliance with submission requirements should be enforced.

The Forum also discussed the need for additional water conservation actions among agricultural water users by encouraging agricultural producers to continue to pursue water saving technology and/or best management practices. The Forum also agreed that metering all water uses in the state would be an appropriate next step. This action could significantly enhance overall water use efficiency among all water users and allow for better accounting of the state’s limited water resources.

Nevada’s appropriative rights system was another key conversation topic among the Forum and

agricultural producers. Many producers discussed perceived risks associated with conservation, including potential loss of unused water saved as part of conservation efforts. Nevada water law is based on a “use it or lose it” doctrine (see also, “Nevada Water Law”), which requires users to demonstrate a beneficial use of water and restricts users from speculating in water rights or holding on to water rights that they do not intend to place for beneficial use in a timely manner. The Forum agreed that these provisions should be reviewed to promote conservation efforts among agricultural users and help resolve potential conflicts.

The Forum also discussed and recommended implementation of a policy directive addressing water efficiency within the power industry, and recommended strategies to improve conservation efforts within homeowner associations.

RECOMMENDATIONS

- Amend the current statute that requires all water purveyors to submit a water conservation plan to the Division of Water Resources. Amendments would add the following additional areas that purveyors must require as part of their plan, unless the requirement is deemed unnecessary by the State Engineer:
 - ◆ Meters on all connections
 - ◆ Water efficiency standards for new development
 - ◆ Tiered rate structures to promote water conservation
 - ◆ Time-of-day and day-of-week watering restrictions
- Ensure compliance with water conservation plan submittal requirements by amending the water conservation plans statute to provide enforcement capability for the State Engineer after attempts to achieve submittal compliance, including technical assistance, are unsuccessful.
- Clarify and strengthen the law to allow the State Engineer to require the installation of water meters for all water uses in the state, including domestic wells, unless such installation is deemed unnecessary by the State Engineer.

- Review potential changes and clarifications to the “use it or lose it” provisions in Nevada water law to increase opportunities and incentives for water conservation during drought and non-drought conditions.
- 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).
- Issue a state policy directive that requires all newly developed thermoelectric power plant projects, or all additions to existing thermoelectric facilities, to utilize dry cooling or other similar water efficient technology.
- Request local political subdivisions to explore implementation of water conservation measures where Home Owner Association Covenants, Conditions and Restrictions (CC&Rs) are to the contrary.

2 NEVADA WATER LAW

Nevada’s first water law was passed in 1866 and has been amended many times since. The Office of the State Engineer was created in 1903 to protect existing water rights and to improve methods for utilizing the state’s limited water resources. The State Engineer is responsible for administering and enforcing Nevada water law, which includes the appropriation of surface and groundwater in the state, and the adjudication of pre-statutory vested rights, dam safety and other duties.

Nevada water law is considered one of the most comprehensive water laws in the western United States. It is based on two basic principles: prior appropriation and beneficial use. Prior appropriation—also known as “first in time, first in right”—allows for the orderly use of the state’s water resources by granting priority to senior water rights in times of shortage. This concept helps to ensure senior water users are protected, even as new uses for water are allocated.

The Forum’s meetings and the Drought Summit generated significant discussion regarding

Nevada water law, particularly in regard to the management of over appropriated basins; pumping impacts to senior groundwater right holders by junior pumpers; the relationship between groundwater pumping and surface water flows; adaptive management through monitoring, management and mitigation (“3M Plans”); and the nexus between Nevada’s “use it or lose it” doctrine and water conservation needs (see also “Water Conservation”). Other conversations centered on place of use; management of supplemental water rights; terms of use for temporary rights; and the need for greater flexibility to manage resources during times of drought to help minimize impacts.

Forum members and participants generally agreed that current drought conditions have intensified the conversation, particularly in light of declining stream and groundwater levels, as well as dwindling storage reserves. These issues have the potential to create and/or exacerbate conflict, particularly in over-appropriated basins. The time it takes to resolve conflicts through the courts is also a concern, especially since many fundamental water management principles are not clearly defined in statutes. The Drought Forum agreed that these issues need to be addressed, with an incremental approach to guard against unintended consequences.

To help ease drought-related impacts, the Forum recommended changes to Nevada water law that clarify and strengthen the State Engineer’s authority related to water management tools such as 3M Plans, Critical Management Areas and Groundwater Management Plans. Members also agreed that in times of curtailment (when water supplies are reduced or restricted), access to water for indoor use by domestic well users should be preserved.

The Forum also discussed the topic of rainwater collection and use for domestic or wildlife needs. NRS 533.030 does not specifically address the permissibility of rainwater capture and use, but does limit the diversion and use of water in the state to those entities that have a granted water right. The Forum agreed that changes to law could be implemented to allow for the use of small-scale precipitation capture devices without significant



impacts to state resources, although limitations must be defined to restrict the magnitude of these activities.

RECOMMENDATIONS

- Continue refinement of Nevada water law to strengthen the State Engineer's ability to address Critical Management Areas and provide flexibility in the development of Groundwater Management Plans for over-appropriated basins.
- Clarify Nevada water law related to the State Engineer's inherent authority to provide for adaptive water management through implementation of 3M Plans.
- Clearly define fundamental water management principles in statute.
- Seek an addition to Nevada water law that clarifies that, in times of curtailment, only outdoor use by domestic well users may be prohibited.
- Explore changing water law to allow for the use of small scale precipitation capture devices in areas where capture increases the water supply and does not conflict with existing rights.

3 MONITORING AND RESEARCH DATA

Produced by the National Drought Mitigation Center, the U.S. Drought Monitor provides summary information on the location and intensity of drought conditions occurring across the United States and Puerto Rico. The map is

updated weekly by combining data and local expert input. The Drought Monitor is produced by a rotating group from the U.S. Department of Agriculture, the National Oceanic and Atmospheric Administration, and the National Drought Mitigation Center, incorporating the review from a group of 250 climatologists, extension agents and others across the nation.

Within Nevada, the Drought Monitor is used by state and federal agencies to establish policy and management tools and to assist local planning agencies and other water users with real-time information on hydrological conditions. While the Drought Monitor is a useful tool for reporting current hydrological conditions, participants at the Forum meetings and the Summit agreed that additional information and analysis is needed to improve decision-making efforts related to livestock grazing, as well as land and environmental resource management.

The Forum agreed that narrowing information gaps through additional data collection and monitoring could significantly improve coordination between various stakeholder groups throughout the state and allow for the development of more flexible resource management strategies. As such, the Forum recommended the formation of a working group to set monitoring and research goals, and to assess monitoring recommendations. The work group's efforts will complement and enhance the applicability, value and effectiveness of the U.S. Drought Monitor through the development of

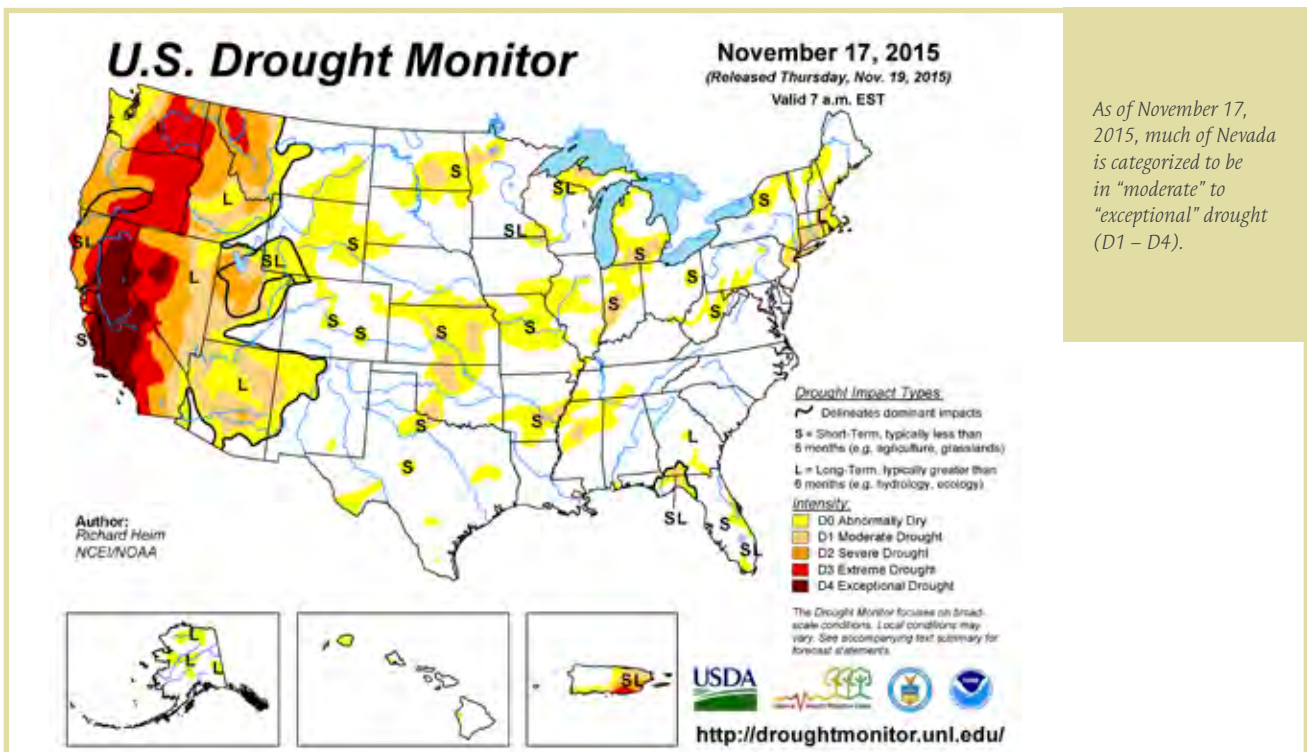
new tools to increase the accuracy and accessibility of data, and improve drought forecasting through technology. The Forum agreed these coordinated efforts may help to defray expenses on mutually beneficial projects, make better use of limited staffing resources, reduce duplication of efforts and enhance interagency/stakeholder coordination and cooperation.

The Forum recognized that enhanced forecasting and monitoring tools may also be of value to other western states that are experiencing significant drought conditions. To this end, members recommended that the U.S. Drought Monitor be expanded to include multiple indicators, including state impact reporting. They also supported the addition of another Drought Monitor author in the western states and other drought-related research.

RECOMMENDATIONS

- Direct the formation of a working group of climate professionals and other relevant disciplines to set goals and assess recommendations for drought monitoring, including information gaps/site needs, prioritization of efforts, implementation strategies, and cost identification/funding strategies. This working group is encouraged to:

- ◆ Develop a statewide monitoring network that utilizes diverse information sources to strengthen Nevada information sharing and monitoring coordination as well as centralized availability of real-time data.
- ◆ Partner among network organizations to increase and enhance the accuracy of data, in part, by establishing standards for data collection and reporting.
- ◆ Work with other organizations (such as NIDIS—National Integrated Drought Information System) and/or explore implementation of new technologies to improve drought monitoring, drought early warning systems and forecasts.
- Work with other western Governors to request an additional U.S. Drought Monitor author to represent western states and encourage expansion of the U.S. Drought Monitor to include multiple indicators (vegetative and hydrologic drought), including state impact reporting.
- Support development of research data related to the impacts of drought, including state tourism’s offer to include questions related to drought and visitation as part of its scheduled research efforts.



As of November 17, 2015, much of Nevada is categorized to be in "moderate" to "exceptional" drought (D1 – D4).

4 FINANCIAL AND TECHNICAL ASSISTANCE

Incentive and retrofit programs have had much success in certain parts of the state, and could serve as a model for other users. However, such programs often require significant levels of funding, a limiting factor that many stakeholders face. As such, the Forum recommended that state agencies identify high-priority funding programs (including incentive programs) and associated resource needs.

The Forum also agreed that additional staffing resources will likely be needed to implement recommendations for monitoring and enforcement, as well as to provide technical assistance to water users/suppliers. Likewise, members discussed the importance of individual water users to investigate independent funding options for drought relief and conservation efficiency, including existing grants, state revolving loan funds and/or other federal emergency assistance programs.

RECOMMENDATIONS

- Direct appropriate state agencies to investigate and develop budget proposals that improve Nevada's drought response and resiliency, including possible incentive and/or rebate programs.
- Establish adequate bond funding for the state's Water Grants Program, under the purview of the Board for Financing Water Projects, for necessary capital improvements to aged water infrastructure above and beyond what a community can demonstrably afford.
- Enhance state water resources staffing capacity to support increased metering, monitoring/inventories and enforcement, as well as technical assistance in areas such as water conservation planning.
- Direct appropriate state agencies to identify and prioritize the resources needed to implement those recommendations of the Drought Forum selected by the Governor.

5 SUPPLY AUGMENTATION AND LONG-RANGE PLANNING

In addition to exploring ways to reduce water use and improve overall efficiency, the Forum also considered opportunities to augment existing water supplies and improve drought response efforts through long-range planning.

The Forum agreed that the recharge and recovery of drought affected water supplies—including river, storage and groundwater systems—is an important priority to improve Nevada's resilience to future drought events and recommended exploring ways to enhance system recovery. While these efforts are unlikely to provide near-term drought relief due to time and financial constraints that would need to be addressed, the Forum agreed that additional steps should be taken to identify strategies that can be implemented to improve recovery of impacted systems, as well as enhance the state's long-term resiliency.

Likewise, the Forum recommended that local governments work with water purveyors to develop long-range water plans that consider both water supply and demand projections. Such planning efforts are a valuable tool in anticipating future water resource needs, as well as identify needed management strategies for use during both drought and non-drought conditions.

The Forum also agreed that the reuse of treated waste water is a valuable resource that should be explored to augment existing water supplies. As such, the Forum recommended support for the state's Water Reuse Steering Committee in exploring possible changes to reuse regulations, particularly in cases where implementation of reuse extends available water supplies. Likewise, the Forum also supported the continued monitoring of technology and other advancements that could potentially increase water supplies and/or reduce evaporative losses.

RECOMMENDATIONS

- Ask appropriate staff to explore the feasibility of additional management measures that can help to expedite the recharge and recovery of impacted river, storage and groundwater systems.

- Without affecting the inherent authority of the Nevada State Engineer, support and encourage the development of local and regional water plans that include long-term supply and demand projections in order to ensure a sustainable water supply.
- Support the work of the state's Water Reuse Steering Committee in exploring possible changes to water reuse regulations in cases where reuse extends supplies.
- Direct continued monitoring of advances, efficacy and cost efficiencies related to desalination of brackish water, cloud seeding and evaporative controls.
- Identify high-level messages on drought conditions and responses that can be delivered statewide to ensure consistency of messaging to all Nevada water users by state agencies, water purveyors and other stakeholders.
- Maintain a focus on water conservation messaging in Nevada even in non-drought conditions.
- Explore opportunities for judicial education on water law, such as the New Mexico Water Judges Seminar.
- Establish dedicated state staff to handle public information coordination statewide, including outreach to elected and appointed officials, as well as education programs, web site maintenance and enhancement, and assistance with information on best practices and technology transfers.

6 INFORMATION SHARING AND OUTREACH

The Forum discussed the availability and use of information in decision-making processes, particularly as it relates to drought response (see also "Monitoring and Research Data"). Members agreed that additional outreach tools are needed and recommended ways to better inform the public and other decision-makers of current conditions, policy intent and other drought-related issues. Implementation of these recommendations is designed to provide for more flexibility and predictability in responding to Nevada's water supply challenges, and to ensure a more consistent understanding among interested parties.

The Forum also agreed that communication with the public and other stakeholders should occur on an ongoing basis, regardless of the state's drought status. To support this effort, the Forum recommended staff resources to support current and ongoing coordination, information sharing and outreach needs.

RECOMMENDATIONS

- Work with federal partners on what climate information/data will trigger federal management actions, with the goal of enhancing predictability for asset managers and the development of a more flexible response in evolving drought conditions.

7 DROUGHT DECLARATIONS/ EMERGENCY ACTIONS

The State Drought Response Plan, updated in April 2012, was developed to define and address drought in Nevada, and to help mitigate associated impacts. The plan established a framework of actions based on three stages of drought: Drought Watch (stage 1), Drought Alert (stage 2) and Drought Emergency (stage 3). A Drought Response Committee was also formed to monitor drought conditions, collect data associated with drought, oversee intergovernmental coordination, disseminate information, report to the Governor, and work with the State Emergency Operation Center on drought response.

Subsequent to this action, the U.S. Department of Agriculture issued a final ruling that updated its disaster regulation process for drought-affected areas. The rule includes provisions for automatic disaster designations in the case of severe drought. It also removes the requirement for a State Governor to request a Secretarial disaster designation before a designation can be made. According to the rule, a drought disaster will be declared for any county that: 1) has a drought intensity value of at least D2 (Severe Drought) as reported in the U.S. Drought Monitor for eight consecutive weeks; or 2) has a drought intensity

value of D3 (Extreme Drought) or higher at any time in the growing season of the affected crops.

The Forum agreed that objective Nevada criteria are needed to define drought stages. Further, members agreed that the state's current Drought Response Plan should be updated to include definitions and other relevant drought response mitigation efforts resulting from the Forum's work. The Forum also recommended that the Committee review existing laws concerning water emergencies to ensure consistency.

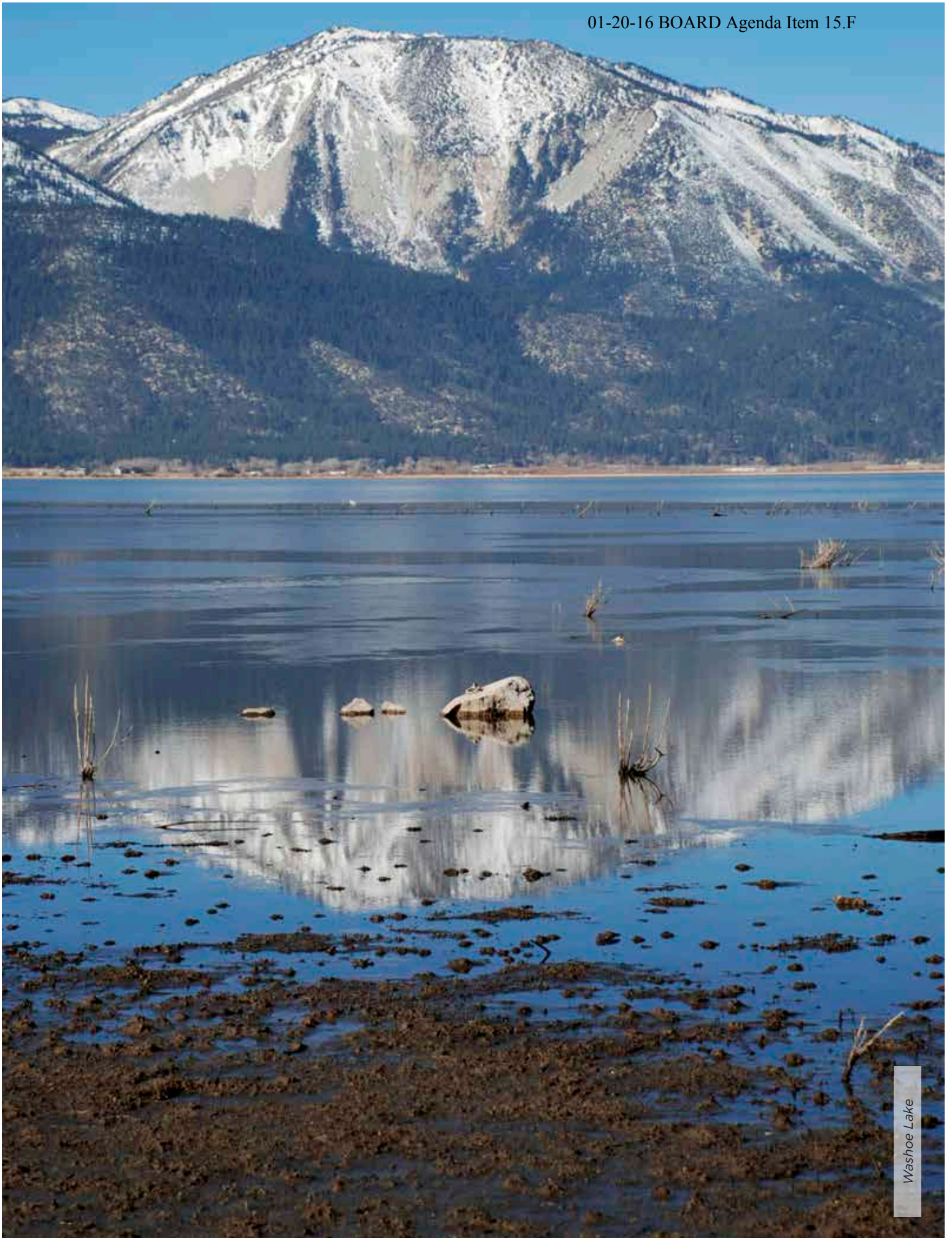
As part of this discussion, the Forum recognized the diversity of the state's climate, water supply sources and users' overall ability to respond to drought. Members cautioned against implementing measures on a statewide basis unless conditions warranted such action and noted that emergency measures enacted should serve to preserve access to supplies. Users/suppliers that have made appropriate reductions or implemented other tools to ensure sufficient resources are available should not be penalized.

RECOMMENDATIONS

- Currently, the State Drought Response Committee consists of the State Climatologist, State Engineer and the Chief of Nevada's Division of Emergency Management. The Forum recommends expanding this committee to include representatives from TMWA, SNWA and the Nevada Department of Agriculture and directing the newly expanded State Drought Response Committee to develop broad-based, objective Nevada criteria specifically for a Governor's Drought Declaration in lieu of a declaration based solely on a U.S. Department of Agriculture determination.
- Require the Committee to further refine and define the Nevada criteria for Drought Warnings and Drought Alerts, and to clarify in the Drought Response Plan the distinctions between Drought Alerts, Drought Warnings and a Governor Drought Declaration, and a proclamation of water emergency as outlined in NRS 416.050.

- Require the Committee to update the current Drought Response Plan in light of information gathered through the Drought Forum and Governor's Drought Summit.
- Direct the Committee to explore the steps necessary for response measures such as a State Engineer's temporary suspension of forfeiture provisions or imposition of shared curtailment, as well as temporary suspension by state Environmental Protection of non-public health water quality standards.
- Direct the Committee to also review, from a water perspective, NRS Chapter 416 *Emergencies Concerning Water or Energy*, to align the chapter with the Drought Response Plan, including possible amendment of NRS 416.060 to add the term "statutes" to "rescind any regulation or order" in narrowly defined water emergencies.
- The Committee shall invite experts and make recommendations to the Governor for adding additional members as needed.





Washoe Lake