



**TRUCKEE MEADOWS WATER AUTHORITY**  
**Board of Directors**

**AGENDA**

**Wednesday, February 15, 2017 at 10:00 a.m.**  
**Sparks Council Chambers, 745 4<sup>th</sup> Street, Sparks, NV**

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**Board Members**

Chair Geno Martini  
Member Neoma Jardon  
Member Jenny Brekhus  
Member Ron Smith

Vice Chair Vaughn Hartung  
Member Jeanne Herman  
Member Naomi Duerr

**NOTES:**

1. The announcement of this meeting has been posted at the following locations: Truckee Meadows Water Authority (1355 Capital Blvd., Reno), Reno City Hall (1 E. First St., Reno), Sparks City Hall (431 Prater Way, Sparks), Sparks Justice Court (1675 E. Prater Way, Sparks), Washoe County Courthouse (75 Court St., Reno), Washoe County Central Library (301 South Center St., Reno), Washoe County Administration (1001 East Ninth St., Reno), at <http://www.tmwa.com>, and State of Nevada Public Notice Website, <https://notice.nv.gov/>.
2. In accordance with NRS 241.020, this agenda closes three working days prior to the meeting. We are pleased to make reasonable accommodations for persons who are disabled and wish to attend meetings. If you require special arrangements for the meeting, please call 834-8002 before the meeting date.
3. The Board may elect to combine agenda items, consider agenda items out of order, remove agenda items, or delay discussion on agenda items. Arrive at the meeting at the posted time to hear item(s) of interest.
4. Asterisks (\*) denote non-action items.
5. Public comment is limited to three minutes and is allowed during the public comment periods. The public may sign-up to speak during the public comment period or on a specific agenda item by completing a "Request to Speak" card and submitting it to the clerk. In addition to the public comment periods, the Chairman has the discretion to allow public comment on any agenda item, including any item on which action is to be taken.
6. In the event the Chairman and Vice-Chairman are absent, the remaining Board members may elect a temporary presiding officer to preside over the meeting until the Chairman or Vice-Chairman are present (**Standing Item of Possible Action**).
7. Notice of possible quorum of Western Regional Water Commission: Because several members of the Truckee Meadows Water Authority Board of Directors are also Trustees of the Western Regional Water Commission, it is possible that a quorum of the Western Regional Water Commission may be present, however, such members will not deliberate or take action at this meeting in their capacity as Trustees of the Western Regional Water Commission.

1. Roll call\*
2. Pledge of allegiance\*
3. Public comment — limited to no more than three minutes per speaker\*
4. Approval of the agenda (**For Possible Action**)
5. Approval of the minutes of the January 18, 2017 meeting of the TMWA Board of Directors (**For Possible Action**)

<sup>1</sup> The Board may adjourn from the public meeting at any time during the agenda to receive information from legal counsel regarding potential or existing litigation and to deliberate toward a decision on such matters.

6. Water Supply Update — Bill Hauck\*
7. Discussion and possible action and direction to staff regarding 2017 legislative activities, current bills, and TMWA recommended positions on legislative proposals — John Zimmerman and Steve Walker, Walker & Associates **(For Possible Action)**
8. Discussion and action on appointment or reappointment of four persons to the Board of Trustees of the Western Regional Water Commission consisting of one TMWA Board member each from: the Reno City Council, Sparks City Council, Washoe County Board of Commissioners, and one person to represent TMWA as successor to South Truckee Meadows General Improvement District, from the following list of eligible persons: Jenny Brekhus, Jeanne Herman, Neoma Jardon, Bob Lucey, Ron Smith, for two-year terms ending March 31, 2019 — Mark Foree **(For Possible Action)**
9. Presentation of Financial Performance for First Half Fiscal Year 2017 — Michele Sullivan, Tabitha Carlisle\*
10. Discussion and action on adoption of Resolution No. 248: A resolution designated by the short title “2017 refunding bond resolution” authorizing the issuance by the authority of its “Truckee Meadows Water Authority, Water Revenue Refunding Bonds, Series 2017,” for the purpose of defraying wholly or in part the cost of refunding certain outstanding bonds; providing the form, terms, and conditions of the bonds and the security therefor; providing for the collection and disposition of revenues derived from the operation of the authority’s water system; pledging such revenues to the payment of the bonds; providing other covenants, agreements, details and other matters relating thereto — Michele Sullivan **(For Possible Action)**
11. Discussion and action regarding appointment of, and possible approval of contract with, Tami Fruhwirth as TMWA’s Ombudsman — Andy Gebhardt **(For Possible Action)**
12. General Manager’s Report\*
13. Public comment — limited to no more than three minutes per speaker\*
14. Board comments and requests for future agenda items\*
15. Adjournment **(For Possible Action)**

<sup>1</sup>. The Board may adjourn from the public meeting at any time during the agenda to receive information from legal counsel regarding potential or existing litigation and to deliberate toward a decision on such matters.

TRUCKEE MEADOWS WATER AUTHORITY  
**DRAFT** MINUTES OF THE JANUARY 18, 2017  
MEETING OF THE BOARD OF DIRECTORS

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The Board of Directors met on Wednesday, January 18, 2017, at Washoe County Commission Chambers, 1001 E. Ninth Street, Reno, Nevada. Vice Chair Hartung called the meeting to order at 10:00 a.m.

1. ROLL CALL

**Members Present:** Jenny Brekhus, Alternate Member Kristopher Dahir, Naomi Duerr, Vaughn Hartung, Jeanne Herman, Neoma Jardon, and Ron Smith.

**Member Absent:** Geno Martini

A quorum was present.

2. PLEDGE OF ALLEGIANCE

The Pledge of Allegiance was led by Alternate Member Dahir.

3. PUBLIC COMMENT

There was no public comment.

4. APPROVAL OF THE AGENDA

**Upon motion by Member Smith, second by Member Jardon, which motion duly carried by unanimous consent of the members present, the Board approved the agenda.**

5. APPROVAL OF THE MINUTES OF THE DECEMBER 21, 2016 MINUTES

**Upon motion by Member Brekhus, second by Member Smith, which motion duly carried by unanimous consent of the members present, the Board approved the December 21, 2016 minutes.**

6. WATER SUPPLY UPDATE

Member Hartung praised Mr. Hauck and thanked him for all his work and efforts during the flood on behalf of TMWA and the community.

Bill Hauck, TMWA Senior Hydrologist, reported the recent storms are one of the best starts to the water year in recent history. Mr. Hauck stated the snowpack levels are measured at almost 200% of the average, Lake Tahoe is almost 2 feet above the natural rim and is projected to peak at about 4 feet above the rim, all other reservoirs on the Truckee River system are expected to fill and spill, and normal river flows are projected through 2018.

7. PRESENTATION ON THE STATE OF NEVADA'S INTEGRATED SOURCE WATER PROTECTION PROGRAM, DISCUSSION AND POSSIBLE ACTION, APPROVAL OF STAFF RECOMMENDATION TO SUBMIT LETTER REQUESTING TO PARTICIPATE IN THE STATE OF NEVADA'S INTEGRATED SOURCE WATER PROTECTION PROGRAM WITH CONCURRENT UPDATE AND DEVELOPMENT OF A TRUCKEE RIVER WATERSHED MANAGEMENT PLAN

John Enloe, TMWA Director of Natural Resources, introduced Kim Borgzinner and Birgit Henson from the Nevada Division of Environmental Protection (NDEP).

Ms. Borgzinner presented on the Integrated Source Water Protection Program (ISWPP) and how successful the program, which is completely voluntary, has been in other communities since its inception in 2012. The success can be attributed to stakeholder input and community collaboration in other counties creating specific programs to meet the needs at the local level.

Ms. Henson presented on how the Non-Point Source (NPS) program funds projects to mitigate or reduce NPS pollution. She noted the plan is to create a group of watershed stakeholders, and with TMWA being one stakeholder, they can then utilize state funds to create and implement a watershed management plan.

Member Duerr asked if funding has been procured. Ms. Henson replied not yet, today they are asking for approval to have TMWA participate in the program to develop the plan in order to obtain future funding.

Alternate Member Dahir inquired if there is any accountability. Ms. Henson replied that it is a voluntary program with no regulatory oversight and the state provides funding.

**Upon motion by Member Smith, second by Alternate Member Dahir, which motion duly carried by unanimous consent of the members present, the Board approved the staff recommendation to submit a letter requesting to participate in the State of Nevada's Integrated Source Water Protection Program with concurrent update and development of a Truckee River Watershed Management Plan.**

8. PRESENTATION ON PROPOSED BILLS FOR THE 2017 LEGISLATIVE SESSION AND DISCUSSION AND POSSIBLE ACTION ON TMWA LEGISLATIVE POSITION RECOMMENDATIONS

John Zimmerman, TMWA Water Resources Manager, informed the Board that the TMWA Legislative Subcommittee met on January 13 to review the staff recommendations on positions on proposed bills. The

legislative subcommittee approved all but one recommended position. The exception was AB 72, which proposes changes to how plumbing code changes are administered by governments; staff's recommendation is "Watch, Oppose", but the legislative subcommittee approved "Watch" only. Staff is continuing to track bill draft requests (BDRs) as they become bills and will continue to update both the TMWA legislative subcommittee and Board.

Mr. Zimmerman requested the Board appoint a board member who would be the point person and speak on behalf of TMWA, alongside Mr. Pagni and Mr. Walker, at the Legislature.

Vice Chair Hartung asked Michael Pagni, TMWA General Counsel, if the Board can choose a member today. Mr. Pagni replied, the agenda as it is written does not allow for such an action, but the legislative subcommittee can decide at their next meeting.

Member Brekhus expressed her position in support of AB 72.

Steve Walker, TMWA lobbyist, provided an overview of water-related bills introduced thus far and the position the TMWA Legislative Subcommittee decided to recommend; discussion followed.

Vice Chair Hartung excused himself to attend the ribbon cutting ceremony for the new Washoe County Medical Examiner's building. He asked Member Jardon to continue as acting chair. With no further questions or discussion Member Jardon continued the meeting as acting chair.

*\*Vice Chair Hartung departed at 10:52 a.m.*

Alternate Member Dahir inquired about TMWA's opposition to AB 48. Mr. Pagni replied the bill would prohibit a municipal utility from charging different rates to customers who live within the city from those who live outside of the city. TMWA's position to oppose is because the bill does not explain what a municipal utility is and TMWA's connection fees are based on the pipes needed to serve the area and not based on political lines.

Member Brekhus asked if it was connection fees or monthly user charges. Mr. Pagni replied it is different rate or fee, the language is broad.

Member Brekhus commented that this bill goes against good land-use planning measures and does not agree with the State preempting local government agencies since it does not provide funding. Mr. Walker added the bill is sponsored by Clark County and the majority of the statute being amended is specific to using the population delimiter of (greater than) 700,000.

Mr. Pagni continued with AB 8 (Support) which would expand the law, which allows a governing body of a city to collect delinquent sewer charges, to expand to any utility service charges. The Joint Powers Agreement (JPA) provides TMWA some conferred powers. If it passes, it may allow TMWA another avenue to collect delinquent charges; AB 71 (Watch; Neutral) establishes a hybrid retirement program; staff is still analyzing the impacts on our collective bargaining agreement.

Member Brekhus inquired if the Governor's budget included water related line items. Mr. Walker replied there has been a request to include sponsorship of cloud seeding program, but nothing as of today.

**Upon motion by Member Duerr, second by Member Herman, which motion duly carried by unanimous consent of the members present, the**

**Board approved to accept the TMWA legislative subcommittee's position recommendations.**

**9. DISCUSSION AND POSSIBLE ACTION, APPROVAL OF STAFF RECOMMENDATION FOR AN INTERIM OMBUDSMAN AND DIRECTION TO STAFF TO SEND OUT A REQUEST FOR QUOTE (RFQ) TO RECRUIT A NEW OMBUDSMAN**

Andy Gebhardt, TMWA Director of Operations & Water Quality, reported that TMWA's Ombudsman, Joanne Stralla, passed away at the end of November and staff is requesting Board approval to contract with Tammy Fruhwirth as an interim ombudsman and for staff to send out a request for qualifications (RFQ) for filling the vacancy. Ms. Fruhwirth has a very strong customer service background.

Member Smith inquired if Ms. Fruhwirth is interested in becoming TMWA's permanent Ombudsman. Mr. Gebhardt replied yes, Ms. Fruhwirth is agreeable to becoming TMWA's permanent ombudsman.

Member Brekhus noted that the amount TMWA has paid the ombudsman in the past is not a large amount, but it still may be prudent to go through the RFQ process to show that there is a vetting process, however she deferred to the Board.

Mr. Gebhardt mentioned staff has enjoyed working with Ms. Fruhwirth during this interim period and it would be difficult to find someone locally with her experience and strong utility customer service background.

**Upon motion by Member Smith, second by Member Herman, which motion duly carried by unanimous consent of the members present, the Board approved staff to hire Tammy Fruhwirth as the permanent ombudsman.**

**10. PRESENTATION OF PUBLIC OPEN HOUSE SCHEDULE FOR PROPOSED RATE ADJUSTMENT AND DISCUSSION AND POSSIBLE DIRECTION TO STAFF ON OPEN HOUSE AND PUBLIC NOTIFICATIONS OF PROPOSED RATE ADJUSTMENT**

Mr. Gebhardt presented the schedule for the four public open houses for the proposed rate adjustment; the information was sent out in January bill inserts, and will be publicly noticed.

**Upon motion by Member Duerr, second by Member Hartung, which motion duly carried by unanimous consent of the members present, the Board approved the public open house schedule and public notifications for proposed rate adjustment.**

## 11. PRESENTATION OF TRUCKEE RIVER FUND ACTIVITIES FOR CALENDAR YEAR 2016

Mr. Enloe reported since the inception of the Truckee River Fund (TRF) in 2005, the TMWA Board of Directors has approved funding for 138 projects, approximately \$11.4 million. Mr. Enloe further stated the total funding match is almost double at \$20.3 million, which is extremely impressive and speaks to the support the community has shown over the years with regards to how the money is leveraged and alternate funding sources are gained to ensure the TRF's mission to safeguard the Truckee River watershed, protect water quality and educate the community are fulfilled.

Mr. Enloe highlighted a few projects such as the City of Reno approving the *Highland Canal Stormwater Improvement* project, which will reduce non-point source pollution to the canal and construction will begin within the next few months. He noted Chalk Bluff continued to treat water during the flood event but they had to take water from the river rather than the canal because of the storm drainage entering the canal; the Nature Conservancy's project, *Optimizing Restoration Investments in the Truckee Watershed*, which has been successful by focusing on restoring old logging roads which were the highest source contributing sediment to the river; Keep Truckee Meadows Beautiful, Truckee River Clean-Up, which has grown in support; and the Sierra Nevada Journey's Watershed Education Initiative, an education effort for students in the Washoe County School District.

## 12. GENERAL MANAGER'S REPORT

Mr. Foree reported TMWA's settlement with the Public Utilities Commission (PUC) has been resolved and TMWA received a \$1,000 fine due to instances where an NV Energy natural gas service line was damaged. He reported staff has completed two trainings and pertinent staff will continue to be trained to prevent further damages; one such practice is to increase the distance from excavation near the on-the-ground markings.

Mr. Foree commended TMWA staff in their efforts to prevent flooding to TMWA's infrastructure, and protecting the hydro facilities and buildings. He noted that the only significant damage TMWA sustained (still relatively minor in cost) was to a pump station vault on West Huffaker Lane due to the overflow of the Lake ditch; no customers went without water, but 12 customers had low water pressure for a few days. Also, with the heavy rains/snow, the Donner Lake outlet was clogged with wooden debris and there was potential for flooding properties around the lake. TMWA contacted the Truckee-Donner Public Utility District (PUD) who referred staff to a contractor that could clear the debris, avoiding any flooding from occurring. He commended staff and the contractor for working late into the early morning in a very difficult situation with high winds, deep snow and trees falling in the area.

Lastly, TMWA was contacted by NvWarn (a Nevada water/wastewater mutual aid network) and the Washoe County District Health Department (WCDHD) to assist the Sutcliffe community (225 customers) in repairing their water system and reestablishing water service. The community, part of the Pyramid Lake Paiute Tribe (PLPT), had been without water for about six days because a water main washed out, which completely drained their entire system. TMWA crews and staff did an excellent job working with the

WCDHD, PLPT's representatives and other agencies and reestablished water service within about 24 hours; water samples have been taken and preliminary results are good. TMWA's efforts included repairing water main breaks/leaks, building a road so that Lyon County Utility's potable water trucks (filled from TMWA's system in Spanish Springs) could get to the water storage tank site, providing a pump and generator to pump water from the tankers into the water storage tank, flushing mains and taking bacteriological samples.

Member Brekhus asked if Washoe County (the County) declared an emergency and TMWA will be reimbursed. Mr. Foree replied the PLPT will go through the County and State of Nevada for reimbursement for TMWA's costs, which are approximately \$30,000. Jack Byrom, TMWA EOC, added both the County and State declared emergencies and PLPT would need to apply for funding to either entity to reimburse TMWA.

Member Brekhus inquired what it cost to assist the River Belle mobile home park in Verdi in 2016. Mr. Foree replied it was a very minor cost, a few thousand dollars.

### 13. PUBLIC COMMENT

There was no public comment.

### 14. BOARD COMMENTS AND REQUESTS FOR FUTURE AGENDA ITEMS

Member Smith commended the community and how everyone stepped up and supported each other during the flooding of the previous week; particularly CB Concrete Company who showed up at Cottonwood Park with a cement truck full of sand and helped fill sandbags in record time.

### 15. ADJOURNMENT

With no further discussion, Acting Chair Jardon adjourned the meeting at 11:21 a.m.

Approved by the TMWA Board of Directors in session on \_\_\_\_\_.

Sonia Folsom, Recording Secretary

***\*Vice Chair Hartung was present for agenda items 1 through 8***



## Water Supply Outlook

Bill Hauck, Senior Hydrologist  
TMWA Board of Directors Meeting

February 15, 2017

# U.S. Drought Monitor West

02-15-17 BOARD Agenda Item 6  
**February 7, 2017**  
(Released Thursday, Feb. 9, 2017)  
Valid 7 a.m. EST

*Drought Conditions (Percent Area)*

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
<b>Current</b>	73.67	26.33	12.59	1.58	0.10	0.00
<b>Last Week</b> <i>1/31/2017</i>	70.84	29.16	13.38	2.83	0.25	0.00
<b>3 Months Ago</b> <i>11/8/2016</i>	44.17	55.83	24.68	9.71	5.73	2.81
<b>Start of Calendar Year</b> <i>1/3/2017</i>	54.19	45.81	21.51	8.53	5.11	2.44
<b>Start of Water Year</b> <i>9/27/2016</i>	27.78	72.22	30.95	13.45	5.77	2.81
<b>One Year Ago</b> <i>2/9/2016</i>	38.22	61.78	37.15	19.90	10.79	5.55

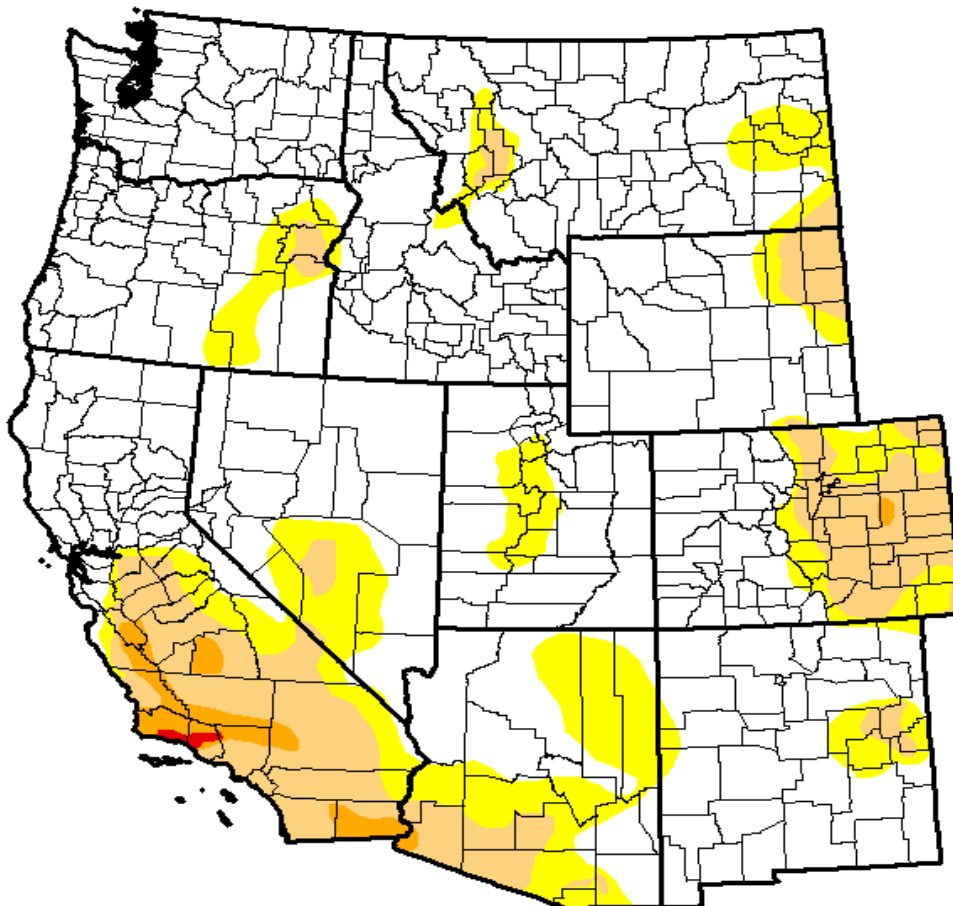
## Intensity:

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

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

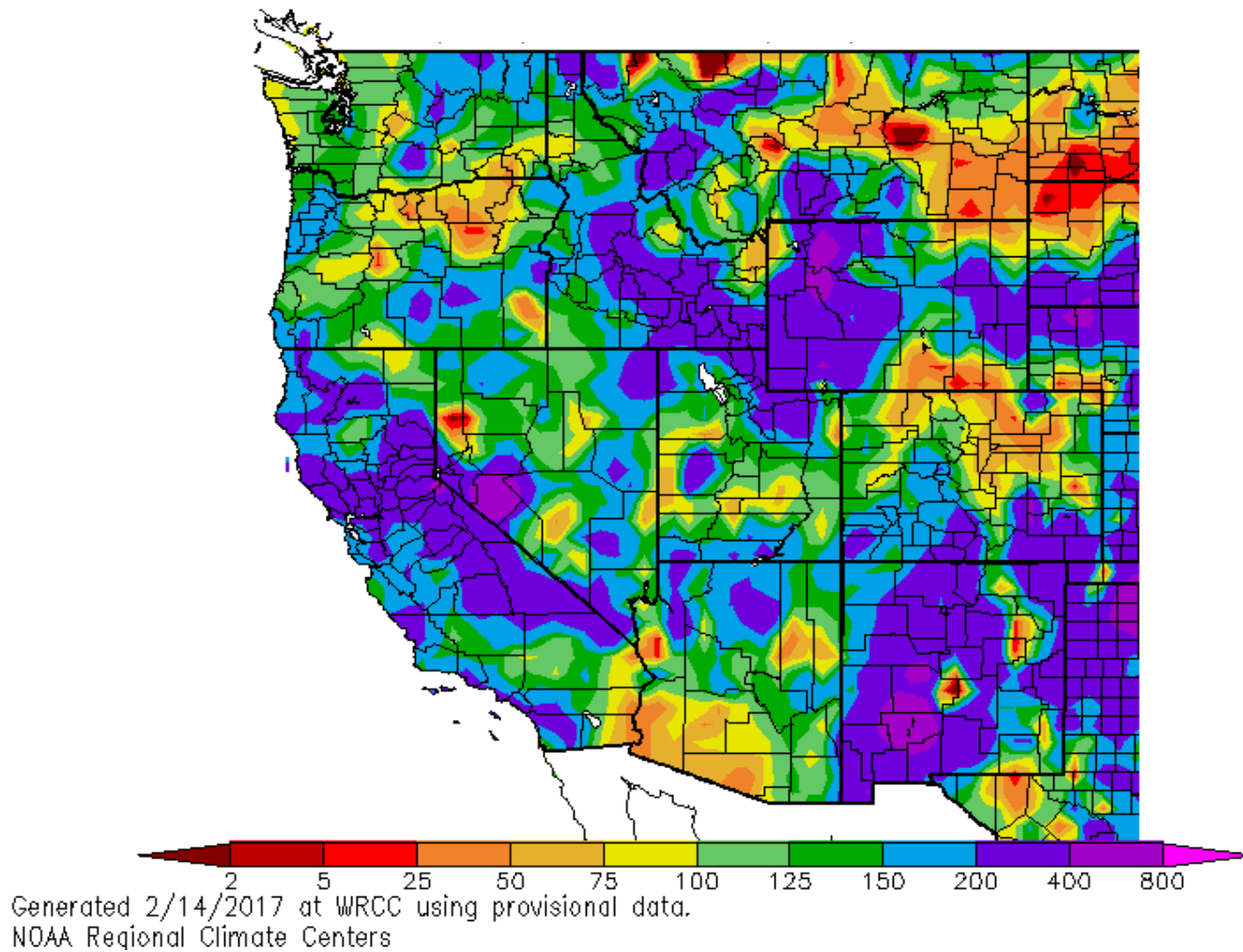
## **Author:**

David Simera  
Western Regional Climate Center

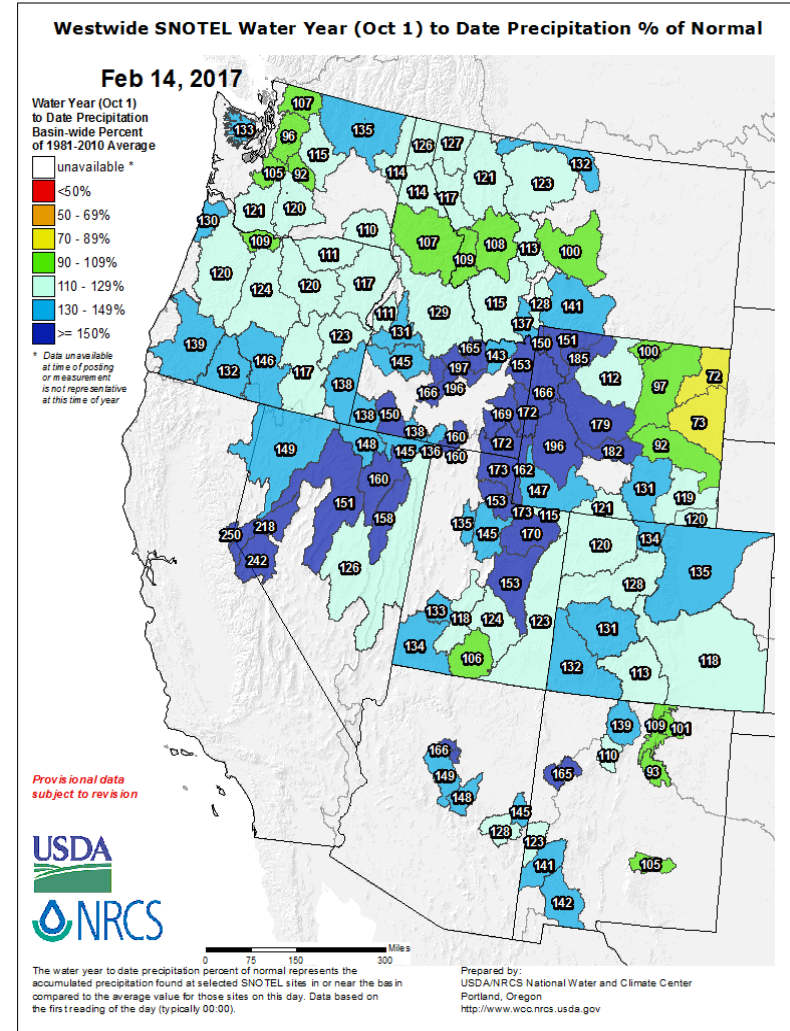
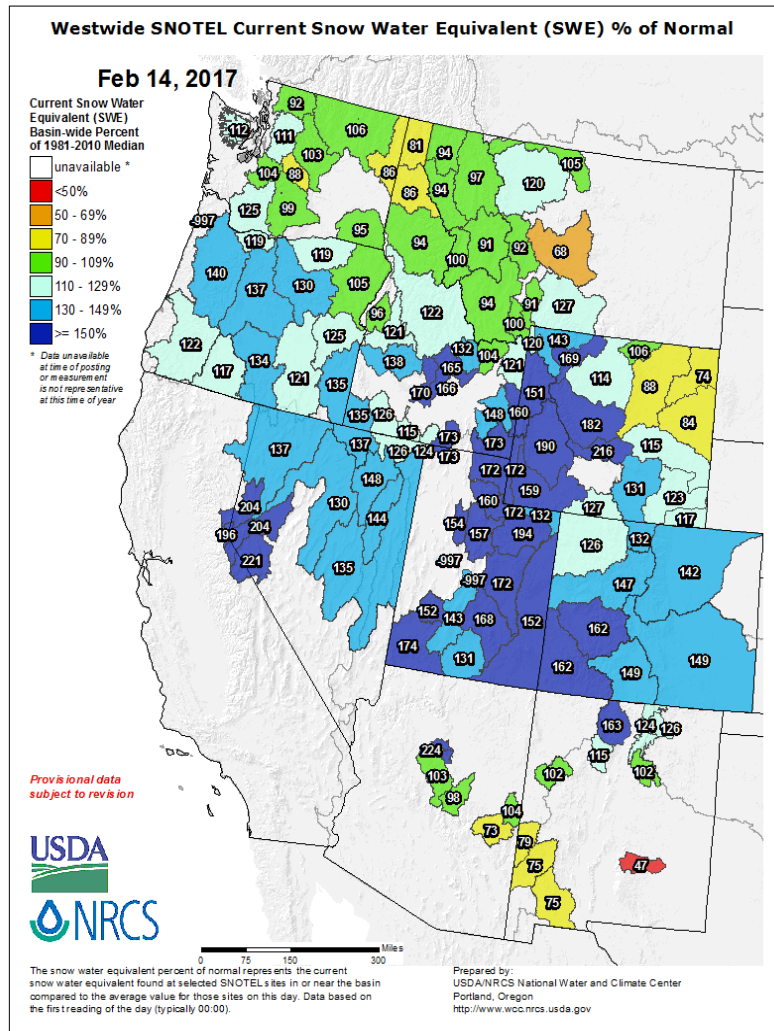


<http://droughtmonitor.unl.edu/>

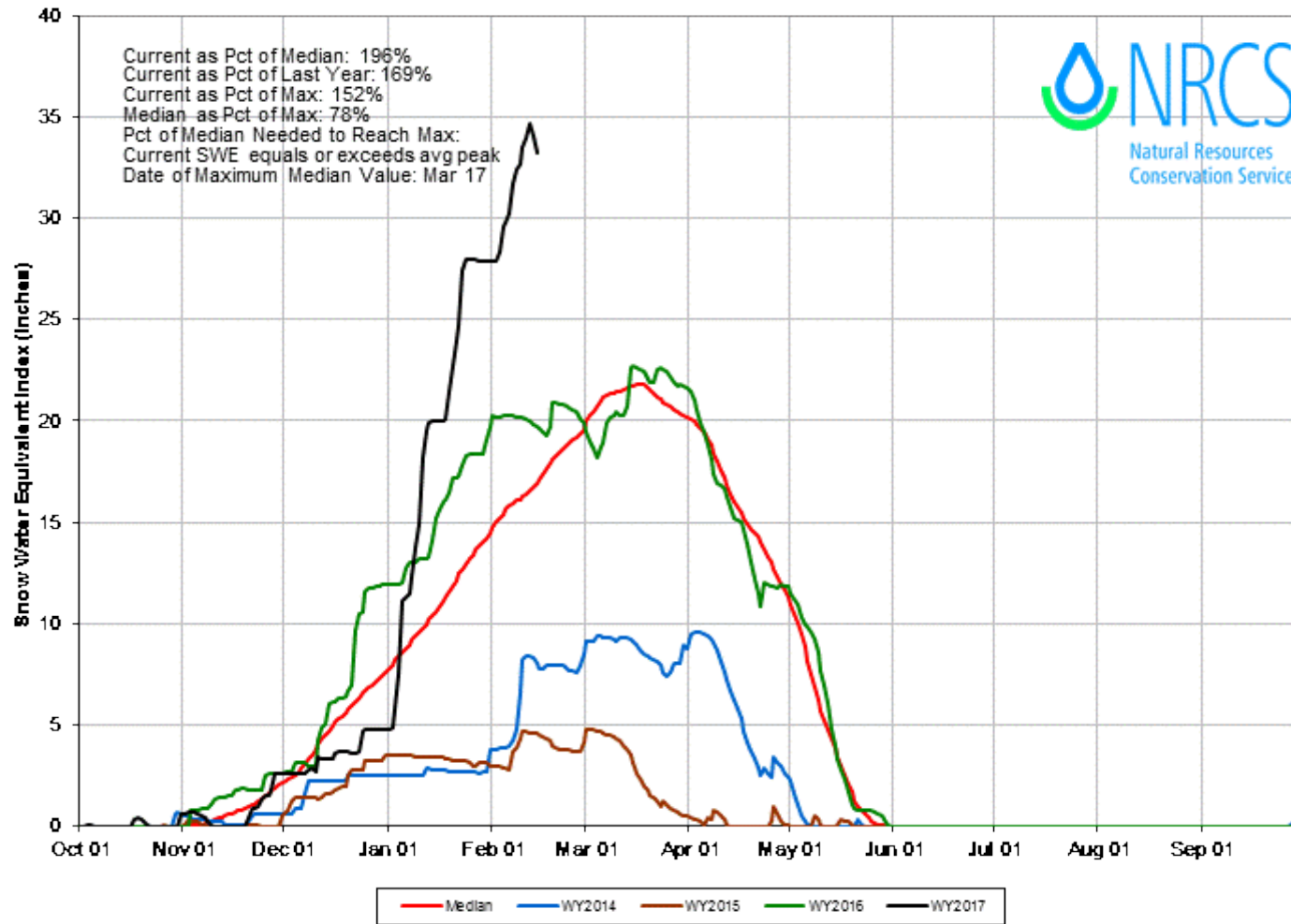
# Percent of Average Precipitation (1/15/2017-2/13/2017)



# Current Precipitation and Snowpack Status



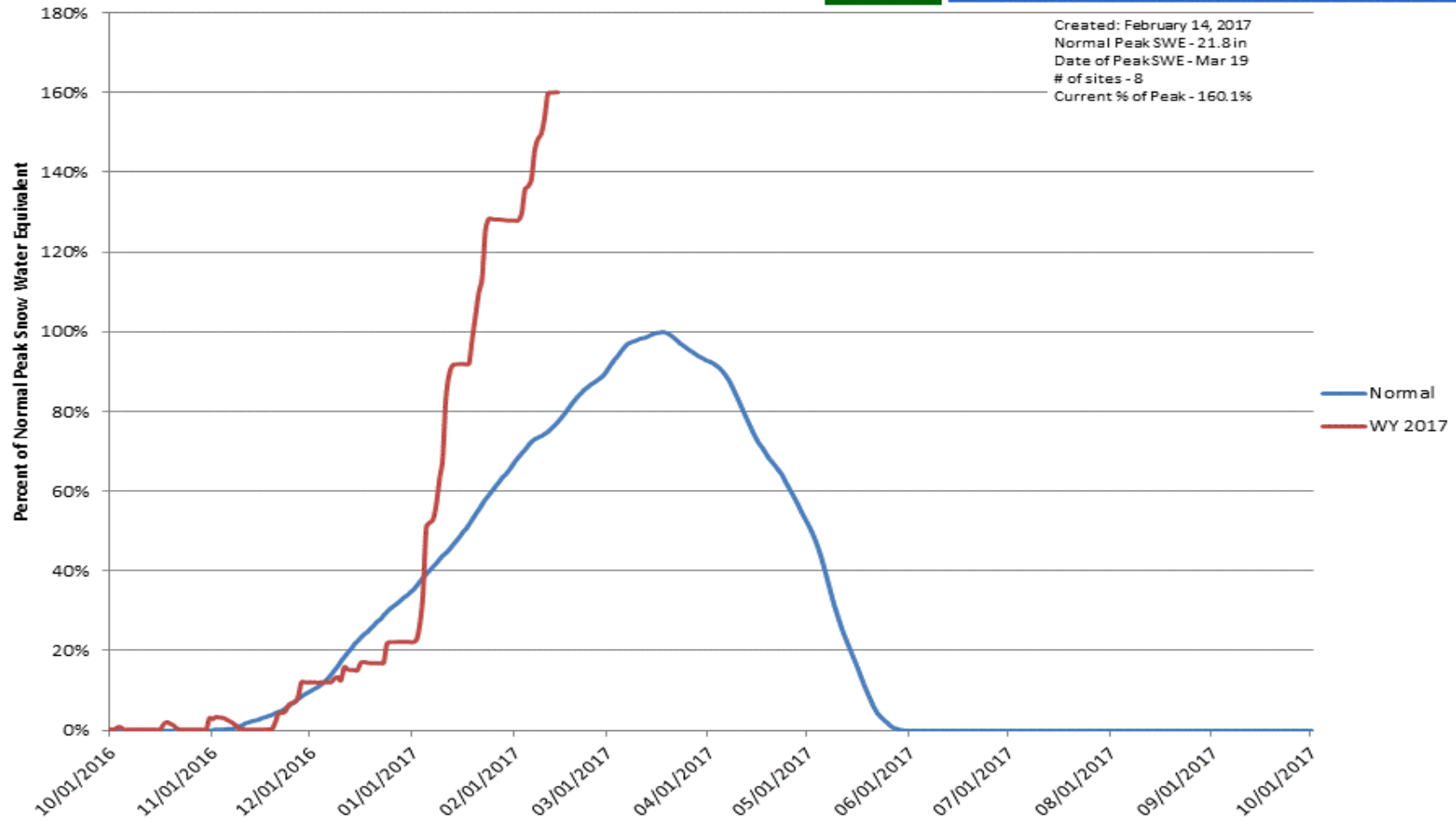
# Lake Tahoe Basin Time Series SNOTEL Snowpack Summary



# Lake Tahoe Basin Percent of Normal *Peak* Snowpack (%)

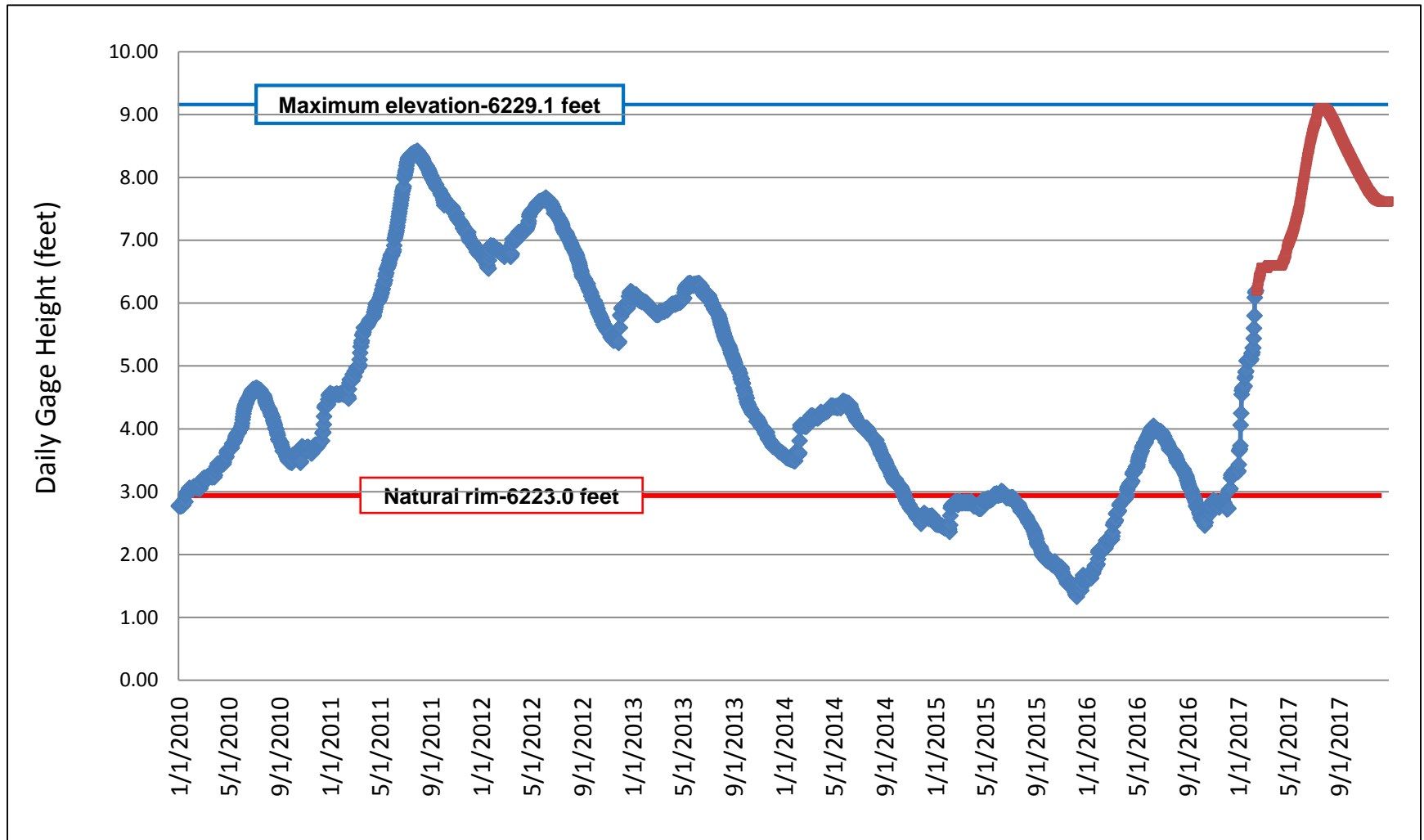


Created: February 14, 2017  
 Normal Peak SWE - 21.8in  
 Date of PeakSWE - Mar 19  
 # of sites - 8  
 Current % of Peak - 160.1%

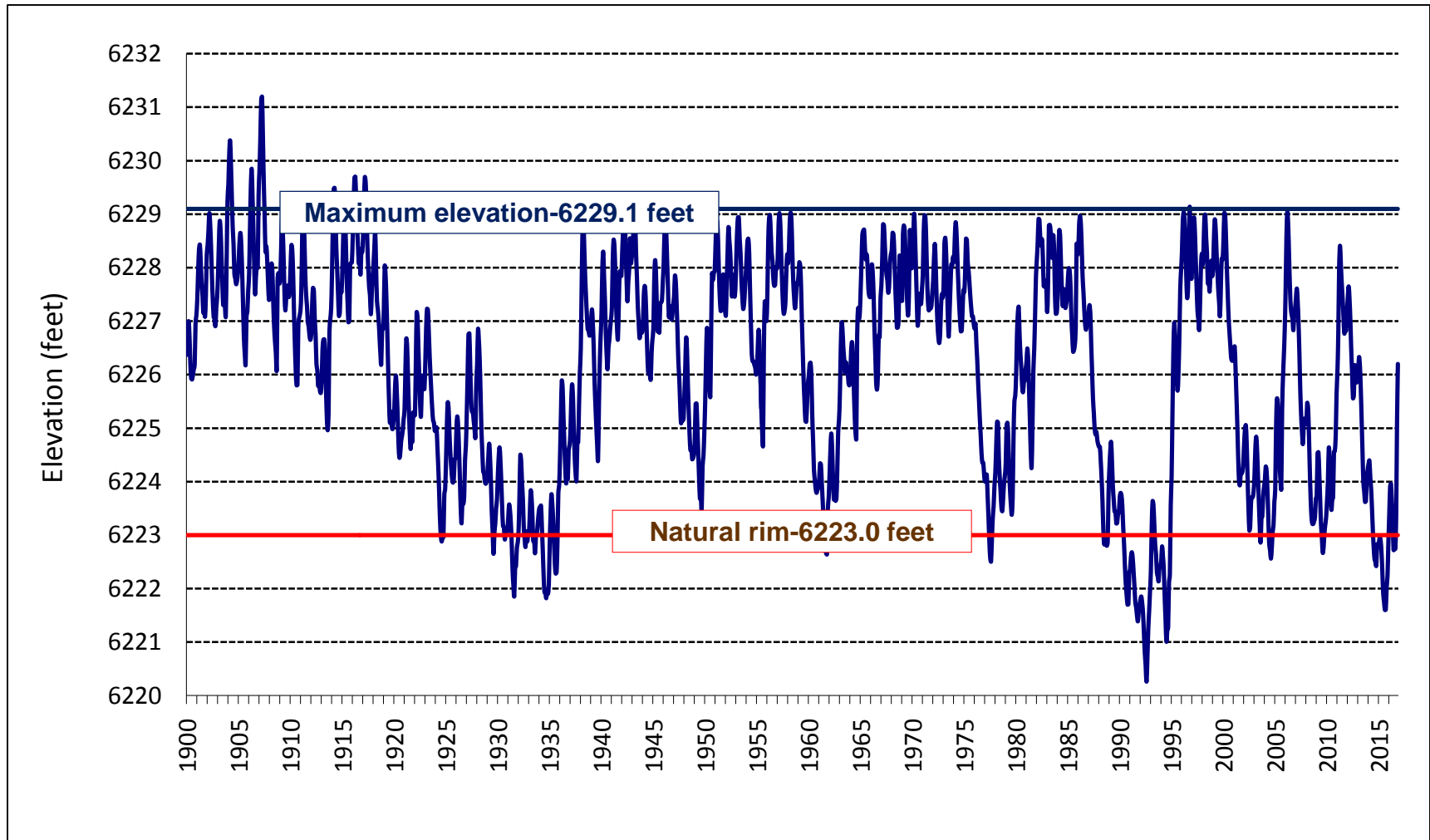




# Lake Tahoe Elevation Hydrograph (actual and projected)



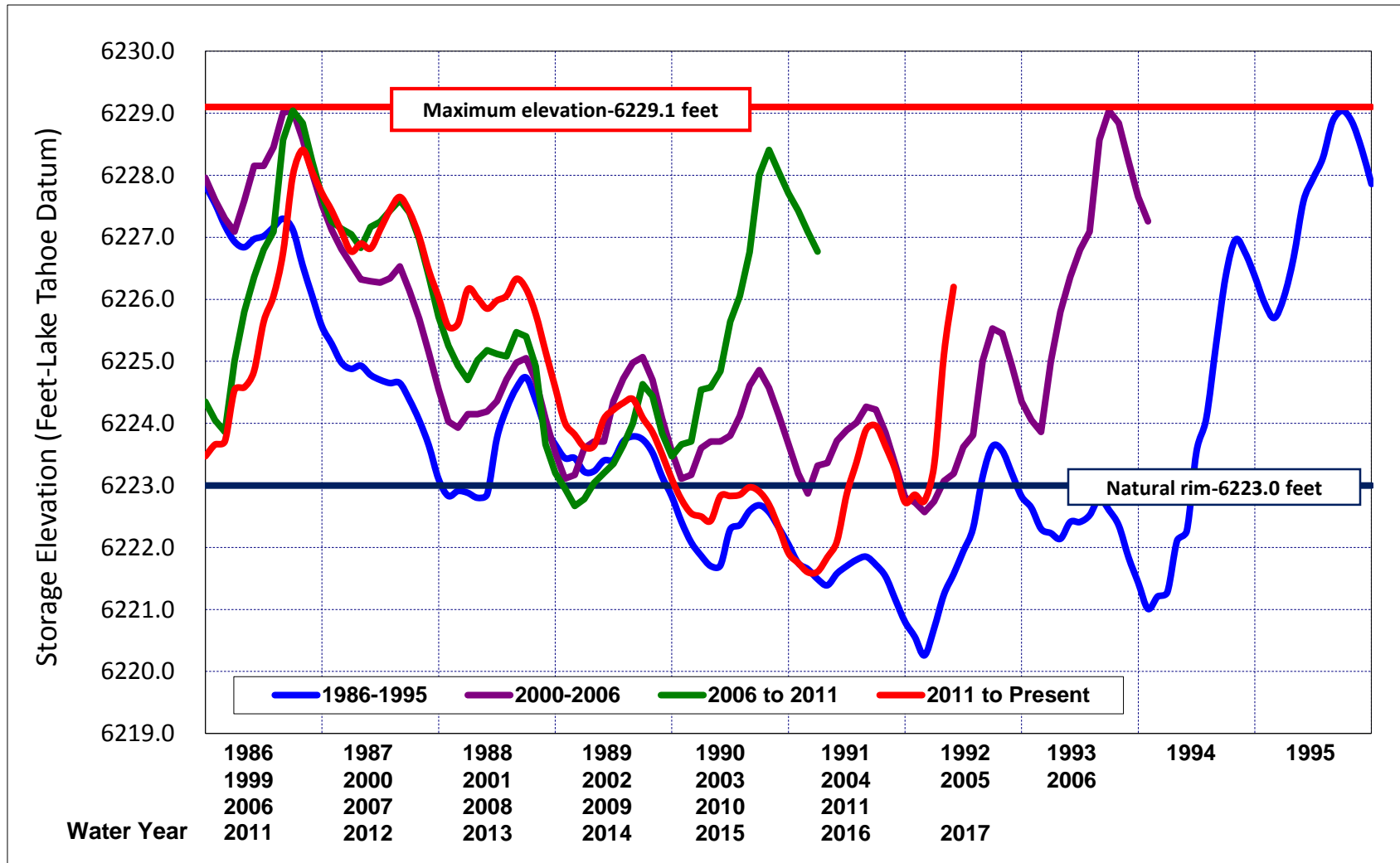
# Lake Tahoe Elevation 1900-Present



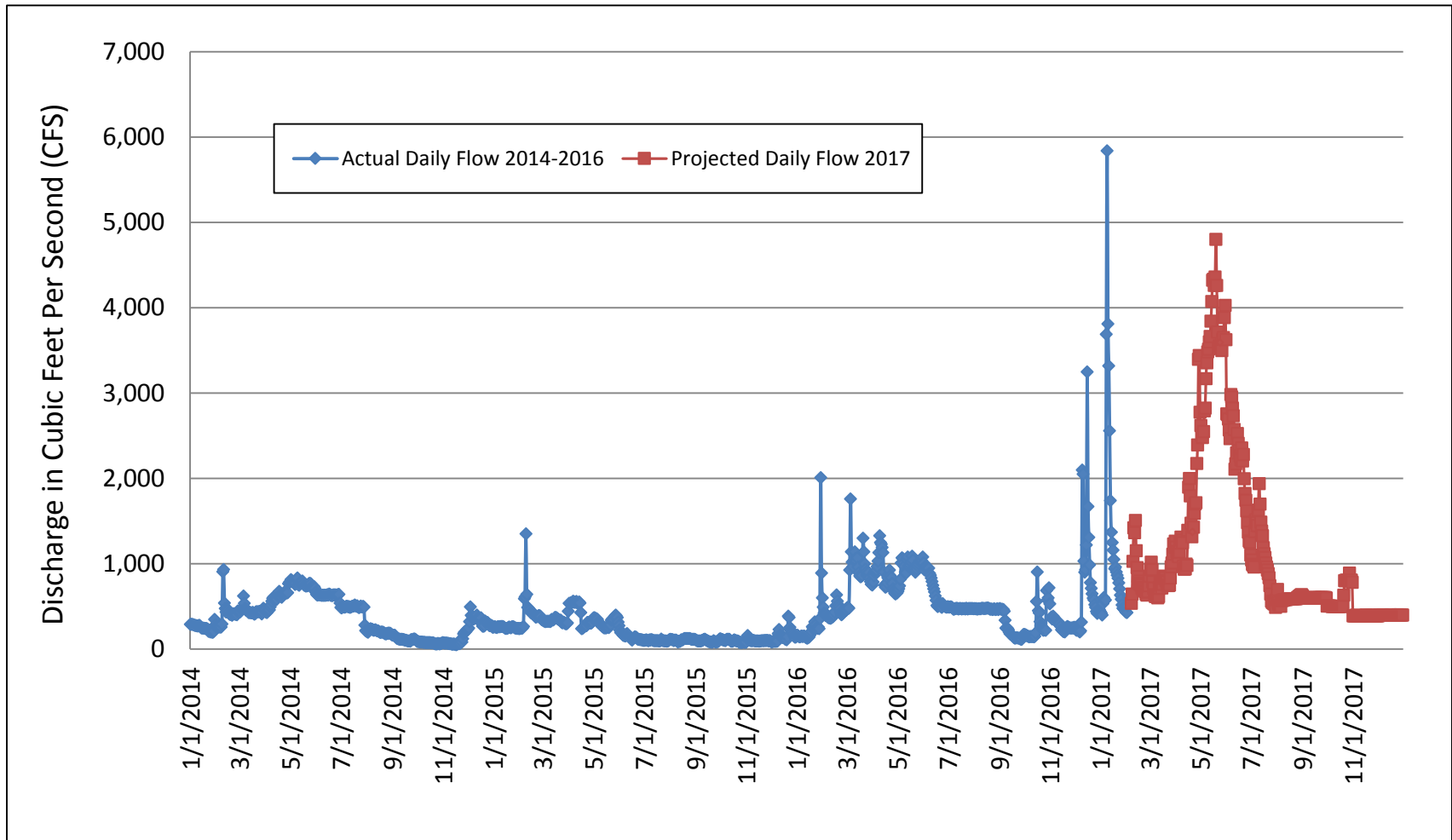
# The Truckee & Carson River Systems



# Lake Tahoe Elevation Comparison (4 Drought Years)



# Truckee River Flow at CA/NV State Line (actual and projected)



# 2017 Water Supply Summary

02-15-17 BOARD Agenda Item 6

- Blockbuster Water Year
- Precipitation and Snowpack > 200+% average
- Lake Tahoe currently 3.2 feet above natural rim (more than 50% full)
- Streamflow runoff projections also 200+% average
- Lake Tahoe expected to fill in 2017 (in addition to all other Truckee River reservoirs)
- Precautionary drawdown commenced at both Lake Tahoe, Stampede and Lahontan reservoirs
- Based on current runoff forecast, normal Truckee River flows anticipated for several years
- Nipping at the heels of one of the best water years on record (1983)
- Drought is over

# Thank you!

Questions?

Bill Hauck, Senior Hydrologist

Email: [bhauck@tmwa.com](mailto:bhauck@tmwa.com)

O: (775) 834-8111 M: (775) 250-1333



## STAFF REPORT

**TO:** Chairman and Board Members  
**FROM:** John Zimmerman, Manager of Water Resources  
**DATE:** February 6, 2017  
**SUBJECT:** Discussion and possible action and direction to staff regarding 2017 legislative activities, current bills, and TMWA recommended positions on legislative proposals

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This is a standing item on the Board's monthly agenda regarding the 2017 legislative session. Attached is a table of the proposed bills the Board reviewed and made a decision on at the January Board meeting. Since that meeting, more bills have been introduced. Staff is currently reviewing the additional legislation and the TMWA legislative subcommittee will meet on February 10th to review staff's recommendations on those bills. Staff, TMWA lobbyist Steve Walker, and General Counsel Michael Pagni will update the Board regarding the new legislation and the subcommittee's recommendations and discuss any relevant new information regarding the session or existing bills the Board has already reviewed.

Staff requests the Board provide direction regarding TMWA's position on, and possible action regarding, the additional bills.

### Key 2017 Legislative Deadlines:

February 6-----Opening Day  
March 20-----Legislators' Bill Introductions  
March 27-----Committees' Bill Introductions  
April 14-----Committee Passage (1<sup>st</sup> House)  
April 25-----First House Passage  
May 19-----Committee Passage (2<sup>nd</sup> House)  
May 26-----Second House Passage  
June 5-----Sine Die

Content	Description	Sponsors	Tags	Board/Committee Position	Status/Location	Most Recent History Actions
AB3	Makes various changes relating to the administration of workers' compensation claims. (BDR 53-161)	Committee on Commerce and Labor	Human Resources	1/4 WATCH, NEUTRAL	First Reading	11/21/2016 -- From printer.
AB5	Provides for the creation of certain local improvement districts. (BDR 22-233)	Committee on Government Affairs	Energy; Governance	1/3 WATCH, NEUTRAL	First Reading	11/21/2016 -- From printer.
AB8	Revises provisions governing the collection of delinquent municipal utility charges. (BDR 21-323)	Committee on Government Affairs	Financial, Risk Management; Governance	11/21 WATCH, SUPPORT	First Reading	11/21/2016 -- From printer.
AB11	Revises provisions governing the operation of unmanned aerial vehicles. (BDR 44-137)	Committee on Transportation	Emergency Mgmt, Safety, Motor Vehicles; Governance	11/21 WATCH, NEUTRAL	First Reading	11/21/2016 -- From printer.
AB26	Revises provisions governing the dissemination of certain records of criminal history to certain persons by the Central Repository for Nevada Records of Criminal History. (BDR 14-138)	Committee on Corrections, Probation, and Parole	Human Resources	1/4 WATCH, NEUTRAL	First Reading	11/21/2016 -- From printer.
AB30	Establishes a committee to review the current tax structure in this State. (BDR S-432)	Committee on Taxation	Financial, Risk Management	1/10 WATCH, NEUTRAL	First Reading	11/21/2016 -- From printer.
AB32	Revises provisions governing pest control. (BDR 49-176)	Committee on Natural Resources, Agriculture, and Mining	Governance	1/9 WATCH, NEUTRAL	First Reading	11/21/2016 -- From printer.
AB34	Revises provisions relating to state lands. (BDR 26-179)	Committee on Natural Resources, Agriculture, and Mining	Property	12/20 WATCH, NEUTRAL	First Reading	11/21/2016 -- From printer.
AB36	Revises the Charter of the City of Reno. (BDR S-448)	Committee on Legislative Operations and Elections	Governance; Open Meeting, Records, Boards and Elections	1/6 WATCH, NEUTRAL	First Reading	11/21/2016 -- From printer.
AB39	Revises provisions governing the appointment of representatives to a governing board for regional planning in certain counties. (BDR 22-433)	Committee on Government Affairs	Governance; Open Meeting, Records, Boards and Elections	11/21 WATCH, NEUTRAL	First Reading	11/21/2016 -- From printer.
AB42	Revises various provisions relating to public records. (BDR 19-389)	Committee on Government Affairs	Open Meeting, Records, Boards and Elections	11/21 WATCH, NEUTRAL	First Reading	11/21/2016 -- From printer.
AB48	Makes various changes relating to local government. (BDR 21-435)	Committee on Government Affairs	Financial, Risk Management	11/21 OPPOSE, NEUTRAL WITH AMENDMENT	First Reading	11/21/2016 -- From printer.
AB50	Revises provisions relating to the imposition of certain fees, civil penalties and administrative fines by the State Environmental Commission. (BDR 40-181)	Committee on Natural Resources, Agriculture, and Mining	Financial, Risk Management; Governance	12/29 WATCH	First Reading	11/21/2016 -- From printer.
AB54	Revises provisions relating to reports of certain accidents or motor vehicle crashes by employers. (BDR 53-160)	Committee on Commerce and Labor	Emergency Mgmt, Safety, Motor Vehicles	1/6 WATCH, NEUTRAL	First Reading	11/21/2016 -- From printer.

Content	Description	Sponsors	Tags	Board/Committee Position	Status/Location	Most Recent History Actions
AB71	Revises provisions governing public employees' retirement. (BDR 23-429)	Committee on Government Affairs	PERS, PEBS	14 WATCH, NEUTRAL	First Reading	11/21/2016 -- From printer.
AB72	Revises provisions relating to the Uniform Plumbing Code. (BDR 40-237)	Committee on Health and Human Services	Public Works	1/13 WATCH; Staff Recommendation: WATCH, OPPOSE	First Reading	11/21/2016 -- From printer.
AB79	Revises provisions relating to economic development. (BDR S-404)	Committee on Government Affairs	Financial, Risk Management; Water Rights (Resources, Conservation)	1/6 WATCH, NEUTRAL	First Reading	11/21/2016 -- From printer.
AB83	Makes various changes relating to insurance. (BDR 57-159)	Committee on Commerce and Labor	Financial, Risk Management	1/6 WATCH, NEUTRAL	First Reading	11/21/2016 -- From printer.
SB10	Revises provisions governing the publication of information concerning unclaimed and abandoned property. (BDR 10-407)	Committee on Judiciary	Property	11/21 WATCH, NEUTRAL	First Reading	11/23/2016 -- From printer.
SB21	Abolishes the Nye County Water District. (BDR S-478)	Committee on Government Affairs	Water Rights (Resources, Conservation)	11/21 WATCH	First Reading	11/23/2016 -- From printer.
SB23	Clarifies requirements relating to a petition for judicial review of a final administrative decision in a contested case. (BDR 18-374)	Committee on Government Affairs	Governance	11/21 WATCH	First Reading	11/23/2016 -- From printer.
SB24	Authorizes cities to enact ordinances requiring the registration of vacant properties. (BDR 21-421)	Committee on Government Affairs	Governance; Property	11/21 WATCH	First Reading	11/23/2016 -- From printer.
SB26	Makes certain changes concerning governmental entities that contract with or invest in companies that boycott Israel. (BDR 27-418)	Committee on Government Affairs	Governance	11/21 WATCH, NEUTRAL	First Reading	11/23/2016 -- From printer.
SB27	Revises the definition of the term “mental illness” for purposes of provisions relating to criminal procedure, mental health and intellectual disabilities. (BDR 39-133)	Committee on Health and Human Services	Human Resources	11/21 NEUTRAL	First Reading	11/23/2016 -- From printer.
SB36	Revises provisions relating to ethics in government. (BDR 23-230)	Committee on Legislative Operations and Elections	Governance	11/21 WATCH, NEUTRAL	First Reading	11/23/2016 -- From printer.
SB47	Makes various changes relating to the appropriation of water. (BDR 48-499)	Committee on Natural Resources	Water Rights (Resources, Conservation)	1/6 WATCH, SUPPORT	First Reading	11/23/2016 -- From printer.
SB48	Revises provisions relating to relations between local governments and their employees. (BDR 23-428)	Committee on Government Affairs	Human Resources	1/4 WATCH, NEUTRAL	First Reading	11/23/2016 -- From printer.
SB51	Makes various changes relating to the adjudication of vested water rights. (BDR 48-180)	Committee on Natural Resources	Water Rights (Resources, Conservation)	12/29 WATCH, NEUTRAL	First Reading	11/23/2016 -- From printer.
SB52	Revises provisions relating to unemployment compensation. (BDR 53-226)	Committee on Commerce, Labor and Energy	Human Resources	1/4 WATCH, NEUTRAL	First Reading	11/23/2016 -- From printer.
SB53	Revises provisions relating to the installation, operation and maintenance of telecommunications facilities. (BDR 18-234)	Committee on Transportation	Information Tech	1/6 WATCH	First Reading	11/23/2016 -- From printer.

Content	Description	Sponsors	Tags	Board/Committee Position	Status/Location	Most Recent History Actions
SB63	Revises provisions which govern responsibility for the costs of maintenance and repair of certain county roads. (BDR 20-324)	Committee on Revenue and Economic Development	Governance; Property	1/6 WATCH, NEUTRAL	First Reading	11/23/2016 -- From printer.
SB67	Revises provisions relating to fire safety requirements for multi-story buildings occupied by people. (BDR 42-412)	Committee on Government Affairs	Emergency Mgmt, Safety, Motor Vehicles	1/6 WATCH, NEUTRAL	First Reading	11/23/2016 -- From printer.
SB69	Revises provisions governing state agencies, boards and commissions that regulate occupations and professions. (BDR 54-229)	Committee on Commerce, Labor and Energy	Governance; Human Resources; Open Meeting, Records, Boards and Elections	1/5 WATCH, NEUTRAL	First Reading	11/23/2016 -- From printer.
SB73	Revises provisions relating to water. (BDR 48-177)	Committee on Natural Resources	Property; Water Rights (Resources, Conservation)	1/6 WATCH, NEUTRAL	First Reading	11/23/2016 -- From printer.
SB74	Revises provisions relating to water. (BDR 48-178)	Committee on Natural Resources	Water Rights (Resources, Conservation)	12/29 WATCH	First Reading	11/23/2016 -- From printer.
SB78	Revises provisions relating to local government financial administration. (BDR 31-403)	Committee on Government Affairs	Financial, Risk Management	1/9 WATCH, NEUTRAL	First Reading	11/23/2016 -- From printer.
SB80	Makes various changes relating to the Public Employees' Benefits Program and the Deferred Compensation Program. (BDR 18-243)	Committee on Government Affairs	PERS, PEBS	1/5 WATCH, NEUTRAL	First Reading	11/23/2016 -- From printer.
SB82	Revises provisions relating to employment and trade secrets. (BDR 53-419)	Committee on Commerce, Labor and Energy	Human Resources	1/5 WATCH, NEUTRAL	First Reading	11/23/2016 -- From printer.
SB84	Makes various changes relating to ethics in government. (BDR 23-250)	Committee on Legislative Operations and Elections	Governance	1/6 WATCH	First Reading	11/23/2016 -- From printer.



## STAFF REPORT

**TO:** Board of Directors  
**FROM:** Mark Foree, General Manager  
**DATE:** February 6, 2017  
**SUBJECT:** Discussion and action on appointment or reappointment of four persons to the Board of Trustees of the Western Regional Water Commission consisting of one TMWA Board member each from: the Reno City Council, Sparks City Council, Washoe County Board of Commissioners, and one person to represent TMWA as successor to South Truckee Meadows General Improvement District, from the following list of eligible persons: Jenny Brekhus, Jeanne Herman, Neoma Jardon, Bob Lucey, Ron Smith, for two-year terms ending March 31, 2019

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## RECOMMENDATION

It is recommended that the TMWA Board appoint four members to the Western Regional Water Commission to serve a two-year term, commencing April 1, 2017 to include:

1. One TMWA Board member who is a member of the Reno City Council
2. One TMWA Board member who is a member of the Sparks City Council
3. One TMWA Board member who is a member of the Washoe County Board of County Commissioners
4. One member designated by the TMWA Board as South Truckee Meadows General Improvement District (STMGID) successor

## DISCUSSION

During the 2007 legislative session, SB487 was enacted to create the Western Regional Water Commission (effective date April 1, 2008), a governing board to oversee water resources planning and management in Washoe County. The Western Regional Water Commission Act, Chapter 531, Statutes of Nevada, Section 25, provides for appointments to the Board of Trustees as follows:

**Sec. 25.** 1. The Regional Water Commission must be directed and governed by a Board of Trustees composed of the following nine members appointed pursuant to this section:

- (a) Two members of the City Council of the City of Reno;
- (b) Two members of the City Council of the City of Sparks;
- (c) Two members of the Board of County Commissioners of Washoe County;
- (d) One member representing the Truckee Meadows Water Reclamation Facility or its successor;
- (e) One member designated by the Board of Trustees of the South Truckee Meadows General Improvement District or its successor; and

- (f) One member of the Board of Trustees of the Sun Valley General Improvement District or its successor.
2. The City Council of the City of Reno, the City Council of the City of Sparks and the Board of County Commissioners of Washoe County shall each appoint one trustee from their membership for an initial term of 2 years.
3. The Board of Directors of the Truckee Meadows Water Authority or its successor shall appoint from its membership, for initial terms of 3 years:
- (a) One trustee who is a member of the City Council of the City of Reno;
  - (b) One trustee who is a member of the City Council of the City of Sparks; and
  - (c) One trustee who is a member of the Board of County Commissioners of Washoe County.
- ➡ The trustees appointed pursuant to this subsection must be different persons than those appointed pursuant to subsection 2.
4. The Board of Trustees of the Sun Valley General Improvement District or its successor and the Board of Trustees of the South Truckee Meadows General Improvement District or its successor shall each appoint one trustee from its membership for an initial term of 3 years.
5. The owners of the Truckee Meadows Water Reclamation Facility or its successor shall jointly appoint one trustee for an initial term of 2 years.
6. After the initial terms, each trustee who is appointed to the Board serves for a term of 2 years. A trustee may be reappointed.
7. All trustees must be elected officials. No trustee may serve beyond his term of office.
8. The position of a trustee must be considered vacated upon his loss of any of the qualifications required for his appointment, and in such event, the appointing authority shall appoint a successor to fill the remainder of the unexpired term.

The current appointees to the Western Regional Water Commission Board are as follows:

<b>Appointing Body</b>	<b>Trustee</b>
City of Reno	Councilmember Naomi Duerr
City of Sparks	Councilmember Donald Abbott
Washoe County	Commissioner Vaughn Hartung
TMWA (Section 3 - from TMWA Board):	Councilmember Ron Smith (Sparks)
	Councilmember Jenny Brekhus (Reno)
	Commissioner Jeanne Herman (Washoe)
Truckee Meadows Water Reclamation Facility	Vacant
Sun Valley General Improvement District	SVGID Trustee Sandra Ainsworth
TMWA (Section 4 – as successor to STMGID)	Commissioner Bob Lucey



**TO:** TMWA Board of Directors  
**FROM:** Michele Sullivan, Chief Financial Officer  
Tabitha Carlisle, Financial Controller  
**DATE:** January 31, 2017  
**SUBJECT:** **Presentation of Financial Performance for First Half Fiscal Year 2017**

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### **First Half Financial Results**

TMWA's financial performance was strong for the six months ended December 31, 2016, with total operating revenues \$5.4 million or 9.9% more than the revised budget and operating spending \$2.3 million or 8.4% under budget. Please refer to **Attachment A-1** for budget to actual comparisons. TMWA personnel continue to do an excellent job managing operating expenses and are optimizing consolidated water utility operations on a continual basis. The revised budget does reflect water demands much lower than historical highs as a result of community response to drought conditions. Water use did increase compared to the prior year as drought conditions lessened and customers relaxed their conservation efforts. In addition, the first few months of the fiscal year in our area experienced little to no precipitation, leading to increased water use compared to the prior year.

Total operating revenues were \$5.4 million or 9.9% more than the revised budget. Water sales were higher than budget due to a dry summer and some relaxation of conservation efforts. Hydroelectric power sales were \$0.1 million or 16.1% higher than budget due to good river flows. Verdi hydroelectric plant was in operation through December. Other operating sales were \$0.2 million or 19% higher than budget which was due to more than expected inspection business service fees and late payment customer service fees.

Total spending on operations was \$2.3 million, or 8.4% below budget. Spending on wages and salaries was \$0.3 million or 3.75% less than budget due to a few sporadic position vacancies, offset by significant overtime devoted to repairing water system leaks. Lower spending on employee benefits by \$0.5 million or 10.8% less than budget, is reflective of a lower actual premium increase of 5% versus the budgeted increase. Services and supplies spending was \$1.4 million or 10.7% less than budget, a notable achievement with control over power expenses of \$0.5 million being the greatest contributor to this positive spending variance. Other smaller variances make-up the rest: CIS contract services, storage fees, and river monitoring, all of which are expected to be expended in the second half of the year.

Investment income was slightly above budget. Investment returns have increased slightly over the last quarter. TMWA's other investment returns range from 0.6% to 5.5% and are laddered in maturities in a manner to meet future cash flow requirements.

Interest expense on TMWA's outstanding debt was lower than expected due to the premium on the Refunding of the 2006 Series Senior Debt.

In total, developer contributions are significantly ahead of budget by \$1.7 million. Development has been concentrated in residential activity and small commercial activities. It is difficult to project the level of developer fee contributions since entitled developments and shadow inventories cannot be accurately determined. Regardless, as a matter of policy, TMWA is not reliant on growth for financial stability. TMWA received the last portion of the TROA grant from the Bureau of Reclamation for \$1.2M. TMWA also received \$1.2M from Scannell Properties for their portion of costs related to the Truckee Canyon Water Treatment Plant Expansion, which is shown in Contribution From Others.

Spending on capital outlays and construction projects as of December 31, 2016, was approximately \$11.6 million. Construction spending in the first half of the fiscal year was primarily focused on various distribution system improvements. Capital spending is expected to increase during the remainder of the year with the Stead and 4<sup>th</sup> Street/ Prater main replacements. Please refer to **Attachment A-2** which contains TMWA's Statement of Cash Flows that presents total capital spending and other cash flow information for the first half of the fiscal year.

Also reflected in **Attachment A-2**, TMWA redeemed \$4.4 million in TECP in December of 2016 as a result of water (right) will-serve sales.

#### **Year over Year - Six Months Ended December 2016 compared to December 2015**

Please refer to **Attachment A-3**. For the six months ended December 2016 as compared to December 2015 were favorable. Total operating revenues were \$5.9M or 11.0% higher, contributing to the overall increase in operating income of \$5.8M or 47.9%. Water sales increased \$4.9M due to a drier summer in 2016 and lessened conservation efforts from a high precipitation winter. Hydroelectric sales were \$.8M for the six months ended December 2016 compared to \$0 in 2015. River flows were strong in 2016 compared to 2015 where the hydroelectric plants were not in operation for most of the year. Operating expenses were slightly higher in 2016 due to increases in salaries and wages and employee benefits which resulted from hiring new staff for fire hydrant maintenance and an increase in health insurance premiums of 20%.

Other non-operating expenses, without the one-time gain on disposal of assets in December 2015, would have decreased mainly due to a decrease in interest expense. Defeasment and refunding of the 2006 Series Senior Lien Debt in April 2016 reduced the interest expense in the current year. TMWA received \$3.5M from the disposal of water rights as part of TROA implementation in December 2015, which offset total non-operating expenses of \$8.8M in 2015.

In total, developer contributions are significantly ahead of last year by \$4.8 million. Development has accelerated in residential activity and small commercial activities. TMWA received the last portion of the TROA grant from the Bureau of Reclamation for \$1.2M in December 2016. TMWA also received \$1.2M from Scannell Properties for their portion of

costs related to the Truckee Canyon Water Treatment Plant Expansion, which is shown in Contribution From Others.

### **First Half Cash Position**

Referring to TMWA's Statement of Net Assets in **Attachment A-4**, total cash on hand was \$197 million as of December 31, 2016 which is approximately \$10 million higher than at the beginning of the fiscal year. Of this total, \$119.5 million was unrestricted to be used to meet upcoming and future operating/maintenance expenses, principal/interest payments, and construction project payments. Unrestricted cash increased due to lower debt service owed in the next twelve months and higher than expected revenue.

The remaining \$77.7 million was restricted to pay for scheduled bond principal and interest payments as well as maintaining required reserves as stipulated in TMWA's bond indentures. In addition, the treasury reserve transferred from the dissolved South Truckee Meadows General Improvement District (STMGID) is included in restricted reserves for use on capital improvements in the former STMGID service area.

**TRUCKEE MEADOWS WATER AUTHORITY**  
**COMPARATIVE STATEMENTS OF REVENUES, EXPENSES AND CHANGES**  
**IN NET POSITION - BUDGET TO ACTUAL**  
**FOR THE SIX MONTHS ENDED DECEMBER 31, 2016**

	<u>REVISED</u> <u>Budget</u>	<u>UNAUDITED</u> <u>Actual</u>	<u>Variance</u>
<b>OPERATING REVENUES</b>			
Charges for water sales	\$ 52,346,377	\$ 57,381,582	\$ 5,035,205
Hydroelectric sales	705,430	818,878	113,448
Other operating sales	1,249,000	1,486,547	237,547
Total Operating Revenues	<u>54,300,807</u>	<u>59,687,007</u>	<u>5,386,200</u>
<b>OPERATING EXPENSES</b>			
Salaries and wages	9,263,652	8,916,018	347,634
Employee benefits	4,666,398	4,160,529	505,869
Services and supplies	13,471,939	12,030,784	1,441,155
Total Operating Expenses before Depreciation	27,401,989	25,107,331	2,294,658
Depreciation	16,620,480	16,620,480	-
Total Operating Expenses	<u>44,022,469</u>	<u>41,727,811</u>	<u>2,294,658</u>
Operating Income	<u>10,278,338</u>	<u>17,959,196</u>	<u>7,680,858</u>
<b>NONOPERATING REVENUES (EXPENSES)</b>			
Investment earnings	1,115,652	1,310,373	194,721
Net (decrease) in fair value of investments	-	(242,588)	(242,588)
Gain (Loss) on disposal of assets	-	305	305
Amortization of bond/note issuance costs	(237,222)	(161,298)	75,924
Interest expense	(8,465,088)	(8,023,615)	441,473
Other non-operating revenue	-	-	-
Other non operating expense	-	(243,000)	(243,000)
Total Nonoperating Revenues (Expenses)	<u>(7,586,658)</u>	<u>(7,359,823)</u>	<u>226,835</u>
Income (Loss) before Capital Contributions	<u>2,691,680</u>	<u>10,599,373</u>	<u>7,907,693</u>
<b>CAPITAL CONTRIBUTIONS</b>			
Grants	75,000	1,191,168	1,116,168
Water meter retrofit program	809,628	(41,899)	(851,527)
Developer infrastructure contributions	-	-	-
Developer will-serve contributions (net of refunds)	2,307,828	2,986,946	679,118
Developer capital contributions-other	1,582,572	2,126,205	543,633
Developer facility charges (net of refunds)	2,254,572	2,856,989	602,417
Contributions from others	-	1,244,000	1,244,000
Net Capital Contributions	<u>7,029,600</u>	<u>10,363,409</u>	<u>3,333,809</u>
Change in Net Position	<u>9,721,280</u>	<u>20,962,782</u>	<u>11,241,502</u>
 <b>NET POSITION , BEGINNING OF YEAR</b>	 <u>584,982,314</u>	 <u>584,982,314</u>	
<b>NET POSITON , END OF YEAR</b>	<u><u>\$ 594,703,594</u></u>	<u><u>\$ 605,945,096</u></u>	

TRUCKEE MEADOWS WATER AUTHORITY  
STATEMENTS OF CASH FLOWS  
FOR THE SIX MONTHS ENDED DECEMBER 31, 2016

	UNAUDITED DECEMBER 2016	AUDITED JUNE 2016	REVISED Budget	Budget Variance
<b>INCREASE IN CASH AND CASH EQUIVALENTS</b>				
<b>CASH FLOWS FROM OPERATING ACTIVITIES</b>				
Cash received from customers	\$ 62,455,368	\$ 90,753,299	\$ 54,300,807	\$ 8,154,561
Cash paid to employees	(13,160,872)	(24,132,183)	(13,930,050)	769,178
Cash paid to suppliers	(14,444,520)	(26,198,864)	(13,471,939)	(972,581)
Net Cash Provided by Operating Activities	34,849,976	40,422,252	26,898,818	7,951,158
<b>CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES</b>				
Acquisition and construction of capital assets	(11,609,836)	(49,416,333)	(23,910,000)	12,300,164
Interest paid on financing	(7,368,330)	(18,904,799)	(7,315,184)	(53,146)
Principal paid on financing	(13,307,706)	(12,568,107)	(13,307,706)	-
Proceeds from refunding bonds	-	149,354,337	-	-
Issuance of commercial paper notes	-	-	-	-
Redemption of commercial paper notes	(4,400,000)	(7,200,000)	-	(4,400,000)
Proceeds transferred to refunding escrow	-	(151,026,620)	-	-
Proceeds from capital debt issuance	717,139	8,239,034	-	717,139
Proceeds from capital asset disposal	305	6,460,373	-	305
Contributions for water meter retrofit program	(41,899)	482,081	809,628	(851,527)
Contributions from developers-will-serve letters	2,986,946	4,363,692	2,307,828	679,118
Contributions from developers-other	2,126,205	2,473,163	1,582,572	543,633
Contributions from developers-facility charges	2,856,989	2,931,940	2,254,572	602,417
Contributions from others	1,244,000	356,200	-	1,244,000
Grants	1,234,767	253,131	75,000	1,159,767
Bond/Note issuance costs	(144,365)	(1,298,798)	(220,290)	75,925
Net Cash (Used) by Capital and Related Financing Activities	(25,705,785)	(65,500,706)	(37,723,580)	12,017,795
<b>CASH FLOWS FROM INVESTING ACTIVITIES</b>				
Cash received in connection with WCWU transfer of operations	-	9,678,076	-	-
Cash received from STMGID subsequent to merger	-	162,770	-	-
Verdi Business Park receivable	-	-	-	-
Payments received on Verdi Business Park receivable	9,480	22,244	-	9,480
Interest received	1,041,166	7,233,417	1,201,152	(159,986)
Net Cash (Used) by Investing Activities	1,050,646	17,096,507	1,201,152	(150,506)
Net Increase (Decrease) in Cash and Cash Equivalents	10,194,837	(7,981,947)	(9,623,610)	19,818,447
<b>CASH AND CASH EQUIVALENTS, BEGINNING OF YEAR</b> (including \$87,271,219 in restricted accounts)	187,035,903	195,017,850	187,035,903	-
<b>CASH AND CASH EQUIVALENTS, As of December 31, 2016</b> (including \$77,680,822 in restricted accounts)	\$ 197,230,740	\$ 187,035,903	\$ 177,412,293	\$ 19,818,447

ATTACHMENT A-2

**TRUCKEE MEADOWS WATER AUTHORITY**  
**COMPARATIVE STATEMENTS OF REVENUES, EXPENSES AND CHANGES**  
**IN NET POSITION - ACTUAL TO ACTUAL**  
**FOR THE SIX MONTHS ENDED DECEMBER, 2016 AND 2015**

	UNAUDITED 2016	UNAUDITED 2015	Variance
<b>OPERATING REVENUES</b>			
Charges for water sales	\$ 57,381,582	\$ 52,516,763	4,864,819
Hydroelectric sales	818,878	-	818,878
Other operating sales	1,486,547	1,275,266	211,281
Total Operating Revenues	59,687,007	53,792,029	5,894,978
<b>OPERATING EXPENSES</b>			
Salaries and wages	8,916,018	8,281,428	634,590
Employee benefits	4,160,529	3,708,242	452,287
Services and supplies	12,030,784	13,053,997	(1,023,213)
Total Operating Expenses before Depreciation	25,107,331	25,043,667	63,664
Depreciation	16,620,480	16,603,656	16,824
Total Operating Expenses	41,727,811	41,647,323	80,488
Operating Income	17,959,196	12,144,706	5,814,490
<b>NONOPERATING REVENUES (EXPENSES)</b>			
Investment earnings	1,310,373	1,230,557	79,816
Net (decrease) in fair value of investments	(242,588)	-	(242,588)
Gain (Loss) on disposal of assets	305	2,972,511	(2,972,206)
Amortization of bond/note issuance costs	(161,298)	(212,809)	51,511
Interest expense	(8,023,615)	(9,892,339)	1,868,724
Other non-operating revenue	-	-	-
Other non operating expense	(243,000)	-	(243,000)
Total Nonoperating Revenues (Expenses)	(7,359,823)	(5,902,080)	(1,457,743)
Income (Loss) before Capital Contributions	10,599,373	6,242,626	4,356,747
<b>CAPITAL CONTRIBUTIONS</b>			
Grants	1,191,168	138,288	1,052,880
Water meter retrofit program	(41,899)	85,773	(127,672)
Developer infrastructure contributions	-	-	-
Developer will-serve contributions (net of refunds)	2,986,946	1,310,137	1,676,809
Developer capital contributions-other	2,126,205	811,688	1,314,517
Developer facility charges (net of refunds)	2,856,989	1,047,305	1,809,684
Contributions from others	1,244,000	-	1,244,000
Contributions from other governments	-	-	-
Net Capital Contributions	10,363,409	3,393,191	6,970,218
Change in Net Position	20,962,782	9,635,817	11,326,965
<b>NET POSITION , BEGINNING OF YEAR</b>	584,982,314	563,874,134	
<b>NET POSITON , END OF YEAR</b>	\$ 605,945,096	\$ 573,509,951	

**TRUCKEE MEADOWS WATER AUTHORITY**  
**STATEMENTS OF NET POSITION**  
**DECEMBER 31, 2016 AS COMPARED TO JUNE 30, 2016**  
**ASSETS**

	<b>UNAUDITED</b> <b>December 31, 2016</b>	<b>AUDITED</b> <b>June 30, 2016</b>
<b>CURRENT ASSETS</b>		
Cash and investments	\$ 119,549,918	\$ 99,764,684
Accounts receivable, net	11,123,593	13,580,981
Due from others	46,431	313,955
Due from other governments	1,550	45,969
Interest receivable	1,071,552	1,048,498
Prepaid assets	1,423,722	1,243,125
	<u>133,216,766</u>	<u>115,997,212</u>
 <b>RESTRICTED CURRENT ASSETS</b>		
Cash and investments:		
Water meter retrofit program	2,084,980	2,084,980
Current bond debt service	9,579,881	19,395,405
	<u>11,664,861</u>	<u>21,480,385</u>
 Total Current Assets	<u>144,881,627</u>	<u>137,477,597</u>
 <b>RESTRICTED NONCURRENT ASSETS</b>		
Cash and investments:		
Future bond debt service	35,399,903	35,390,010
Operations and maintenance	8,955,188	8,739,954
Renewal and replacement	21,160,870	21,160,870
Water rate stabilization	500,000	500,000
	<u>66,015,961</u>	<u>65,790,834</u>
 <b>NONCURRENT ASSETS</b>		
Capital assets, not depreciated	158,199,706	147,064,145
Capital assets, depreciated	767,439,585	783,728,106
Deferred charges and other assets	979,473	1,013,985
	<u>926,618,764</u>	<u>931,806,236</u>
 Total Noncurrent Assets	<u>992,634,725</u>	<u>997,597,070</u>
 <b>DEFERRED OUTFLOW OF RESOURCES</b>		
Deferred amount on bond refundings	2,962,358	3,053,052
Deferred amount on net pension liability	7,156,688	7,156,688
 Total Deferred Outflows	10,119,046	10,209,740
 Total Assets and Deferred Outflow of Resources	<u>\$ 1,147,635,398</u>	<u>\$ 1,145,284,407</u>

**ATTACHMENT A-4**

**LIABILITIES**

**CURRENT LIABILITIES PAYABLE FROM UNRESTRICTED**

**CURRENT ASSETS**

Accounts payable	\$ 1,410,995	\$ 2,909,126
Contracts and retention payable	2,042,737	2,185,872
Accrued liabilities	3,915,812	4,000,137
Due to other governments	1,637,571	2,137,679
Accrued interest payable	295,553	315,707
Current portion of long term debt	84,976,308	89,414,845
Customer deposits and amounts due to developers	2,800,689	2,757,239
	<u>97,079,665</u>	<u>103,720,605</u>

**CURRENT LIABILITIES PAYABLE FROM RESTRICTED**

**CURRENT ASSETS**

Current portion of long term debt	1,355,000	12,620,000
Interest payable	8,224,881	6,775,405
	<u>9,579,881</u>	<u>19,395,405</u>

Total Current Liabilities

106,659,546      123,116,010

**NONCURRENT LIABILITIES**

Net Pension Liability	26,869,406	26,869,406
Long-term debt, net of current portion	404,544,561	406,696,538

Total Non-Current Liabilities

431,413,967      433,565,944

**DEFERRED INFLOW OF RESOURCES**

Deferred amount on net pension liability	3,486,191	3,486,191
Deferred amount on bond refundings	130,599	133,948

Total deferred inflows of resources

3,616,790      3,620,139

Total Liabilities

541,690,303      560,302,093

**NET POSITION**

Net investment in capital assets	491,311,348	478,543,111
Restricted for water meter retrofit program	2,084,980	2,084,980
Restricted for debt service	1,355,000	12,620,000
Restricted for operations and maintenance reserve	4,355,188	4,139,954
Restricted for renewal and replacement reserve	21,160,870	21,160,870
Restricted for water rate stabilization	500,000	500,000
Unrestricted	85,177,709	65,933,399

Total Net Position

605,945,095      584,982,314

Total Liabilities and Net Position

\$ 1,147,635,398      \$ 1,145,284,407

**ATTACHMENT A-4**



## STAFF REPORT

**TO:** TMWA Board of Directors  
**FROM:** Michele Sullivan, Chief Financial Officer  
**DATE:** February 6, 2017  
**SUBJECT:** **Discussion and action on adoption of Resolution No. 248: A resolution designated by the short title “2017 refunding bond resolution” authorizing the issuance by the authority of its “Truckee Meadows Water Authority, Water Revenue Refunding Bonds, Series 2017,” for the purpose of defraying wholly or in part the cost of refunding certain outstanding bonds; providing the form, terms, and conditions of the bonds and the security therefor; providing for the collection and disposition of revenues derived from the operation of the authority’s water system; pledging such revenues to the payment of the bonds; providing other covenants, agreements, details and other matters relating thereto**

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## RECOMMENDATION

Staff recommends that the Board of Directors of the Truckee Meadows Water Authority approve the resolution providing for the issuance of approximately \$152,090,000 in bonds (2017 refunding bonds) to defease TMWA’s callable 2007 Revenue Bonds in the amount of \$202,900,000. The reduction in principle includes the release of the debt service reserve balance in excess of \$32,000,000 which will be used to reduce the principal balance outstanding on the Revenue Bonds.

## BACKGROUND

TMWA has successfully refunded (refinanced) its Revenue Bonds in the past which has brought significant savings to TMWA’s customers. TMWA staff and its financial advisory firms Public Financial Management and Hobbs Ong & Associates have been monitoring the bond market for defeasance opportunities in relation to TMWA’s outstanding 2007 Revenue Bonds. In December 2016, based upon market bond conditions at that time, defeasance calculations indicated that net present value savings would amount to over \$15 million or 7.4% on the refunded bonds. This is very significant since TMWA’s Debt Management Policy targets any present value savings above 3% for triggering refunding efforts. TMWA will be pricing the refunding bonds on March 9<sup>th</sup>, which allows TMWA to refund the refunding bonds (and that may be potentially valuable) in the future. If TMWA refunded these bonds over 90 days prior to the call date in July 2017, this would not allow TMWA to refund the refunding bonds. RBC Capital, Morgan Stanley and Citigroup will be the underwriters on the refunding.



**RESOLUTION NO. 248**

**A RESOLUTION DESIGNATED BY THE SHORT TITLE “2017 REFUNDING BOND RESOLUTION” AUTHORIZING THE ISSUANCE BY THE AUTHORITY OF ITS “TRUCKEE MEADOWS WATER AUTHORITY, WATER REVENUE REFUNDING BONDS, SERIES 2017,” FOR THE PURPOSE OF DEFRAYING WHOLLY OR IN PART THE COST OF REFUNDING CERTAIN OUTSTANDING BONDS; PROVIDING THE FORM, TERMS, AND CONDITIONS OF THE BONDS AND THE SECURITY THEREFOR; PROVIDING FOR THE COLLECTION AND DISPOSITION OF REVENUES DERIVED FROM THE OPERATION OF THE AUTHORITY’S WATER SYSTEM; PLEDGING SUCH REVENUES TO THE PAYMENT OF THE BONDS; PROVIDING OTHER COVENANTS, AGREEMENTS, DETAILS AND OTHER MATTERS RELATING THERETO.**

**WHEREAS**, the Truckee Meadows Water Authority (the “Authority” or “TMWA”) was duly organized and is operating in accordance with the provisions of the “Truckee Meadows Water Authority Cooperative Agreement among City of Reno, City of Sparks, County of Washoe” dated December 4, 2000, as amended (the “TMWA Cooperative Agreement”) entered into pursuant to the provisions of Nevada Revised Statutes (“NRS”) 277.080 to 277.180, inclusive, as amended (the “Authority Act”); and

**WHEREAS**, the Board of Directors (the “Board”) of the Authority, in Washoe County, Nevada (the “County” and the “State” respectively) has the authority to issue revenue and other bonds, notes and other obligations and incur liabilities for the purposes of refunding, paying and discharging certain of the outstanding “Truckee Meadows Water Authority, Water Revenue Refunding Bonds, Series 2007” (the “2007 Bonds”); and

**WHEREAS**, pursuant to the TMWA Cooperative Agreement, the Board is authorized to issue revenue bonds secured by revenues of the TMWA Water System (hereinafter defined); and

**WHEREAS**, the Authority is a body corporate and politic, a quasi-municipal corporation, and a political subdivision of the State, and the Authority and its Board are organized and operating under the Authority Act and all laws supplemental thereto; and

**WHEREAS**, pursuant to the Local Government Securities Law and all laws amendatory thereof (herein the “Bond Act”), cited as NRS 350.500 through 350.720, and all laws supplemental thereto, the Authority has the power to issue its “Truckee Meadows Water Authority, Water Revenue Refunding Bonds, Series 2017” (herein the “2017 Bonds” or the “Bonds”), which constitute special obligations of the Authority without the necessity of such revenue bonds being authorized at any election or of any other preliminaries being taken; and

**WHEREAS**, pursuant to NRS 350.155, a certificate of the TMWA Manager (as defined below), as chief administrative officer of the Authority and a report of the Authority's financial advisor have been submitted to the Board and are hereby approved; and

**WHEREAS**, the Board hereby elects to have the provisions of Chapter 348 of NRS (the "Supplemental Bond Act") apply to the Bonds; and

**WHEREAS**, after negotiating the purchase of the 2017 Bonds, if it is determined by the chief administrative officer of the Authority (the "TMWA Manager"), that the Authority will achieve present value savings or effect other economies, the TMWA Manager, or in his absence, the Chief Financial Officer of the Authority, is hereby authorized to sell the Bonds to the Underwriters (as defined in the Bond Purchase Agreement); to accept the bond purchase agreement for the Bonds submitted by the Underwriters (the "Bond Purchase Agreement"); and to specify in the Bond Purchase Agreement which maturities of the outstanding 2007 Bonds, if any, shall be refunded with a portion of the proceeds of the 2017 Bonds (collectively, the "Refunded Bonds"); and

**WHEREAS**, the Bonds are to bear interest at the rates per annum provided in the Bond Purchase Agreement, which rates must not exceed by more than 3% the 25 Bond Revenue Index most recently published in The Bond Buyer before the Bond Purchase Agreement is accepted and are to be sold at a price equal to the principal amount thereof (not to exceed the principal amount sufficient to accomplish the Refunding Project (as defined below)), plus a premium, or less a discount not exceeding 9% of the principal amount thereof, all as specified by the TMWA Manager, or in his absence, the Chief Financial Officer of the Authority, in the Bond Purchase Agreement; and

**WHEREAS**, the Board has considered, found, and determined, and does hereby declare this Instrument pertains to the sale, issuance, and payment of the 2017 Bonds and such declaration shall be conclusive in the absence of fraud or gross abuse of discretion in accordance with the provisions of subsection 2 of NRS 350.579.

**NOW, THEREFORE, THE BOARD OF DIRECTORS OF THE TRUCKEE MEADOWS WATER AUTHORITY DO RESOLVE:**

## ARTICLE I

### SHORT TITLE, DEFINITIONS, INTERPRETATION, RATIFICATION, AUTHENTICATION, AND EFFECTIVE DATE

Section 101. Short Title. This resolution shall be known as the, and may be cited by the short title, “2017 Refunding Bond Resolution” (herein the “Instrument” or the “Resolution”).

Section 102. Meanings and Construction.

A. Definitions. The terms in this Section defined for all purposes of this Instrument and of any instrument amendatory hereof or supplemental hereto, and of any other instrument or any other document pertaining hereto, except where the context by clear implication otherwise requires, shall have the meanings herein specified:

(1) “Authority” or “TMWA” means the Truckee Meadows Water Authority, the Authority being situate in the County and the State, and constituting a body corporate and politic, a quasi-municipal corporation, and a political subdivision of the State, and means any successor corporation thereof.

(2) “Authority Act” means NRS 277.080 to 277.180, inclusive, the act creating the Authority, under which act the Authority and its Board are operating, and all laws amendatory thereof.

(3) “Banking Institution” means a state or national bank or trust company which is a member of the Federal Deposit Insurance Corporation, which is located within the United States.

(4) “Board” means the board of directors of the Authority, or the Board’s successor in functions, if any.

(5) “Bond Act” means NRS 350.500 through 350.720, and all laws amendatory thereof, and is designated in NRS 350.500 thereof as the Local Government Securities Law.

(6) “Bond Fund” means the special and separate account designated as the “Truckee Meadows Water Authority, TMWA Water System Parity Revenue Securities, Bond Fund,” heretofore created and continued herein. The Bond Fund consists of 3 separate subaccounts, the Interest Account, the Principal Account and the Bond Reserve Account.

(7) “Bond Requirements” means the principal of, any prior redemption premiums due in connection with, and the interest on the 2017 Bonds and any additional bonds or other additional securities payable from Pledged Revenues and heretofore or hereafter issued, if any, or such part of such securities or such other securities pertaining to the TMWA Water System as may be designated, as such principal, any such premiums, and such interest become due. “Bond

Requirements” does not include any capitalized interest on bonds payable from the proceeds of those bonds as designated by the Chief Financial Officer.

For purposes of computing the Bond Requirements of variable interest rate parity securities with respect to which a Qualified Swap is in effect, the interest payable on such variable interest rate securities (a) except as provided in clause (b) of this sentence, shall be deemed to be the interest payable on such variable interest rate securities in accordance with the terms thereof plus any amount required to be paid by the Authority to the Qualified Swap Provider pursuant to the Qualified Swap or minus any amount required to be paid by the Qualified Swap Provider to the Authority pursuant to the Qualified Swap, or (b) for purposes of computing combined average annual principal and interest requirements for the Bond Reserve Account, for purposes of computing the maximum annual principal and interest requirements, and for purposes of any other computation for the issuance of additional parity securities (including refunding securities) shall be deemed to be the amount accruing at the fixed rate as provided in the Qualified Swap. No computation of Bond Requirements under this Instrument shall take into account payments due the Qualified Swap Provider on the termination of the Qualified Swap unless such payments on termination are then unconditionally due and payable in accordance with the terms of the related Qualified Swap.

For purposes of computing the Bond Requirements of a Qualified Swap with respect to which no parity securities remain Outstanding or of that portion of a Qualified Swap with respect to which the notional amount is greater than the principal amount of Outstanding parity securities to which such Qualified Swap relates, (a) for purposes of Article 5 hereof, the interest payable thereon shall be deemed to be the net amount positive or negative, if any, required to be paid by the Authority to the Qualified Swap Provider pursuant to the Qualified Swap, and (b) for purposes of any computation of Bond Requirements for a period after the date of computation, the interest payable thereon shall be deemed to be the net amount most recently paid, as of the date of computation, by the Authority to the Qualified Swap Provider thereunder or (expressed as a negative number) by the Qualified Swap Provider to the Authority thereunder.

In addition, if any Parity Credit Facility Loan is incurred, the principal and interest due on the Parity Credit Facility Loan shall be taken into account in calculating the Bond Requirements as provided in this paragraph. “Parity Credit Facility Loan” means a loan made to the Authority pursuant to a letter of credit, line of credit or similar credit support arrangement (a “Credit Facility”) that secures parity bonds (the “Credit Secured Bonds”) for the purposes of acquiring the Credit Secured Bonds or to pay the purchase price of or principal of or interest on the Credit Secured Bonds. The amounts payable as principal and interest on a Parity Credit Facility Loan shall be taken into account in determining the Minimum Securities Reserve and in determining, as provided in Article VII hereof, whether additional parity bonds or other parity securities (including the Credit Secured Bonds and the Parity Credit Facility Loan) may be issued (but not for purposes of Article X hereof):

(i) the Parity Credit Facility Loan shall be treated as issued on the date of issue of the Credit Secured Bonds and all calculations shall be made as of that date;

(ii) the principal amount of the Parity Credit Facility Loan taken into account shall be deemed to be the maximum amount of the Parity Credit Facility Loan under the terms of the Credit Facility;

(iii) the Parity Credit Facility Loan shall be deemed to be repayable in 20 level installments of principal and interest commencing in the first Bond Year in which there is no capitalized interest with respect to the Credit Secured Bonds and ending 20 years after that Bond Year;

(iv) interest shall be deemed to accrue on the Parity Credit Facility Loan at a rate equal to the lesser of the maximum rate permitted under the terms of the Parity Credit Facility Loan or a rate equal to the "25 Bond Revenue Index" as most recently published in The Bond Buyer prior to the date a firm offer to purchase the Credit Secured Bonds is accepted by the Authority, or if such index is no longer published such other index as the Authority reasonably selects; and

(v) the sum of the (i) principal of and interest on the Credit Secured Bonds plus (ii) the principal of and interest on the Parity Credit Facility Loan shall not be taken into account; rather, whichever of such obligations results in the highest Minimum Securities Reserve and the highest Combined Maximum Principal and Interest Requirements shall be taken into account.

The actual amount payable on a Parity Credit Facility Loan in any Bond Year shall be taken into account in calculating the "Bond Requirements" for the purposes of Article X hereof.

(8) "Bond Reserve Account" means the special and separate subaccount designated as the "Truckee Meadows Water Authority, TMWA Water System Parity Revenue Securities, Reserve Account," heretofore created. When the 2007 Bonds are no longer Outstanding, the Bond Reserve Account shall be discontinued in accordance with Section 508 hereof.

(9) "Bond Year" for the purposes of this Instrument means the 12 months commencing on July 2nd of any calendar year and ending on July 1st of the next succeeding calendar year.

(10) "Budget Act" means NRS 354.470 through 354.626, and all laws amendatory thereof, and is designated in NRS 354.470 thereof as the Local Government Budget Act.

(11) "Budget Year" means the Fiscal Year for which a budget is being prepared.

(12) "Chairman" means the de jure or de facto chairman of the Board and the Authority and chosen as such officer by the Board, and means the de jure or de facto vice chairman of the Board and the Authority whenever the chairman of the Board and the Authority is unable to act in such capacity, and the defined term means his successor in functions, if any.

(13) “Chief Financial Officer” means the de jure or de facto Chief Financial Officer of the Authority, designated as such by the Authority (but if there is no Chief Financial Officer of the Authority, Chief Financial Officer means the TMWA Manager), and means the de jure or de facto assistant Chief Financial Officer or acting Chief Financial Officer, if any, of the Authority whenever the Chief Financial Officer is unable to act in such capacity, or the successor of the Chief Financial Officer in functions, if any. The Chief Financial Officer is the “chief financial officer” of the Authority for purposes of Chapter 350 of NRS.

(14) “Cities” means the City of Reno and the City of Sparks, in the County and the State, and constituting political subdivisions thereof and bodies politic and corporate, or any successor municipal corporations.

(15) “combined average annual principal and interest requirements,” except as otherwise expressly provided herein, means (i) the sum of the Bond Requirements of the 2017 Bonds and any other parity securities payable from the Net Revenues, which Bond Requirements come due during any Bond Year from the date of calculation to the last day on which any of the then outstanding parity securities are due and payable, but not including any securities which are no longer Outstanding under the defeasance provisions of Section 1201 hereof, (ii) divided by the number of years (including any fraction thereof) from the date of the calculation of the combined average annual principal and interest requirements to the last day on which any of the then outstanding parity securities are due and payable. If any parity security bears interest at a variable interest rate and is not covered by a Qualified Swap, the rate of interest used in the foregoing test shall be the lesser of the maximum permitted rate of interest on those parity securities or a rate equal to the “25 Bond Revenue Index” as most recently published in The Bond Buyer prior to the date a firm offer to purchase the then proposed parity securities is accepted by the Authority or if such index is no longer published, such other similar long-term bond index as the Authority reasonably selects.

(16) “combined maximum annual principal and interest requirements” means the maximum sum of the principal of and the interest (including any payments to be made (positive or negative) on any Qualified Swap as provided in the definition of “Bond Requirements”) on the 2017 Bonds and any other parity securities, falling due during any one succeeding Bond Year for the period beginning with the Bond Year in which such computation is made and ending with the Bond Year in which any 2017 Bonds last become due and payable but not including any securities which are no longer Outstanding under the defeasance provisions of Section 1201 hereof. If any parity security bears interest at a variable interest rate and is not covered by a Qualified Swap, the rate of interest used in the foregoing test shall be the lesser of the maximum permitted rate of interest on those parity securities or a rate equal to the “25 Bond Revenue Index” as most recently published in The Bond Buyer prior to the date a firm offer to purchase the then proposed parity securities is accepted by the Authority or if such index is no longer published, such long-term bond securities index as the Authority reasonably selects.

Parity Credit Facility Loans shall be taken into account in such calculations as described under the definition of “Bond Requirements” above.

(17) “Comparable Bond Year” means, in connection with any Fiscal Year, the Bond Year which commences in the Fiscal Year. For example, for the Fiscal Year commencing on July 1, 2017, and ending on June 30, 2018, the Comparable Bond Year commences on July 2, 2017, and ends on July 1, 2018.

(18) “Cost of the Project” or “Cost of the Refunding Project,” or any phrase of similar import, means, in connection with the 2017 Bonds, all or any part designated by the Board of the cost of refunding the Refunded Bonds, which cost may include all or any part of the incidental costs pertaining to the Refunding Project.

(19) “Costs of Issuance Account” means the special account designated as the “Truckee Meadows Water Authority, Water Revenue Refunding Bonds, Series 2017, Costs of Issuance Account” created herein.

(20) “County” means the County of Washoe, in the State, and constituting a political subdivision thereof, or any successor municipal corporation; and where the context so indicates, such term means the geographical area comprising the County of Washoe.

(21) “Directors” means members of the Authority’s governing body, i.e., the Board.

(22) “disposal” or “dispose” means the sale, destruction, razing, loan, lease, grant, transfer, assignment, option to sell, other contract, other disposition, or any combination thereof, of the TMWA Water System, other property, or any interest therein.

(23) “Emergency Capital Amount” means the amount designated by the Professional Engineer as a continuing reserve to be deposited, accumulated, reaccumulated, and maintained in the Renewal and Replacement Account in accordance with Section 514 hereof.

(24) “equip” or “equipment” means the furnishing of all related or appurtenant machinery, furnishings, apparatus, paraphernalia, or other gear, or any combination thereof, pertaining to the Project, the TMWA Water System, or other property, or any interest therein.

(25) “Escrow Account” means the special account designated as the “Truckee Meadows Water Authority, Water Revenue Refunding Bonds, Series 2017 Escrow Account” created herein and held by the Escrow Bank.

(26) “Escrow Agreement” means the agreement between the Authority and the Escrow Bank regarding the redemption of the Refunded Bonds.

(27) “Escrow Bank” means The Bank of New York Mellon Trust Company, N.A. or any successor thereto.

(28) “events of default” means the events stated in Section 1303 hereof.

(29) “Federal Government” means the United States, or any agency, instrumentality, or corporation thereof.

(30) “Federal Securities” means bills, certificates of indebtedness, notes, bonds, or similar securities which are direct obligations of, or the principal and interest of which securities are unconditionally guaranteed by, the United States.

(31) “Financial Consultant” means any Person which is retained by the Authority to render to it fiscal advice and to perform financial services in connection with the 2017 Bonds and/or the TMWA Water System.

(32) “Fiscal Year” for the purposes of this Instrument means the 12 months commencing on July 1st of any calendar year and ending on June 30th of the next succeeding calendar year.

(33) “General Purpose Account” means the special and separate account designated as the “Truckee Meadows Water Authority, TMWA Water System General Purpose Account,” heretofore created and continued herein.

(34) “Gross Revenues” means all income and revenues received or accrued under generally accepted accounting principles derived directly or indirectly by the Authority from the water and other goods and services provided by, or from the operation and use of and otherwise pertaining to, the TMWA Water System, including, without limitation, all rates, fees, and other charges for the use of the TMWA Water System, or for any service rendered by the Authority in the operation thereof, or any part thereof, whether resulting from repairs, enlargements, extensions, betterments or other improvements to the TMWA Water System, or otherwise, and includes all revenues received by the Authority from the TMWA Water System, including, without limitation, all fees, rates, and other charges for the use of the TMWA Water System, or for any service rendered by the Authority in the operation thereof, directly or indirectly, the availability of any such service or the sale or other disposal of any commodity derived therefrom, but excluding any moneys borrowed and used for the acquisition of capital improvements and any moneys received as grants, appropriations or gifts from the United States, the State or other sources, the use of which is limited by the grantor or donor to the construction of capital improvements for the TMWA Water System, except to the extent any such moneys shall be received as payments for the use of the TMWA Water System, services rendered thereby, the availability of any such service or the disposal of any such commodities. “Gross Revenues” shall also include:

(i) all income or other gain from the investment of such income and revenues and of the proceeds of securities payable from Gross Revenues or Net Revenues; and

(ii) all amounts withdrawn from the Rate Stabilization Account and deposited in the Revenue Fund as described in Section 515 hereof.

(35) “hereby,” “herein,” “hereinabove,” “hereinafter,” “hereinbefore,” “hereof,” “hereto,” “hereunder,” or any similar term refer to this Instrument and not solely to the particular portion thereof in which such word is used; “heretofore” means before the adoption of this Instrument; and “hereafter” means after the adoption of this Instrument.

(36) “holder,” or any similar term, when used in conjunction with any Bonds, or any other designated securities, means the registered owner of any Bond or other security which is registered for payment.

(37) “Independent Accountant” means any certified public accountant, or any firm of certified public accountants, duly licensed to practice and practicing as such under the laws of the State, as from time to time appointed and compensated by the Board on the behalf and in the name of the Authority:

(a) Who is, in fact, independent and not under the domination of the Authority;

(b) Who does not have any substantial interest, direct or indirect, with the Authority; and

(c) Who is not connected with the Authority as an officer or employee thereof, but who may be regularly retained to make annual or similar audits of any books or records of the Authority.

(38) “Insurer” means the insurer of the payment of the Bond Requirements of the 2017 Bonds, if any, and its successors.

(39) “Instrument” means this resolution, cited in Section 101 hereof by the short title “2017 Refunding Bond Resolution”; and the term “instrument of the Authority,” “instrument of the Board,” “amendatory instrument,” “supplemental instrument,” or any phrase of similar import, means any resolution adopted by the Board on behalf of the Authority.

(40) “Interest Account” means the special and separate subaccount designated as the “Truckee Meadows Water Authority, TMWA Water System Parity Revenue Securities, Interest Account,” heretofore created within the Bond Fund and continued herein.

(41) “I.R.C.” or “Tax Code” means the Internal Revenue Code of 1986, as of the date of delivery of the Bonds and the regulations promulgated thereunder.

(42) “Member” means the Cities and the County and any other entity that may hereafter become a member of the Authority.

(43) “Minimum Operation and Maintenance Reserve” means at any time in each Fiscal Year an amount at least equal to one-sixth of the aggregate amount of the Operation and

Maintenance Expenses of the TMWA Water System for the Fiscal Year as fixed by the then current budget for that year, which minimum amount is required to be deposited, accumulated or reaccumulated, and maintained in the Operation and Maintenance Reserve Account pursuant to Section 513 hereof.

(44) “Minimum Securities Reserve” means at any time, the least of:

(a) 125% of the “combined average annual principal and interest requirements,” as herein defined; or

(b) 100% of the “combined maximum annual principal and interest requirements, as herein defined; or

(c) an amount determined by adding the amount of the Minimum Securities Reserve in effect immediately prior to the issuance of additional parity securities to an amount equal to 10 percent of the proceeds, within the meaning of Section 148(d)(1) of the I.R.C., of the then proposed to be issued parity securities, and is required to be calculated commencing or recommencing July 2nd of each Bond Year and on the first day of the month next succeeding each date on which any 2017 Bonds or any parity securities (except refunding parity securities) hereafter authorized are delivered, and is required to be deposited, accumulated or reaccumulated, and maintained in the Reserve Account pursuant to Section 508 hereof ; but

When the 2007 Bonds are no longer Outstanding, the Minimum Securities Reserve shall no longer be required and the Bond Reserve Account shall be discontinued in accordance with Section 508 hereof.

(45) “Net Revenues” means the Gross Revenues remaining after the deduction of the “Operation and Maintenance Expenses,” of the TMWA Water System, or any other facilities in connection with which the defined term is used.

(46) “NRS” means Nevada Revised Statutes, the State’s code of general laws.

(47) “Operation and Maintenance Expenses,” or any phrase of similar import, means all reasonable and necessary current expenses of the Authority, paid or accrued under generally accepted accounting principles, of operating, maintaining, and repairing the TMWA Water System or any other designated facilities in connection with which such term is used; and the term includes, without limitation:

(a) Engineering, auditing, reporting, legal, planning and other overhead expenses relating to the administration, operation, and maintenance of the TMWA Water System;

(b) Fidelity bond and property and liability insurance premiums pertaining to the TMWA Water System, or a reasonably allocable share of a premium of any blanket bond or policy pertaining to the TMWA Water System;

(c) Payments to pension, retirement, health, and hospitalization funds, and other insurance, and to any self-insurance fund as insurance premiums not in excess of such premiums which would otherwise be required for such insurance;

(d) Any general taxes, assessments, excise taxes, or other charges which may be lawfully imposed on the Authority, the TMWA Water System, revenues therefrom, or the Authority's income from or operations of any properties under its control and pertaining to the TMWA Water System, or any privilege in connection with the TMWA Water System or its operation;

(e) The reasonable charges of the Trustee, Paying Agent, Registrar and any other depository bank pertaining to the bonds and any other securities payable from Pledged Revenues or otherwise pertaining to the TMWA Water System;

(f) Contractual services, professional services, salaries, other administrative expenses, and costs of materials, supplies, repairs, and labor, pertaining to the TMWA Water System or to the issuance of the 2017 Bonds or any other securities relating to the TMWA Water System, including, without limitation, the expenses and compensation of the Trustee, any receiver, or other fiduciary under the Bond Act;

(g) The costs incurred by the Board in the collection and any refunds of all or any part of Pledged Revenues;

(h) Any costs of utility services furnished to the TMWA Water System;

(i) Any lawful refunds of any Pledged Revenues;

(j) The cost of calculating and verifying any amount due the United States as rebate payments under Section 148(f), I.R.C.; and

(k) All other administrative, general, and commercial expenses pertaining to the TMWA Water System; but

(i) Excluding any allowance for depreciation or amortization;

(ii) Excluding any costs of extensions, enlargements, betterments, and other improvements, or any combination thereof;

(iii) Excluding any reserves for major capital replacements, other than normal (noncapital) repairs;

(iv) Excluding any reserves for operation, maintenance, or repair of the TMWA Water System;

(v) Excluding any allowance for the redemption of any bond or other security evidencing a loan or other obligation, or the payment of any interest thereon, or any prior redemption premium due in connection therewith;

(vi) Excluding any liabilities incurred in the acquisition or improvement of any properties comprising any project or any existing facilities, or any combination thereof, pertaining to the TMWA Water System, or otherwise; and

(vii) Excluding any liabilities imposed on the Authority for any ground of legal liability not used on contract, including, without limitation, negligence in the operation of the TMWA Water System.

(48) “Operation and Maintenance Account” means the special and separate account designated as the “Truckee Meadows Water Authority, TMWA Water System Operation and Maintenance Account,” heretofore created and continued herein, and required to be applied in accordance with Section 506 hereof.

(49) “Operation and Maintenance Reserve Account” means the special and separate account designated as the “Truckee Meadows Water Authority, TMWA Water System Operation and Maintenance Reserve Account,” heretofore created and continued herein.

(50) “Outstanding” when used with reference to the Bonds or any other designated securities and as of any particular date means all the Bonds or any such other securities payable from Pledged Revenues or otherwise pertaining to the TMWA Water System, as the case may be, in any manner theretofore and thereupon being executed and delivered:

(a) Except any bond or other security canceled by the Authority, by the Registrar, Paying Agent or otherwise on the Authority’s behalf, at or before such date;

(b) Except any bond or other security for the payment or the redemption of which moneys at least equal to its Bond Requirements to the date of its maturity or any Redemption Date, whichever date is earlier, if any, shall have theretofore been deposited with a trust bank in escrow or in trust for that purpose, as provided in Sections 520 or 1201 hereof; and

(c) Except any bond or other security in lieu of or in substitution for which another bond or other security shall have been executed and delivered pursuant to Sections 306 or 1509 hereof.

(51) “parity bonds” or “parity securities” means bonds or securities pertaining to the TMWA Water System and secured by Pledged Revenues and with a lien on Pledged Revenues on a parity with the Outstanding 2017 Bonds.

(52) “Paying Agent” means The Bank of New York Mellon Trust Company, N.A., a “Banking Institution” and a “trust bank,” as herein defined, and designated by the Authority as the paying agent for the 2017 Bonds, which Banking Institution is also the “Registrar” hereunder and is an agent of the Authority for the payment of the Bond Requirements of the 2017 Bonds and for other administration of moneys pertaining to the Authority; and the term “Paying Agent” includes any successor Banking Institution as such a paying agent.

(53) “Person” means a corporation, firm, other body corporate (including, without limitation, the Federal Government, the State, or any other body corporate and politic other than the Authority), partnership, association, or individual, and also includes an executor, administrator, trustee, receiver, or other representative appointed according to law.

(54) “Pledged Revenues” means all or a portion of the Net Revenues. The designated term indicates a source of revenues and does not necessarily indicate all or any portion or other part of such revenues in the absence of further qualification. With respect to the Bonds and any other outstanding parity bonds, Pledged Revenues means all of the Net Revenues.

(55) “Principal Account” means the special and separate subaccount designated as the “Truckee Meadows Water Authority, TMWA Water System Parity Revenue Securities, Principal Account,” heretofore created within the Bond Fund and continued herein.

(56) “Project” means the Refunding Project.

(57) “Professional Engineer” means any registered or licensed professional engineer, any firm of such engineers, any licensed professional architect, or any firm of such architects, as from time to time determined by the Authority, which Person or Persons shall:

(a) Have a wide and favorable reputation for skill and experience in the field of designing, preparing plans and specifications for, and supervising construction of, water systems and water facilities;

(b) Be entitled to practice and are practicing as such under the laws of the State; and

(c) Be selected, retained, and compensated by the Board, in the name and on behalf of the Authority, and who may be in the regular employ or control of the Authority.

(58) “Qualified Surety Bond” means any surety bond or any insurance policy which has liquidity features equivalent to an irrevocable and unconditional letter of credit, or any irrevocable and unconditional letter of credit, deposited in the Bond Reserve Account in lieu of or in partial substitution for monies on deposit therein, the issuer of which is rated at the time of deposit of such Qualified Surety Bond in the highest rating category so long as the 2007 Bonds or 2015 Bonds are Outstanding, and thereafter, in one of the two highest rating categories, by Standard

and Poor's Ratings Services, Moody's Investors Service or Fitch Investors Services, whichever has a rating in effect on the Bonds at the time of deposit of the Qualified Surety Bond.

(59) "Qualified Swap" means, to the extent from time to time permitted by law, any financial arrangement entered into by the Authority with respect to the 2017 Bonds, parity securities or subordinate securities for the purpose of moderating interest rate fluctuations or any other purpose, (i) which is entered into with an entity that is a Qualified Swap Provider at the time the arrangement is entered into; (ii) which is any of the following, or any combination thereof, or any option with respect thereto: a cap, floor or collar; forward rate; future rate; swap (such swap may be based on an amount equal either to the principal amount of such 2017 Bonds, parity securities or subordinate securities, as the case may be, as may be designated or a notional principal amount relating to all or a portion of the principal amount of such 2017 Bonds, parity securities or subordinate securities, or such other exchange or rate protection transaction agreement; or other similar transaction (however designated); and (iii) which has been designated in writing to the Trustee by the Authority as a Qualified Swap with respect to such bonds.

(60) "Qualified Swap Provider" means, except as otherwise provided in Section 1135 hereof, a counterparty whose senior long term debt obligations, or whose obligations under a Qualified Swap are guaranteed by a financial institution whose senior long term debt obligations, are rated by whichever of Standard and Poor's Ratings Services, Moody's Investors Service or Fitch Investors Services as then has a rating in effect for the bonds or all such agencies if all then have a rating in effect for the bonds, at the time the subject Qualified Swap is entered into of at least "A" in the case of Moody's, "A" in the case of Standard & Poor's, or "A" by Fitch Investors Services.

(61) "Rate Stabilization Account" means the "Truckee Meadows Water Authority, TMWA Water System Rate Stabilization Account" heretofore created and continued herein.

(62) "Rebate Account" means the "Truckee Meadows Water Authority, TMWA Water System Parity Revenue Securities Rebate Account" heretofore created and continued herein.

(63) "Redemption Date" means the date fixed for the redemption prior to their respective fixed maturity dates of any bonds or other designated securities payable from Pledged Revenues or other moneys pertaining to the TMWA Water System in any notice of prior redemption, or otherwise fixed and designated by the Authority.

(64) "Redemption Price" means, when used with respect to a bond or other designated security payable from Pledged Revenues or other moneys pertaining to the TMWA Water System, the principal amount thereof plus accrued interest thereon to the Redemption Date plus the applicable premium, if any, payable upon the redemption thereof prior to the stated fixed maturity date of such bond or other security on a Redemption Date in the manner contemplated in accordance with the security's terms.

(65) “Refunding Project” means the refunding of the Refunded Bonds, if any, financed wholly or in part with a portion of the proceeds of the 2017 Bonds.

(66) “Registrar” means The Bank of New York Mellon Trust Company, N.A., which Banking Institution is required to keep records for the registration, transfer, and exchange of the 2017 Bonds or any successor thereof.

(67) “Renewal and Replacement Account” means the special and separate account designated as the “Truckee Meadows Water Authority, TMWA Water System Renewal and Replacement Account,” heretofore established and authorized and continued herein.

(68) “Revenue Fund” means the special and separate account designated as the “Truckee Meadows Water Authority, TMWA Water System Gross Revenues Fund,” heretofore established and authorized and continued herein.

(69) “Secretary” means the de jure or de facto secretary of the Board and the Authority and chosen as such officer by the Board, and means the de jure or de facto assistant secretary or acting secretary, if any, of the Board and the Authority whenever the secretary is unable to act in such capacity, the individual designated as secretary may be (but is not necessarily) a member of the Board and may be (but is not necessarily) the same individual as the Treasurer, and the defined term means his successor in functions, if any.

(70) “State” means the State of Nevada, in the United States; and where the context so indicates, means the geographical area comprising the State of Nevada.

(71) “Subordinate bonds” or “subordinate securities” means bonds or securities pertaining to the TMWA Water System and secured by Pledged Revenues with a lien on Pledged Revenues subordinate and junior to the lien thereon of the Outstanding 2017 Bonds.

(72) “Superior bonds” or “superior securities” means bonds or securities pertaining to the TMWA Water System and secured by Pledged Revenues with a lien on Pledged Revenues superior to the lien thereon of the Outstanding 2017 Bonds.

(73) “Tax Code” means the I.R.C., as herein defined.

(74) “TMWA Manager” means the de jure or de facto General Manager of the Authority and any deputy director designated by the TMWA Manager for purposes of this Instrument, and means any de jure or de facto deputy director or acting TMWA Manager, if any, of the Authority whenever the TMWA Manager is absent or is unable to act in such capacity, or the TMWA Manager’s successor in functions, if any. The TMWA Manager is the “chief administrative officer” of the Authority for the purposes of Chapter 350 of NRS.

(75) “TMWA Asset Purchase Agreement” means the asset purchase agreement between Sierra Pacific Power Company and the Authority dated as of January 15, 2001.

(76) “TMWA Water System” means the water facilities described in the TMWA Asset Purchase Agreement, and consisting of all properties, real, personal, mixed or otherwise, now owned or hereafter acquired by the Authority through purchase, construction or otherwise, and used in connection with such system of the Authority, and in any way pertaining thereto, whether or not located within or without or both within and without the boundaries of the County, including, without limitation, machinery, apparatus, structures, buildings and related or appurtenant furniture, fixtures and other equipment, as such system is from time to time extended, bettered or otherwise improved, or any combination thereof.

(77) “Treasurer” means the de jure or de facto treasurer of the Board and the Authority and chosen as such officer by the Board, and means the de jure or de facto assistant treasurer or acting treasurer, if any, of the Board and the Authority whenever the treasurer is unable to act in such capacity, the individual designated as treasurer may be (but is not necessarily) a member of the Board and may be (but is not necessarily) the same individual as the Secretary, and the defined term means his successor in functions, if any.

(78) “Trust bank” means the Trustee and any “Banking Institution,” as defined herein, which is also authorized to exercise and is exercising trust powers, and also means any branch of the Federal Reserve Bank.

(79) “Trustee” means The Bank of New York Mellon Trust Company, N.A., which Banking Institution is the fiduciary appointed by Section 1401 hereof, and the term “Trustee” includes any successor “trust bank,” as herein defined, which may at any time be substituted in its place as such a trustee.

(80) “2017 Bonds or Bonds” means the “Truckee Meadows Water Authority, Water Revenue Refunding Bonds, Series 2017,” authorized to be issued by this Instrument.

(81) “2016 Bonds” means the “Truckee Meadows Water Authority, Water Revenue Refunding Bonds, Series 2016,” authorized to be issued by the 2016 Bond Resolution.

(82) “2015 Bonds” means the “Truckee Meadows Water Authority, Water Revenue Refunding Bonds, Series 2015A,” authorized by the 2015 Bond Resolution.

(83) “2007 Bonds” means the “Truckee Meadows Water Authority, Water Revenue Refunding Bonds, Series 2007,” authorized to be issued by the 2007 Bond Resolution.

(84) “2017 Bond Resolution” means the resolution adopted by the Board, and authorizing the issuance of the “2017 Bonds,” as herein defined, and as stated in Section 101 hereof to be the short title of this Instrument.

(85) “2016 Bond Resolution” means the resolution adopted by the Board, and authorizing the issuance of the “2016 Bonds,” as herein defined.

(86) “2015 Bond Resolution” means the resolution adopted by the Board, and authorizing the issuance of the “2015 Bonds,” as herein defined.

(87) “2007 Bond Resolution” means the resolution adopted by the Board, and authorizing the issuance of the “2007 Bonds,” as herein defined.

(88) “United States” means the United States of America; and where the context so indicates, such term means the geographical area comprising the United States of America.

(89) “Vice Chairman” means the de jure or de facto vice chairman or the Board and the Authority and chosen as such officer by the Board, and the defined term means his successor in functions, if any.

(90) “Water Fund” means the separate fund designated as the “Truckee Meadows Water Authority, Water Fund,” heretofore authorized and continued herein, which fund consists of a self-balancing group of accounts pertaining to the TMWA Water System, and to which the various accounts herein created or otherwise designated relate.

B. Construction. This Instrument, except where the context by clear implication herein otherwise requires, shall be construed as follows:

(1) Words in the singular number include the plural, and words in the plural include the singular.

(2) Words in the masculine gender include the feminine and the neuter, and when the sense so indicates words of the neuter gender refer to any gender.

(3) Articles, sections, subsections, paragraphs, and subparagraphs mentioned by number, letter, or otherwise, correspond to the respective articles, sections, subsections, paragraphs, and subparagraphs of this Instrument so numbered or otherwise so designated.

(4) The titles and leadlines applied to articles, sections, and subsections of this Instrument are inserted only as a matter of convenience and ease in reference and in no way define, limit, or describe the scope or intent of any provisions of this Instrument.

(5) Any 2017 Bonds held by the Authority shall not be deemed to be Outstanding for the purpose of redemption or Outstanding for the purpose of consents hereunder or for any other purpose provided herein.

Section 103. Successors. All of the covenants, stipulations, obligations, and agreements by or on behalf of and other provisions for the benefit of the Authority or the Board contained herein shall bind and inure to the benefit of any successors thereof and shall bind and inure to the benefit of any officer, board, district, commission, authority, agent, or instrumentality to whom or to which there shall be transferred by or in accordance with law any right, power, or duty of the

Authority or the Board or of their respective successors, if any, the possession of which is necessary or appropriate in order to comply with any such covenants, stipulations, obligations, agreements, or other provisions hereof.

Section 104. Parties Interested Herein. Except as herein otherwise expressly provided, nothing herein expressed or implied is intended or shall be construed to confer upon or to give to any Person, other than the Authority, the Board, the Directors, the Paying Agent, the Trustee, the Insurer, if any, and the holders from time to time of the 2017 Bonds, including, without limitation, the Paying Agent in its capacity as a paying agent and as the Registrar, any right, remedy, or claim under or by reason hereof or any covenant, condition, or stipulation hereof. All the covenants, stipulations, promises, and agreements herein contained by and on behalf of the Authority shall be for the sole and exclusive benefit of the Authority, the Board, the Directors, the Paying Agent, the Trustee, and any holder of any 2017 Bonds, except as herein otherwise provided.

Section 105. Ratification. All action taken (not inconsistent with the provisions of this Instrument) by the Board, the officers of the Authority, and otherwise by the Authority, including without limitation, directed:

- A. Project. Toward the Project.
- B. Bonds. Toward the sale and delivery of the Authority's 2017 Bonds for purposes of the Project.
- C. Bond Purchase Agreement. Toward the completion and execution of the Bond Purchase Agreement by the officers designated therein, and
- D. Bond Insurance. Toward the municipal bond insurance policy issued by the Insurer, if any, for the purpose of guaranteeing the scheduled payment of the principal of and interest on the 2017 Bonds.

and otherwise towards any and all of the purposes and objectives of the Authority be, and the same hereby is, ratified, approved, and confirmed.

Section 106. Authorization of Official Statement. The TMWA Manager, or in his absence, the Chief Financial Officer, is authorized to deem the preliminary official statement to be a "final" official statement as of its date for the purposes of Rule 15c2-12 of the Securities and Exchange Commission, with such changes and additions as the TMWA Manager or Chief Financial Officer determines necessary or appropriate. The TMWA Manager or Chief Financial officer is hereby authorized and directed to execute and deliver, on behalf of the Authority, the final official statement with such changes or additions, the approval of such changes or additions by the TMWA Manager to be conclusively evidenced by the execution and delivery of the final official statement.

Section 107. Instrument Irrepealable. In consideration of the purchase and acceptance of the 2017 Bonds by those who shall hold the same from time to time, after any of the 2017 Bonds are issued, this Instrument shall constitute an irrevocable contract between the Authority

and the holder or holders of the 2017 Bonds; and this Instrument (subject to the provisions of Section 1201 and of article XV hereof), if any 2017 Bonds are in fact issued, shall be and shall remain irrevocable until the 2017 Bonds, as to all Bond Requirements, shall be fully paid, canceled, and discharged, except as herein otherwise expressly provided.

Section 108. Repealer. All bylaws, orders, and other instruments, or parts thereof, inconsistent herewith are hereby repealed to the extent only of such inconsistency. This repealer shall not be construed to revive any bylaw, order, or other instrument, or part thereof, heretofore repealed.

Section 109. Severability. If any section, subsection, paragraph, clause, or other provision of this Instrument shall for any reason be held to be invalid or unenforceable, the invalidity or unenforceability of such section, subsection, paragraph, clause, or other provision shall not affect any of the remaining provisions of this Instrument.

Section 110. Execution of Instrument. This Instrument, immediately on its final passage and adoption, shall be recorded in the official records of the Authority kept for that purpose, shall be executed by the signature of the Chairman, shall be attested by the Secretary, and the seal of the Authority shall be affixed thereto.

Section 111. Effective Date. This Instrument shall be in effect upon its adoption.

## ARTICLE II

### BOARD'S DETERMINATIONS, AUTHORITY FOR AND AUTHORIZATION OF PROJECT, NECESSITY OF PROJECT AND BONDS, PROJECT COST, OBLIGATION OF AUTHORITY, AND TERMS OF BOND SALE

Section 201. Authority for this Instrument. This Instrument is adopted by virtue of the Authority Act, the Bond Act, the Supplemental Bond Act and pursuant to their provisions; and the Authority has ascertained and hereby determines that each and every matter and thing as to which provision is made herein is necessary in order to carry out and to effectuate the purposes of the Authority in accordance with the Authority Act and the Bond Act.

Section 202. Necessity of Project and Bonds. It is necessary and for the best interests of the Authority and the inhabitants thereof, that the Authority effect the Project and defray the cost thereof wholly or in part by issuing the 2017 Bonds therefor; and the Board hereby so determines and declares.

Section 203. Authorization of Project. The Board, on behalf of the Authority, does hereby determine, and, if determined by the TMWA Manager, or in his absence, the Chief Financial Officer, to be in the best interests of the Authority, to refund the Refunded Bonds with the proceeds of the 2017 Bonds; and the Project is hereby so authorized.

Section 204. Cost of the Project. The cost of the Project is estimated not to exceed an amount received from the sale of the 2017 Bonds, excluding any such cost defrayed or to be defrayed by other than with the proceeds of the 2017 Bonds.

Section 205. Bonds Equally Secured. The covenants and agreements herein set forth to be performed on behalf of the Authority shall be for the equal benefit, protection, and security of the holders of any and all of the Outstanding 2017 Bonds and any Outstanding parity securities payable from Pledged Revenues and heretofore or hereafter authorized, all of which, regardless of the time or times of their issue or maturity, shall be of equal rank without preference, priority, or distinction of any of the 2017 Bonds or other such securities over any other thereof, except as otherwise expressly provided in or pursuant to this Instrument.

Section 206. Special Obligations. All of the 2017 Bonds, as to all Bond Requirements, shall be payable and collectible solely out of the Net Revenues pertaining to the TMWA Water System, which Net Revenues are so pledged; the holder or holders thereof may not look to any general or other fund for the payment of the Bond Requirements, except the herein-designated special funds pledged therefor; the 2017 Bonds shall not constitute an indebtedness or a debt within the meaning of any constitutional or statutory provision or limitation; and the 2017 Bonds shall not be considered or held to be general obligations of the Authority but shall constitute its special obligations. The Authority has no taxing power and, therefore, does not pledge its full faith and credit for the payment of the 2017 Bonds.

Section 207. Character of Agreement. None of the covenants, agreements, representations, and warranties contained herein or in the 2017 Bonds issued hereunder, in the absence of any breach thereof, shall ever impose or shall be construed as imposing any liability, obligation, or charge against the Authority (except for the special funds pledged therefor) or its general credit, payable out of its general fund or out of any funds derived from taxation.

Section 208. No Pledge of Property. The payment of the 2017 Bonds is not secured by an encumbrance, mortgage, or other pledge of property of the Authority, except the Net Revenues and any other moneys pledged for the payment of the 2017 Bonds. No property of the Authority, subject to such exception, shall be liable to be forfeited or taken in payment of the 2017 Bonds.

Section 209. No Recourse against Officers and Agents. Pursuant to NRS 350.606, no recourse shall be had for the payment of the Bond Requirements of the 2017 Bonds or for any claim based thereon, or otherwise, upon this Instrument authorizing their issuance or any other instrument pertaining thereto, against any individual member of the Board or the Authority, or any officer or other agent of the Authority, past, present, or future, either directly or indirectly through the Board of the Authority, or otherwise, whether by virtue of any constitution, statute, or rule of law, or by the enforcement of any penalty, or otherwise, all such liability, if any, being by the acceptance of the 2017 Bonds and as a part of the consideration of their issuance specially waived and released.

Section 210. Limitations upon State. Pursuant to NRS 350.610, the faith of the State is hereby pledged that the Authority Act, the Bond Act, any law supplemental or otherwise pertaining thereto, and any other act concerning the 2017 Bonds or other securities, Pledged Revenues, or any combination of such securities and such revenues, shall be neither repealed nor amended nor otherwise directly or indirectly modified in such a manner as to impair adversely any Outstanding securities of the Authority until all such securities have been discharged in full or provision for their payment and redemption has been fully made.

Section 211. No Election or Other Preliminaries. The 2017 Bonds shall be issued without their being authorized at an election by any electors of the Authority or without any other preliminaries being taken other than as herein otherwise provided.

Section 212. Sale of Bonds. The TMWA Manager, or in his absence, the Chief Financial Officer, is authorized to proceed with the sale of the Bonds to the Underwriters on the terms and conditions provided herein, and to execute the Bond Purchase Agreement in substantially the form on file with the Secretary with such changes as are approved by the officer executing the Bond Purchase Agreement whose execution thereof shall be conclusive evidence of consent to any such changes; the 2017 Bonds are to bear interest at the rates per annum provided in the Bond Purchase Agreement, which rates must not exceed by more than 3% the 25 Bond Revenue Index most recently published in The Bond Buyer before the Bond Purchase Agreement is accepted and are to be sold at a price equal to the principal amount thereof (not to exceed the principal amount sufficient to accomplish the Refunding Project), plus a premium, or less a discount not exceeding 9% of the principal amount thereof.

## ARTICLE III

AUTHORIZATION, TERMS, EXECUTION AND FORM OF BONDS

Section 301. Authorization of Bonds. For the purpose of protecting the public health, conserving the property, and advancing the general welfare of the citizens of the Authority, the “Truckee Meadows Water Authority, Water Revenue Refunding Bonds, Series 2017,” in the aggregate principal amount set forth in the Bond Purchase Agreement, payable as to all Bond Requirements solely out of the Net Revenues pertaining to the TMWA Water System, are hereby authorized to be issued, pursuant to the Authority Act and the Bond Act; the Authority pledges irrevocably, but not necessarily exclusively, the Net Revenues to the payment of the Bond Requirements of the 2017 Bonds; and the proceeds of the 2017 Bonds are to be used solely to defray wholly or in part the Cost of the Project, except as herein otherwise provided.

Section 302. 2017 Bond Details. The 2017 Bonds shall be issued in fully registered form, i.e., registered as to both principal and interest, in compliance with Section 149 of the Tax Code, and the regulations of the Secretary of the Treasury thereunder. The 2017 Bonds shall be dated as of the date of delivery of the Bonds. Except as otherwise provided in Section 307 hereof, the Bonds shall be issued in denominations of \$5,000 or any integral multiple thereof. The 2017 Bonds shall bear interest calculated based on a 360-day year of twelve 30-day months, from their date until their respective maturity dates (or, if redeemed prior to maturity as provided below, their redemption dates) at the respective dates set forth in the Bond Purchase Agreement, payable semiannually on January 1 and July 1 of each year commencing on July 1, 2017; provided that those 2017 Bonds which are reissued upon transfer, exchange or other replacement shall bear interest at the rates shown in the Bond Purchase Agreement from the most recent interest payment date to which interest has been paid or duly provided for, or if no interest has been paid, from the date of the 2017 Bond. The 2017 Bonds shall mature on July 1 in each of the designated amounts of principal and designated years, as set forth in the Bond Purchase Agreement (not to exceed 20 years from the date of delivery of the Bonds).

The principal of and redemption premium, if any, on any 2017 Bond shall be payable to the registered owner thereof as shown on the registration records kept by the Registrar, upon maturity or prior redemption thereof and upon presentation and surrender at the office of the Paying Agent or such other office as designated by the Paying Agent. If any 2017 Bond shall not be paid upon such presentation and surrender at or after maturity, it shall continue to draw interest at the interest rate borne by said 2017 Bond until the principal thereof is paid in full. Except as otherwise provided in Section 307 hereof, payment of interest on any 2017 Bond shall be made to the registered owner thereof by check or draft mailed by first class mail by the Paying Agent, on each interest payment date (or, if such interest payment date is not a business day, on the next succeeding business day), to the registered owner thereof, at his or her address as shown on the registration records kept by the Registrar as of the close of business on the 15th day of the calendar month next preceding each interest payment date (other than a special interest payment date hereafter fixed for payment of defaulted interest) (the “Regular Record Date”); but any such interest not so timely paid or duly provided for shall cease to be payable to the owner thereof as shown on the registration records of the Registrar as of the close of business on the Regular Record Date and shall be payable

to the owner thereof, at his or her address, as shown on the registration records of the Registrar as of the close of business on a date fixed to determine the names and addresses of owners for the purpose of paying defaulted interest (the "Special Record Date"). Such Special Record Date shall be fixed by the Paying Agent whenever moneys become available for payment of the defaulted interest, and notice of the Special Record Date shall be given to the owners of the 2017 Bonds not less than ten days prior thereto by first-class mail to each such owner as shown on the Registrar's registration records as of a date selected by the Registrar, stating the date of the Special Record Date and the date fixed for the payment of such defaulted interest. The Paying Agent may make payments of interest on any 2017 Bond by such alternative means as may be mutually agreed to between the owner of such 2017 Bond and the Paying Agent. All such payments shall be made in lawful money of the United States of America without deduction for any service charges of the Paying Agent or Registrar.

### Section 303. Prior Redemption and Partial Redemption

A. Optional Redemption. 2017 Bonds, or portions thereof (\$5,000 or any integral multiple), if any, maturing before the date set forth in the Bond Purchase Agreement, shall be subject to optional redemption prior to their respective maturities, at the option of the Authority, on and after the date set forth in the Bond Purchase Agreement, in whole or in part at any time from any maturities selected by the Authority and by lot within a maturity (giving proportionate weight to 2017 Bonds in denominations larger than \$5,000), at a price equal to the principal amount of each 2017 Bond, or portion thereof, so redeemed, accrued interest thereon to the redemption date, and a premium, if any, as set forth in the Bond Purchase Agreement.

B. Mandatory Sinking Fund Redemption. The Bonds maturing on July 1 of the years set forth in the Bond Purchase Agreement, if any (the "Term Bonds") are subject to mandatory sinking fund redemption at a redemption price equal to 100% of the principal amount thereof and accrued interest to the redemption date. As and for a sinking fund for the redemption of the Term Bonds, there shall be deposited into the Bond Fund on or before July 1 of the years set forth in the Bond Purchase Agreement, a sum which, together with other moneys available in the Bond Fund, is sufficient to redeem the Term Bonds plus accrued interest to the redemption date, on July 1 of the years and in the principal amounts as set forth in the Bond Purchase Agreement.

Not more than sixty days nor less than thirty days prior to the sinking fund payment dates for the Term Bonds, the Registrar shall proceed to select for redemption (by lot in such manner as the Registrar may determine) from all Outstanding Term Bonds of a series, a principal amount of the Term Bonds equal to the aggregate principal amount of the Term Bonds redeemable with the required sinking fund payments, and shall call such Term Bonds or portions thereof for redemption from the sinking fund on the next July 1, and give notice of such call as provided in Section 304 of this Instrument.

At the option of the Authority to be exercised by delivery of a written certificate to the Registrar not less than sixty days next preceding any sinking fund redemption date, it may (i) deliver to the Registrar for cancellation Term Bonds, or portions thereof (\$5,000 or any integral multiple thereof) in an aggregate principal amount desired by the Authority or, (ii) specify a principal amount of Term Bonds, or portions thereof (\$5,000 or any integral multiple thereof) which prior to said date

have been redeemed (otherwise than through the operation of the sinking fund) and canceled by the Registrar and not theretofore applied as a credit against any sinking fund redemption obligation. Each Term Bond or portions thereof so delivered or previously redeemed shall be credited by the Registrar at 100% of the principal amount thereof against the obligation of the Authority on the sinking fund redemption dates and any excess shall be so credited against future sinking fund redemption obligations in such manner as the Authority determines. In the event the Authority shall avail itself of the provisions of clause (i) of the first sentence of this paragraph, the certificate required by the first sentence of this paragraph shall be accompanied by the respective Term Bonds or portions thereof to be canceled or in the event the Bonds are registered in the name of Cede & Co. as provided in Section 307 of this Instrument, the certificate required by the first sentence of this paragraph shall be accompanied by such direction and evidence of ownership as is satisfactory to The Depository Trust Company.

C. Partial Redemption. In the case of 2017 Bonds in a denomination larger than \$5,000, a portion of such 2017 Bond (\$5,000 or any integral multiple thereof) may be redeemed, in which case the Registrar shall, except as otherwise provided in Section 307 hereof, without charge to the owner of such 2017 Bond, authenticate and issue a replacement 2017 Bond or 2017 Bonds for the unredeemed portion thereof. In the case of a partial redemption of 2017 Bonds of a single maturity pursuant to Subsection A of this Section, the Paying Agent shall select the 2017 Bonds to be redeemed by lot at such time as directed by the Authority (but at least 30 days prior to the redemption date), and if such selection is more than 60 days before a redemption date, except as otherwise provided in Section 307 hereof, shall direct the Registrar to appropriately identify the 2017 Bonds so called for redemption by stamping them at the time any 2017 Bond so selected for redemption is presented to the Registrar for stamping or for transfer or exchange, or by such other method of identification as deemed adequate by the Registrar, and any 2017 Bond or 2017 Bonds issued in exchange for, or to replace, any 2017 Bond or 2017 Bonds so called for prior redemption shall likewise be stamped or otherwise identified.

Section 304. Notice of Redemption. Unless waived by any registered owner of a 2017 Bond to be redeemed, notice of prior redemption shall be given electronically by the Registrar, as long as Cede & Co. is registered owner of the 2017 Bonds, and otherwise by first-class mail, at least 30 days but not more than 60 days prior to the Redemption Date to the Municipal Securities Rulemaking Board via its Electronic Municipal Market Access ("MSRB"), the Insurer, if any, and to the registered owner of any 2017 Bond (initially Cede & Co.) all or a part of which is called for prior redemption at his or her address as it last appears on the registration records kept by the Registrar. Actual receipt of notice by the MSRB, the Insurer, if any, or any registered owner of 2017 Bonds shall not be a condition precedent to redemption of such 2017 Bonds. Failure to give such notice to the MSRB, the Insurer, if any, or the registered owner of any 2017 Bond designated for redemption, or any defect therein, shall not affect the validity of the proceedings for the redemption of any other 2017 Bond. A certificate by the Registrar that notice of call and redemption has been given as provided in this Section shall be conclusive as against all parties; and no owner whose 2017 Bond is called for redemption or any other owner of any 2017 Bond may object thereto or may object to the cessation of interest on the Redemption Date on the ground that he failed actually to receive such notice of redemption.

All official notices of redemption shall be dated and shall state:

- (1) the redemption date,
- (2) the purchase prices,
- (3) the identification by CUSIP number and maturity (and, in the case of partial redemption of a maturity, other appropriate identification) of the 2017 Bonds to be redeemed,
- (4) that on the redemption date the redemption price will become due and payable upon each such 2017 Bond or portion thereof called for redemption, and that interest thereon shall cease to accrue from and after said date, and
- (5) the place where such 2017 Bonds are to be surrendered for payment of the redemption price, which place of payment shall be the principal office of the Paying Agent or such other office as designated by the Paying Agent (accrued interest to the redemption date being payable by mail or as otherwise provided in this Instrument).

Unless waived by the Registrar, written direction to give a notice of optional redemption shall be given by the Authority to the Registrar in writing not less than 60 days prior to the redemption date. No such written direction need be provided for mandatory redemption under Section 303B, and the Registrar shall call Bonds in accordance with Section 303B without further direction.

Each notice may further state that such redemption shall be conditional upon the Paying Agent receiving for deposit in the Bond Fund on or prior to the date fixed for redemption, monies authorized by the Authority to be deposited into the Bond Fund that are sufficient to pay the principal of and interest and prior redemption premium, if any, on the 2017 Bonds to be redeemed and that if such monies have not been so received, the notice shall be of no force and effect and the Authority shall not be required to redeem such 2017 Bonds. Unless waived by the Registrar, the Authority, not less than 60 days prior to the redemption date, shall advise the Registrar, in writing, of its election to conditionally redeem any 2017 Bonds as provided in this paragraph.

Official notice of redemption having been given as aforesaid, the 2017 Bonds or portions of 2017 Bonds so to be redeemed shall, on the redemption date, become due and payable at the redemption price therein specified, and from and after such date (unless the Authority shall not have deposited payment of the redemption price into the Bond Fund) such 2017 Bonds or portions of 2017 Bonds shall cease to bear interest. Upon surrender of such 2017 Bonds for redemption in accordance with said notice, such 2017 Bonds shall be paid by the Paying Agent at the redemption price, if the Authority has deposited with the Paying Agent an amount of money sufficient to pay the redemption price. Installments of interest due on or prior to the redemption date shall be payable as herein provided for payment of interest. Upon partial redemption of any 2017 Bond, the applicable amount being redeemed shall be reflected on the prepayment panel appended to the 2017 Bonds. All 2017 Bonds which have been redeemed shall be canceled and destroyed by the Registrar and shall not be reissued.

Section 305. Negotiability. The 2017 Bonds shall be fully negotiable within the meaning of and for the purpose of the Uniform Commercial Code - Investment Securities and each owner shall possess all rights enjoyed by holders of negotiable instruments under the Uniform Commercial Code - Investment Securities.

Section 306. Registration, Transfer and Exchange of Bonds. Except as otherwise provided in Sections 303 and 307 hereof:

A. Records for the registration and transfer of the 2017 Bonds shall be kept by the Registrar. Upon the surrender of any 2017 Bond at the Registrar, duly endorsed for transfer or accompanied by an assignment in form satisfactory to the Registrar duly executed by the owner or his or her attorney duly authorized in writing, the Registrar shall authenticate and deliver in the name of the transferee or transferees a new 2017 Bond or 2017 Bonds of a like aggregate principal amount and of the same maturity, bearing a number or numbers not previously assigned. 2017 Bonds may be exchanged at the Registrar for an equal aggregate principal amount of 2017 Bonds of the same maturity of other authorized denominations, as provided in Section 302 hereof. The Registrar shall authenticate and deliver a 2017 Bond or 2017 Bonds which the owner making the exchange is entitled to receive, bearing a number or numbers not previously assigned. For every exchange or transfer of 2017 Bonds requested by the owner thereof, the Registrar may make a sufficient charge to the bondholder to reimburse it for any tax, fee or other governmental charge required to be paid with respect to such exchange or transfer and may charge a sum sufficient to pay the cost of preparing and authenticating a new 2017 Bond. No such charge shall be levied in the case of an exchange resulting from an optional redemption of a 2017 Bond.

B. The Registrar shall not be required to transfer or exchange (i) any 2017 Bond, or portion thereof, subject to redemption during a period beginning at the opening of business fifteen (15) days before the date of mailing by the Registrar of a notice of prior redemption of 2017 Bonds and ending at the close of business on the date of such mailing; (ii) any 2017 Bond, or any portion thereof, subject to redemption after the mailing of such notice as herein provided; or (iii) any 2017 Bond, or portion thereof, during a period beginning fifteen (15) days before the maturity date of such 2017 Bond presented for transfer.

C. The person in whose name any 2017 Bond shall be registered, on the registration records kept by the Registrar, shall be deemed and regarded as the absolute owner thereof for the purpose of payment and for all other purposes (except to the extent otherwise provided in Section 302 hereof with respect to interest payments); and payment of or on account of either principal or interest on any 2017 Bond shall be made only to or upon the written order of the owner thereof or his or her legal representative. All such payments shall be valid and effectual to discharge the liability upon such 2017 Bond to the extent of the sum or sums so paid.

D. If any 2017 Bond shall be lost, stolen, destroyed or mutilated, the Registrar shall, upon receipt of such evidence, information or indemnity relating thereto as it or the Authority may reasonably require, and upon payment by the holder of all expenses in connection therewith, authenticate and deliver a replacement 2017 Bond or 2017 Bonds of a like aggregate principal

amount and of the same maturity, bearing a number or numbers not previously assigned. If such lost, stolen, destroyed or mutilated 2017 Bond shall have matured or shall have been called for redemption, the Registrar may direct that such 2017 Bond be paid by the Paying Agent in lieu of replacement.

E. Whenever any 2017 Bond shall be surrendered to the Paying Agent upon payment thereof, or to the Registrar for transfer, exchange or replacement as provided herein, such 2017 Bond shall be promptly canceled or destroyed by the Paying Agent or Registrar, and counterparts of a certificate of such cancellation or proof of destruction shall be furnished by the Paying Agent or Registrar to the Board upon request.

#### Section 307. Custodial Deposit.

A. Notwithstanding the foregoing provisions of Sections 302 to 306 hereof, the 2017 Bonds shall initially be registered in the name of "Cede & Co." as nominee for The Depository Trust Company, the securities depository for the 2017 Bonds. The 2017 Bonds may not thereafter be transferred or exchanged except:

(1) to any successor of The Depository Trust Company or its nominee, which successor must be both a "clearing corporation" as defined in NRS 104.8102, and a qualified and registered "clearing agency" under Section 17A of the Securities Exchange Act of 1934, as amended; or

(2) upon the resignation of The Depository Trust Company or a successor or new depository under clause (1) or this clause (2) of this Subsection A, or a determination by the Authority that The Depository Trust Company or such successor or new depository is no longer able to carry out its functions, and the designation by the Authority of another depository institution acceptable to the depository then holding the 2017 Bonds, which new depository institution must be both a "clearing corporation" as defined in NRS 104.8102 and a qualified and registered "clearing agency" under Section 17A of the Securities Exchange Act of 1934, as amended, to carry out the functions of The Depository Trust Company or such successor or new depository;

(3) upon the resignation of The Depository Trust Company or a successor or new depository under clause (1) or clause (2) of this Subsection A, or a determination by the Authority that The Depository Trust Company or such successor or new depository is no longer able to carry out its functions, and the failure by the Authority, after reasonable investigation, to locate another qualified depository institution under clause (2) to carry out such depository functions; or

(4) upon the determination of the Authority to discontinue the book-entry system for the 2017 Bonds.

B. In the case of a transfer to a successor of The Depository Trust Company or its nominee as referred to in clause (1) of Subsection A hereof or designation of a new depository pursuant to clause (2) of Subsection A hereof, upon receipt of the outstanding 2017 Bonds by the Registrar, together with written instructions for transfer satisfactory to the Registrar, a new 2017

Bond for each maturity then outstanding shall be issued to such successor or new depository, as the case may be, or its nominee, as is specified in such written transfer instructions. In the case of a resignation or determination under clause (3) of Subsection A hereof and the failure after reasonable investigation to locate another qualified depository institution for the 2017 Bonds as provided in clause (3) of Subsection A hereof, or upon a determination pursuant to clause (4) of Subsection A hereof, and upon receipt of the outstanding 2017 Bonds by the Registrar, together with written instructions for transfer satisfactory to the Registrar, new 2017 Bonds shall be issued in the denominations of \$5,000 or any integral multiple thereof, as provided in and subject to the limitations of Section 302 hereof, registered in the names of such persons, and in such denominations as are requested in such written transfer instructions; however, the Registrar shall not be required to deliver such new 2017 Bonds within a period of less than 60 days from the date of receipt of such written transfer instructions.

C. The Authority, the Registrar and the Paying Agent shall be entitled to treat the registered owner of any 2017 Bond as the absolute owner thereof for all purposes hereof and any applicable laws, notwithstanding any notice to the contrary received by any or all of them and the Authority, the Registrar and the Paying Agent shall have no responsibility for transmitting payments or notices to the beneficial owners of the 2017 Bonds held by The Depository Trust Company or any successor or new depository named pursuant to Subsection A hereof.

D. The Authority, the Registrar and the Paying Agent shall endeavor to cooperate with The Depository Trust Company or any successor or new depository named pursuant to clause (1) or (2) of Subsection A hereof in effectuating payment of the 2017 Bond Requirements of the 2017 Bonds by arranging for payment in such a manner that funds representing such payments are available to the depository on the date they are due.

E. Upon any partial redemption of any maturity of the Bonds, Cede & Co (or its successor) in its discretion may request the Authority to issue and authenticate a new Bond or shall make an appropriate notation on the Bond indicating the date and amount of prepayment, except in the case of final maturity, in which case the Bond must be presented to the Paying Agent prior to payment.

Section 308. Execution of Bonds. The 2017 Bonds shall be executed as follows:

A. Filings with Secretary of State. Pursuant to NRS 350.638 and to the act cited as the Uniform Facsimile Signatures of Public Officials Act, cited as chapter 351 of NRS, and prior to the execution of any 2017 Bonds by facsimile signature, the Chairman, the Treasurer, and the Secretary shall each file with the Secretary or State of the State of Nevada such officer's manual signature certified by such officer under oath.

B. Manner of Execution. Pursuant to NRS 350.636, each Bond shall be signed and executed in the name and on behalf of the Authority with the manual or reproduced facsimile of the signature of the Chairman, and shall be countersigned and executed with a manual or facsimile signature of the Treasurer; each Bond shall be authenticated with the manual or facsimile

impression of the official seal of the Authority; and each Bond shall be signed, subscribed, executed, and attested by the manual or facsimile signature of the Secretary.

Section 309. Use of Predecessor's Signature. The 2017 Bonds bearing the signatures of the officers in office at the time of the signing thereof shall be the valid and binding obligations of the Authority, notwithstanding that before the delivery thereof and the payment thereof any or all of the individuals whose signatures appear thereon shall have ceased to fill their respective offices. At the time of the execution of the 2017 Bonds and of a signature certificate pertaining thereto the Chairman, the Treasurer, and the Secretary, respectively, may adopt as and for his own signature the signature of his predecessor in office if such signature appears upon any of the 2017 Bonds pertaining thereto.

Section 310. Authentication of the Bonds. No 2017 Bond shall be valid or obligatory for any purpose unless the certificate of authentication thereon, substantially in the form hereinafter provided, has been duly manually executed by the Registrar. By authenticating any of the 2017 Bonds initially delivered pursuant to this Instrument, the Registrar shall be deemed to have assented to all of the provisions of this Instrument.

Section 311. Incontestable Recital in Bonds. Pursuant to NRS 350.628, each 2017 Bond shall recite that it is issued pursuant to the Authority Act, the Supplemental Bond Act and to the Bond Act, which recital shall be conclusive evidence of the validity of the 2017 Bonds and the regularity of their issuance.

Section 312. State Tax Exemption. The 2017 Bonds and the income therefrom are exempt from all State, County, and municipal taxation, except for the tax on estates imposed pursuant to the provisions of chapter 375A of NRS and the tax on generation-skipping transfers imposed pursuant to chapter 375B of NRS.

Section 313. Bond Execution. The Chairman, the Treasurer, and the Secretary are hereby authorized and directed to prepare and to execute the 2017 Bonds as herein provided.

Section 314. Bond Delivery. After registration, execution and authentication, the TMWA Manager or the Chief Financial Officer shall cause the 2017 Bonds to be delivered to the Underwriters, upon payment being made therefor on the terms of the sale of the 2017 Bonds.

Section 315. Bond Form. Subject to the provisions of this Instrument, each 2017 Bond shall be, respectively, in substantially the following form, with such omissions, insertions, endorsements, and variations as to any recitals of fact or other provisions as may be required by the circumstances, be required or permitted by this Instrument, including, without limitation, if applicable, a statement of insurance to guarantee the payment of the principal of and the interest on each 2017 Bond of a designated portion or all of the issue by any insurer or insurers thereof, or be consistent with this Instrument and necessary or appropriate to conform to the rules and requirements of any governmental authority or any usage or requirement of law with respect thereto:

(Form of Bond)

**TRUCKEE MEADOWS WATER AUTHORITY  
WATER REVENUE REFUNDING BOND  
SERIES 2017**

No. \_\_\_\_\_ \$ \_\_\_\_\_

<u>Interest Rate</u>	<u>Maturity Date</u>	<u>Dated As of</u>	<u>CUSIP</u>
_____ % per annum	July 1, ____	_____, 2017	

REGISTERED OWNER: Cede & Co.

PRINCIPAL AMOUNT: \_\_\_\_\_ DOLLARS

The Truckee Meadows Water Authority, in Washoe County, in the State of Nevada (the "Authority", "County", and the "State", respectively) for value received, hereby acknowledges itself to be indebted and for value received promises to pay to the registered owner specified above, or registered assigns, the principal amount specified above, on the maturity date specified above (unless called for earlier redemption), and to pay interest thereon on January 1 and July 1 of each year, commencing on July 1, 2017, at the interest rate per annum specified above, until the principal sum is paid or payment has been provided for or, if such payment date is not a business day, on or before the next succeeding business day. This bond shall bear interest from the most recent interest payment date to which interest has been paid or, if no interest has been paid, from the date of the initial delivery of the series of bonds of which this bond is one (the "Bond"). The principal of and redemption premium, if any, on this Bond are payable upon presentation and surrender hereof at the principal office or such other office of the Authority's paying agent for the Bonds or any successor (the "Paying Agent") as designated by the Paying Agent, presently The Bank of New York Mellon Trust Company, N.A., who is also now acting as the Authority's Registrar for the Bonds (the "Registrar"). Interest on this Bond will be paid on each interest payment date (or, if such date is not a business day, on the next succeeding business day) by check or draft mailed, by first class mail, to the person in whose name this Bond or any predecessor bond is registered (the "registered owner") in the registration records of the Authority maintained by the Registrar, at the address appearing thereon, as of the close of business on the 15th day of the calendar month next preceding such interest payment date (the "Regular Record Date"). Any such interest not so timely paid or duly provided for shall cease to be payable to the person who is the registered owner as of the close of business on the Regular Record Date and shall be payable to the person who is the registered owner as of the close of business on a special record date for the payment of any defaulted interest (the "Special Record Date"). Such Special Record Date shall be fixed by the Registrar whenever moneys become available for payment of the defaulted interest, and notice of the Special Record Date shall be given to the registered owner not less than ten (10) days prior thereto. Alternative means of payment of interest may be used if mutually agreed to by the registered owner and the Paying Agent,

as provided in the Resolution of the Board of Directors of the Authority (the "Board") authorizing the issuance of the Bonds and designated in Section 101 thereof as the "2017 Refunding Bond Resolution" (the "Resolution"), duly adopted by the Board on February 15, 2017. All such payments shall be made in lawful money of the United States of America without deduction for any service charges of the Paying Agent or Registrar. If this Bond is not paid upon presentation at its maturity, interest at the rate specified above shall continue to be borne hereby until the principal hereof is discharged as provided in the Resolution.

This Bond is one of a series of Bonds issued by the Authority upon its behalf and upon the credit thereof, for the purpose of defraying wholly or in part of the cost of refunding certain outstanding bonds of the Authority (the "Project") under the authority of and in full compliance with the Constitution and laws of the State, and pursuant to the Resolution.

The Bonds are issued pursuant to NRS 277.080 to 277.180, inclusive (the "Authority Act"); pursuant to NRS 350.500 through 350.720, and all laws amendatory thereof designated in NRS 350.500 thereof as the Local Government Securities Law (the "Bond Act"); pursuant to NRS chapter 348 (the "Supplemental Bond Act"); and pursuant to NRS 350.628, Bond Act, this recital is conclusive evidence of the validity of the Bonds and the regularity of their issuance; and the Bonds and the income therefrom are exempt from all State, County, and municipal taxation, except for the tax on estates imposed pursuant to chapter 375A of NRS and the tax on generation skipping transfers imposed pursuant to chapter 375B of NRS.

The Bonds, or portions thereof, are subject to redemption prior to their respective maturities, at the option of the Authority as provided in the Resolution.

[Certain of the Bonds are also subject to mandatory sinking fund redemption as provided in the Resolution and the Bond Purchase Agreement.]

Redemption shall be made upon not less than 30 days prior notice in the manner and upon the conditions provided in the Resolution. If this Bond is called for redemption and payment is duly provided for as specified in the Resolution, interest shall cease to accrue hereon from and after the date fixed for redemption.

The Bonds do not constitute a debt or an indebtedness of the Authority within the meaning of any constitutional or statutory provision or limitation, and shall not be considered or held to be general obligations of the Authority. The Authority has not pledged its full faith and credit for the payment of the Bonds. The Bonds are special obligations and are payable and collectible solely out of and are secured by an irrevocable pledge of the gross revenues (the "Gross Revenues") derived from the operation and use of, and otherwise pertaining to, certain water facilities of the Authority (herein the "TMWA Water System"), after provision is made for the payment of all necessary and reasonable Operation and Maintenance Expenses of the TMWA Water System (the "Net Revenues"), which Net Revenues are so pledged, as more specifically provided in the Resolution; and the holder hereof may not look to any general or other fund for the payment of the principal of, interest on, and any prior redemption premiums due on this Bond (the "Bond Requirements") of this obligation except the special funds pledged therefor.

Payment of the Bond Requirements due in connection with the Bonds shall be made solely from and as security for such payment there are irrevocably (but not exclusively) pledged, pursuant to the Resolution three special and separate subaccounts identified as the "Truckee Meadows Water Authority, TMWA Water System Parity Revenues Securities, Interest Account," the "Truckee Meadows Water Authority, TMWA Water System Parity Revenue Securities, Principal Account," and the "Truckee Meadows Water Authority, TMWA Water System Parity Revenue Securities, Reserve Account," which three subaccounts are within the "Truckee Meadows Water Authority, TMWA Water System Parity Revenue Securities, Bond Fund" (the "Bond Fund"), into which three subaccounts within the Bond Fund the Authority covenants to pay from the Net Revenues sums sufficient to pay when due the Bond Requirements of the Bonds and any additional parity securities heretofore or hereafter issued and payable from such Net Revenues.

The Bonds are equally and ratably secured by a lien on the Net Revenues, and the Bonds constitute an irrevocable lien (but not necessarily an exclusive lien) upon the Net Revenues, on a parity with the lien thereon of the outstanding 2007 Bonds, 2015 Bonds, 2016 Bonds and any outstanding parity securities hereafter issued. Bonds and other securities, subject to expressed conditions, may be issued and made payable from the Net Revenues of the TMWA Water System having a lien thereon subordinate and junior to the lien or, subject to additional expressed conditions, having a lien thereon on a parity with the lien of the Bonds, in accordance with the provisions of the Resolution. No bonds or other securities, may be issued with a lien on the Net Revenues that is superior to the lien thereon of the Bonds.

Reference is made to the Resolution and to the Bond Act, for an additional description of the nature and extent of the security for the Bonds, the accounts, funds, or revenues pledged, the nature and extent and manner of enforcement of the pledge, the rights and remedies of the registered owners of the Bonds with respect thereto, the terms and conditions upon which the Bonds are issued, and a statement of rights, duties, immunities, and obligations of the Authority, and other rights and remedies of the owners of the Bonds.

To the extent and in the respects permitted by the Resolution, the provisions of the Resolution may be amended or otherwise modified by action of the Authority taken in the manner and subject to the conditions and exceptions prescribed in the Resolution. The pledge of Net Revenues under the Resolution may be discharged at or prior to the respective maturities or prior redemption of the Bonds upon the making of provision for the payment thereof on the terms and conditions set forth in the Resolution.

This Bond shall not be entitled to any benefit under the Resolution, or be valid or obligatory for any purpose until the Registrar shall have manually signed the certificate of authentication hereon.

\*The Bonds are issuable solely in fully registered form in denominations of \$5,000 each or (subject to certain conditions) any integral multiple thereof, and are exchangeable for fully registered Bonds of the same maturity in equivalent aggregate principal amounts and in authorized

denominations at the aforesaid office of the Registrar but only in the manner, subject to the limitations, and on payment of charges provided in the Resolution.\*

\*This Bond is fully transferable by the registered owner in person or by his or her duly authorized attorney on the registration records kept by the Registrar upon surrender of this Bond together with a duly executed written instrument of transfer satisfactory to the Registrar. Upon such transfer a new fully registered Bond of authorized denomination or denominations of the same aggregate principal amount and maturity will be issued to the transferee in exchange for this Bond, on payment of the charges and subject to the terms and conditions as set forth in the Resolution.\*

The Authority and the Registrar and Paying Agent may deem and treat the person in whose name this Bond is registered as the absolute owner hereof for the purpose of payment and for all other purposes, except to the extent otherwise provided hereinabove and in the Resolution with respect to Regular and Special Record Dates for the payment of interest.

\*The Registrar will not be required to transfer or exchange (i) any Bond, or portion thereof, subject to redemption during the period beginning at the opening of business fifteen (15) days before the day of mailing by the Registrar of a notice of prior redemption of Bonds and ending at the close of business on the day of such mailing; (ii) any Bond, or portion thereof, subject to redemption after the mailing of such notice; or (iii) any Bond, or portion thereof, during a period beginning fifteen (15) days before the maturity date of such Bond presented for transfer.\*

\*\*The Bonds shall not be transferable or exchangeable except as set forth in the Resolution.\*\*

\*\*Upon any partial prior redemption of the Bond, Cede & Co., in its discretion may request the Registrar to authenticate a new Bond or shall make an appropriate notation on this Bond indicating the date and amount of prepayment, except in the case of final maturity, in which case this Bond must be presented to the Paying Agent prior to prepayment.\*\*

\*\*Unless this certificate is presented by an authorized representative of The Depository Trust Company, a New York corporation ("DTC"), to Authority or its agent for registration of transfer, exchange, or payment, and any certificate issued is registered in the name of Cede & Co., or in such other name as is requested by an authorized representative of DTC (and any payment is made to Cede & Co. or to such other entity as is requested by an authorized representative of DTC), ANY TRANSFER, PLEDGE, OR OTHER USE HEREOF FOR VALUE OR OTHERWISE BY OR TO ANY PERSON IS WRONGFUL inasmuch as the registered owner hereof, Cede & Co., has an interest herein.\*\*

It is further certified, recited, and warranted that all the requirements of law have been fully complied with by the proper officers of the Authority in the issuance of this bond; that it is issued pursuant to and in strict conformity with the Constitution and laws of the State, and particularly under the terms and provisions of the Authority Act, the Bond Act, and all laws supplemental thereto, and with the Resolution; and that this Bond does not contravene any constitutional or statutory limitation.

No transfer of this Bond shall be valid unless made on the registration records maintained at the principal office of the Registrar by the registered owner or his or her attorney duly authorized in writing.

No recourse shall be had for the payment of the Bond Requirements of this Bond or for any claim based thereon or otherwise in respect to the Resolution or other instrument pertaining thereto against any individual member of the Board, or any officer or other agent of the Authority, past, present, or future, either directly or indirectly through the Board or otherwise, whether by virtue of any constitution, statute or rule of law, or by the enforcement of any penalty or otherwise, all such liability, if any, being by the acceptance of this Bond and as a part of the consideration of its issuance specially waived and released.

IN WITNESS WHEREOF, the Board of Directors of the Truckee Meadows Water Authority, in the County of Washoe and State of Nevada has caused this Bond to be executed in the name and on behalf of the Authority with the manual or facsimile signature of the Chairman, to be attested, signed and executed with a manual or facsimile signature of the Authority Secretary, has caused a manual or facsimile impression of the seal of the Authority to be affixed hereon, and has caused this Bond to be countersigned with the manual or facsimile signature of the Authority Treasurer, all as of \_\_\_\_\_, 2017.

TRUCKEE MEADOWS WATER AUTHORITY

By:           (Manual or Facsimile Signature)           Chairman  
Countersigned:

          (Manual or Facsimile Signature)            
Treasurer

(MANUAL OR FACSIMILE SEAL)

Attest:

          (Manual or Facsimile Signature)            
Secretary

\* Insert only if Bonds are delivered pursuant to Section 307(A)(3) or (4) of this Instrument.

\*\* Insert only if the Bonds are initially delivered to the Depository Trust Company pursuant to Section 307(A) of this Instrument.

(End of Form of Bond)

## (Form of Registrar's Certificate of Authentication for Bonds)

Date of authentication  
and registration \_\_\_\_\_

This is one of the Bonds described in the within-mentioned Resolution, and this Bond has been duly registered on the registration records kept by the undersigned as Registrar for such Bonds.

THE BANK OF NEW YORK MELLON TRUST  
COMPANY, N.A., as Registrar

By \_\_\_\_\_ Manual Signature  
Authorized Officer

(End of Form of Registrar's Certificate of Authentication for Bonds)

## (Form of Prepayment Panel)

The following installments of principal (or portions thereof) of this Bond have been prepaid by the Truckee Meadows Water Authority, in accordance with the terms of the Resolution authorizing the issuance of this Bond:

<u>Date of</u> <u>Prepayment</u>	<u>Principal</u> <u>Amount</u> <u>Prepaid</u>	<u>Signature of</u> <u>Authorized</u> <u>Representative of DTC</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____

(End of Form of Prepayment Panel)

(Form of Assignment for Bonds)

For value received, the undersigned hereby sells, assigns and transfers unto \_\_\_\_\_ the within Bond and hereby irrevocably constitutes and appoints \_\_\_\_\_ attorney, to transfer the same on the records kept for registration of the within Bond, with full power of substitution in the premises.

Dated: \_\_\_\_\_

Signature Guaranteed:

\_\_\_\_\_

Name of Transferee:

\_\_\_\_\_

Address of Transferee:

\_\_\_\_\_  
\_\_\_\_\_

Social Security or other tax  
identification number of  
Transferee:

\_\_\_\_\_

NOTE: The signature to this Assignment must correspond with the name as written on the face of the within Bond in every particular, without alteration or enlargement or any change whatsoever.

NOTICE: TRANSFER FEES MUST BE PAID TO THE REGISTRAR IN ORDER TO TRANSFER OR EXCHANGE THIS BOND AS PROVIDED IN THE WITHIN-MENTIONED RESOLUTION.

(End of Form of Assignment for Bonds)

## ARTICLE IV

### USE OF BOND PROCEEDS AND OTHER REVENUES

Section 401. Disposition of Bond Proceeds. The proceeds of the 2017 Bonds, upon the receipt thereof at any time, or from time to time, shall be applied in the following manner:

(1) Escrow Account. First, if the Bond Purchase Agreement provides that the Refunding Project is to be effected, Bond proceeds, together with any other available monies, in an amount sufficient to effect the Refunding Project shall at the discretion of the Authority be: (i) deposited in the Escrow Account, hereby created, to be held by the Escrow Bank, in an amount fully sufficient to establish an initial cash balance remaining uninvested and to buy the Federal Securities designated in the Escrow Agreement for credit to the Escrow Account, to be used solely for the purpose of paying the Bond Requirements of the Refunded Bonds described in the Escrow Agreement; and/or (ii) delivered directly to the paying agent for any of the Refunded Bonds in an amount fully sufficient to pay the Bond Requirements of such Refunded Bonds.

(2) Bond Reserve Account. Second, to the extent necessary and not funded from other available monies, there shall be credited to the Bond Reserve Account, an amount sufficient to satisfy the portion of the Minimum Securities Reserve attributable to the 2017 Bonds required to be deposited and maintained pursuant to Section 508 hereof.

(3) Costs of Issuance Account. Third, an amount sufficient to pay the costs of issuing the Bonds shall be deposited into the Costs of Issuance Account, a special account to be held under the control of the Authority hereby created, and shall be applied to the costs of issuing the 2017 Bonds. After payment of the costs of issuance, if there is a balance remaining in the Costs of Issuance Account, the remaining balance shall be deposited in the Bond Fund.

Section 402. Underwriters Not Responsible. The validity of the 2017 Bonds shall neither be dependent upon nor be affected by the validity or regularity of any proceedings relating to the Project. The Underwriters of the 2017 Bonds, any associate thereof, and any subsequent holder of the 2017 Bonds shall in no manner be responsible for the application or disposal by the Authority or by any of the officers, agents, and employees of the Authority of the moneys derived from the sale of the 2017 Bonds or of any other moneys herein designated.

Section 403. Lien on Costs of Issuance Account. The proceeds of the 2017 Bonds credited to the Costs of Issuance Account pursuant to Section 401 hereof shall be subject to a lien and pledge for the 2017 Bonds until such proceeds are expended to defray Bond Requirements of the 2017 Bonds or the Cost of the Project.

Section 404. Prior Redemption of Refunded Bonds. If the Bond Purchase Agreement provides that the Refunding Project shall be effected, the Authority hereby elects to redeem the Refunded Bonds on the Redemption Date of the Refunded Bonds (the "Refunded Bonds Redemption Date") at a price equal to the principal amount thereof, accrued interest to the Refunded Bonds Redemption Date and the premium, if any, designated in resolutions authorizing the Refunded

Bonds. The Escrow Bank shall cause the notices of defeasance and prior redemption of the Refunded Bonds to be effected in accordance with the terms of the Escrow Agreement, this Instrument and the resolutions authorizing the Refunded Bonds.

Section 405. Notice of Redemption of Refunded Bonds. If required, Notice of Defeasance and Prior Redemption of the Refunded Bonds shall be given in the name of and on behalf of the Authority by the Registrar of the Refunded Bonds as set forth in resolutions authorizing the Refunded Bonds.

Section 406. Prevention of 2017 Bond Default. The Treasurer shall use any 2017 Bond Proceeds credited to the Costs of Issuance Account, without further order or warrant, to pay the Bond Requirements of the 2017 Bonds as the same become due whenever and to the extent monies in the Bond Fund or otherwise available therefor and insufficient for that purpose, unless the 2017 Bond proceeds shall be needed to defray obligations accrued and to accrue under any contracts existing and relating to the Project. The Treasurer shall notify the Chairman and Secretary of any such use. Any monies so used shall be restored to the Costs of Issuance Account from the first Pledged Revenues thereafter received and not needed to meet the requirements provided in Sections 507 through 511 hereof.

Section 407. Maintenance of the Escrow Account. If the Bond Purchase Agreement provides that the Refunding Project shall be effected and the Escrow Account is established with the Escrow Bank:

A. The Escrow Account shall be maintained at the Escrow Bank by the Authority in an amount, at the time of those initial deposits therein and at all times subsequently, at least sufficient, together with the known minimum yield to be derived from the initial investment and any temporary reinvestment of the deposits therein or any part thereof in Federal Securities, to pay the interest due in connection with the Refunded Bonds, both accrued and not accrued, as the same becomes due up to and including the redemption date for the Refunded Bonds; and to redeem on such date (as set forth in the Escrow Agreement), the Refunded Bonds then Outstanding, in accordance with the resolutions authorizing the Refunded Bonds.

B. Moneys shall be withdrawn by the Escrow Bank from the Escrow Account in sufficient amounts and at such times to permit the payment without default of interest due in connection with the Refunded Bonds, and in accordance with the provisions of the Escrow Agreement. Any moneys remaining in the Escrow Account after provision shall have been made for the redemption in full of the Refunded Bonds shall be applied to any lawful purpose of the Authority as the Board may hereafter determine.

C. If for any reason the amount in the Escrow Account shall at any time be insufficient for its purpose, the Authority shall forthwith from the first moneys available therefore deposit in such account such additional moneys as shall be necessary to permit the payment in full of the principal, interest, and any redemption premiums due in connection with the Refunded Bonds as herein provided.

## ARTICLE V

ADMINISTRATION OF AND ACCOUNTING FOR PLEDGED REVENUES

Section 501. Pledge Securing Bonds. The Net Revenues and all moneys and securities paid or to be paid to or held or to be held in any account or subaccount under this article or under Section 401 hereof, except the Escrow Account, are hereby pledged to secure the payment of the Bond Requirements of the 2017 Bonds. This pledge shall be valid and binding from and after the date of the first delivery of any 2017 Bonds; and the moneys, as received by the Authority and hereby pledged, shall immediately be subject to the lien of this pledge without any physical delivery thereof, any filing, or further act. The lien of this pledge and the obligation to perform the contractual provisions hereby made shall have priority over any or all other obligations and liabilities of the Authority, except for the 2007 Bonds, the 2015 Bonds, the 2016 Bonds and any Outstanding securities hereafter authorized, the lien of which on the Net Revenues is on a parity with the lien thereon of the 2017 Bonds; and the lien of this pledge shall be valid and binding as against all parties having claims of any kind in tort, contract, or otherwise against the Authority (except as herein otherwise provided) irrespective of whether such parties have notice thereof.

Section 502. Establishment of Trustee Accounts and Subaccounts. The Authority hereby authorizes the following special and separate subaccounts within the Bond Fund, hereby continued, previously created and designated the “Truckee Meadows Water Authority, TMWA Water System Parity Revenue Securities, Bond Fund,” which shall be held by the Trustee, within which are designated:

A. Interest Account. The “Truckee Meadows Water Authority, TMWA Water System Parity Revenue Securities, Interest Account” (herein the “Interest Account”);

B. Principal Account. The “Truckee Meadows Water Authority, TMWA Water System Parity Revenue Securities, Principal Account” (herein the “Principal Account”); and

C. Bond Reserve Account. The “Truckee Meadows Water Authority, TMWA Water System Parity Revenue Securities, Reserve Account” (herein the “Bond Reserve Account”).

Section 503. Establishment of Authority Accounts. The Authority hereby continues the previously established and authorized following special and separate accounts, which shall be under the control of the Authority, which shall not be held by the Trustee (except in a capacity other than as Trustee, e.g., as custodian), and which are designated:

A. Revenue Fund. The “Truckee Meadows Water Authority, TMWA Water System Gross Revenues Fund” (herein the “Revenue Fund”).

B. Rebate Account. The “Truckee Meadows Water Authority, TMWA Water System Parity Revenue Securities Rebate Account” (herein the “Rebate Account”).

C. Operation and Maintenance Account. The “Truckee Meadows Water Authority, TMWA Water System Operation and Maintenance Account” (herein the “Operation and Maintenance Account”);

D. Operation and Maintenance Reserve Account. The “Truckee Meadows Water Authority, TMWA Water System Operation and Maintenance Reserve Account” (herein the “O & M Reserve Account”).

E. Renewal and Replacement Account. The “Truckee Meadows Water Authority, TMWA Water System Renewal and Replacement Account” (herein the “Renewal and Replacement Account”).

F. Rate Stabilization Account. The “Truckee Meadows Water Authority, TMWA Water System Rate Stabilization Account” (herein the “Rate Stabilization Account”).

G. General Purpose Account. The “Truckee Meadows Water Authority, TMWA Water System General Purpose Account” (herein the “General Purpose Account”).

Section 504. Revenue Fund Deposits. So long as any of the 2017 Bonds shall be Outstanding, all Gross Revenues, upon their receipt from time to time by the Authority, shall be deposited at least weekly, as far as practicable, and shall be set aside and credited immediately to the Revenue Fund.

Section 505. Administration of Revenue Fund. So long as any of the 2017 Bonds hereby authorized shall be Outstanding, in each Fiscal Year the Revenue Fund shall continue to be administered, and the moneys on deposit therein shall continue to be applied in the order of priority, all as provided in Sections 506 through 516 hereof.

Section 506. Operation and Maintenance Expenses. First, as a first charge on the Revenue Fund, from time to time there shall be set aside in and credited to the Operation and Maintenance Account, moneys sufficient to pay Operation and Maintenance Expenses by the last day of the month that is at least one month before such expenses are to be paid, and thereupon they shall be promptly paid. Any surplus remaining at the end of the Fiscal Year and not needed for Operation and Maintenance Expenses shall be transferred for credit to the Revenue Fund and shall be used for the purposes thereof, as herein provided.

Section 507. Bond Fund Payments. Second, and subject to the aforesaid provisions, from any moneys remaining in the Revenue Fund, and concurrently with the transfers into the Interest Account and Principal Account required by the 2007 Bond Resolution for the 2007 Bonds, the 2015 Bond Resolution for the 2015 Bonds, the 2016 Bond Resolution for the 2016 Bonds and any parity securities hereafter issued, there shall be transferred to the Trustee and credited to the Bond Fund, the following:

A. Interest Payments. Monthly, into the Interest Account, within the Bond Fund, commencing on the first day of the month that is one full month after the delivery date of the Bonds,

and on the first day of the month succeeding the delivery of any other parity securities hereafter issued and payable from the Bond Fund, an amount in substantially equal monthly installments necessary, together with any other moneys from time to time available therefor or from whatever source, to pay the next accruing installment of interest on the 2017 Bonds and any additional parity securities then Outstanding (including payments due on any Qualified Swap) and monthly thereafter, commencing on each interest payment date, the amount necessary to accumulate the next accruing installment of interest on the 2017 Bonds and any additional parity securities then Outstanding (including payments due on any Qualified Swap) in equal monthly installments prior to the due date thereof, except to the extent any other moneys are available therefor on the due date of such installment.

B. Principal Payments. Monthly, into the Principal Account, within the Bond Fund, commencing on the first day of the month of the year immediately preceding the first principal payment date of the 2017 Bonds or any parity securities hereafter issued and payable from the Bond Fund (i.e., 12 months prior to the first date on which the principal of such bonds is due), an amount in substantially equal monthly installments necessary, together with any other moneys from time to time available therefor from whatever source, to pay the next maturing installment of principal (including any mandatory sinking fund or prior redemption payments then due) of the 2017 Bonds and any additional parity securities then Outstanding, and monthly thereafter, commencing on each principal payment date, the amount necessary to accumulate the next maturing installment of principal (including any mandatory sinking fund or prior redemption payments then due) of the 2017 Bonds, and any such additional parity securities then Outstanding, in equal monthly installments prior to the due date thereof, except to the extent any other moneys are available therefor on the due date of such installment.

The moneys credited to the Interest Account and the Principal Account within the Bond Fund shall be used to pay the Bond Requirements of the 2017 Bonds, 2016 Bonds, 2015 Bonds, 2007 Bonds and any additional parity securities hereafter issued as such Bond Requirements become due.

Section 508. Reserve Payments. Third, but subsequent to the payments into the Interest Account and the Principal Account within the Bond Fund, except as provided in Sections 510, 511 and 1135 hereof, from any moneys remaining in the Revenue Fund there shall be transferred to the Trustee and credited to the Bond Reserve Account within the Bond Fund, commencing on the first day of the month that is one full month after the date of delivery of the 2017 Bonds and recommencing on the first day of the month next succeeding each date on which any parity securities hereafter authorized are delivered, in 24 substantially equal monthly installments, an amount equal to the remainder of the Minimum Securities Reserve less the amount of any other moneys available therein and less the available balance of any Qualified Surety Bond which are accounted for in the Bond Reserve Account, to accumulate or reaccumulate, together with any moneys from any source other than Net Revenues deposited therein, and to maintain the Bond Reserve Account as a continuing reserve in an amount equal to the Minimum Securities Reserve, to meet possible deficiencies in the Interest Account and the Principal Account within the Bond Fund. No payment need be made into the Bond Reserve Account so long as the sum of the moneys therein plus the available balance of any Qualified Surety Bond shall equal not less than the Minimum Securities Reserve. The moneys in the Bond Reserve Account shall be accumulated or

reaccumulated and maintained as a continuing reserve to be used, except as hereinafter provided in this Section and in Sections 510 and 511 hereof, only to prevent deficiencies in the payment of the Bond Requirements of the 2017 Bonds and any parity securities resulting from the failure to deposit into the Interest Account and the Principal Account within the Bond Fund sufficient funds to pay such Bond Requirements as the same accrue.

When the 2007 Bonds are no longer Outstanding, there shall be no requirement to maintain a Minimum Securities Reserve. At such time, moneys then remaining in the Bond Reserve Account shall be transferred to the Escrow Account if so provided in the Escrow Agreement, to the General Purpose Account to be used for capital improvements or Bond Requirements as set forth in subsections A and D of Section 516 hereof to the extent permitted by the Tax Code, and if not permitted, the Authority shall use such remaining moneys in accordance with the opinion of bond counsel to the Authority.

Section 509. Rebate Account. Fourth, and subject to the provisions hereinabove in this article, but before the transfer of any Net Revenues to the payment of subordinate securities, such amounts as are required to be deposited in the Rebate Account to meet the Authority's obligations under the covenant contained in Section 1134 hereof, in accordance with Section 148(f) of the Tax Code with respect to the 2017 Bonds. Amounts in the Rebate Account shall be used for the purpose of making the payments to the United States required by such covenant and Section 148(f) of the Tax Code. Any amounts in the Rebate Account in excess of those required to be on deposit therein by Section 1134 hereof and Section 148(f) of the Tax Code may be withdrawn therefrom and used for any lawful purpose as provided herein.

Section 510. Termination of Deposits. No payment need be made into the Interest Account, the Principal Account, or the Bond Reserve Account, or all or any other combination thereof, within the Bond Fund, if the amount in the Bond Fund totals a sum at least equal to all Bond Requirements of the Outstanding 2017 Bonds and any Outstanding parity securities, to their respective maturities or to any Redemption Date or Redemption Dates on which the Authority shall have exercised or shall have obligated itself to exercise its option to redeem prior to their respective maturities the 2017 Bonds and any parity securities (or any part thereof) then Outstanding and thereafter maturing, whichever date is the earlier, if any, and both accrued and not accrued, in which case moneys in those 3 subaccounts in an amount at least equal to such Bond Requirements, except for any interest or other gain to accrue from any investment of moneys in Federal securities or otherwise pursuant to article VI hereof from the time of any such investment to the time or respective times the proceeds of any such investment or deposit shall be needed for such payment, shall be used, together with any such gain from such investments, solely to pay such Bond Requirements as the same become due; and any moneys in excess thereof in those 3 subaccounts and any other moneys derived from the Pledged Revenues may be used in any lawful manner determined by the Board or the TMWA Manager, if the TMWA Manager certifies that the Rebate Account is sufficiently funded to meet the requirements of 148(f) of the Tax Code.

Section 511. Defraying Delinquencies. If on an interest or principal payment date or date on which a payment under a Qualified Swap is due, there is not on deposit in the Interest Account and the Principal Account the full amount stated above, then an amount shall be paid into

such subaccounts from the Bond Reserve Account equal to the difference between that paid from the Net Revenues and the full amount so stipulated. If the Bond Reserve Account contains a Qualified Surety Bond and cash, the cash in the Bond Reserve Account must be drawn down completely before any demand is made on a Qualified Surety Bond. If the Bond Reserve Account contains a Qualified Surety Bond issued by an insurer and a Qualified Surety Bond issued by another insurer, the Qualified Surety Bonds must be drawn down on a pro rata basis. The money so used shall be reimbursed to the provider of a Qualified Surety Bond which has been drawn upon and then replaced in the Bond Reserve Account from the first revenues thereafter received from the Net Revenues not required to be otherwise applied by Sections 507 through 510 hereof. If in any month the Authority shall for any reason fail to pay into the Bond Reserve Account the full amount above stipulated from the Net Revenues, the difference between the amount paid and the amount so stipulated shall be paid therein from the first Net Revenues thereafter received and not required to be applied otherwise by Sections 507 through 510 hereof. The moneys in the Bond Fund shall be used solely and only for the purpose of paying the Bond Requirements of the 2017 Bonds and any additional parity securities then Outstanding; but any moneys at any time in excess of the Minimum Securities Reserve in the Bond Reserve Account may be withdrawn therefrom, and transferred from time to time to the Revenue Fund, and used as herein provided for moneys credited to such account; and also any moneys in the Bond Fund in excess of the Bond Requirements, both accrued and not accrued, to the respective maturities or any designated Redemption Date or Redemption Dates of the Outstanding 2017 Bonds and any parity securities, whichever due date is the earlier, if any, for any security, may be used as hereinabove provided in Section 510 hereof.

Section 512. Payment of Subordinate Securities. Fifth, and subject to the provisions hereinabove in this article, but subsequent to the payments required by Sections 507, 508 and 509 and subject to the provisions of Section 519 hereof, as provided in article VII hereof any moneys remaining in the Revenue Fund may be used by the Authority acting by and through the Trustee for the payment of Bond Requirements of subordinate bonds or other subordinate securities payable from Pledged Revenues and hereafter authorized to be issued in accordance with article VII and any other provisions herein supplemental thereto, including reasonable reserves for such securities and rebate requirements for such securities, as the same accrue; but the lien of such subordinate bonds or other subordinate securities on the Net Revenues and the pledge thereof for the payment of such securities shall be subordinate to the lien and pledge of the 2017 Bonds herein authorized, as herein provided. (Any other parity securities hereafter authorized to be issued shall be payable from the Bond Fund pursuant to Sections 507 through 511 hereof.)

Section 513. Operation and Maintenance Reserve Account. Sixth, and subject to the provisions hereinabove in this article, from any moneys remaining in the Revenue Fund there shall be credited to the Operation and Maintenance Reserve Account monthly, an amount sufficient to accumulate the Minimum Operation and Maintenance Reserve in 60 substantially equal monthly installments. For this purpose, in each Fiscal Year during such 60 month period the Authority will calculate the substantially equal monthly amount that would be sufficient to accumulate over the then remaining months in such 60 month period, an amount equal to the Minimum Operation and Maintenance Reserve. In any Fiscal Year, the amount of the Minimum Operation and Maintenance Reserve shall be determined based on that Fiscal Year's budget.

After the balance in the Operation and Maintenance Reserve Account initially has reached an amount equal to the Minimum Operation and Maintenance Reserve, if, at the beginning of any Fiscal Year, the amount accounted for in the Operation and Maintenance Reserve Account is less than the Minimum Operation and Maintenance Reserve for the Fiscal Year as stated in the budget therefor, there shall be credited to the Operation and Maintenance Reserve Account, in 12 substantially equal monthly installments commencing on the first day of the Fiscal Year, an amount at least equal to the remainder of the Minimum Operation and Maintenance Reserve for the Fiscal Year less the amount accounted for in that account at the beginning of the Fiscal Year. No payment need be made into the Operation and Maintenance Reserve Account so long as the moneys therein shall then equal not less than the Minimum Operation and Maintenance Reserve. The moneys in the Operation and Maintenance Reserve Account shall be accumulated or reaccumulated and maintained as a continuing reserve to be used only to prevent deficiencies in the payment of the TMWA Water System's Operation and Maintenance Expenses resulting from the failure to deposit into the Operation and Maintenance Account pursuant to Section 506 hereof sufficient funds to pay such expenses as the same accrue and become due. If at any time the moneys credited to the Operation and Maintenance Account are not sufficient to pay Operation and Maintenance Expenses, the Authority acting by and through the TMWA Manager or the Chief Financial Officer may requisition the additional moneys needed therefor, and thereupon such money shall be withdrawn from the Operation and Maintenance Reserve Account and transferred to the Operation and Maintenance Account. Any moneys accounted for in the Operation and Maintenance Reserve Account and exceeding the Minimum Operation and Maintenance Reserve for the then current Fiscal Year may be transferred to and deposited in the Revenue Fund.

Section 514. Renewal and Replacement Account. Seventh, and subject to the provisions hereinabove in this article, from any moneys remaining in the Revenue Fund there shall be credited to the Renewal and Replacement Account monthly, the sum of \$166,000 per month, unless the amount of \$10,000,000.00 (the "Emergency Capital Amount") is on deposit therein. If the Professional Engineer determines that the aforesaid monthly payments and the Emergency Capital Amount are insufficient or excessive for the purposes for which the Renewal and Replacement Account is established, the monthly payments into that account shall be adjusted in the amount directed by the Professional Engineer until the aggregate amount so determined by the Professional Engineer is on deposit therein, but in no event at a rate less than \$33,333.00 per month or in an aggregate amount less than \$2,000,000.00 (except for any period during which the Emergency Capital Amount is being accumulated or reaccumulated). The Authority shall expend moneys in the Renewal and Replacement Account only to make up deficiencies in the Bond Fund and to pay the cost of, and to create a reserve for the payment of the cost of, emergency capital improvements, extraordinary maintenance, repairs, renewals, and replacements to the TMWA Water System as shall not be annually recurring in nature, as determined by the Professional Engineer, unless otherwise provided by the Board.

Section 515. Rate Stabilization Account. Eighth, and subject to the provisions hereinabove in this article, from any moneys remaining in the Revenue Fund there shall be withdrawn from the Revenue Fund, and credited monthly, to the Rate Stabilization Account, an amount sufficient to accumulate in 12 substantially equal monthly installments the Rate Stabilization Amount (which shall not be less than \$500,000) as is designated by the Authority for that Fiscal Year

and pertaining to the TMWA Water System. No deposit need be made into the Rate Stabilization Account if the amount therein equal or exceeds the Rate Stabilization Amount for the Fiscal Year. Such amounts shall be used for expenditure from time to time for any lawful purpose or purposes of the Authority pertaining to the Authority's TMWA Water System, and any other water facilities of the Authority, and to be held as a reserve therefor. Expenditures from the Rate Stabilization Account shall be in accordance with an annual budget for the account established by the Authority. At the beginning of each Fiscal Year any moneys accounted for in the Rate Stabilization Account, whether or not encumbered to pay obligations accrued and to accrue under any existing contract made by the Authority prior to such Fiscal Year, shall remain in the Rate Stabilization Account for the purposes of the account designated above in this section, until expended for any such purposes. Amounts in the Rate Stabilization Account at the beginning of a Fiscal Year which are deposited into the Revenue Fund in that Fiscal Year are Gross Revenues for Fiscal Year in which they are deposited into the Revenue Fund.

Section 516. General Purpose Account. Ninth, and subject to the payment of the provider of a Qualified Surety Bond of any interest on amounts advanced and any expenses incurred under the Qualified Surety Bond required to be paid pursuant to an agreement between the Authority and the provider of such Qualified Surety Bond, and subject to the provisions hereinabove in this article, from any moneys remaining in the Revenue Fund, at least annually by the end of each Fiscal Year, there shall to be set aside and credited to the General Purpose Account, on or before the last day of each Fiscal Year the remaining revenues in the Revenue Fund. Moneys accounted for in such account, as may be determined and directed from time to time by the TMWA Manager within budget limitations fixed by the Board, but subject to any limitations herein or in any other contract pertaining to such account, may be withdrawn in any priority for any one, all, or any other combination of the following, as the TMWA Manager may from time to time determine:

A. Capital Costs. To pay the costs of constructing or otherwise acquiring any betterments of, enlargement of, extensions of, or any other improvements to the TMWA Water System, or any part thereof, and any equipment therefor, authorized by law;

B. Major Maintenance Costs. To pay the costs of extraordinary and major repairs, renewals, replacements, or maintenance items pertaining to any properties of the TMWA Water System of a type not recurring annually or at shorter intervals and not defrayed by the monies in the Extraordinary Maintenance Account or otherwise as Operation and Maintenance Expenses;

C. Lawful Refunds. To make any lawful refund of any Pledged Revenues due any Person;

D. Bond Requirements. To pay any bonds or other securities pertaining to the TMWA Water System and payable from the Net Revenues (regardless of whether such securities are secured by a lien thereon), including, without limitation, the 2017 Bonds, as to Bond Requirements and any other appurtenant charge, at the fixed maturity dates pertaining to such Bond Requirements, or any Redemption Date or Redemption Dates, or by purchase in the open market, or otherwise; and

E. Law Suits Obligations. To pay any obligations pertaining to the TMWA Water System and arising from a judgment against the Authority or any officer, employee, or other agent of the Authority acting within the scope of his official duties, rights, or privileges, or the scope of his employment, as the case may be, in any suit, action, or special proceedings in equity or at law, in any court of competent jurisdiction, or a settlement by the Authority of any claim to avoid or to settle such a suit, action, or special proceedings, except to the extent revenues are otherwise available to defray such an obligation, including, without limitation, insurance proceeds.

F. Lawful Purpose. For any other lawful purpose as the Authority may determine, provided that no such amount shall be used for a purpose that is not a capital or working capital expense of the Authority unless the balance in the General Purpose Account, after payment of such non-capital or non-working capital expense, is at least equal to six months of Operation and Maintenance Expenses based on the then current budget of the Authority.

Section 517. Application of General Purpose Account. Moneys shall be withdrawn from the General Purpose Account for any one, all, or other combination of such purposes designated in Section 516 hereof pursuant to any such directive of the TMWA Manager upon approval by the Board, drawn by the TMWA Manager or the Chief Financial Officer, and countersigned by the Chairman or the Treasurer, in the same manner that other claims against the Authority are presented and paid.

Section 518. Water Fund and Water Fund Accounts. There is hereby authorized to be created a separate fund designated as the "Truckee Meadows Water Authority, Water Fund" (herein the "Water Fund"), which fund consists of a self-balancing group of accounts, including, without limitation, the respective special and separate accounts and subaccounts herein designated, and constitutes an independent fiscal and accounting entity. Separate accounts and subaccounts (other than those herein designated) pertaining to the Water Fund may from time to time be created, terminated, and otherwise modified, but in no manner inconsistent with the provisions of this Instrument.

Section 519. Repayment of Interaccount Loans. If the Authority makes an interaccount loan and transfer to any account or subaccount within the Water Fund for the benefit of the TMWA Water System to the extent hereby permitted, the Authority's obligation to repay the loan and any interest accruing thereon to the account from which the loan is made may be deemed by the Authority to be outstanding revenue subordinate securities thereof payable from the Net Revenues as to the Bond Requirements of such obligation in accordance with Section 512 hereof at such time or times and in such amount or amounts as the Authority may determine in accordance with an annual budget for such account or subaccount or as may otherwise be provided for the payment of such securities in this Instrument or any other instrument of the Authority.

Section 520. Funds Held for Securities. The amounts held or applied for the payment of the Bond Requirements due on any date with respect to particular 2017 Bonds, any parity securities, including, without limitation, any subordinate securities and any securities payable from the General Purpose Account, pending such payment, shall be set aside and held in trust for the holders of the respective securities entitled thereto by any paying agent holding moneys for such

payment; and for the purposes of this Instrument, such Bond Requirements, after the due date thereof, shall no longer be considered to be unpaid or Outstanding.

## ARTICLE VI

GENERAL ADMINISTRATION

Section 601. Administration of Accounts. The separate accounts and subaccounts designated in article IV and V hereof shall be administered as provided in this article (but not any account under Section 1201 hereof).

Section 602. Places and Times of Deposits. Each of the separate accounts and subaccounts hereinabove designated in article IV and V hereof shall be maintained as an account and kept separate from all other accounts solely for the purposes herein designated therefor, except as otherwise expressly stated herein. The moneys accounted for in such separate accounts and subaccounts shall be deposited in one bank account or more, except as herein otherwise provided. Nothing herein prevents the commingling of moneys accounted for in any two or more accounts or subaccounts, or both accounts and subaccounts, pertaining to the TMWA Water System, the Pledged Revenues, proceeds of securities, other moneys, or to the fund pertaining to the TMWA Water System and any other funds of the Authority (each of which funds consists of a self-balancing group of accounts and constitutes an independent fiscal and accounting entity) in any bank account or any investment in Federal Securities hereunder (but not any account under Section 1201 hereof). Each such bank account shall be continuously secured to the fullest extent required or permitted by the laws of the State for the securing of public funds, subject to the provisions of Section 1403 hereof, and shall be irrevocable and not withdrawable by anyone for any purpose other than the purpose or purposes designated therefor. Each periodic payment shall be credited to the proper account or subaccount not later than the date therefor herein designated, except that when any such date shall be a Saturday, Sunday, or a legal holiday, then such payment shall be made on or before the next preceding secular day. Notwithstanding any other provision herein to the contrary, collected moneys shall be deposited with the Paying Agent, and any other Banking Institution designated as a paying agent for any securities heretofore or hereafter authorized to be issued and payable from Pledged Revenues (or any combination thereof), at least by the day of each interest payment date or any other due date herein designated sufficient to pay the Bond Requirements then becoming due on the Outstanding 2017 Bonds and any other Outstanding securities pertaining to the TMWA Water System.

Section 603. Investment of Moneys. Any moneys in any account designated in articles IV and V hereof (but not any account under Section 1201 hereof), and not needed for immediate use, may be invested or reinvested in any investments permitted under State law which are consistent with any guidelines for permitted investments required by the Insurer, if any, as a condition of insuring the Bonds, or are approved in writing by the Insurer (the "permitted securities") in accordance with written or verbal instructions, which are promptly followed in writing, of the TMWA Manager or the Chief Financial Officer, except as otherwise expressly stated herein. Such investments shall mature not later than the date or dates on which the TMWA Manager or the Chief Financial Officer estimates the proceeds thereof will be needed, and, in any event, investments of amounts in the Bond Reserve Account may mature within 30 years of the date of the investment or the maximum allowed under State law. Any securities that mature later than 5 years after the investment therein will be revalued to their market value at least semiannually. For the purposes of

any such investment or reinvestment, securities shall be deemed to mature at the earliest date on which the obligor is, on demand, obligated to pay a fixed sum in discharge of the whole of such obligations. In making each such investment or reinvestment, the Trustee may rely upon such written or verbal instructions, which are promptly followed in writing, and shall be under no duty as to the propriety of the investment or reinvestment made in accordance with such instructions. The Trustee may sell or present for redemption, any securities so purchased whenever it shall be necessary to provide moneys to meet any required payment, transfer, withdrawal or disbursement from the fund or account to which such securities are credited, and the Trustee shall not be liable or responsible for any loss resulting from such investment.

Section 604. Permitted Investments. The TMWA Manager and the Chief Financial Officer shall have no obligation to cause the making of any investment or reinvestment hereunder, unless any moneys on hand and accounted for in any one account exceeds \$5,000.00 and at least \$5,000.00 therein will not be needed for a period of not less than 60 days. In such event, the TMWA Manager or Chief Financial Officer shall cause the investment or reinvestment in permitted securities to the extent practicable not less than substantially all the amount which will not be needed during such 60-day period, except for any moneys on deposit in an interest-bearing account of a Banking Institution, regardless of whether such moneys on deposit are evidenced by a certificate of deposit, or otherwise; but the TMWA Manager and the Chief Financial Officer are not required to invest, or so to invest in such a manner, any moneys accounted for hereunder if any such investment would contravene the provisions of the Tax Code or any other investment limitation imposed by law upon the Authority. The TMWA Manager or the Chief Financial Officer may cause the investment or reinvestment in any lawful manner any moneys on hand at any time even though he is not obligated to do so. The Authority acknowledges that regulations of the Comptroller of the Currency grant the Authority the right to receive brokerage confirmations of the investments or reinvestments as they occur. To the extent permitted by law, the Authority specifically waives compliance with 12 C.F.R. 12 and hereby notifies the Trustee that no brokerage confirmations need be sent relating to the security transactions as they occur.

Section 605. Accounting for Investments. The securities so purchased as an investment or reinvestment of moneys in any such account or subaccount, as the case may be, shall be deemed at all times to be a part of the account or subaccount and held in trust therefor. Except as herein otherwise provided, any interest accruing thereon and any other gain realized therefrom, as well as any interest and other gain from the deposit of moneys in a Banking Institution shall be credited to the Revenue Fund (except as hereinafter provided) as such gain is received; and any loss in any account or subaccount resulting from any such investments and reinvestment in securities and from any such deposits in any Banking Institution shall be charged or debited to the Revenue Fund (except as hereinafter provided); but, so long as the 2017 Bonds or any parity securities, or both, are Outstanding, and except for amounts representing rebatable arbitrage for the purpose of Section 148(f), I.R.C., no such gain shall be transferred to the Revenue Fund at any time:

A. Interest Account. From the Interest Account prior to July 1, 2017, if the moneys accounted for therein for the payment of the interest on the 2017 Bonds and any parity securities then Outstanding do not after any such transfer at least equal the amount of unpaid interest accruing to July 1, 2017; or

B. Bond Reserve Account. From the Bond Reserve Account if the moneys accounted for therein do not after any such transfer at least equal the Minimum Securities Reserve.

Except as provided in Section 603, no loss or profit in any account or subaccount on any investments or reinvestments in securities or any certificates of deposit shall be deemed to take place as a result of fluctuations in the market quotations of the investments, reinvestments, or certificates prior to the sale or maturity thereof. In the computation of the amount in any account or subaccount for any purpose hereunder, except as herein otherwise expressly provided, securities and certificates of deposit shall be valued at the cost thereof (including any amount paid as accrued interest at the time of purchase of the obligation) and other bank deposits shall be valued at the amounts deposited, exclusive of any accrued interest or any other gain to the Authority until such gain is realized. The expenses of purchase, safekeeping, sale, and all other expenses incident to any investment or reinvestment of moneys pursuant to this article shall be accounted for as Operation and Maintenance Expenses of the TMWA Water System and charged to the Operation and Maintenance Account as permitted by Section 506 hereof.

Section 606. Accelerated Payments. Nothing contained in article V hereof prevents the accumulation in any account or subaccount herein designated of any monetary requirements at a faster rate than the rate or minimum rate, as the case may be, provided in article V; but, no payment shall be so accelerated if such acceleration shall cause the Board to default in the payment of any obligation of the Authority pertaining to Pledged Revenues or the TMWA Water System. Nothing herein contained requires in connection with Pledged Revenues received in any Fiscal Year the accumulation in any account or subaccount for the payment in the Comparable Bond Year of Bond Requirements due in connection with any series of bonds or other securities payable from Pledged Revenues and herein or hereafter authorized, in excess of such Bond Requirements due in such Comparable Bond Year, and of any reserves required to be accumulated and maintained therefor, and of any existing deficiencies, and payable from such account, as the case may be, except as may be otherwise provided herein.

Section 607. Payment of Bond Requirements. The moneys credited to any account or subaccount designated in article V hereof for the payment of the Bond Requirements due in connection with any issue of bonds or other securities payable from Pledged Revenues and herein, heretofore, or hereafter authorized shall be used without requisition, voucher, warrant, further order, or authority (other than is contained herein), or any other preliminaries, to pay promptly the Bond Requirements payable from such account or subaccount as such securities become due, upon the respective Redemption Dates, if any, on which the Authority is obligated to pay such securities, or upon the respective principal and interest fixed maturity dates of such securities, as provided therefor herein, or otherwise, except to the extent any other moneys are available therefor, including, without limitation, moneys accounted for in the Bond Fund.

Section 608. Payment of Redemption Premiums. Notwithstanding any other provision herein, this Instrument requires the accumulation in any account or subaccount designated in article V hereof for the payment of any issue of bonds or other securities payable from Pledged Revenues of amounts sufficient to pay not only the principal thereof and interest thereon but also the

prior redemption premiums due in connection therewith, as the same become due, whenever the Authority shall have exercised or shall have obligated itself to exercise a prior redemption option pertaining thereto or otherwise to call any security for prior redemption, except to the extent provision is otherwise made therefor, if any prior redemption premiums are due in connection therewith. In such event moneys shall be deposited in such account or subaccount when due for the payment of all such Bond Requirements without default as the same become due.

## ARTICLE VII

### SECURITIES LIENS AND ADDITIONAL SECURITIES

Section 701. Lien of the Bonds. The 2017 Bonds authorized herein, constitute an irrevocable lien (but not necessarily an exclusive lien) upon the Pledged Revenues on a parity with the liens of the 2007 Bonds, the 2015 Bonds, the 2016 Bonds and any parity securities hereafter issued.

Section 702. Equality of Bonds. The 2017 Bonds, the 2016 Bonds, the 2015 Bonds, the 2007 Bonds and any parity securities hereafter authorized to be issued and from time to time Outstanding are equally and ratably secured by a lien on the Net Revenues and shall not be entitled to any priority one over the other in the application of the Net Revenues regardless of the time or times of the issuance of the bonds and any other such securities, it being the intention of the Board that there shall be no priority among the 2017 Bonds, the 2016 Bonds, the 2015 Bonds, the 2007 Bonds and any such parity securities regardless of the fact that they may be actually issued and delivered at different times.

Section 703. Issuance of Parity Securities. Nothing herein, subject to the limitations stated in Section 712 hereof, prevents the issuance by the Authority of additional bonds or other additional securities payable from Pledged Revenues and constituting a lien thereon on a parity with, but not prior or superior to, the lien thereon of the 2017 Bonds, or prevents the issuance of bonds or other securities refunding all or a part of the 2017 Bonds, except as provided in Sections 708 through 712 hereof; but before any additional parity bonds or other additional parity securities are authorized or actually issued:

A. Absence of Default. At the time of the adoption of the supplemental instrument authorizing the issuance of the additional bonds or other securities as provided in Section 712 hereof, the Authority shall not be in default in making any payments for parity securities required by article V hereof.

B. Earnings Tests. Either:

(1) Projected Earnings Test. The estimated Gross Revenues to be derived for each of the immediately succeeding five Fiscal Years after the estimated date of the completion of the project effected in whole or in part with the proceeds of the parity securities to be issued for each such Fiscal Year shall be at least in an amount equal to the sum of the following for each of such five Fiscal Years:

(a) An amount equal to the Operation and Maintenance Expenses of the TMWA Water System for such Fiscal Year, and

(b) An amount equal to the sum of 1.25 times the combined maximum annual principal and interest requirements for the Outstanding 2017 Bonds, any other Outstanding parity securities and the parity securities proposed to be issued; or

(2) Historical Earnings Test. The Net Revenues for (i) the immediately preceding Fiscal Year or (ii) any 12 consecutive months of the immediately preceding 18 months are equal to or greater than 1.25 times the combined maximum annual principal and interest requirements of the Outstanding 2017 Bonds and any other Outstanding parity securities and the parity securities proposed to be issued.

C. Reduction of Annual Requirements. The respective annual Bond Requirements (including as such a requirement not only the principal of and interest on the securities but also the amount of any prior redemption premiums due on any Redemption Date as of which the Authority shall have exercised or shall have obligated itself to exercise its prior redemption option by a call of securities for payment then) shall be reduced to the extent such Bond Requirements are scheduled to be paid each of the respective Bond Years with moneys held in trust or in escrow for that purpose by any trust bank within or without the State, including the known minimum yield from any investment in Federal Securities.

D. Treatment of Variable Interest Rate Securities. For the purposes of Subsection B of this section, if any parity security bears interest at a variable interest rate and is not covered by a Qualified Swap, the rate of interest used in the foregoing test shall be the lesser of the maximum permitted rate of interest on those parity securities or a rate equal to the "25 Bond Revenue Index" as most recently published in The Bond Buyer prior to the date a firm offer to purchase the then proposed parity securities is accepted by the Authority or if such index is no longer published such other similar long-term bond index as the Authority reasonably selects.

E. Swap Termination Payments. If payments due under a Qualified Swap Agreement on the termination thereof prior to the full term permitted under the Qualified Swap Agreement are to be made on a parity with the payments of the Bond Requirements of any 2017 Bonds, then the consent of the Insurer, if any, shall be obtained prior to the execution of such Qualified Swap Agreement.

F. Adjustment of Revenues. In any computation of such earnings test as to whether or not additional parity securities may be issued as provided in Section 703 B(1) or (2), the amount of Gross Revenues or Net Revenues shall be decreased and may be increased by the amount of any loss or gain conservatively estimated by the Independent Accountant, Professional Engineer or Chief Financial Officer making the computations, which loss or gain results from any change in any schedule of rates, fees and charges or any annexations or extensions to the TMWA Water System which took effect during the next preceding Fiscal Year or thereafter prior to the issuance of such parity securities, based on the number of ratepayers during such next preceding Fiscal Year as if such modified schedule of rates, fees and charges and number of ratepayers shall have been effect during the entire next preceding Fiscal Year, if the change shall have been made by the Authority before the computation of the designated earnings test but made in the same Fiscal Year as the computation is made or in the next preceding Fiscal Year.

Section 704. Certification of Revenues. A written certification or written opinion by the Chief Financial Officer, a Professional Engineer or an Independent Accountant that such

annual revenues are sufficient to pay the amounts provided in Section 703 B(2) hereof, when adjusted thereby as hereinabove provided in Section 703 D, E or F or a written certification or written opinion by the Chief Financial Officer, a Professional Engineer or an Independent Accountant that such annual revenues are sufficient to pay the amounts provided in Section 703 B(1) hereof, based upon estimates of the Chief Financial Officer, a Professional Engineer or an Independent Account as provided in Section 703 B(1) hereof shall be conclusively presumed to be accurate in determining the right of the Authority to authorize, issue, sell, and deliver additional bonds on a parity with the 2017 Bonds.

Section 705. Subordinate Securities Permitted. Nothing herein, subject to the limitations otherwise stated in this article and Section 1207, prevents the Authority from issuing subordinate securities.

Section 706. Superior Securities Prohibited. Nothing herein permits the Authority to issue superior securities.

Section 707. Use of Proceeds. The proceeds of any additional bonds or other additional securities (other than funding or refunding securities) payable from Pledged Revenues shall be used only to pay the cost of a project, including, without limitation, incidental expenses, for the betterment, enlargement, extension, other improvement, and equipment of the TMWA Water System, or any combination thereof.

Section 708. Issuance of Refunding Securities. At any time after the 2017 Bonds, or any part thereof, are issued and remain Outstanding, if the Board shall find it desirable to refund any Outstanding bonds or other Outstanding securities payable from and constituting a lien upon Pledged Revenues, such bonds or other securities, or any part thereof, may be refunded only if the bonds or other securities at the time or times of their required surrender for their payment shall then mature or shall be then callable for prior redemption for the purpose of refunding them at the Authority's option upon proper call, unless the holder or holders of all such Outstanding securities consent to such surrender and payment, regardless of whether the priority of the lien for the payment of any refunding securities on Pledged Revenues is changed (except as provided in Sections 706 and 709 through 712 hereof).

Section 709. Partial Refundings. The parity refunding securities so issued shall enjoy complete equality of lien with the portion of any parity securities of the same issue which is not refunded; and the holder or holders of such parity refunding securities shall have the same rights and privileges enjoyed by the holder or holders of the unrefunded parity securities of the same issue partially refunded by the parity refunding securities.

Section 710. Limitations Upon Refundings. Any bonds or other refunding securities payable from Pledged Revenues shall be issued with such details as the Board may by instrument provide, subject to the provisions of Section 712 hereof, and subject to the inclusion of any such rights and privileges designated in Section 709 hereof, but without any impairment of any contractual obligation imposed upon the Authority by any proceedings authorizing the issuance of any one or more issues, including, without limitation, the 2017 Bonds.

Section 711. Protection of Securities Not Refunded. If only a part of the Outstanding bonds and other Outstanding securities of any issue or issues payable from Pledged Revenues is refunded, then such securities may not be refunded without the consent of the holder or holders of the unrefunded portion of such securities:

A. Requirements Not Increased. Unless the bonds or other refunding securities do not increase for any Bond Year the aggregate principal and interest requirements evidenced by such refunding securities and by the Outstanding securities not refunded on and prior to the last maturity date or last Redemption Date, if any, whichever time is earlier, if any, of such unrefunded securities, and unless the lien of the refunding securities on Pledged Revenues is not raised to a higher priority than the lien thereon of the bonds or other securities thereby refunded; or

B. Subordinate Lien. Unless the lien on any Pledged Revenues for the payment of the refunding securities is subordinate to each such lien for the payment of any securities not refunded; or

C. Default and Earnings Test. Unless the refunding securities are issued in compliance with Section 703 hereof and Section 704 hereof, but excluding from any computation thereunder the bonds to be refunded and redeemed.

Section 712. Supplemental Instrument. Additional bonds or other additional securities payable from Pledged Revenues shall be issued only after authorization thereof by a supplemental instrument of the Board stating the purpose or purposes of the issuance of such additional securities, directing the application of the proceeds thereof to such purpose or purposes, directing the execution and authentication thereof, and fixing and determining the date, principal amount, maturity or maturities, designation, and numbers thereof, the maximum rate or the rate or rates of interest to be borne thereby, any prior redemption privileges of the Authority with respect thereto, and other provisions thereof. Upon such authorization such additional bonds or other additional securities may at one time or from time to time be executed by and on behalf of the Authority and authenticated and delivered by the Authority or upon its order. All additional securities shall bear such date, shall bear such numbers and series designation, letters, or symbols prefixed to their numbers distinguishing them from each other security, shall be payable at such place or places, may be subject to redemption prior to maturity on such terms and conditions, and shall bear interest at such rate or at such different or varying rates per annum, as may be fixed by instrument or other document of the Board.

## ARTICLE VIII

BUDGETARY PROCEDURES

Section 801. Procedures Applicable. For the purposes of this Instrument the budgetary procedures of the Authority shall be substantially as provided in this article. The Board and the officials of the Authority shall annually and at such other times, if any, as may be provided by law prepare and adopt a budget pertaining to the TMWA Water System pursuant to the Budget Act, all laws supplemental thereto, and the provisions hereof.

Section 802. Budget Estimates. The TMWA Manager or Chief Financial Officer shall annually submit for each Budget Year to the Board in accordance with the budget calendar estimates of Gross Revenues and expenditure requirements for the TMWA Water System for such Budget Year, i.e., the next ensuing Fiscal Year, including, without limitation, as a part of such expenditure requirements the Operation and Maintenance Expenses for the Budget Year and the Bond Requirements for the Comparable Bond Year (but none other). The estimates of expenditures in connection with the operation of the TMWA Water System shall be classified so as to set forth the data by accounts, including those designated in article V hereof, character, and object of expenditures, work programs, and other details requested by the Board. The estimates of the Gross Revenues shall be classified as to accounts and sources of income in such detail as requested by the Board. Such estimates, in addition, shall be so prepared as to permit an analysis of the Gross Revenues of the TMWA Water System and of the Operation and Maintenance Expenses of the TMWA Water System under the definitions set forth in Section 102 hereof.

Section 803. Amount of Net Revenues. The amount of the remainder of Net Revenues for each Fiscal Year shall at least equal the sum required for the Fiscal Year by the rate maintenance covenant in Section 1001 hereof and all other provisions herein supplemental thereto.

Section 804. Content and Submission of Budget. The TMWA Manager shall include such estimates in his proposed budget annually submitted to the Board. The annual budget as adopted by the Board shall show the amounts apportioned for the Operation and Maintenance Expenses of the TMWA Water System and shall be in such detail as to permit the analysis above contemplated.

Section 805. Limitation Upon Expenditures. The total expenditures for operating and maintaining the TMWA Water System in any Fiscal Year (other than expenses for the purchase of commodities for resale) shall not exceed the total expenditures so set forth in the budget except upon the approval of a majority of the members of the Board as expressed by vote of the Board.

ARTICLE IX

RESERVED

Section 901. Reserved.

## ARTICLE X

### RATES, FEES AND OTHER CHARGES

Section 1001. Rate Maintenance Covenant. The Authority shall adopt, from time to time revise, and continue in effect, a schedule of rates, fees, and other charges for water and other goods and services provided by, and for the use of, the TMWA Water System as may be necessary or proper in order that the amount of the Gross Revenues in each Fiscal Year, shall at least equal the sum of:

A. The amount of Gross Revenues required to pay Operation and Maintenance Expenses for such Fiscal Year; plus

B. The greater of:

(i) 1.25 times the Bond Requirements for the Comparable Bond Year of the Outstanding 2017 Bonds and all other Outstanding parity securities; or

(ii) All other amounts payable from the Gross Revenues and pertaining to the TMWA Water System, including, without limitation, debt service on any parity or subordinate securities, Operation and Maintenance reserves, capital reserves, any necessary capital expenditures not otherwise provided for, any requirements of an agreement between the Authority and the provider of a Qualified Surety Bond, and prior deficiencies pertaining to any account relating to Gross Revenues.

The foregoing rate maintenance covenant is subject to compliance by the Authority with any legislation of the United States, the State, or other governmental body, or any regulation or other action taken by the Federal Government, any State agency, or any political subdivision of the State pursuant to such legislation, in the exercise of the police power thereof for the public welfare, which legislation, regulation, or action limits or otherwise inhibits the amounts of any rates, fees, and other charges due to the Authority for the use of or otherwise pertaining to any and all services rendered by or at the TMWA Water System, including, without limitation, increases in the amounts of such rates, fees, or other charges (or any combination thereof).

Section 1002. Increasing Revenues. From time to time, and as often as it shall appear necessary, and whenever the audit report made pursuant to article XI hereof states that the Gross Revenues were not sufficient to comply with the rate maintenance covenant stated in Section 1001 hereof (adjusted as provided therein), the Authority, upon recommendation of the TMWA Manager or Chief Financial Officer, shall revise the schedule of rates, fees, and other charges for the use of the TMWA Water System as may be necessary to produce Gross Revenues as aforesaid.

Section 1003. Collection of Charges. The Authority shall cause all rates, fees, and other charges pertaining to the TMWA Water System to be collected as soon as reasonable, shall prescribe and enforce rules and regulations or impose contractual obligations for the payment thereof, including, without limitation, the imposition of penalties for any defaults, to the end that the

Gross Revenues of the TMWA Water System shall be adequate to meet the requirements of this Instrument and any other instruments supplemental thereto. The rates, fees, and other charges due shall be collected in any lawful manner.

## ARTICLE XI

MISCELLANEOUS PROTECTIVE COVENANTS

Section 1101. General. The Authority hereby particularly covenants and agrees with the holders of the 2017 Bonds and makes provisions which shall be a part of its contract with such holders to the effect and with the purpose set forth in the following provisions and sections of this article.

Section 1102. Performance of Duties. The Authority, acting by and through the TMWA Manager, the Board, or otherwise, shall faithfully and punctually perform or cause to be performed all duties with respect to Pledged Revenues, the TMWA Water System required by the Constitution and laws of the State and the various resolutions and other instruments of the Authority, including, without limitation, the proper segregation of the proceeds of the 2017 Bonds, the 2016 Bonds, the 2015 Bonds, 2007 Bonds and any securities hereafter authorized and pertaining to the TMWA Water System and Pledged Revenues and their application from time to time to the respective accounts provided therefor.

Section 1103. Contractual Obligations. The Authority shall perform all contractual obligations undertaken by it under leases or other agreements with the Federal Government, under and any other agreements with all other Persons relating to the 2017 Bonds and any other TMWA Water System securities, Pledged Revenues, the Project, or the TMWA Water System, or any combination thereof.

Section 1104. Further Assurances. At any and all times the Authority, acting by and through the Board except when otherwise required by law, shall, so far as it may be authorized by law, pass, make, do, execute, acknowledge, deliver, and file or record all and every such further instruments, acts, deeds, conveyances, assignments, transfers, other documents, and assurances as may be necessary or desirable for the better assuring, conveying, granting, assigning, and confirming all and singular the rights, the Gross Revenues, and other moneys and accounts hereby pledged or assigned, or intended so to be, or which the Authority may hereafter become bound to pledge or to assign, or as may be reasonable and required to carry out the purposes of this Instrument and any instrument supplemental thereto, and to comply with the Authority Act and the Bond Act. The Authority, acting by and through the TMWA Manager, the Board, or otherwise, shall at all times, to the extent permitted by law, defend, preserve, and protect the pledge of the Gross Revenues and other moneys and accounts pledged hereunder and all the rights of every holder of any bonds or other securities payable from Pledged Revenues against all claims and demands of all Persons whomsoever.

Section 1105. Conditions Precedent. Upon the date of issuance of any 2017 Bonds, all conditions, acts, and things required by the Constitution or statutes of the United States, the Constitution or statutes of the State, including, without limitation, the Authority Act and the Bond Act, or this Instrument to exist, to have happened, and to have been performed precedent to or in the issuance of the bonds shall exist, have happened, and have been performed; and the bonds, together with all other obligations of the Authority, shall not contravene any debt or other limitation

prescribed by the Constitution or statutes of the United States, or the Constitution or statutes of the State.

Section 1106. Rules, Regulations, and Other Details. The Authority, acting by and through the TMWA Manager, the Board, or otherwise, shall establish and enforce reasonable rules and regulations governing the operation, care, repair, maintenance, management, control, occupancy, use, and services of the TMWA Water System. The Authority shall observe and perform all of the terms and conditions contained in this Instrument and shall comply with all valid acts, rules, regulations, orders, and directives of any legislative, executive, administrative, or judicial body applicable to the TMWA Water System or the Authority.

Section 1107. Competent Personnel and Operation. The Authority shall at all times endeavor to employ in connection with the operation of the TMWA Water System in executive and managerial capacities only individuals competent therefor by reason of training and experience. The Authority shall administer the TMWA Water System in accordance with sound business principles. All salaries, fees, wages, and other compensation paid by the Authority in connection with the maintenance, repair, and operation of the TMWA Water System shall be reasonable, proper, and not excessive.

Section 1108. Maintenance of TMWA Water System. The Authority shall, insofar as it may legally do so, without any violation of other provisions of this Instrument, maintain, preserve, keep, and operate the TMWA Water System or cause the TMWA Water System to be maintained, preserved, kept, and operated in good repair, working order, and condition.

Section 1109. Operation of TMWA Water System. The Authority shall at all times operate the TMWA Water System properly and in a sound and economical manner and shall maintain, preserve, and keep the TMWA Water System properly, or cause the same, by lease or otherwise, so to be maintained, preserved, and kept, with the appurtenances and every part and parcel thereof, in good repair, working order, and condition. The Authority also shall from time to time make or cause to be made all necessary and proper repairs, replacements, and renewals so that at all times the operation of the TMWA Water System may be properly and advantageously conducted in conformity with standards customarily followed by municipalities operating water facilities of like size and character.

Section 1110. Competing Water Facilities. The Authority shall not construct other facilities or structures to be operated by the Authority separate from the TMWA Water System and competing with the TMWA Water System for revenues otherwise available for the payment of the 2017 Bonds or any other securities payable from Pledged Revenues.

Section 1111. Corporate Existence. The Authority shall maintain its corporate identity and existence so long as any of the 2017 Bonds and any other securities payable from Pledged Revenues remain Outstanding, unless another body corporate and politic by operation of law succeeds to the duties, privileges, powers, liabilities, disabilities, immunities, and rights of the Authority and is obligated by law to operate and maintain the TMWA Water System and to fix and collect Pledged Revenues as herein provided without adversely and materially affecting at any time

the privileges and rights of any holder of any Outstanding bond or any such other Outstanding security.

Section 1112. Disposal of TMWA Water System Prohibited. Except for the use of the TMWA Water System or services pertaining thereto in the normal course of business, neither all nor a substantial part of the TMWA Water System shall be sold, leased, mortgaged, pledged, encumbered, alienated, or otherwise disposed of, until all the 2017 Bonds have been paid in full, as to all Bond Requirements, or unless provision has been made therefor, or until the bonds have been otherwise redeemed, including, without limitation, the termination of the pledge as herein authorized; and the Authority shall not dispose of its title to the TMWA Water System or to any useful part thereof, including, without limitation, any property necessary to the operation and use of the TMWA Water System and the lands comprising the site of the TMWA Water System (other than the execution of leases, licenses, easements, or other agreements in connection with the operation of the TMWA Water System by the Authority), except for any pledges of and liens on revenues derived from the operation and use of the TMWA Water System, or any part thereof, for the payment of any other revenue bonds or other securities pertaining to the TMWA Water System as permitted herein, and except as otherwise provided herein.

Section 1113. Revenues and Agreements. The Authority shall not create or permit to be created any charge or lien on the Gross Revenues, except as herein permitted. Nothing herein contained prevents the Authority from executing leases, licenses, easements, or other agreements for any part of the TMWA Water System with the Federal Government or any other Persons, if such instrument shall not substantially diminish the Net Revenues otherwise available for the payment of the Outstanding 2017 Bonds and any other Outstanding bonds or other Outstanding securities payable from Pledged Revenues. TMWA shall not enter into any agreement that limits its ability to increase rates and charges for water and other goods and services provided by, and for the use of the TMWA Water System as may be necessary to comply with Section 1001 hereof. No more than 10 percent of the Gross Revenues, excluding revenues derived from the sale of electric power, may be subject to a contract that fixes the amount paid to the Authority for goods or services or otherwise for a term greater than three years.

Section 1114. Disposal of Unnecessary Property. The Authority may sell, exchange, lease, or otherwise dispose of at any time and from time to time any property constituting a part of the TMWA Water System and not useful in the construction, reconstruction, or operation thereof, or which shall cease to be necessary for the efficient operation of the TMWA Water System, or which shall have been replaced by other property of at least equal value, except to the extent the Authority is prevented from so doing by any contractual limitation pertaining thereto. The TMWA Manager shall certify that such property is not useful, has ceased to be necessary for the efficient operation of the TMWA Water Systems, or has been replaced by other property of at least equal value prior to disposal of such property. The net proceeds of the sale of any TMWA Water System property shall be used for the purpose of replacing properties at the TMWA Water System, real, personal, mixed, or otherwise, or shall be paid into the General Purpose Account for the purposes thereof.

Section 1115. Loss from Condemnation. If any part of the TMWA Water System shall be taken by the exercise of a power of eminent domain, the amount of any award received by

the Authority as a result of such taking shall be paid into the General Purpose Account for the purposes of reconstructing the TMWA Water System and, to the extent not needed for reconstruction, to the Revenue Fund, as the Board may determine.

Section 1116. Payment of Governmental Charges and Liens. The Authority shall pay or cause to be paid all taxes, assessments, and other municipal or governmental charges, if any, lawfully levied or assessed upon or in respect of the TMWA Water System, or upon any part thereof, or upon any portion of the Gross Revenues, or revenues otherwise pertaining to the TMWA Water System, when the same shall become due. The Authority shall duly observe and comply with all valid requirements of any municipal or governmental authority relative to the TMWA Water System, or any part thereof, except for any period during which the validity of the same is being contested in good faith by proper legal proceedings. The Authority shall not create or suffer to be created any lien or charge upon the TMWA Water System, or any part thereof, or upon the Gross Revenues, except the pledge and lien created by this Instrument for the payment of the Bond Requirements of the 2017 Bonds and any Outstanding parity securities or subordinate securities, and except as herein otherwise permitted. The Authority shall pay or cause to be discharged or shall make adequate provision to satisfy and to discharge, within 60 days after the same shall become payable, all lawful claims and demands for labor, materials, supplies, or other objects which, if unpaid, might by law become a lien upon the TMWA Water System, any part thereof, the Gross Revenues, or any other revenues pertaining to the TMWA Water System. Nothing herein contained requires the Authority to pay or cause to be discharged or to make provision for any such tax, assessment, lien, charge, or demand before the time when payment thereon shall be due, or so long as the validity thereof shall be contested in good faith.

Section 1117. Protection of Security. The Authority, the officers, agents, and employees of the Authority and the Board shall not take any action in such manner or to such extent as might prejudice the security for the payment of the Bond Requirements of the 2017 Bonds and any other securities payable from Pledged Revenues according to the terms of such securities. The Authority shall maintain, preserve, and renew all the rights, powers, privileges, and franchises now owned or hereafter acquired with respect to the TMWA Water System. No contract shall be entered into and no other action shall be taken by which the rights of any holder of any bond or other security payable from Pledged Revenues might be prejudicially and materially impaired or diminished.

Section 1118. Prompt Payment of Securities. The Authority shall promptly pay the Bond Requirements of every bond and every other security payable from Pledged Revenues at a place, on the dates, and in the manner specified in the bond or other security according to their true intent and meaning and as provided in any instrument pertaining thereto, including without limitation, this Instrument.

Section 1119. Use of Gross Revenues. None of the Gross Revenues shall be used for any purpose other than as provided herein. The Authority shall apply the Net Revenues to the payment of the bonds, any other securities payable from Pledged Revenues, and the interest thereon (but not necessarily exclusively thereto), and the Authority is not obligated to make such payments from any other source or moneys, but it is not prohibited from making such payments from any moneys which may be lawfully used for that purpose.

Section 1120. Use of Bond Fund. The Bond Fund shall be used solely and only and the moneys credited to such account are hereby pledged for the purpose of paying the Bond Requirements of the 2017 Bonds and any parity securities heretofore or hereafter authorized and then Outstanding, except for those moneys in the Interest Account, the Principal Account, and the Bond Reserve Account within the Bond Fund as are in excess of such Bond Requirements, both accrued and not accrued, to their respective maturities or any Redemption Date or Redemption Dates, whichever due date is earlier, if any (subject to the provisions of Sections 510, 511, 606, and 1201 hereof), and except for those moneys in the Bond Reserve Account within the Bond Fund in excess of the Minimum Securities Reserve, as hereinabove provided.

Section 1121. Additional Securities. The Authority shall not hereafter issue any bonds or other securities payable from Pledged Revenues and having a lien on Pledged Revenues on a parity with the lien thereon of the 2017 Bonds so long as any 2017 Bonds are Outstanding, unless such additional securities (other than securities issued pursuant to Sections 708 through 712 hereof and refunding securities on a parity with the 2017 Bonds) with a lien on Pledged Revenues on a parity with the 2017 Bonds are issued in such manner as provided in Sections 703, 704, 707, and 712 hereof. Any other securities hereafter authorized to be issued and secured by Pledged Revenues shall not hereafter be issued, unless such additional securities are also issued in conformance with the provisions of Articles V and VII hereof.

Section 1122. Other Liens. Other than as provided herein, there are no liens or encumbrances of any nature whatsoever on or against the TMWA Water System, or any part thereof, or on or against the Gross Revenues derived or to be derived, on a parity with or superior to the lien of the 2017 Bonds, the 2016 Bonds, the 2015 Bonds and the 2007 Bonds. The Authority shall not issue any bonds, other than the 2017 Bonds, 2016 Bonds, 2015 Bonds and 2007 Bonds, or any other additional securities secured by a pledge of or lien on the Gross Revenues, or both such a pledge and such a lien (including, without limitation, amounts which the Authority may thereafter be entitled to withdraw from the Revenue Fund and transfer to the Operation and Maintenance Account for the payment of Operation and Maintenance Expenses) and shall neither create nor cause to be created any lien or charge on the Gross Revenues or on any amount held by the Trustee or the Authority under this Instrument, except as provided in Articles V and VII hereof; but neither this Section nor any other provision of this Instrument shall prevent the Authority from issuing additional bonds or other additional securities for the purposes of the Authority secured by a pledge of and lien on Pledged Revenues subordinate to the lien of the 2017 Bonds, 2016 Bonds, 2015 Bonds, or 2007 Bonds, or to be derived on and after such date as the pledge of and lien on the Pledged Revenues provided in this Instrument are discharged and satisfied as provided in Section 1201 hereof, or otherwise.

Section 1123. Revenues Claims. The Authority shall defend against every suit, action, or proceeding at any time brought against any holder of any bonds or other securities payable from Pledged Revenues upon any claim arising out of the receipt, application, or disbursement of any of the Gross Revenues, or involving such holder's rights under this Instrument or other proceedings pertaining to the issuance of such securities; the Authority shall also indemnify and save harmless any such holders against any and all liability, claim, or assertion by any Person whomsoever, arising

out of such receipt, application, or disbursement; but such holder at his election may appear in and defend any such suit, action, or proceedings; and notwithstanding any contrary provision hereof, this covenant shall continue and remain in full force and effect, even though all indebtedness, liabilities, obligations, and other sums secured hereby may have been fully paid and satisfied, and the obligations under this Instrument may have been released and the lien hereof discharged.

Section 1124. Accumulation of Interest Claims. In order to prevent any accumulation of claims for interest after maturity, the Authority shall not directly or indirectly extend or assent to the extension of the time for the payment of any claim for interest on any of the 2017 Bonds or any other securities payable from Pledged Revenues; and the Authority shall not directly or indirectly be a party to or approve any arrangements for any such extension or for the purpose of keeping alive any of such claims for interest. If the time for the payment of such installment of interest shall be extended in contravention of the foregoing provisions, such installment or installments of interest after such extension or arrangement shall not be entitled in case of default hereunder to the benefit or security of this Instrument, except upon the prior payment in full of the principal of all 2017 Bonds and any such other securities then Outstanding and of all matured interest on all such securities the payment of which has not been extended.

Section 1125. Records and Accounts. So long as any of the 2017 Bonds and any other securities payable from Pledged Revenues remain outstanding, proper records and accounts shall be kept by the Authority, separate and apart from all other records and accounts, showing complete and correct entries of all transactions relating to the TMWA Water System and to all moneys pertaining thereto, including, without limitation, the Gross Revenues. Such records shall include (but not necessarily be limited to) monthly records, all in reasonable detail as may be determined by the TMWA Manager or her delegate and in accordance with standard accounting practices, showing:

A. Receipts. The Gross Revenues and other moneys received and pertaining to the TMWA Water System;

B. Purposes and Accounts. The respective purposes for which such moneys were paid and the respective accounts in which such moneys were accounted; and

C. Complete Accounting. Complete and correct entries of all transactions relating to the receipt, disbursement, allocation, and application of all moneys.

All requisitions, requests, certificates, opinions, and other documents received by any Person on behalf of the Authority in connection with the TMWA Water System under the provisions of this Instrument shall be retained in the Authority's official records in accordance with State law.

Section 1126. Rights Concerning Records. The Trustee shall have the right at all reasonable times to inspect all financial statements, other records, accounts, and data relating thereto, concerning the TMWA Water System, or the Gross Revenues, or any other moneys pertaining to the TMWA Water System, or any combination thereof, and to make copies of such financial statements, other records, accounts, and data.

Section 1127. Audits Required. The Authority shall cause an audit to be made for each Fiscal Year within 180 days following the close of the Fiscal Year of such records, accounts, and subaccounts by an Independent Accountant, and shall order an audit report showing the receipts and disbursements for each account and subaccount pertaining to the TMWA Water System, including, without limitation, the Gross Revenues.

Section 1128. Accounting Principles. Records and accounts, and audits thereof, with respect to the TMWA Water System and the Gross Revenues, shall be currently kept and made, as nearly as practicable, in accordance with generally accepted accounting principles, methods and terminology followed and construed for water systems comparable to the TMWA Water System, except as may be otherwise provided herein or required by applicable law or regulation or by contractual obligation existing on the effective date of this Instrument.

Section 1129. Insurance and Reconstruction. The Authority, shall at all times maintain fire and extended coverage insurance, workmen's compensation insurance, public liability insurance, and all such other insurance as is customarily maintained with respect to facilities of like character against loss of or damage to the TMWA Water System, against loss of Pledged Revenues and against public and other liability to the extent reasonably necessary to protect the interests of the Authority and of each owner of a Bond or any other security payable from the Pledged Revenues, except as herein otherwise provided. The amounts of such insurance coverage shall be approved by the Authority's risk manager or the risk managers of the Members. If at any time the Authority is unable to obtain insurance to the extent provided herein, the Authority shall maintain such insurance to the extent it is reasonably obtainable. If such insurance is not reasonably obtainable, the Authority shall self-insure to the extent it is financially able to do so. If any useful part of the TMWA Water System shall be damaged or destroyed, the Authority shall, as expeditiously as possible, commence and diligently prosecute the repair or replacement of the damaged or destroyed property so as to restore the same to use. The proceeds of any such property insurance relating to the TMWA Water System shall be payable to the Authority and applied as provided in Section 1130 below. The Authority may insure all or a portion of the above risks through a program of self-insurance, providing that the level of self-insurance reserves and the funding thereof are approved by an independent expert in self-insurance.

Section 1130. Use of Insurance Proceeds. Immediately after any loss or damage to the TMWA Water System which is covered by insurance, the Authority shall cause plans and specifications for repairing, reconstruction, or otherwise replacing the damaged or destroyed property to be prepared and an estimate of the cost thereof, and to file copies of such plans and specifications and of such estimate with the TMWA Manager. The proceeds of all insurance referred to in Section 1129 hereof shall be available for and to the extent necessary be applied to the repair, reconstruction, and other replacement of the damaged or destroyed property. If such proceeds are more than sufficient for such purpose, the balance remaining shall be paid into the following subaccount and account in the following priorities:

A. Bond Reserve Account. Firstly, into the Bond Reserve Account, designated in Section 508 hereof to the extent necessary to bring the amount on deposit in the Bond Reserve Account up to the then Minimum Securities Reserve; and

B. General Purpose Account. Secondly, into the General Purpose Account designated in Section 516 hereof.

If such proceeds shall be insufficient to repair, reconstruct, or otherwise replace the damaged or destroyed property pertaining to the TMWA Water System, the deficiency may be supplied by the TMWA Manager from moneys in the Renewal and Replacement Account, the General Purpose Account, or any other accounts or subaccounts legally available for such purposes. If the cost of repairing, reconstruction, or otherwise replacing the damaged or destroyed property as estimated by the TMWA Manager shall not exceed the proceeds of insurance and other moneys legally available for such purpose, the Authority shall forthwith commence and diligently prosecute the repair, reconstruction, or other replacement of the damaged or destroyed property. The cost of maintaining such insurance for the TMWA Water System shall be deemed a part of the Operation and Maintenance Expenses of the TMWA Water System.

Section 1131. Transfer to General Purpose Account. The proceeds of any insurance designated in Sections 1129 and 1130 hereof and not applied within 18 months after receipt by the Authority to the repairing, reconstructing, or otherwise replacing of the damaged or destroyed property, unless the Authority is prevented from so doing because of conditions beyond its control, shall be transferred to the General Purpose Account.

Section 1132. Maintenance of Policies. All such insurance policies designated in Sections 1129 hereof shall be filed with the TMWA Manager and shall be subject to the inspection at all reasonable times of any holder of any Outstanding bond or any other Outstanding security payable from Pledged Revenues or any authorized representative of any such holder.

Section 1133. Completion of Project. The Authority, with the proceeds derived from the sale of the 2017 Bonds and any other available moneys, shall proceed to cause the Project to be completed without delay to the best of the Authority's ability and with due diligence, as herein provided.

Section 1134. Federal Tax Covenant. The Authority hereby covenants for the benefit of each holder of the 2017 Bonds that it will not take any action or omit to take any action with respect to the 2017 Bonds, the proceeds thereof, any other funds of the Authority or any facilities refinanced with the proceeds of the 2017 Bonds if such action or omission (i) would cause the interest on the 2017 Bonds to lose its exclusion from gross income for Federal income tax purposes under Section 103 of the Tax Code or (ii) would cause interest on the 2017 Bonds to lose its exclusion from alternative minimum taxable income as defined in Section 55(b)(2) of the Tax Code except to the extent such interest is required to be included in the adjusted current earnings adjustment applicable to corporations under Section 56 of the Tax Code in calculating corporate alternative minimum taxable income. The foregoing covenant shall remain in full force and effect

notwithstanding the payment in full or defeasance of the 2017 Bonds until the date on which all obligations of the Authority in fulfilling the above covenant under the Tax Code have been met.

Section 1135. Additional Covenants. While the 2017 Bonds are Outstanding, the Authority agrees to the following:

A. Commencing on the first day of the month succeeding the date on which any parity security which bears interest at a variable interest rate converts to a parity security which bears interest at a fixed interest rate the Authority will be required to provide the Trustee from any revenues available therefor, for credit to the Bond Reserve Account within the Bond Fund, after provision is made for Operation and Maintenance Expenses and principal and interest payments on any Outstanding parity securities as provided in Sections 507 and 508 hereof, respectively, in 36 substantially equal monthly installments, an amount equal to the remainder of the Minimum Securities Reserve less the amount of any other moneys available therein and less the available balance of any Qualified Surety Bond which are accounted for in the Bond Reserve Account.

B. At least 15 days in advance of entering into a Qualified Swap, the Authority will give written notice to Standard and Poor's Ratings Group, Moody's Investors Service, and/or Fitch whichever then has a rating in effect for the bonds, of such Qualified Swap and provide those rating agencies the proposed documentation evidencing such Qualified Swap.

C. If a termination payment under a Qualified Swap is unconditionally due and payable in accordance with the terms of the Qualified Swap, and the Authority determines that payment of such termination payment on its due date would be unduly burdensome, the Authority will use its best efforts to issue bonds or other obligations and use the proceeds thereof for the purpose of paying such termination payment.

D. Any Qualified Swap entered into by the Authority will contain a provision requiring the Qualified Swap Provider to (i) maintain at least an "A" rating from Standard and Poor's Corporation on its senior long-term debt obligations, or on the senior long-term debt obligations of the financial institution that guarantees the Authority's obligations under the Qualified Swap, or (ii) to collateralize its obligations under the Qualified Swap in a manner reasonably acceptable to Standard and Poor's Corporation.

Section 1136. Continuing Disclosure Undertaking. The Authority covenants for the benefit of the holders and beneficial owners of the Bonds to comply with the applicable provisions of the final Continuing Disclosure Certificate substantially in the form now on file with the Secretary, to be executed by the TMWA Manager or the Chief Financial Officer and delivered in connection with the delivery of the Bonds.

Section 1137. No Purveyor Members. As provided in Section 6.13(e) of the TMWA Asset Purchase Agreement, the Authority shall not permit any of its Members to engage in the retail delivery of potable water within its respective jurisdiction and within the retail service area of the Authority.

## ARTICLE XII

MISCELLANEOUS

Section 1201. Defeasance. Except as otherwise set forth herein, when all Bond Requirements of any 2017 Bond or any other security of any other issue payable from Pledged Revenues have been duly paid, the pledge and lien and all obligations hereunder shall thereby be discharged as to that Bond or security and it shall no longer be deemed to be Outstanding within the meaning of this Instrument. There shall be deemed to be such due payment if the Authority has placed in escrow or in trust with a trust bank exercising trust powers, an amount sufficient (including the known minimum yield available for such purpose from Federal Securities in which such amount wholly or in part may be initially invested) to meet all Bond Requirements of the Bond or security, as such requirements become due to the fixed maturity date of the Bond or security or to any Redemption Date or Redemption Dates as of which the Authority shall have exercised or shall have obligated itself to exercise its prior redemption option by a call of the Bond or security thereafter maturing for payment then. The Federal Securities shall become due prior to the respective times on which the proceeds thereof shall be needed, in accordance with a schedule established and agreed upon between the Authority and such bank at the time of the creation of the escrow or trust, or the Federal Securities shall be subject to redemption at the option of the holders thereof to assure such availability as so needed to meet such schedule. If at any time the Authority has so placed in escrow or trust an amount so sufficient to pay designated Bond Requirements of securities constituting less than all of the Bond Requirements of the securities becoming due on and before their respective due dates, be they the fixed maturity dates of the securities or any such Redemption Date pertaining to the securities, such designated Bond Requirements shall be deemed paid and discharged under this Instrument. For the purposes of this Section, "Federal Securities" shall not include any Federal Securities which are callable by any party other than the owner thereof; and if any defeasance escrow investments involve a contract for supplying Federal Securities for the escrow after the date of creation of the escrow, the consent of the Insurer, if any, must be obtained. Notwithstanding anything herein to the contrary, in the event that the principal of or interest on the 2017 Bonds shall be paid by the provider of a Qualified Surety Bond pursuant to the terms of such Qualified Surety Bond, the 2017 Bonds shall remain Outstanding, not be defeased or otherwise satisfied until the amounts owed by the Authority pursuant to the terms of the agreement between the Authority and the provider of such Qualified Surety Bond are paid to the provider of such Qualified Surety Bond. The Authority shall provide the Trustee with either (i) a report of an independent firm of nationally recognized certified public accountants verifying the sufficiency of the escrow established to pay the defeased 2017 Bonds in full or (ii) an opinion of bond counsel to the effect that such 2017 Bonds are no longer Outstanding under this Instrument, that the defeasance was in accordance with the requirements of this Instrument and will not adversely affect the tax exempt status of such 2017 Bonds.

Section 1202. Delegated Powers. The Chairman, Secretary, Treasurer, TMWA Manager, Chief Financial Officer and other officers of the Authority be, and they hereby are, authorized and directed to take all action necessary or appropriate to effectuate the provisions of this Instrument, including, without limitation:

A. Printing Bonds. The printing of the 2017 Bonds, including, without limitation, the printing on each 2017 Bond of any applicable statement of insurance guaranteeing the payment of the principal of and the interest on the insured 2017 Bonds by the insurer or insurers thereof;

B. Final Certificates. The execution of such certificates as may be reasonably required by the Underwriters, relating, among other matters, to:

- (1) The signing of the 2017 Bonds,
- (2) The tenure and identity of the officials of the Board and the Authority,
- (3) The exemption of interest on the 2017 Bonds from Federal income taxation,
- (4) The delivery of the 2017 Bonds and the receipt of the purchase price,
- (5) If it is in accordance with fact, the absence of litigation, pending or threatened, affecting the validity thereof, and
- (6) The execution of any agreement related to the Paying Agent and Registrar not inconsistent with this Instrument;

C. Continuing Disclosure Certificate. The completion and execution of the Continuing Disclosure Certificate concerning the 2017 Bonds;

D. Escrow Agreement. The completion and execution of the Escrow Agreement by the TMWA Manager, or in his absence, the Chief Financial Officer, in substantially the form of the Escrow Agreement which is on file with the Authority;

E. Official Statement. The preparation and distribution of an official statement for use for prospective buyers of the 2017 Bonds, including, without limitation, such use by the Underwriters and their associates, if any; and

F. Bond Sale. The sale and issuance of the 2017 Bonds in accordance with the provisions of this Instrument, including but not limited to the completion and execution of the Bond Purchase Agreement.

Section 1203. Statute of Limitations. No action or suit based upon any Bond or other obligation of the Authority shall be commenced after it is barred by any statute of limitations pertaining thereto. Any trust or fiduciary relationship between the Authority and the holder of any Bond or the obligee regarding any such obligation shall be conclusively presumed to have been repudiated on the fixed maturity date or other due date thereof unless the Bond is presented for payment or demand for payment of any such obligation is otherwise made before the expiration of the applicable limitation period. Any moneys from whatever source derived remaining in any

account reserved, pledged, or otherwise held for the payment of any such obligation, action or suit for the collection of which has been barred, shall revert to the Revenue Fund, unless the Board shall otherwise provide by instrument of the Authority. Nothing herein prevents the payment of any such obligation after any action or suit for its collection has been barred if the Board deems it in the best interests of the public so to do and orders such payment to be made.

Section 1204. Impairment of Prior Contracts. Nothing herein impairs the Authority's obligation of contracts with any Person in connection with the Authority, including, without limitation:

- A. Pledged Revenues. Pledged Revenues,
- B. Outstanding Securities. Any Outstanding securities payable from Pledged Revenues,
- C. TMWA Water System. The TMWA Water System,
- D. Project. The Project,
- E. Prior Contracts. Any existing viable contracts pertaining to the TMWA Water System between the Authority and other Persons, or
- F. Combination. Any combination thereof.

If any provision herein is inconsistent with any provision in any existing contract pertaining to the Authority so as to affect prejudicially and materially the rights and privileges thereunder, so long as such contract shall remain viable and in effect such provision therein shall control such inconsistent provision herein and the latter provision shall be subject and subordinate to such provision in such existing contract.

Section 1205. Governmental Powers. The enforceability of the Authority's obligations and creditors' remedies is:

- A. Equity Principles. Subject to general principles of equity to the extent relevant to the Authority (regardless of whether such enforceability is considered in a proceeding in equity or at law),
- B. Limitations Fixed by Law. Subject to the limitations upon enforceability fixed by bankruptcy, insolvency, reorganization, moratorium, and other laws affecting creditors' rights and privileges,
- C. State and U.S. Powers. Otherwise subject to the reasonable exercise in the future by the State and its governmental bodies of the police powers and the powers of eminent domain, taxation, and licensing inherent in the sovereignty of the State and to the exercise by the United States of the powers delegated to it by the Constitution of the United States,

D. Limitations Upon Suits. Subject to the limitations stated in the 11th Amendment, Constitution of the United States, upon suits against states in Federal courts, and

E. Sovereign Immunity. Subject to the possible passage hereafter of a State statute reestablishing the doctrine of sovereign immunity (heretofore waived by the State subject to certain exceptions and conditions) of the State and any political subdivision of the State from liability and suits thereagainst in the absence of the State's consent thereto.

Nothing herein prohibits or limits the exercise by the Federal Government, the State, or any other governmental entity of their respective sovereign powers. Generally, the State can neither contract away such sovereign powers nor limit or inhibit by contract the proper exercise of such powers, and this Instrument does not purport to do so.

Section 1206. Additional Securities. The Authority reserves the privileges of issuing at a later time or from time to time any securities now or hereafter authorized by law (not herein designated for issuance), as moneys, if any, are needed for the project or projects for which such securities are authorized respectively to be issued.

Section 1207. No Acceleration. Nothing in this Instrument or any other instrument of the Authority or any law of the State shall permit the acceleration of the time or times for the payment of the 2017 Bonds, as to all Bond Requirements prior to their respective maturities or other due dates as provided herein, even if the Authority defaults in the payment of any such Bond Requirements hereunder, and shall not permit such an acceleration of the time for the payment of any subordinate securities without the consent of the Insurer. The Authority may enter into Qualified Swaps which provide for a payment due on termination of the Qualified Swap, whether by reason of a default by the Authority or otherwise, without obtaining the consent of the Insurer so long as the termination payment does not have a lien on the Net Revenues that is on a parity with or superior to the lien thereon of the 2017 Bonds.

Section 1208. Subrogation of Bondholder's Rights. If the principal, or the Redemption Price, if applicable, and interest due on the 2017 Bonds shall be paid by the Insurer, if any, the assignment and pledge of Pledged Revenues, and all covenants, agreements, other obligations, liabilities, and duties of the Authority or the Trustee, or both of them, as the case may be, to the holders of the 2017 Bonds shall continue to exist; and the Insurer shall be subrogated to the rights and privileges of such holders of the bonds so paid by the Insurer, if any.

Section 1209. The Insurer Treated as Holder. So long as it has not defaulted on its insurance policy with respect to the 2017 Bonds, the Insurer, if any, shall be deemed to be the holder of the 2017 Bonds as provided below:

A. Consent to Amendments. At any time the consent of a holder of 2017 Bond is required for adoption of an amendatory or supplemental instrument, the Insurer must consent in writing to the adoption of the instrument, which consent must be obtained in lieu of the consents

required to be obtained from the holders of the 2017 Bonds. Copies of any amendments consented to by the Insurer must be sent by first class mail, postage prepaid, to Standard & Poor's Ratings Group.

B. Other Purposes. Following an Event of Default for all other purposes (except payment of the principal of and interest on the 2017 Bonds unless the Insurer is entitled to such payment by virtue of its ownership of a 2017 Bond or subrogation), until after the curing of all defaults which may theretofore have occurred, the Insurer shall be treated as the holder of all of the 2017 Bonds.

C. Notices. A copy of any notices required to be sent pursuant to the provisions of this Instrument must be sent to the Insurer at such address as is provided in writing for such purpose by the Insurer.

Section 1210. No Optional Redemption or Distribution of Funds. Without the written consent of the provider of a Qualified Surety Bond, there shall be no optional redemption of Bonds or distribution of funds to the Authority unless all amounts owed to the provider of a Qualified Surety Bond under the terms of the Qualified Surety Bond and the agreement between the Authority and the provider of the Qualified Surety Bond have been paid in full.

## ARTICLE XIII

### PRIVILEGES, RIGHTS AND REMEDIES

Section 1301. Bondholder's Remedies. Each holder of any 2017 Bond and the Trustee, acting for each such holder, shall be entitled to all of the privileges, rights, and remedies provided herein, in the Authority Act, in the Bond Act, and as otherwise provided or permitted at law or in equity or by other statutes, except as provided in Sections 206 through 210 hereof, but subject to the provisions herein concerning Pledged Revenues and the proceeds of the 2017 Bonds.

Section 1302. Right To Enforce Payment. Nothing in this article affects or impairs the right of any holder of any 2017 Bond to enforce the payment of the Bond Requirements of his bond or the obligation of the Authority to pay the Bond Requirements of each 2017 Bond to the holder thereof at the time and the place expressed in the 2017 Bond.

Section 1303. Events of Default. Except as otherwise provided herein, each of the following events is hereby declared an "event of default:"

A. Nonpayment of Principal and Premium. Payment of the principal of any of the 2017 Bonds, or any prior redemption premium due in connection therewith, or both, is not made when the same becomes due and payable, either at maturity or by proceedings for prior redemption, or otherwise;

B. Nonpayment of Interest. Payment of any installment of interest is not made when the same becomes due and payable;

C. Incapable To Perform. The Authority for any reason is rendered incapable of fulfilling its obligations hereunder;

D. Nonperformance of Duties. The Authority fails to carry out and to perform (or in good faith to begin the performance of) all acts and things lawfully required to be carried out or to be performed by it under any contract relating to Pledged Revenues, to the TMWA Water System, or to all or any other combination thereof, or otherwise, including, without limitation this Instrument, and such failure continues for 60 days after receipt of notice directly from the holders of a majority in principal amount of the 2017 Bonds and parity securities then Outstanding or receipt of such notice from such holders is delivered by the Trustee;

E. Failure to Reconstruct. The Authority discontinues or unreasonably delays or fails to carry out with reasonable dispatch the repair, reconstruction, or other replacement of any material part of the TMWA Water System which is destroyed or damaged and is not promptly replaced (whether such failure to replace the same is due to impracticability of such replacement, is due to a lack of moneys therefor, or for any other reason);

F. Appointment of Receiver. An order or decree is entered by a court of competent jurisdiction with the consent or acquiescence of the Authority appointing a receiver or

receivers for the TMWA Water System or for any Pledged Revenues and any other moneys subject to the lien to secure the payment of the 2017 Bonds, or both such TMWA Water System and such moneys, or an order or decree having been entered without the consent or acquiescence of the Authority is not vacated or discharged or stayed on appeal within 60 days after entry; and

G. Default of Any Provision. Except as otherwise provided herein, the Authority makes any default in the due and punctual performance of any other of the representations, covenants, conditions, agreements, and other provisions contained in the 2017 Bonds or in this Instrument on its part to be performed, and such default continues for 60 days after written notice specifying such default and requiring the same to be remedied is given to the Authority directly by the holders of a majority in principal amount of the 2017 Bonds and any parity securities then Outstanding or such notice from such holders is received by the Trustee and delivered to the Authority by the Trustee. If the Authority defaults in performance of the Rate Maintenance Covenant pursuant to Section 1001 hereof, and: (1) the Authority has consulted an Professional Engineer with regard to the steps it should take to increase Net Revenues; (2) the rates and charges collected by the Authority equal or are greater than 100 percent of combined maximum principal and interest requirements; and (3) the Authority is following those recommendations of the Professional Engineer, it does not constitute an event of default as long as such default does not continue for a period of not more than three years.

Section 1304. Remedies for Defaults. Upon the happening of an event of default as provided in subsections A or B of Section 1303 with respect to any 2017 Bond which is insured by the Insurer, the Trustee shall instruct the Paying Agent to proceed as provided in the payment procedures provided by the Insurer. Upon the happening and continuance of any of the events of default, as provided in Section 1303 hereof, then and in every case the holder or holders of not less than a majority in principal amount of the 2017 Bonds and any parity securities then Outstanding or the Trustee therefor may proceed against the Authority and its agents, officers, and employees to protect and to enforce the rights of any holder of 2017 Bonds under this Instrument by mandamus or by other suit, action, or special proceedings in equity or at law, in any court of competent jurisdiction, either for the appointment of a receiver or for the specific performance of any covenant or agreement contained herein or by an award of execution of any power herein granted for the enforcement of any proper, legal, or equitable remedy as such holder or holders may deem most effectual to protect and to enforce the rights aforesaid, or thereto enjoin any act or thing which may be unlawful or in violation of any right of any holder of any 2017 Bond, or to require the Authority to act as if it were the trustee an expressed trust, or any combination of such remedies. All such proceedings at law or in equity shall be instituted, had, and maintained for the equal benefit of all holders of the 2017 Bonds and any parity securities then Outstanding.

Section 1305. Vesting in Trustee Powers of Statutory Trustee. The holders of the 2017 Bonds shall be entitled to the benefits and be subject to the provisions of NRS 350.660, 350.664, and 350.666 (except as hereinafter provided with respect to the method of the appointment of a trustee), and the trustee referred to therein (being the Trustee appointed and confirmed herein) shall have the powers provided by such sections of the Bond Act; the provisions of such sections of the Bond Act (except as to such method of appointment) shall be fully applicable to all Outstanding 2017 Bonds; the right or privilege of such holders to appoint such trustee in the manner provided in

such sections is hereby abrogated; all of the rights, powers, and duties of such trustee shall be and hereby are vested in the Trustee without further act on the part of the holders of the 2017 Bonds; and the Authority shall not interpose, as a defense to any proceedings under such sections of the Bond Act, failure of holders of 2017 Bonds to appoint a trustee in the manner provided in such sections of the Bond Act.

Section 1306. Receiver's Rights and Privileges. Any receiver appointed in any proceedings to protect the rights of such holders hereunder, the consent to any such appointment being hereby expressly granted by the Authority, may enter and take possession of the TMWA Water System, subject to the rights and privileges of any lessee or other user under any lease or other contract, may operate and maintain the same, may prescribe rates, fees, and other charges, and may collect, receive, and apply all Gross Revenues and any other revenues pertaining to the TMWA Water System arising after the appointment of such receiver in the same manner as the Authority itself might do.

Section 1307. Rights and Privileges Cumulative. The failure of any holder of any Outstanding 2017 Bond to proceed in any manner herein provided shall not relieve the Authority, its Board, or any of the Authority's officers, agents, or employees of any liability for failure to perform or carry out any duty, obligation, or other commitment. Each right or privilege of any such holder (or trustee thereof) is in addition and is cumulative to any other right or privilege, and the exercise of any right or privilege by or on behalf of any holder shall not be deemed a waiver of any other right or privilege thereof.

Section 1308. Duties upon Defaults. Upon the happening of any of the events of default as provided in Section 1303 hereof, the Authority, in addition, shall do and perform all proper acts on behalf of and for the holders of the 2017 Bonds, and any parity securities payable from Pledged Revenues to protect and to preserve the security created for the payment of the securities and to insure the payment of the Bond Requirements of the securities promptly as the same become due. During any period of default, so long as any of the securities, as to any Bond Requirements, are Outstanding, all Net Revenues shall be paid into the Bond Fund, and, to the extent such revenues, if any, exceed the Bond Requirements of the Outstanding securities payable from such account, both accrued and to accrue to their respective fixed maturity dates or to any Redemption Date or Redemption Dates pertaining thereto, whichever is earlier, if any, into any like account or like accounts for any Outstanding subordinate securities. If the Authority fails or refuses to proceed as in this Section provided, the holder or holders of not less than a majority in principal amount of the bonds and any parity securities then Outstanding, after demand in writing, may proceed to protect and to enforce the rights of the holders of the securities as hereinabove provided; and to that end any such holders of Outstanding securities shall be subrogated to all rights of the Authority under any agreement, lease, or other contract involving Pledged Revenues, or the TMWA Water System entered into prior to the effective date of this Instrument or thereafter while any such securities are Outstanding.

Section 1309. Duties in Bankruptcy Proceedings. If any lessee or other user of the TMWA Water System proceeds under any laws of the United States relating to bankruptcy, including, without limitation, any action under law providing for corporate reorganization, it shall be

the duty of the Authority and its appropriate officers are hereby authorized and directed to take all necessary steps for the benefit of the holders of the 2017 Bonds and any parity securities in such proceedings, including, without limitation, the filing of any claims for unpaid rates, fees, other charges, and other payments due to the Authority or otherwise arising from the breach of any of the covenants, terms, or conditions of the lease or any other contract pertaining to the TMWA Water System, unless the TMWA Manager or his delegate determines that the costs of such action are likely to exceed the amounts thereby recovered from such obligor.

Section 1310. Prejudicial Action Unnecessary. Nothing in this article requires the Authority to proceed as provided therein if the TMWA Manager or his delegate determines in good faith and without any gross abuse of his discretion that if the Authority so proceeds it is more likely than not to incur a net loss rather than a gain or such action is otherwise likely to affect materially and prejudicially the holders of the Outstanding 2017 Bonds and any Outstanding parity securities.

## ARTICLE XIV

### CONCERNING THE TRUSTEE

Section 1401. Appointment of Trustee. The Bank of New York Mellon Trust Company, N.A. is hereby appointed and confirmed as Trustee. The Trustee shall signify its acceptance of the duties and obligations imposed upon it by this Instrument by executing the certificate of authentication endorsed upon the 2017 Bonds; and the Trustee shall be deemed to have accepted such duties and obligations not only with respect to the 2017 Bonds so authenticated, but also with respect to all the 2017 Bonds thereafter to be issued hereunder.

Section 1402. Property Held in Trust. All moneys and securities held by the Trustee at any time pursuant to the terms of this Instrument shall be and hereby are assigned, transferred, and set over unto such Trustee in trust for the purposes and under the terms and conditions on this Instrument.

Section 1403. Deposit and Security of Funds. Subject to the provisions of Sections 602 and 603 hereof, all moneys (not including securities) held by the Trustee may, subject to the provisions of this Section, be deposited by the Trustee in demand or time deposit in its banking department, the banking department of any of the Trustee's affiliates, or with such other Banking Institutions as may be designated by the Authority. No such moneys shall be deposited with any Banking Institution, other than the Trustee or an affiliate of the Trustee, in an amount exceeding 50% of the amount which an officer of such bank shall certify to the Trustee and to the Authority as the combined capital and surplus of such bank. No such moneys shall be deposited or remain on deposit with any Banking Institution, including the Trustee and its affiliates, in excess of the amount guaranteed by the Federal Deposit Insurance Corporation or other Federal agency:

A. Pledge of Collateral Security. Unless such bank shall have lodged with the corporate trust department of the Trustee or, with the written approval of the Trustee and of the Authority, pledged to some other Banking Institution for the benefit of the Authority and every holder of any 2017 Bond issued hereunder, as collateral security for the moneys deposited, Federal Securities or such securities as are provided by law for securing a deposit in a Banking Institution in the State of cities and towns in the State, having a market value (exclusive of accrued interest) at least equal to 110% of the amount of such moneys; or

B. Surety Bond. Unless, in lieu of such collateral security as to all or any part of such moneys, there shall have been lodged with the corporate trust department of the Trustee for the benefit of the Authority and every holder of any 2017 Bond issued hereunder, and remain in full force and effect as security for such moneys or part thereof, the indemnifying bond or bonds of a surety company or companies qualified as surety for deposits of funds of the United States and qualified to transact business in the state in which such Banking Institution is located in a sum at least equal to the amount of such moneys or part thereof.

The Trustee shall allow and credit interest on any such moneys held by it at such rate as it customarily allows upon similar funds of similar size and under similar conditions or as required

by law. Interest or any other gain in respect of moneys or on securities in any account shall be credited in accordance with the provisions of article VI hereof.

Section 1404. Basic Duties of Trustee.

A. General Duties. The Trustee undertakes, prior to default, and after the curing of all defaults which may have occurred, to perform such duties and only such duties as are specifically set forth in this Instrument and, in case of an event of default (which has not been cured) to exercise such of the rights and powers vested in it by this Instrument and to use the same degree of care and skill in their exercise, as a prudent man would exercise or use under the circumstances in the conduct of his own affairs, except as herein otherwise expressly provided. The Trustee, upon receipt of evidence furnished to it by or on behalf of the Authority pursuant to any provision of this Instrument shall examine the same to determine whether or not such evidence conforms to the requirements of this Instrument.

B. Duties to Provider of Qualified Surety Bond.

(1) In the event of nonpayment of the principal of or interest on the bonds when due, the Trustee shall immediately:

(a) notify the Authority by telephone, confirmed in writing by registered or certified mail, of the amount of the deficiency and of the Trustee's intent to demand payment from the provider of a Qualified Surety Bond; and

(b) deliver a demand for payment to the provider of a Qualified Surety Bond in the form and in the manner required by the terms of the Qualified Surety Bond and the agreement between the Authority and the provider of the Qualified Surety Bond.

(2) The Trustee must maintain adequate records, verified with the provider of a Qualified Surety Bond and the Authority as to:

(a) the amount available to be drawn under the Qualified Surety Bond;

(b) any amounts paid under the Qualified Surety Bonds; and

(c) any amounts owed to the provider of the Qualified Surety Bond under the terms of the agreement between the Authority and the provider of the Qualified Surety Bond.

Section 1405. Trustee's Conduct. Except as herein otherwise expressly provided, no provision of this Instrument relieves the Trustee from liability for its own negligent action, its own negligent failure to act, or its own willful misconduct, except that:

A. Absence of Implied Duties. Prior to default hereunder and after the curing of all defaults which may have occurred, the Trustee shall not be liable except for the performance of such duties as are specifically set out in this Instrument, and no implied covenants or obligations shall be read into this Instrument against the Trustee, but the duties and obligations of the Trustee, prior to default and after curing of all defaults which may have occurred, shall be determined solely by the express provisions of this Instrument;

B. Reliance Upon Instruments. Prior to default hereunder and after the curing of all defaults which may have occurred, and in the absence of bad faith on the part of the Trustee, the Trustee may conclusively rely as to the truth of the statements and the correctness of the opinions expressed therein, upon certificates, opinions, or other instruments conforming to the requirements of this Instrument;

C. No Liability for Mere Error of Judgment. The Trustee shall not be personally liable for any error of judgment made in good faith by a responsible officer or officers of the Trustee, unless it shall be proven that the Trustee was negligent in ascertaining the pertinent facts or in the performance of an expressed duty;

D. Action Directed by Bondholders. The Trustee shall not be personally liable with respect to any action taken or omitted to be taken by it in good faith in accordance with the direction of the holders of not less than a majority in principal amount of the 2017 Bonds and parity securities then Outstanding relating to the time, method, and place of conducting any proceeding for any remedy available to the Trustee, or exercising any trust or power conferred upon the Trustee under this Instrument;

E. Incurrence of Personal Liabilities. The Trustee shall not be required to advance or expend or use its own funds or otherwise incur personal financial liability in the performance of any of its duties or in the exercise of any of its rights or powers, if the repayment of such funds or liability is not assured to it by the security afforded it by the terms of this Instrument or by other security or indemnity reasonably satisfactory to the Trustee;

F. Limited Liability Concerning Bonds. The Trustee shall not be under any responsibility or duty with respect to the disposition by the Authority of the 2017 Bonds or the application by the Authority of the proceeds thereof or of any moneys paid to the Authority under any of the provisions hereof, except to the extent that such proceeds are paid to the Trustee in its capacity as Trustee or Paying Agent. The Trustee shall have no responsibility or liability with respect to any information, statement or recital in any offering memorandum or other disclosure material prepared or distributed with respect to the issuance of the Bonds; and

G. Cost of Execution or Enforcement of Trusts. The Trustee, in the case of any default hereunder, shall not be under any obligation to take any action toward the execution or enforcement of the trusts created by this Instrument, which, in the opinion of the Trustee, will likely involve it in expense or liability, unless one or more of the holders of 2017 Bonds shall, as often as

required by the Trustee, furnish to the Trustee security and indemnity satisfactory to the Trustee against such expense or liability.

Section 1406. Recitals of Fact and Representations. The recitals of fact contained herein and in the bonds (other than the Trustee's certificate of authentication) shall be taken as the statements of the Authority, and the Trustee assumes no responsibility for the correctness of the same. The Trustee makes no representations as to the validity of this Instrument or of the 2017 Bonds issued thereunder.

Section 1407. Entry upon TMWA Water System. The Trustee shall not be personally liable in case of entry by it upon the TMWA Water System for debts contracted or liability or damages incurred in the management or operation of the properties comprising the TMWA Water System.

Section 1408. Further Permitted Reliance. To the extent permitted by Sections 1404 and 1405:

A. Reliance upon Documents. The Trustee may rely and shall be protected in acting upon any resolution, certificate, opinion, notice, request, consent, order, appraisal, report, bond, or other paper or document believed by it to be genuine and to have been signed or presented by the proper party or parties;

B. Reliance upon Counsel. The Trustee may consult with counsel and the opinion of such counsel shall be full and complete authorization and protection in respect of any action taken or suffered by it hereunder in good faith and in accordance with the opinion of such counsel; and

C. Reliance upon Assistants. Whenever this Instrument provides for certain action to be taken or a certain document shall be executed and forwarded to the Trustee or otherwise by a designated official and such action is taken or such document is executed and so forwarded by the assistant to such official or by an acting official so designated, the Trustee may conclusively assume that the designated official is unable to act in such capacity at such time and the assistant or acting official is then authorized to take such action or to execute and so forward such document, as the case may be; and the Trustee may rely upon such action or document.

Section 1409. Other Immunities. The Trustee shall not be under any responsibility for the approval of any expert for any of the purposes expressed in this Instrument, but nothing in this Section contained shall relieve the Trustee of its obligation to exercise reasonable care with respect to the approval of independent experts who may furnish opinions or certificates to the Trustee pursuant to any provision of this Instrument. Any instrument of the Board shall be evidenced to the Trustee by a copy thereof certified by the Secretary of the Authority to have been duly adopted, and the Trustee may accept such copy as conclusive evidence of the adoption of such instrument. Nothing contained in this Section modifies the obligation of the Trustee to exercise after default the rights and powers vested in it by this Instrument with the degree of care and skill

specified in Section 1404. No surety bond or other security shall be required of the Trustee unless ordered by a court having jurisdiction and for cause shown.

Section 1410. Permitted Transactions with Authority. The Trustee, the affiliates of the Trustee, any paying agent, and any other Banking Institution to which this Instrument pertains may buy, hold, sell or deal in, or be a pledgee of the bonds and any other securities of the Authority and may engage or be interested in any financial or other transaction with the Authority, all as freely as if they were not Trustee, paying agent, or such other bank hereunder.

Section 1411. Commingling of Moneys. Except as herein otherwise provided, all moneys received by the Trustee, whether as Trustee or otherwise, until used or applied as herein provided, shall be held in trust for the purposes for which they were paid, but need not be segregated from other moneys except to the extent required by law, unless herein otherwise expressly provided.

Section 1412. Compensation of Trustee. The Authority covenants and agrees to pay to the Trustee from time to time, and the Trustee shall be entitled to, reasonable compensation for all services rendered by it in the execution of the trusts hereby created and in the exercise and performance of any of the powers and duties hereunder of the Trustee, which compensation shall not be limited by any provision of law in regard to the compensation of a trustee of an express trust; and the Authority will pay to the Trustee from time to time its expenses and disbursements (including, without limitation, reasonable compensation and the expenses, charges, counsel fees, and other disbursements of its counsel, officers, employees, other agents, and of all other Persons not regularly in the Trustee's employ). The Authority also covenants to indemnify the Trustee for, and to hold it harmless against, any loss, liability, or expense incurred without negligence or bad faith on the part of the Trustee, arising out of or in connection with the acceptance or administration of this trust, including the costs and expenses of defending against any claim of liability in the premises. The obligations of the Authority to the Trustee under this Section shall constitute additional obligations secured by the lien of this Instrument, and shall be defrayed as Operation and Maintenance Expenses.

Section 1413. Preference in Event of Defaults. In order to further assure the Trustee that it will be compensated, reimbursed, and indemnified, all parties to this Instrument agree, and hereafter each holder of any bond and any other security hereafter authorized and payable from Pledged Revenues by his acceptance thereof shall be deemed to have agreed that in the event of the occurrence of any one or more of the events of default mentioned in Section 1303 hereof, the Trustee may file from time to time in any proceeding or proceedings one or more claims, supplemental claims, and amended claims as a creditor for its reasonable compensation for all services rendered by it (including services rendered during the course of any such proceeding or proceedings) and for reimbursement as Operation and Maintenance Expenses for all advances, expenses, and disbursements (including the reasonable compensation and the expenses and disbursements of its counsel and of all other Persons not regularly in its employ) made or incurred by it in the execution of the trusts hereby created and in the exercise and performance of any of the powers and duties herein of the Trustee, and for any and all amounts to which the Trustee is entitled as indemnity; and the Trustee and its counsel and agents may file in any such proceeding or proceedings applications or petitions for compensation for such services rendered, for reimbursement for such advances, expenses, and disbursements, and for such indemnity, as such Operation and Maintenance Expenses.

Section 1414. Adjustment and Allowance of Claims. The claim or claims of the Trustee filed in any such proceeding or proceedings shall be reduced by the amount of compensation for services, reimbursement for advances, expenses, and disbursements, and indemnity paid to it following final allowance to it and to its counsel and agents by the court in any such proceedings as an expense of administration or in connection with a plan of reorganization or readjustment. To the extent that compensation, reimbursement, and indemnity are denied to the Trustee or to its counsel or its other agents because of not being rendered or incurred in connection with the administration of an estate in a proceeding or in connection with a plan of reorganization or readjustment approved as required by law, because such services were not rendered in the interests of and with benefit to the estate of the Authority as a whole but in the interest of and with benefit to the holders of the 2017 Bonds and any other securities hereafter authorized and payable from Pledged Revenues in the execution of the trusts hereby created or in the exercise and performance of any of the powers and duties hereunder of the Trustee, or because of any other reason, the court may, to the extent permitted by law, allow such claim, as supplemented and amended, in any such proceeding or proceedings and for the purposes of any plan of reorganization or readjustment of the Authority's obligations, may classify the Trustee as a creditor of a class having priority for the payment of the Operation and Maintenance Expenses, and precedence over the class in which the holders of the 2017 Bonds and any such securities are placed. The amount of the claim or claims of the Trustee for services rendered and for advances, expenses, and disbursements, including the reasonable compensation and the expenses and disbursements of its counsel and of all Persons not regularly in its employ which are not allowed and paid in any such proceeding, but for which the Trustee is entitled to the allowance of a claim as herein provided may be fixed by the court or judge in any such proceeding or proceedings to the extent that such court or judge has or exercises jurisdiction over the amount of any such claim or claims.

Section 1415. Certificates of Officers and Experts. Whenever in the administration of the trusts of this Instrument, prior to a default hereunder, the Trustee shall deem it necessary or desirable that a matter be proved or established prior to taking or suffering any action hereunder, such matter (unless other evidence in respect thereof be herein specifically prescribed), subject to the provisions of Sections 1404 and 1405, may be deemed to be prima facie proved and established by a certificate signed by an Authority officer, or may be deemed to be conclusively proved and established by a certificate signed by the Chairman or Vice Chairman and Secretary or Treasurer of the Board and delivered to the Trustee, and any such certificate so conclusively proved shall be full warrant to the Trustee for any action taken or suffered by it under the provisions of this Instrument upon the faith thereof. Likewise, all appraiser's certificates, engineer's certificates, independent appraiser's certificates, independent engineer's certificates, officers' certificates, and other certificates or instruments herein provided to be given to the Trustee, shall be full warrant and protection to the Trustee, subject to the provisions of Sections 1404 and 1405 hereof, for any action or non-action taken or suffered by it under the provisions of this Instrument upon the faith thereof. Whenever it is provided in this Instrument that the Trustee shall take any action upon the happening of a specified event or upon the fulfillment of any condition or upon the request of the Authority or of any holder of any 2017 Bond, the Trustee shall have full power to give any and all notices and to do any and all acts and things incident to such action.

Section 1416. Resignation of Trustee. The Trustee, or any successor thereof, may at any time resign and be discharged of its duties and obligations hereunder by giving not less than 60 days written notice to the Authority. Such resignation shall take effect upon the day specified in such notice unless previously a successor shall have been appointed by the Authority or holders of 2017 Bonds as herein provided, in which event such resignation shall take effect immediately on the appointment of such successor.

Section 1417. Removal of Trustee. The Trustee, or any successor thereof, may be removed at any time by the Authority, as designated by the TMWA Manager or the Chief Financial Officer, as long as the Authority is not in default pursuant to the terms of this Instrument or any other instrument authorizing the issuance of parity securities, and at any time by the holders of a majority in principal amount of the 2017 Bonds and any other bonds payable from Pledged Revenues then Outstanding, which payment is secured by a lien on such revenues, excluding any such bonds held by or for the account of the Authority, by an instrument or concurrent instruments in writing signed and acknowledged by such holders of bonds or by their attorneys-in-fact duly authorized and delivered to the Authority. Copies of each such instrument shall be delivered by the Authority to the Trustee and to any successor thereof.

Section 1418. Successor Trustee. In case the Trustee, or any successor thereof, shall resign or shall be removed or shall become incapable of acting or shall be adjudged a bankrupt or insolvent, or if a receiver, liquidator, or conservator thereof or of its property shall be appointed, or if any public officer shall take charge or control thereof or of its property or affairs, a successor may be appointed by the Authority, as designated by the TMWA Manager or the Chief Financial Officer, or in the case of removal of the Trustee by the holders, a successor may be appointed by the holders of a majority in principal amount of the then Outstanding 2017 Bonds and any other parity bonds payable from Pledged Revenues, which payment is secured by a lien on such revenues, excluding any such bonds held by or for the account of the Authority, by an instrument or concurrent instruments in writing signed and acknowledged by such holders of such parity bonds or by their attorneys-in-fact duly authorized and delivered to the Authority. Pending such appointment by holders of such bonds, the Authority shall forthwith appoint a successor to act until such appointment is made by the holders of such bonds. Copies of each such instrument and of any instrument of the Authority providing for any such appointment shall be delivered by the Authority to the successor and to the predecessor Trustee. If no appointment of a successor shall be made within 30 days after the Trustee has been removed or resigned or after the occurrence of any other event requiring or authorizing such appointment, any holder of such parity bonds or the trustee of such bonds may apply to any court of competent jurisdiction for the appointment of such a successor, and the court thereupon after such notice, if any, as the court may deem proper and may prescribe, may appoint such successor. Any successor appointed under the provisions of this Section shall be a trust bank and willing and able to accept the appointment on reasonable and customary terms and authorized by law to perform all the duties required by this Instrument.

Section 1419. Transfer of Rights and Property. Any successor appointed under the provisions of Section 1418 of this Instrument shall execute, acknowledge, and deliver to its predecessor and also to the Authority an instrument accepting such appointment; and thereupon such successor, without any further act, deed, or conveyance, shall become fully vested with all moneys,

estates, properties, rights, powers, duties, and obligations of its predecessor hereunder, with like effect as if originally appointed herein as Trustee; but the Trustee then ceasing to act shall, nevertheless, on request by the Authority or by such successor, execute, acknowledge, and deliver such instruments of conveyance and further assurance and such other things as may reasonably be required for more fully and certainly vesting and confirming in such successor all the right, title, and interest of such Trustee in and to any property held by it hereunder and shall pay over, assign, and deliver to such successor any money or other property subject to the trusts and conditions herein set forth. If any deed, conveyance, or instrument in writing from the Authority is required by such successor for more fully and certainly vesting in and confirming to it any such moneys, estates, properties, rights, powers, duties, or obligations, any and all such deeds, conveyances, and instruments in writing shall on request and so far as may be authorized by law be executed, acknowledged, and delivered to the Authority by the Trustee originally appointed herein.

Section 1420. Merger or Consolidation. Any company in which the Trustee may be merged or with which it may consolidate or any company resulting from any merger or consolidation to which it shall be a party or any company to which the Trustee may sell or transfer all or substantially all of its corporate trust business, if such company is a trust bank qualified to be a successor to the Trustee under the provisions of Section 1418 hereof, shall be the successor to the Trustee without any further act, deed, or conveyance.

Section 1421. Electronic Instructions. The Trustee shall have the right to accept and act upon instructions, including funds transfer instructions ("Instructions") given pursuant to this Instrument and delivered using Electronic Means ("Electronic Means" means the following communications methods: S.W.I.F.T., e-mail, facsimile transmission, secure electronic transmission containing applicable authorization codes, passwords and/or authentication keys issued by the Trustee, or another method or system specified by the Trustee as available for use in connection with its services hereunder); provided, however, that the Authority, shall provide to the Trustee an incumbency certificate listing officers with the authority to provide such Instructions ("Authorized Officers") and containing specimen signatures of such Authorized Officers, which incumbency certificate shall be amended by the Authority, whenever a person is to be added or deleted from the listing. If the Authority elects to give the Trustee Instructions using Electronic Means and the Trustee in its discretion elects to act upon such Instructions, the Trustee's understanding of such Instructions shall be deemed controlling. If the Trustee elects not to act upon such Instructions, the Trustee shall notify the Authority. The Authority understands and agrees that the Trustee cannot determine the identity of the actual sender of such Instructions and that the Trustee shall conclusively presume that directions that purport to have been sent by an Authorized Officer listed on the incumbency certificate provided to the Trustee have been sent by such Authorized Officer. The Authority shall be responsible for ensuring that only Authorized Officers transmit such Instructions to the Trustee and the Authority and all Authorized Officers are solely responsible to safeguard the use and confidentiality of applicable user and authorization codes, passwords and/or authentication keys upon receipt by the Authority. The Trustee shall not be liable for any losses, costs or expenses arising directly or indirectly from the Trustee's reliance upon and compliance with such Instructions notwithstanding such directions conflict or are inconsistent with a subsequent written instruction. The Authority agrees: (i) to assume all risks arising out of the use of Electronic Means to submit Instructions to the Trustee, including without limitation the risk of the Trustee acting on

unauthorized Instructions, and the risk of interception and misuse by third parties; (ii) that it is fully informed of the protections and risks associated with the various methods of transmitting Instructions to the Trustee and that there may be more secure methods of transmitting Instructions than the method(s) selected by the Authority; (iii) that the security procedures (if any) to be followed in connection with its transmission of Instructions provide to it a commercially reasonable degree of protection in light of its particular needs and circumstances; and (iv) to notify the Trustee immediately upon learning of any compromise or unauthorized use of the security procedures.

Section 1422. Force Majeure. The Trustee shall not be considered in breach of or in default in its obligations hereunder or progress in respect thereto in the event of enforced delay in the performance of such obligations due to unforeseeable causes beyond its control and without its fault or negligence, including, but not limited to, Acts of God, terrorism, war, riots, strikes, fire, floods, earthquakes, epidemics or other like occurrences beyond the control of the Trustee; it being understood that the Trustee shall use reasonable efforts which are consistent with accepted practices in the banking industry to resume performance as soon as practicable under the circumstances.

## ARTICLE XV

AMENDMENT OF INSTRUMENT

Section 1501. Privilege of Amendments. This Instrument may be amended as provided in Section 1510 hereof without the need of obtaining consent of any of the holders of the 2017 Bonds. The "Regular Record Date" as defined in Section 302 hereof may be changed by the Authority without the need of obtaining consent of any holders of the 2017 Bonds if the Authority receives the consent of the securities depository then holding the 2017 Bonds pursuant to Section 302 hereof, if any, and if the Authority gives to the registered owner of each 2017 Bond a notice of change in the Regular Record Date, if a securities depository is the registered owner of the 2017 Bonds, by registered or certified mail, and otherwise, by first class mail, not less than six months before the first interest payment date to which the changed Regular Record Date will be applicable. In addition, except for supplemental instruments adopted pursuant to Section 712 hereof which do not expressly or impliedly amend or otherwise modify this Instrument, and except as provided in Section 1502 hereof, this Instrument may be amended or supplemented by instruments adopted by the Board in accordance with the laws of the State, without receipt by the Authority of any additional consideration, but, subject to the provisions of Section 1209 hereof, with the written consent of the Insurer of the Bonds, if any, or the holders of 66% in aggregate principal amount of the 2017 Bonds and parity securities Outstanding at the time of the adoption of such amendatory or supplemental instrument, excluding, pursuant to paragraph (5), Section 102(B) hereof, any 2017 Bonds which may then be held or owned for the account of the Authority, but including such refunding securities as may be issued for the purpose of refunding any of the 2017 Bonds if such refunding securities are not owned by the Authority.

Section 1502. Limitations upon Amendments. Notwithstanding the provisions of Section 1209(A) of this Instrument, no such instrument shall permit without the consent of the Insurer, if any, and the beneficial owners of the 2017 Bonds affected thereby:

A. Changing Payment. A change in the maturity or in the terms of redemption of the principal of any Outstanding 2017 Bond or any installment of interest thereon; or

B. Reducing Return. A reduction in the principal amount of any 2017 Bond, the rate of interest thereon, or any prior redemption premium payable in connection therewith; or

C. Prior Lien. The creation of a lien upon or a pledge of revenues ranking prior to the lien or the pledge created by this Instrument; or

D. Modifying Limitations upon Modifications. A reduction of the principal amount or percentages or otherwise affecting the description of 2017 Bonds or the consent of the holders of which is required for any such amendment or other modifications; or

E. Priorities Between Bonds. The establishment of priorities as between 2017 Bonds issued and Outstanding under the provisions of this Instrument; or

F. Partial Modification. Materially and prejudicially modifying or otherwise materially and prejudicially affecting the rights or privileges of the holders of less than all of the 2017 Bonds then Outstanding.

Section 1503. Notice of Amendment. Whenever the Board proposes to amend or modify this Instrument under the provisions of this article, it shall cause notice of the proposed amendment to be mailed within 30 days to the Trustee and the Insurer of the Bonds, if any, or each holder of the Outstanding 2017 Bonds and any parity securities. Such notice shall briefly set forth the nature of the proposed amendment and shall state that a copy of the proposed amendatory instrument is on file in the office of the Secretary for public inspection.

Section 1504. Time for Amendment. Whenever at any time within one year from the date of the mailing of such notice, there shall be filed in the office of the Secretary an instrument or instruments executed by the insurer of the Bonds, if any, or the holders of at least 66% in the aggregate principal amount of the 2017 Bonds and any parity securities then Outstanding, which instrument or instruments shall refer to the proposed amendatory instrument described in such notice shall specifically consent to and approve the adoption of such instrument, thereupon, but not otherwise, the Board may adopt such amendatory instrument and such instrument shall become effective.

Section 1505. Binding Consent to Amendment. If the insurer of the Bonds, if any, or the holders of at least 66% in the aggregate principal amount of the 2017 Bonds and parity securities then Outstanding, at the time of the adoption of such amendatory instrument, or the predecessors in title of such holders, shall have consented to and approved the adoption thereof as herein provided, no insurer of the Bonds or holder of any bond whether or not such holder shall have consented to or shall have revoked any consent as in this article provided, shall have any right or interest to object to the adoption of such amendatory instrument or to object to any of the terms or provisions therein contained or to the operation thereof or to enjoin or restrain the Authority from taking any action pursuant to the provisions thereof.

Section 1506. Time Consent Binding. Any consent given by the holder of a 2017 Bond and any parity securities pursuant to the provisions of this article shall be irrevocable for a period of 6 months from the date of the mailing of the notice above provided for in Section 1503 and shall be conclusive and binding upon all future holders of the same bond during such period. Such consent may be revoked at any time after 6 months from the date of such mailing of such notice, by the holder who gave such consent or by a successor in title by filing notice of such revocation with the Secretary, but such revocation shall not be effective if the holders of 66% in aggregate principal amount of the bonds Outstanding as in this article provided, prior to the attempted revocation, consented to and approved the amendatory instrument referred to in such revocation.

Section 1507. Unanimous Consent. Notwithstanding anything in the foregoing provisions of this article, the terms and the provisions of this Instrument or of any instrument amendatory thereof or supplemental thereto and the rights and the obligations of the Authority and of the holders of the 2017 Bonds may be amended or otherwise modified in any respect upon the adoption by the Authority and upon the filing with the Secretary of an instrument to that effect and

with the consent of the holders of all the then Outstanding 2017 Bonds, such consent to be given as provided in Section 1204 hereof; and no notice to holders of 2017 Bonds shall be required as provided in Section 1503 hereof, and the time of consent shall not be limited except as may be provided in such consent.

Section 1508. Exclusion of Authority's Bonds. At the time of any consent or of other action taken under this article, the Authority shall furnish to the Secretary a certificate of the Treasurer, upon which the Authority may rely, describing all bonds to be excluded, for the purpose of consent or of other action or of any calculation of Outstanding bonds provided for in this article, and the Authority shall not be entitled with respect to such bonds to give any consent or to take any other action provided for in this article, pursuant to paragraph (5) of Section 102(B) hereof.

Section 1509. Notation on Bonds. Bonds authenticated and delivered after the effective date of any action taken as in this article provided may bear a notation by endorsement or otherwise in form approved by the Board as to such action; and if such Bonds so authenticated and delivered shall bear such notation, then upon demand of the holder of any Bond Outstanding at such effective date and upon presentation of his Bond for the purpose at the principal office of the Secretary, suitable notation shall be made on such Bond by the Secretary as to any such action. If the Board so determines, new Bonds so modified as in the opinion of the Board to conform to such action shall be prepared, authenticated, and delivered; and upon demand of the holder of any Bond then Outstanding, exchanged without cost to such holder for Bonds then Outstanding upon surrender of such Bonds.

Section 1510. Amendments Not Requiring Consent. The Authority, acting by and through the Board, and the Trustee, notwithstanding the provisions of other sections of this article, and without the consent of or notice to the insurer of the Bonds, if any, or any holder of any 2017 Bond, shall consent to any amendment, change, or modification of this Instrument as required:

- A. Bond Resolution. By the provisions of this Instrument,
- B. Curing Defects. For the purpose of curing any ambiguity or formal defect or omission herein,
- C. Additional Securities. In connection with the issuance and delivery of additional bonds or other securities payable from the Net Revenues, or
- D. Other Change. In connection with any other change herein which, in the judgment of the Trustee and in the opinion of bond counsel to the Authority, is not to the prejudice of the Trustee, the Insurer of the Bonds, if any, or the holders of the 2017 Bonds or any parity securities then Outstanding.

**PASSED, APPROVED AND ADOPTED BY AT LEAST A TWO-THIRDS  
MAJORITY OF THE BOARD OF DIRECTORS OF THE TRUCKEE MEADOWS WATER  
AUTHORITY ON THIS FEBRUARY 15, 2017.**

---

Chairman

(SEAL)

Attest:

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Secretary

STATE OF NEVADA )  
 ) ss.  
 COUNTY OF WASHOE )  
 )  
 TRUCKEE MEADOWS )  
 WATER AUTHORITY )

I am the duly chosen, qualified, and acting Secretary of the Truckee Meadows Water Authority and of its Board of Directors (herein the "Authority" and the "Board," respectively), the Authority being situate in the County of Washoe and State of Nevada, do hereby certify:

1. The foregoing pages together with the Exhibits appended thereto constitute a true, correct, complete, and compared copy of the "2017 Refunding Bond Resolution," introduced, passed, and adopted at a meeting of the Board held on February 15, 2017.

2. The original of the 2017 Refunding Bond Resolution has been approved and authenticated by the signatures of the Chairman of the Board and myself as Secretary, and sealed with the seal of the Authority, and has been recorded in the minute book of the Board kept for that purpose in the Authority's office, which record has been duly signed by such officers and properly sealed.

3. At least two-thirds of the Directors voted on the passage of such instrument as follows:

Those Voting Aye:

Jenny Brekhus  
 Naomi Duerr  
 Vaughn Hartung  
 Jeanne Herman  
 Neoma Jardon  
 Geno Martini  
 Ron Smith

Those Voting Nay:

\_\_\_\_\_

Those Absent:

\_\_\_\_\_

4. The foregoing proceedings were in fact held as in such minutes specified as originally of record in my possession.

5. All members of the Board were given due and proper notice of the meeting. Pursuant to NRS 241.020, written notice of the meeting was given at least 3 working days before the meeting, including in the notice the time, place, location, and agenda of the meeting;

(a) By giving a copy of the notice to each member of the Board,

(b) By posting a copy of the notice on the Authority's website; on the State of Nevada's official website; at the principal office of the Board, or if there is no principal office, at the building in which the meeting is to be held; and at least 3 other separate, prominent places within the jurisdiction of the Board, to wit:

- (i) Truckee Meadows Water Authority  
1355 Capital Boulevard  
Reno, Nevada 89502
- (ii) Reno City Hall  
1 E. First Street  
Reno, Nevada 89505
- (iii) Sparks City Hall  
431 Prater Way  
Sparks, Nevada 89431
- (iv) Sparks Justice Court  
1675 E. Prater Way  
Sparks, Nevada 89434
- (v) Washoe County Administration Complex  
1001 E. Ninth Street  
Reno, Nevada 89512
- (vi) Washoe County Courthouse  
75 Court St.  
Reno, Nevada 89501
- (vii) Washoe County Central Library  
301 South Center St.  
Reno, Nevada 89501

(c) By giving a copy of the notice to each person, if any, who has requested notice of the meetings of the Board in accordance with the provisions of Chapter 241 of NRS.

6. A true, correct, complete, and compared copy of the notice so given of the meeting of the Board is attached to this certificate as Exhibit A.

7. No other proceedings were adopted and no other action was taken or considered at such meeting pertaining to the proposed bonds.

**IN WITNESS WHEREOF**, I have hereunto set my hand and seal of the Truckee Meadows Water Authority, on this February 15, 2017.

(SEAL)

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Secretary

**EXHIBIT A**

**(Attach Copy of Notice of Meeting)**



**TRUCKEE MEADOWS WATER AUTHORITY**  
**Board of Directors**

**AGENDA**

**Wednesday, February 15, 2017 at 10:00 a.m.**  
**Sparks Council Chambers, 745 4<sup>th</sup> Street, Sparks, NV**

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**Board Members**

Chair Geno Martini	Vice Chair Vaughn Hartung
Member Neoma Jardon	Member Jeanne Herman
Member Jenny Brekhus	Member Naomi Duerr
Member Ron Smith	

**NOTES:**

1. The announcement of this meeting has been posted at the following locations: Truckee Meadows Water Authority (1355 Capital Blvd., Reno), Reno City Hall (1 E. First St., Reno), Sparks City Hall (431 Prater Way, Sparks), Sparks Justice Court (1675 E. Prater Way, Sparks), Washoe County Courthouse (75 Court St., Reno), Washoe County Central Library (301 South Center St., Reno), Washoe County Administration (1001 East Ninth St., Reno), at <http://www.tmwa.com>, and State of Nevada Public Notice Website, <https://notice.nv.gov/>.
2. In accordance with NRS 241.020, this agenda closes three working days prior to the meeting. We are pleased to make reasonable accommodations for persons who are disabled and wish to attend meetings. If you require special arrangements for the meeting, please call 834-8002 before the meeting date.
3. The Board may elect to combine agenda items, consider agenda items out of order, remove agenda items, or delay discussion on agenda items. Arrive at the meeting at the posted time to hear item(s) of interest.
4. Asterisks (\*) denote non-action items.
5. Public comment is limited to three minutes and is allowed during the public comment periods. The public may sign-up to speak during the public comment period or on a specific agenda item by completing a "Request to Speak" card and submitting it to the clerk. In addition to the public comment periods, the Chairman has the discretion to allow public comment on any agenda item, including any item on which action is to be taken.
6. In the event the Chairman and Vice-Chairman are absent, the remaining Board members may elect a temporary presiding officer to preside over the meeting until the Chairman or Vice-Chairman are present (**Standing Item of Possible Action**).
7. Notice of possible quorum of Western Regional Water Commission: Because several members of the Truckee Meadows Water Authority Board of Directors are also Trustees of the Western Regional Water Commission, it is possible that a quorum of the Western Regional Water Commission may be present, however, such members will not deliberate or take action at this meeting in their capacity as Trustees of the Western Regional Water Commission.

1. Roll call\*
2. Pledge of allegiance\*
3. Public comment — limited to no more than three minutes per speaker\*
4. Approval of the agenda (**For Possible Action**)
5. Approval of the minutes of the January 18, 2017 meeting of the TMWA Board of Directors (**For Possible Action**)

<sup>1</sup> The Board may adjourn from the public meeting at any time during the agenda to receive information from legal counsel regarding potential or existing litigation and to deliberate toward a decision on such matters.

## Truckee Meadows Water Authority Board of Directors Agenda for February 15, 2017

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6. Water Supply Update — Bill Hauck\*
7. Discussion and possible action and direction to staff regarding 2017 legislative activities, current bills, and TMWA recommended positions on legislative proposals— John Zimmerman and Steve Walker, Walker & Associates **(For Possible Action)**
8. Discussion and action on appointment or reappointment of four persons to the Board of Trustees of the Western Regional Water Commission consisting of one TMWA Board member each from: the Reno City Council, Sparks City Council, Washoe County Board of Commissioners, and one person to represent TMWA as successor to South Truckee Meadows General Improvement District, from the following list of eligible persons: Jenny Brekhus, Jeanne Herman, Neoma Jardon, Bob Lucey, Ron Smith, for two-year terms ending March 31, 2019 — Mark Foree **(For Possible Action)**
9. Presentation of Financial Performance for First Half Fiscal Year 2017 — Michele Sullivan, Tabitha Carlisle\*
10. Discussion and action on adoption of Resolution No. 248: A resolution designated by the short title “2017 refunding bond resolution” authorizing the issuance by the authority of its “Truckee Meadows Water Authority, Water Revenue Refunding Bonds, Series 2017,” for the purpose of defraying wholly or in part the cost of refunding certain outstanding bonds; providing the form, terms, and conditions of the bonds and the security therefor; providing for the collection and disposition of revenues derived from the operation of the authority’s water system; pledging such revenues to the payment of the bonds; providing other covenants, agreements, details and other matters relating thereto — Michele Sullivan **(For Possible Action)**
11. Discussion and action regarding appointment of, and possible approval of contract with, Tami Fruhwirth as TMWA’s Ombudsman — Andy Gebhardt **(For Possible Action)**
12. General Manager’s Report\*
13. Public comment — limited to no more than three minutes per speaker\*
14. Board comments and requests for future agenda items\*
15. Adjournment **(For Possible Action)**

<sup>1</sup>. The Board may adjourn from the public meeting at any time during the agenda to receive information from legal counsel regarding potential or existing litigation and to deliberate toward a decision on such matters.

**EXHIBIT B**

**(Attach Certificate of TMWA Manager and Report of the Authority's Financial Advisor)**

**TRUCKEE MEADOWS WATER AUTHORITY  
WATER REVENUE REFUNDING BONDS  
SERIES 2017**

CERTIFICATE OF GENERAL MANAGER PURSUANT TO NRS 350.155

IT IS HEREBY CERTIFIED by the undersigned, General Manager, as the chief administrative officer of the Truckee Meadows Water Authority (the "Authority"), in connection with the sale and issuance of the Truckee Meadows Water Authority, Water Revenue Refunding Bonds, Series 2017 (the "Bonds"), being issued for the purposes described in the resolution of the Board of Directors of the Authority to be considered for adoption on February 15, 2017, authorizing the issuance of the Bonds:

1. As described in the report of Hobbs Ong & Associates and Public Financial Management, Inc., as financial advisors to the Authority in connection with the Bonds, attached to this certificate and made a part hereof, the Bonds are being sold at a time when, because of particular conditions in the market, a negotiated sale may provide benefits to the Authority that would not be available if the Bonds were sold by competitive bid;
2. The particular conditions in the market which indicate that a negotiated sale of the Bonds may provide a benefit to the Authority are the continued market volatility in municipal debt markets since the presidential election last November and uncertainty about interest rates as the Federal Reserve considers increases to its benchmark rate, the continuing threat of global recession, volatile credit spreads, and uncertain investor demand for municipal securities and bond issues of the size of the contemplated offering (approximately \$152 million). A negotiated offering provides the Authority the flexibility and ability to pre-market the transaction with the expected benefits of a lower effective interest cost to the Authority; and
3. The estimated amount of benefit which could accrue to the Authority is stated in the attached report.

WITNESS my hand as of this February 15, 2017.



General Manager and Chief Administrative  
Officer of Truckee Meadows Water Authority



**Hobbs, Ong  
& ASSOCIATES, INC.**

Financial Consultants/Advisors

3900 Paradise Road 702 733-7223  
Suite 152 702 733-7250 fax  
Las Vegas, NV 89169



**The PFM Group**

Public Financial Management, Inc.  
PFM Asset Management LLC  
PFM Advisors

601 S. Figueroa 213-489-4075  
Suite 4500 www.pfm.com  
Los Angeles, CA 90017

February 1, 2017

Mr. Mark Foree  
General Manager  
Truckee Meadows Water Authority  
1355 Capital Blvd.  
Reno, NV 89502

Dear Mr. Foree:

As required by the Nevada Revised Statutes, this letter serves as the financial advisors' certification of the potential benefits to be derived from a negotiated method of sale for the Truckee Meadows Water Authority, Water Revenue Refunding Bonds, Series 2017 (the "Series 2017 Bonds").

The Series 2017 Bonds will be issued to: (i) refund the Truckee Meadows Water Authority Water Revenue Refunding Bonds, Series 2007, and (ii) pay costs of issuance.

As of 2015, the Washoe County Water Utility and the South Truckee Meadows General Improvement District were merged into TMWA, increasing TMWA's service area and number of accounts. A negotiated bond sale will enable TMWA to benefit from more extensive investor outreach and pre-marketing, enabling investors to understand the nuances and benefits of the new, larger TMWA. Working with both investors and the rating agencies, the lead manager can work with TMWA and the Financial Advisors to ensure that we achieve the lowest yield and structure the transaction to achieve the most effective pricing (including adjusting coupons to respond to different investor needs). In addition, since timing and the ability to move quickly to take advantage of interest rates is important, the negotiated method of sale provides the greatest chance of success. A negotiated sale will provide the most flexibility to enter, as well as to pull the transaction and re-enter quickly. In today's still volatile financial market, flexibility is critical to a successful transaction. Given the volatility in today's capital markets, particularly since the November presidential election and the dependency of the savings and economics on interest rates, we recommend the refunding bonds be issued through a negotiated sale, using a team of underwriters.

While it is always difficult to determine interest rate differentials as a result of a negotiated or competitive sale, we estimate the benefit of using a negotiated sale could be up to 2 basis points in terms of annual interest costs. These potential savings would be derived from lower fixed spreads to the tax-exempt MMD benchmark on the day of pricing.



TMWA  
February 1, 2017  
Page 2

Thank you for this opportunity to serve the District. Please let us know if you have any questions.

Sincerely,

A handwritten signature in black ink that reads "Brian Thomas".

Brian Thomas  
Managing Director  
Public Financial Management Inc.

A handwritten signature in black ink that reads "Katherine Ong".

Katherine Ong  
Director  
Hobbs, Ong & Associates, Inc.

cc: Guy Hobbs – *Hobbs, Ong & Associates, Inc.*  
Jennifer Stern, Ryan Howard – *Sherman and Howard L.L.C.*



## STAFF REPORT

**TO:** Chairman and Board Members  
**THRU:** Mark Foree, General Manager  
**FROM:** Andy Gebhardt, Director Operations and Water Quality  
**DATE:** February 15, 2017  
**SUBJECT:** Discussion and action regarding appointment of, and possible approval of contract with, Tami Fruhwirth as TMWA's Ombudsman

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### Summary

In January, the Board indicated that they would like Tami Fruhwirth to become TMWA's Ombudsman. Staff is formally requesting Board approve the contract with Ms. Fruhwirth to officially become TMWA's Ombudsman.

### Background

On November 1, 2005, pursuant to Board direction, Truckee Meadows Water Authority entered into a Professional Services Agreement with Don Rhoden to provide Ombudsman services for TMWA customers. This contract was renewed annually, until Mr. Rhoden's resignation in late 2008. In December of 2008, TMWA entered in to a contract with Joanne Stralla, following Ms. Stralla's appointment to the Ombudsman position by the Board in November, 2008. With Ms. Stralla's passing in November of 2016, staff recommended Tami Fruhwirth as a possible candidate for the Ombudsman position. Ms. Fruhwirth has extensive customer service experience, particularly in the Utility arena, and is known to many of us at TMWA. The Board previously agreed to staff's recommendation of Ms. Fruhwirth for the Ombudsman position. Attached you will find the proposed contract with Ms. Fruhwirth. The proposed contract is virtually identical to the previous contract with Ms. Stralla, including the compensation amount of approximately \$2,700 per year.

**AGREEMENT FOR SERVICES**  
(NRS 332 Service Providers)

**THIS AGREEMENT FOR SERVICES** ("Agreement") is made this 16 day of February, 2017, by and between **Tried and True Projects, NV** (hereinafter referred to as "Contractor") and Truckee Meadows Water Authority (hereinafter referred to as "TMWA").

**RECITALS**

*WHEREAS*, TMWA is authorized to engage the services of persons as independent contractor pursuant to NRS Chapter 332; and

*WHEREAS*, Contractor has represented it is duly qualified and licensed in the State of Nevada and Washoe County for the purposes of performing the Scope of Work herein;

*WHEREAS*, TMWA wishes to retain Contractor to perform certain services for TMWA and Contractor is willing to perform these services in accordance with the terms and provisions of this Agreement

1. **DEFINITIONS.** "TMWA" means the Truckee Meadows Water Authority, its directors, officers, employees and immune contractors (other than Contractor) as defined in NRS 41.0307.

2. **SCOPE OF WORK**

2.1. **Description of Work.** Contractor shall provide and perform the services set forth in the Scope of Work attached hereto as Exhibit A and incorporated herein by reference for and on behalf of TMWA (collectively the "Services") during the term of the Agreement.

2.2. **Competence to Perform Services.** Contractor represents that it and/or the persons it may employ possess all skills and training necessary to perform the Services described herein and required hereunder. Contractor shall perform the Services faithfully, diligently, in a timely and professional manner, and to the best of its ability, and in such a manner as is customarily performed by a person who is in the business of providing such services in similar circumstances. Contractor represents that neither the execution and delivery of this Agreement, nor the rendering of services by the Contractor hereunder, will violate the provisions of, or constitute a default under, any other contract or agreement to which the Contractor is a party or by which the Contractor is bound, or which would preclude the Contractor from performing the services required of the Contractor hereunder, or which would impose any liability or obligation upon TMWA for accepting such services. Contractor shall be responsible for the professional quality and technical accuracy of all Services furnished by Contractor to TMWA.

**2.3 Time of Completion.** This contract continues until either party gives notice as provided for in Section 6 of this Agreement.

**2.4 Permits and Regulations.** Before commencing with the performance of any work under this Agreement, the Contractor shall obtain all necessary permits and licenses as may be necessary. Before and during the progress of work under this Agreement, the Contractor shall give all notice and comply with all the laws, ordinances, rules and regulations of every kind and nature now or hereafter in effect promulgated by any Federal, State, County, or other Governmental Authority, relating to the performance of work under this Agreement. If the Contractor performs any work that is contrary to any such law, ordinance, rule or regulation, he shall bear all the costs arising therefrom. Contractor agrees to obtain all appropriate business licenses and provide a copy to TMWA prior to commencing work.

**3. TMWA RESPONSIBILITIES.** TMWA shall:

- a. Make available to the Contractor all technical data that is in TMWA's possession, reasonably required by the Contractor relating to the Contractor's Services.
- b. Provide access to and make all provisions for the Contractor to enter upon public and private lands, to the fullest extent permitted by law, as reasonably required for the Contractor to perform the Services under this Agreement.
- c. Examine all reports, correspondence, and other documents presented by the Contractor upon request of TMWA, and render, in writing, decisions pertaining thereto within a reasonable time so as not to delay the work of the Contractor.

**4. TERM.** This Agreement shall commence on the date first written above and shall terminate upon the completion of the Services, unless sooner terminated by either party as specified in Section 6.

**5. COMPENSATION.**

**5.1 Amount.** As compensation for all of Contractor's Services hereunder, TMWA agrees to pay Contractor compensation based upon time and materials and the attached fee schedule or compensation based upon a lump sum amount as provided for in the attached Scope of Work(s) hereinafter called the "**Contract Sum**". The Contract Sum represents full and adequate compensation for the completed work, and includes the furnishing of all materials, and all labor, equipment, tools, and appliances, and all expenses, direct or indirect, connected with the proper execution of the work

**5.2 Payment.** Payment by TMWA for services rendered by Contractor shall be due within thirty days upon receipt of invoices. If payment is not made in a timely manner, Contractor may, in the event TMWA fails to cure the deficiency after seven days

written notice from Contractor, suspend the services under this Agreement until Contractor has been paid in full. TMWA does not agree to and will not reimburse Contractor for expenses unless specifically provided otherwise in this Agreement.

**5.3 Funding Out Clause.** TMWA reasonably believes that funds can be obtained sufficiently to make all payments during the term of this agreement. If the TMWA does not allocate funds to continue the function performed by the Contractor obtained under this Agreement, this Agreement shall be terminated when appropriated funds expire.

## **6. TERMINATION.**

**6.1. Termination Without Cause.** This Agreement may be terminated by TMWA without cause upon ten (10) days written notice to Contractor. If this Agreement is so terminated, Contractor shall be paid for all services satisfactorily rendered and expenses incurred to the date of receipt of notice of termination.

**6.2 Cause Termination for Default or Breach.** A default or breach may be declared with or without termination. This Agreement may be terminated immediately by either party upon written notice of default or breach to the other party as follows:

- (i). If Contractor fails to provide or satisfactorily perform any of the conditions, work, deliverables, goods, or services called for by this Agreement within the time requirements specified in this Agreement or within any granted extension of those time requirements; or
- (ii). If any state, county, city or federal license, authorization, waiver, permit, qualification or certification required by statute, ordinance, law, or regulation to be held by Contractor to provide the goods or services required by this Agreement is for any reason denied, revoked, debarred, excluded, terminated, suspended, lapsed, or not renewed; or
- (iii). If Contractor becomes insolvent, subject to receivership, or becomes voluntarily or involuntarily subject to the jurisdiction of the bankruptcy court; or
- (iv). If TMWA materially breaches any material duty under this Agreement and any such breach impairs Contractor's ability to perform; or
- (v). If it is found by TMWA that any quid pro quo or gratuities in the form of money, services, entertainment, gifts, or otherwise were offered or given by Contractor, or any agent or representative of Contractor, to any officer or employee of the State of Nevada with a view toward securing a contract or securing favorable treatment with respect to awarding, extending, amending, or making any determination with respect to the performing of such contract.

**6.3. Opportunity to Cure.** Termination upon a declared default or breach may be exercised only after service of formal written notice as specified in Section 6.2, and the subsequent failure of the defaulting party within 15 calendar days of receipt of that notice to provide evidence, satisfactory to the aggrieved party, showing that the declared default or breach has been corrected.

**6.4 Winding Up Affairs Upon Termination.** In the event of termination of this Agreement for any reason, the parties agree that the provisions of this paragraph survive termination:

- (i). The parties shall account for and properly present to each other all claims for fees and expenses and pay those which are undisputed and otherwise not subject to set off under this Agreement. Neither party may withhold performance of winding up provisions solely based on nonpayment of fees or expenses accrued up to the time of termination;
- (ii). Contractor shall satisfactorily complete work in progress at the agreed rate (or a pro rata basis if necessary) if so requested by TMWA;
- (iii). Contractor shall execute any documents and take any actions necessary to effectuate an assignment of this Agreement if so requested by TMWA;
- (iv). Contractor shall promptly deliver to TMWA possession all proprietary information in accordance with Section 16.

## **7. INSPECTION & AUDIT.**

**7.1 Books and Records.** Contractor agrees to keep and maintain under general accepted accounting principles (GAAP) full, true and complete records, contracts, books, and documents as are necessary to fully disclose to TMWA, the State of Nevada or United States Government, or their authorized representatives, upon audits or reviews, sufficient information to determine compliance with all state and federal regulations and statutes.

**7.2. Inspection & Audit.** Contractor agrees that the relevant books, records (written, electronic, computer related or otherwise), papers, including, without limitation, relevant accounting procedures and practices of Contractor or its subcontractors, financial statements and supporting documentation, and documentation related to the work product shall be subject, at any reasonable time, to inspection, examination, review, audit, and copying at any office or location of Contractor where such records may be found, with or without notice by TMWA Auditor, or its contracted examiners, representatives of Washoe County, or any of their authorized representatives. Such records shall include, but not be limited to, those records necessary to evaluate and verify direct and indirect costs (including overhead allocations) as they may apply to costs associated with this

Agreement. Contractor shall require all subcontractors, insurance agents, and material suppliers to comply with the provisions of this Section. Contractor will cooperate fully and will cause all of Contractor's subcontractors to cooperate fully in furnishing or in making available to TMWA from time to time all such information, materials and data whenever requested. All subcontracts shall reflect requirements of this paragraph.

**7.2.1 Recovery of Costs.** If an audit inspection or examination in accordance with this section, discloses overcharges of any nature by the Contractor to TMWA in excess of one-half of one percent (0.5%) of the total contract billings, the reasonable actual cost of TMWA's audit shall be reimbursed to TMWA by the Contractor. Any adjustments and/or payments which must be made as a result of any such audit or inspection of the Contractor's invoices and/or records shall be made within a reasonable amount of time (not to exceed 90 days) from presentation of TMWA's findings to Contractor.

**7.3 Period of Retention.** All books, records, reports, and statements relevant to this Agreement must be retained a minimum three years. The retention period runs from the date of payment for the relevant goods or services by TMWA, or from the date of termination of the Agreement, whichever is later. Retention time shall be extended when an audit is scheduled or in progress for a period reasonably necessary to complete an audit and/or to complete any administrative and judicial litigation which may ensure.

**8. INDEPENDENT CONTRACTOR.** Contractor is associated with TMWA only for the purposes and to the extent specified in this Agreement, and in respect to performance of the contracted services pursuant to this Agreement, Contractor is and shall be an independent contractor and, subject only to the terms of this Agreement, shall have the sole right to supervise, manage, operate, control, and direct performance of the details incident to its duties under this Agreement. Nothing contained in this Agreement shall be deemed or construed to create a partnership or joint venture, to create relationships of an employer-employee or principal-agent, or to otherwise create any liability for TMWA whatsoever with respect to the indebtedness, liabilities, and obligations of Contractor or any other party. Contractor shall be solely responsible for, and TMWA shall have no obligation with respect to: (1) withholding of income taxes, FICA or any other taxes or fees; (2) industrial insurance coverage; (3) participation in any group insurance plans available to employees of TMWA; (4) participation or contributions by either Contractor or TMWA to the Public Employees Retirement System; (5) accumulation of vacation leave or sick leave; (6) unemployment compensation coverage provided by TMWA. Contractor shall indemnify and hold TMWA harmless from, and defend TMWA against, any and all losses, damages, claims, costs, penalties, liabilities, and expenses arising or incurred because of, incident to, or otherwise with respect to any such taxes or fees. Neither Contractor nor its employees, agents, or representatives shall be considered employees, agents, or representatives of TMWA. TMWA and Contractor shall evaluate the nature of services and term negotiated in order to determine "independent contractor" status and shall monitor the work relationship throughout the term of the Agreement to ensure that the independent contractor relationship remains as such.

9. **INDEMNIFICATION BY CONTRACTOR.** To the fullest extent permitted by law, Contractor shall indemnify, hold harmless and defend, not excluding TMWA's right to participate, TMWA from and against any and all liability, claims, actions, damages, losses, and expenses, including, without limitation, reasonable attorneys' fees and costs, arising in whole or in part out of any alleged negligent or willful acts or omissions of Contractor, its officers, employees and agents, excepting therefrom any liability arising out of the sole negligence of TMWA.

10. **LIMITED LIABILITY.** TMWA will not waive and intends to assert available NRS chapter 41 liability limitations and other liability limitations available at law in all cases. Contract liability of both parties shall not be subject to punitive damages. Liquidated damages shall not apply unless otherwise specified in this Agreement or any incorporated attachments. Damages for any TMWA breach shall never exceed the amount of funds appropriated for payment under this Agreement, but not yet paid to Contractor, for the fiscal year budget in existence at the time of the breach. Contract damages for any Contractor breach shall not exceed 150% of the contract maximum "not to exceed" value. Contractor's tort liability shall not be limited. Neither party shall be responsible for the negligent acts of the other party in the performance of this Agreement.

11. **INSURANCE.**

11.1 **By Contractor.** Unless expressly waived in writing by TMWA, Contractor, as an independent contractor and not an employee of TMWA, must obtain and maintain policies of insurance in amounts specified in this Section 11 and pay all taxes and fees incident hereunto. TMWA shall have no liability except as specified in this Agreement. Contractor shall, at Contractor's sole expense, procure, maintain and keep in force the following insurance conforming to the minimum requirements specified below. Unless specifically specified herein or otherwise agreed to by TMWA, the required insurance shall be in effect prior to the commencement of work by Contractor.

11.2 **Form of Coverage.** Any insurance or self-insurance available to TMWA shall be excess of and non-contributing with any insurance required from Contractor. Contractor's insurance policies shall apply on a primary basis. Until such time as the insurance is no longer required by TMWA, Contractor shall provide TMWA with renewal or replacement evidence of insurance no less than thirty (30) days before the expiration or replacement of the required insurance. If at any time during the period when insurance is required by the Agreement, an insurer or surety shall fail to comply with the requirements of this Agreement, as soon as Contractor has knowledge of any such failure, Contractor shall immediately notify TMWA and immediately replace such insurance or bond with an insurer meeting the requirements.

11.2.1. **Additional Insured:** By endorsement to all liability policies, except Worker's Compensation and Professional Liability, evidenced by Contractor, TMWA, its officers, employees and immune Contractors as defined in NRS 41.0307, if any, shall be named as additional insureds for all liability arising from the Agreement.

**11.2.2. Waiver of Subrogation:** Each liability insurance policy shall provide that the insurance company waives all right of recovery by way of subrogation against TMWA, its officers, employees and immune contractors in connection with damage covered by any policy.

**11.2.3. Deductibles and Self-Insured Retentions:** Insurance maintained by Contractor shall apply on a first dollar basis without application of a deductible or self-insured retention unless otherwise specifically agreed to by TMWA. Such approval shall not relieve Contractor from the obligation to pay any deductible or self-insured retention. Any deductible or self-insured retention shall not exceed \$5,000 per occurrence, unless otherwise approved by TMWA.

**11.2.4. Approved Insurer:** Each insurance policy shall be (i) issued by insurance companies authorized to do business in the State of Nevada or eligible surplus lines insurers acceptable to TMWA and having agents in Nevada upon whom service of process may be made, and (ii) currently rated by A.M. Best as "A-VII" or better.

### **11.3 Policies Required.**

**11.3.1 Workers' Compensation and Employer's Liability Insurance.** Contractor shall provide proof of worker's compensation insurance as required by NRS 616B.627 or proof that compliance with the provisions of Nevada Revised Statutes, Chapters 616A-D and all other related chapters is not required.

**11.3.2 Commercial General Liability Insurance.** Contractor shall procure and maintain, during the term of this Agreement, occurrence comprehensive general liability insurance for limits of not less than One Million Dollars (\$1,000,000) for bodily injury and property damages, per occurrence, Two Million Dollars (\$2,000,000) products and completed operations aggregate, and Two Million Dollars (\$2,000,000) general aggregate. Coverage shall be on an occurrence basis and shall cover liability arising from premises, operations, independent contractors, completed operations, personal injury, products, civil lawsuits, Title VII actions and liability assumed under an insured contract (including the tort liability of another assumed in a business contract).

**11.3.4 Professional Liability/Errors & Omissions Insurance. Not Required for Contractor Construction Contracts.** Contractor shall procure and maintain, during the term of this Agreement, professional liability/errors and omissions insurance in the amount of not less than One Million Dollars (\$1,000,000) per claim. The policy shall have a retroactive date prior to commencement of the performance of this Agreement and a discovery period at least three (3) years after the later of termination or the date of substantial completion of the project.

**11.3.5 Business Automobile Liability Insurance.** Contractor shall procure and maintain, during the term of this Agreement, business automobile liability insurance in the amount of not less than One Million Dollars (\$1,000,000) per occurrence for bodily injury and property damage. Coverage shall be for "any auto", including owned, non-owned and hired vehicles.

**11.4 Evidence of Insurance.** Prior to the start of any Work, Contractor must provide the following documents to TMWA, Attention: Purchasing & Contracts, P.O. Box 30013, Reno, NV 89520-3013:

**11.4.1 Certificate of Insurance.** Contractor must provide a Certificate of Insurance form to TMWA to evidence the insurance policies and coverage required of Contractor.

**11.4.2 Additional Insured Endorsements.** An original Additional Insured Endorsement, signed by an authorized insurance company representative, must be submitted to TMWA, by attachment to the Certificate of Insurance, to evidence the endorsement of TMWA as additional insured.

**11.4.3 Policy Cancellation Endorsement.** Except for ten days notice for non-payment of premium, each insurance policy shall be endorsed to specify that without thirty (30) days prior written notice to TMWA, the policy shall not be cancelled, non-renewal or coverage and/or limits reduced or materially altered, and shall provide that notices required by this paragraph shall be sent by certified mailed to the address specified above. A copy of this signed endorsement must be attached to the Certificate of Insurance.

Compliance with the insurance requirements of this Agreement shall not limit the liability of Contractor or its sub-contractors, employees or agents to TMWA or others, and shall be in addition to and not in lieu of any other remedy available to TMWA under this Agreement or otherwise. TMWA reserves the right to request and review a copy of any required insurance policy or endorsement to assure compliance with these requirements.

**12. GOVERNMENT OBLIGATIONS.** Contractor shall be responsible for all applicable federal, state, and local government obligations. Contractor will be responsible to pay all taxes, assessments, fees, premiums, permits, and licenses required by law. Real property and personal property taxes are the responsibility of Contractor in accordance with NRS Chapter 361. Contractor warrants that it has a valid business license. Contractor agrees to be responsible for payment of any such government obligations not paid by its subcontractors during performance of this Agreement. TMWA may set-off against consideration due any delinquent government obligation.

**13. ACCEPTANCE BY TMWA.** It is expressly understood and agreed that all work done by the Contractor shall be subject to inspection and acceptance by TMWA and approval of work shall not forfeit the right of TMWA to require correction, and nothing contained herein shall relieve the Contractor of the responsibility of the work required

under the terms of this Contract until all work has been completed and accepted by TMWA

**14. NOTICE.** All notices or other communications required or permitted to be given under this Agreement shall be in writing and shall be deemed to have been duly given if delivered personally in hand, by telephonic facsimile with simultaneous regular mail, or mailed certified mail, return receipt requested, postage prepaid on the date posted, and addressed to the other party as indicated on Page 12 of this agreement.

**15. TMWA OWNERSHIP OF PROPRIETARY INFORMATION.** Any reports, histories, studies, tests, manuals, instructions, photographs, negatives, blue prints, plans, maps, data, system designs, computer code (which is intended to be consideration under the Agreement), or any other documents or drawings, prepared or in the course of preparation by Contractor (or its subcontractors) in performance of its obligations under this Agreement shall be the exclusive property of TMWA and all such materials shall be delivered into TMWA possession by Contractor upon completion, termination, or cancellation of this Agreement. Contractor shall not use, willingly allow, or cause to have such materials used for any purpose other than performance of Contractor's obligations under this Agreement without the prior written consent of TMWA. Notwithstanding the foregoing, TMWA shall have no proprietary interest in any materials licensed for use by TMWA that are subject to patent, trademark or copyright protection.

**16. PUBLIC RECORDS.** Pursuant to NRS 239.010, information or documents received from Contractor may be open to public inspection and copying. TMWA will have the duty to disclose unless a particular record is made confidential by law or a common law balancing of interests. Contractor may clearly label individual documents as a "trade secret" or "confidential" provided that Contractor thereby agrees to indemnify and defend TMWA for honoring such a designation. The failure to so label any document that is released by TMWA shall constitute a complete waiver of any and all claims for damages caused by any release of the records. If a public records request for a labeled document is received by TMWA, TMWA will notify Contractor of the request and delay access to the material until seven working days after notification to Contractor. Within that time delay, it will be the duty of Contractor to act in protection of its labeled record. Failure to so act shall constitute a complete waiver.

**17. CONFIDENTIALITY.** Contractor shall keep confidential all information, in whatever form, produced, prepared, observed or received by Contractor to the extent that such information is confidential by law or otherwise required by this Agreement.

**18. MISCELLANEOUS.**

**18.1 Force Majeure.** Neither party shall be deemed to be in violation of this Agreement if it is prevented from performing any of its obligations hereunder due to strikes, failure of public transportation, civil or military authority, act of public enemy, accidents, fires, explosions, or acts of God, including, without limitation, earthquakes, floods, winds, or storms. In such an event the intervening cause must not be through the

fault of the party asserting such an excuse, and the excused party is obligated to promptly perform in accordance with the terms of the Agreement after the intervening cause ceases.

**18.2 Remedies.** Except as otherwise provided for by law or this Agreement, the rights and remedies of the parties shall not be exclusive and are in addition to any other rights and remedies provided by law or equity, including, without limitation, actual damages, and to a prevailing party reasonable attorneys' fees and costs.

**18.3 Waiver of Breach.** Failure to declare a breach or the actual waiver of any particular breach of the Agreement or its material or nonmaterial terms by either party shall not operate as a waiver by such party of any of its rights or remedies as to any other breach.

**18.4 Severability.** If any provision contained in this Agreement is held to be unenforceable by a court of law or equity, this Agreement shall be construed as if such provision did not exist and the non-enforceability of such provision shall not be held to render any other provision or provisions of this Agreement unenforceable.

**18.5 Assignment.** Contractor shall neither assign, transfer nor delegate any rights, obligations or duties under this Agreement without the prior written consent of TMWA.

**18.6 Proper Authority.** Each party represents that all required authorizations have been obtained to execute this grant and for the compliance with each and every term hereof. Each person signing this Agreement warrants and represents to the other party that he or she has actual authority to execute this Agreement on behalf of the party for whom he or she is signing.

**18.8 Arbitration.** Any controversy of claim arising out of or relating to this Agreement, or the breach thereof, provided both parties agree, may be settled by arbitration in accordance with the Commercial Arbitration Rules of the American Arbitration Association and judgment upon the award rendered by the Arbitrators(s) may be entered in any court having jurisdiction thereof.

**18.9 Jurisdiction.** This Agreement and the rights and obligations of the parties hereto shall be governed by, and construed according to, the laws of the State of Nevada. Contractor consents to the jurisdiction of the Nevada district courts for enforcement of this Agreement. In the event the arbitration award is challenged, or the controversy proceeds to litigation instead of arbitration, any action or proceedings seeking to do so must be brought in the courts of the State of Nevada, County of Washoe, or if a party can acquire subject-matter jurisdiction, in the United States District Court for the District of Nevada. Each of the parties consents to the personal jurisdiction of such courts (and of the appropriate appellate courts) in any such action or proceeding and waives any objection to venue laid therein.

**18.10 No Unfair Employment Practices.** In connection with the performance of work under this Agreement, Contractor agrees not to discriminate against any employee or applicant for employment because of race, creed, color, national origin, sex, sexual orientation or age. Such Agreement shall include, but not be limited to, the following: Employment, upgrading, demotion, or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship. Contractor further agrees to insert this provision in all subcontracts hereunder, except subcontracts for standard commercial supplies or raw materials. Any violation of these provisions by Contractor shall constitute a material breach of contract. As used in this Article, sexual orientation means having or being perceived as having an orientation for heterosexuality, homosexuality or bi-sexuality.

**18.11 Entire Contract and Modification.** This Agreement and its integrated attachment(s) constitute the entire agreement of the parties and such are intended as a complete and exclusive statement of the promises, representations, negotiations, discussions, and other agreements that may have been made in connection with the subject matter hereof. Unless an integrated attachment to this Agreement specifically displays a mutual intent to amend a particular part of this Agreement, general conflicts in language between any such attachment and this Agreement shall be construed consistent with the terms of this Agreement. Unless otherwise expressly authorized by the terms of this Agreement, no modification or amendment to this Agreement shall be binding upon the parties unless the same is in writing and signed by the respective parties hereto.

The signature page follows this page.

***IN WITNESS WHEREOF***, the parties hereto have caused this Agreement to be signed and intend to be legally bound thereby. All required insurance must be provided before this agreement is fully executed. This agreement becomes effective once all parties have signed.

**CONTRACTOR**

Company Name: Tried and True Projects  
Address: 5401 Longley Ln #40, Reno NV  
89511  
Cont: Tami Fruhwirth  
Phone: 775-420-5300  
FAX  
E-mail:  
Tami.triedandtrueprojects@gmail.com

By: 

Printed Name: Tami Fruhwirth  
Title: Consultant/President  
Dated: February 16, 2017  
Business License #: 040248-B1602156  
Expires: 5-31-2017

This agreement was requested:

By: \_\_\_\_\_  
\_\_\_\_\_

**TMWA**

TRUCKEE MEADOWS WATER  
AUTHORITY

By: \_\_\_\_\_

Its: \_\_\_\_\_

Dated: \_\_\_\_\_

Correspondence Address:

TMWA  
P.O. Box 30013  
Reno, NV 89520-30013  
Attention: Maria Dufur  
Purchasing & Contracts Administrator  
Ph: 775-834-8056  
Fax: 775-834-8153

**Exhibit A**  
**Services – Scope of Work**

The Ombudsman is to act as an additional avenue of escalation for customer concerns and complaints, and as an independent advocate for TMWA customers. The Ombudsman will respond in a timely manner to any customer concerns, and will work with TMWA staff and within TMWA rules and guidelines in attempting to resolve any customer issues. The Ombudsman will provide a yearly summary of any customer contacts and their resulting resolutions.



## STAFF REPORT

**TO:** Board of Directors  
**FROM:** Mark Foree, General Manager  
**DATE:** February 6, 2017  
**SUBJECT:** General Manager's Report

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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*).

Included in your agenda packet are press clippings from January 12, 2017 through February 8, 2017.

At the February 7<sup>th</sup> meeting, the TMWA Standing Advisory Committee amended their Governing Rules. Please find the amended Governing Rules attached.

**TRUCKEE MEADOWS WATER AUTHORITY  
STANDING ADVISORY COMMITTEE  
GOVERNING RULES**

1. **Members:** Membership in the Standing Advisory Committee (“Committee”) is governed by the Truckee Meadows Water Authority’s Board of Directors (“Board”). Each Member is appointed for a two-year term. Members serve and may be reappointed at the Board’s pleasure. As requested by the Board, the Committee shall take action to make recommendations to the Board regarding membership in the Committee.
2. **Alternates:** In its discretion, the Board may appoint a Member to serve in either a primary (“Primary”) or alternate (“Alternate”) position. When making a recommendation to the Board to fill a Primary position vacancy, the Committee shall give preference to the existing Alternate(s).
3. **Participation:** Each Member is expected to attend all Committee meetings and review the agenda and all supporting materials prior to arrival. Failure by a Member to attend more than two meetings in a year may result in the Committee making a recommendation to the Board that the Member be replaced.
4. **Compliance with NRS Chapter 241:** Meetings shall be conducted in compliance with NRS Chapter 241, the Nevada “Open Meeting Law.”
5. **Quorum:** A quorum shall consist of a simple majority of the Primary Members. Members may participate telephonically in meetings, but telephonic participation shall not be considered in establishing a quorum. In the absence of a Primary Member, the Alternate Member for that customer class who is physically present at the meeting may be considered in establishing a quorum.
6. **Action:** For items other than those that constitute recommendations to the Board, an action may be taken by affirmative vote of the majority of Members physically present. For items that constitute recommendations to the Board, an action shall be taken only by an affirmative vote of the majority of the Membership. Each member shall have one vote. Members participating telephonically may not vote on action items. An Alternate sitting in for an absent Member has all of the voting rights of the absent Member. Otherwise, an Alternate has no voting rights.
7. **Agenda Items:** The Committee may, by action at a prior meeting, make suggestions to staff as to items to be placed on a future agenda. Except as otherwise directed by the Board, Staff shall have discretion as to the items that will be placed on the Committee’s agendas.
8. **Officers:** There shall be a Chair and a Vice Chair, elected by the Members. The Chair will conduct the meetings. The Vice Chair or such other Member as the Chair or Vice Chair may designate will conduct the meeting in the absence of the Chair. Or, in the absence of the Chair and Vice Chair, a majority of the Members present may designate an Alternate to conduct the meeting. The Chair and Vice Chair each shall serve for a one-year term, with their terms expiring at the first meeting scheduled following the beginning of the calendar year following their election. The Vice Chair shall automatically succeed to the position of Chair for the subsequent term, unless an alternate action is made by the Members. Officers

- may be reelected. The Chair or the Chair's designee is the only Member who may speak on behalf of the Committee to the Board, to any member of the Board, or to the public.
- 9. Conflicts of Interest:** Members shall disclose conflicts of interest regarding any decisions of the Committee and shall disclose any financial interest in Committee decisions and in organizations affected by Committee action, other than the financial interest that derives from being a TMWA customer. Members who will receive a direct financial benefit from any action taken by the Committee, other than a financial interest that derives from being a TMWA customer, shall abstain from voting on such action. In the event that a Member presents an idea to the Committee for consideration on behalf of another individual or entity, said Member shall disclose to the Committee the identity of said individual or entity.
- 10. Uses of staff:** Staff will provide reasonable assistance to facilitate meetings and provide readily available information to the Committee to carry out its functions. The Committee shall reasonably limit its demands on staff time, and any demands made in excess of what staff deems reasonable shall require Board approval. No Member may request the use of staff time without approval of the Committee.
- 11. Amendment of Rules:** Any amendments to these Rules shall require an affirmative vote of the majority of the members.

As amended, February 7, 2017

**TRUCKEE MEADOWS WATER AUTHORITY  
STANDING ADVISORY COMMITTEE  
GOVERNING RULES**

1. **Members:** Membership in the Standing Advisory Committee (“Committee”) is governed by the Truckee Meadows Water Authority’s Board of Directors (“Board”). Each Member is appointed for a two-year term. Members serve and may be reappointed at the Board’s pleasure. As requested by the Board, the Committee shall take action to make recommendations to the Board regarding membership in the Committee.
2. **Alternates:** In its discretion, the Board may appoint a Member to serve in either a primary (“Primary”) or alternate (“Alternate”) position. When making a recommendation to the Board to fill a Primary position vacancy, the Committee shall give preference to the existing Alternate(s).
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- 3.5. **Quorum:** A quorum shall consist of a simple majority of the Primary Members. Members may participate telephonically in meetings, but telephonic participation shall not be considered in establishing a quorum. In the absence of a Primary Member, the Alternate Member for that customer class who is physically present at the meeting may be considered in establishing a quorum.
- 4.6. **Action:** For items other than those that constitute recommendations to the Board, an action may be taken by affirmative vote of the majority of Members physically present. For items that constitute recommendations to the Board, an action shall be taken only by an affirmative vote of the majority of the Membership. Each member shall have one vote. Members participating telephonically may not vote on action items. An Alternate sitting in for an absent Member has all of the voting rights of the absent Member. Otherwise, an Alternate has no voting rights.
- 5.7. **Agenda Items:** The Committee may, by action at a prior meeting, make suggestions to staff as to items to be placed on a future agenda. Except as otherwise directed by the Board, Staff shall have discretion as to the items that will be placed on the Committee’s agendas.
- 6.8. **Officers:** There shall be a Chair and a Vice Chair, elected by the Members. The Chair will conduct the meetings. The Vice Chair or such other Member as the Chair or Vice Chair may designate will conduct the meetings in the absence of the Chair. ~~The Chair or Vice Chair may designate an alternate to conduct the meeting in their absence.~~ Or, in the absence of the Chair and Vice Chair, a majority of the Members present may designate an Aalternate to conduct the meeting. The Chair and Vice Chair each shall serve for a one-year term, with their terms expiring at the first meeting scheduled following the beginning of the calendar year following their election. The Vice Chair shall automatically succeed to the position of Chair

for the subsequent term, unless an alternate action is made by the Members. Officers may be reelected. The Chair or the Chair's designee is the only Member who may speak on behalf of the Committee to the Board, to any member of the Board, or to the public.

**7.9. Conflicts of Interest:** Members shall disclose conflicts of interest regarding any decisions of the Committee and shall disclose any financial interest in Committee decisions and in organizations affected by Committee action, other than the financial interest that derives from being a TMWA customer. Members who will receive a direct financial benefit from any action taken by the Committee, other than a financial interest that derives from being a TMWA customer, shall abstain from voting on such action. In the event that a Member presents an idea to the Committee for consideration on behalf of another individual or entity, said Member shall disclose to the Committee the identity of said individual or entity.

**8.10. Uses of staff:** Staff will provide reasonable assistance to facilitate meetings and provide readily available information to the Committee to carry out its functions. The Committee shall reasonably limit its demands on staff time, and any demands made in excess of what staff deems reasonable shall require Board approval. No Member may request the use of staff time without approval of the Committee.

**9.11. Amendment of Rules:** Any amendments to these Rules shall require an affirmative vote of the majority of the members.

| As amended, February ~~7~~3, 201~~5~~7



## STAFF REPORT

**TO:** Board of Directors  
**THRU:** Mark Foree, General Manager  
**FROM:** Scott Estes, Director of Engineering  
**BY:** Bill Hauck, Senior Hydrologist  
**DATE:** February 06, 2017  
**SUBJECT:** Operations Report

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### Summary

- The current water supply outlook is the best we have seen in over a decade
- Lake Tahoe elevation is 2.20 feet above its natural outlet elevation (at this time)
- Lake Tahoe is projected to fill and all other upstream reservoirs fill and spill
- Normal river flows are expected through 2018 and beyond
- More upstream reserves than ever are currently being held in storage (~39,730 AF)
- Hydro revenue is expected to be approximately \$26,730 for January 2017

### (A) Water Supply

- **Snowpack** – Snowpack in both the Truckee and Tahoe basins is still roughly two times what is considered normal for this time of the year. Truckee River Basin snowpack is 183% of average and Lake Tahoe Basin snowpack is 193% of average, respectfully. Precipitation for the water year to-date is roughly 230% of average in the Lake Tahoe Basin.
- **River Flows** - Truckee River flows at the CA/NV state line were approximately 600 cubic feet per second (CFS) as of this morning, but are expected to rise again in the coming days as another series of winter storms makes its way across our region..
- **Reservoir Storage** - The elevation of Lake Tahoe is currently at 6225.20 feet (2.20' above the natural rim of 6223.00 feet). Current reservoir storage is as follows:

Reservoir	Current Storage (Acre-Feet)	% of Capacity (Percent)
Tahoe	267,400	36%
Donner	4,914	52%
Independence	12,581	72%
Prosser	9,662	32%
Stampede	146,980	65%

In addition to Donner and Independence lakes, TMWA has approximately 23,597 acre-feet of water stored between Boca and Stampede Reservoirs under the terms of TROA. TMWA has been and will continue credit storage operations as hydrological conditions permit. TMWA's total back-up reservoir storage between Donner and Independence lakes and TROA is 39,730 acre-feet as of this morning.

- **Outlook** - With precipitation to-date well over 200% of average and snowpack totals not too far behind, the 2017 Water Year is going to end up being a big one. The month of January was especially impressive bringing record precipitation in the form of rain and snow to the region. This led to significant increases in reservoir storage, particularly at Lake Tahoe which has risen 1.9 feet since January 1<sup>st</sup> alone. And since the start of the water year in October, Lake Tahoe has gained almost 2.6 feet in elevation. The latest streamflow runoff projections are pointing towards a significantly above-average year showing Lake Tahoe coming close to and likely filling by early summer. With a projected rise of almost 6½ feet (since October 01), the 2017 Water Year could very well end up being the best that Lake Tahoe has ever seen in terms of a gain in elevation in over 110 years of record keeping. All other reservoirs on the Truckee River system are projected to fill and spill as well. The 2017 Water year is well on its way to becoming one of the biggest the region has ever seen, and is by any measure a true drought buster.

## **(B) Water Production**

**Demand** - Customer demands are still at their wintertime lows, averaging ~36 million gallons per day which is typical for this time of year. About ninety seven (97) percent of customer demands are being met with surface water from the Chalk Bluff water treatment plant, and the remaining three (3) percent from groundwater production wells located throughout TMWA's consolidated service area.

## **(C) Hydro Production**

**Generation** - Average Truckee River flow at Farad (CA/NV state line) for the month of January was 1,255 cubic feet per second (CFS). This flow was above average due to a couple of significant flooding events the region experienced earlier in the month. All three of TMWA's hydro plants were off-line during the flooding events but the Verdi plant was able to be brought back into service the last week of January. The Fleish and Washoe plants were off-line for scheduled maintenance during the entire month but work is anticipated to be completed soon.

<b>Hydro Plant</b>	<b>Days On-Line</b>	<b>Generation (Megawatt hours)</b>	<b>Revenue (Dollars)</b>	<b>Revenue (Dollars/Day)</b>
Fleish	0	0	0	0
Verdi	8	380	\$26,730	\$3,342
Washoe	0	0	0	0
<b>Totals</b>		<b>380</b>	<b>\$26,730</b>	<b>\$3,342</b>



## STAFF REPORT

**TO:** Board of Directors  
**THRU:** Mark Foree, General Manager  
**FROM:** Marci Westlake, Manager Customer Service  
**DATE:** February 15, 2017  
**SUBJECT:** **January Customer Service Report**

---

The following is a summary of Customer Service activity for January 2017.

### **Ombudsman**

There was one call due to leaks and high bills, call was passed to Marci and handled.

### **Communications**

Attached is the website / social media report.

Customer outreach in January included:

- Neecie Schlesener had a presentation at the Sparks Heritage Museum for 5-14 year olds.
- Travis Bunkowski had a presentation at Chalk Bluff for the Northern Nevada Electrical Training Center. The subject was Water Treatment and 10 attended.
- Ryan Dixon and Ian Dasmann had a presentation at Chalk Bluff for Hunsberger Elementary. The subject was Water Treatment and 60 attended.

### **Conservation (January 1 – January 31)**

- 2 Water Watcher Contacts
- 129 Water Usage Reviews

### **Customer Calls – January**

- 7,723 phone calls handled
- Average handling time – 4 minutes, 36 seconds per call
- Average speed of answer – 20 seconds per call

**Billing – January**

- 124,475 bills issued
- 255(<.2%) corrected bills
- 13,609 customers (11.0%) have signed up for paperless billing to date.

**Service Orders – January** (% is rounded)

- 5,574 service orders taken
- 2860 (51%) move-ins / move-outs
- 720 (13%) cut-out-for-non-payment and cut-in after receiving payments, including deposits and checks for tamper
- 529 (9%) zero consumption meter checks
- 272 (5%) re-read meters
- 380 (7%) new meter sets and meter/register/ERT exchanges and equipment checks
- 381 (7%) problems / emergencies, including cut-out for customer repairs, dirty water, no water, leaks, pressure complaints, safety issues, installing water meter blankets, etc.
- 108 (2%) high-bill complaints / audit and water usage review requests
- 324 (5%) various other service orders

**Remittance – January**

- 33,910 mailed-in payments
- 25,056 electronic payments
- 24,549 payments via RapidPay (EFT)
- 16,555 one-time bank account payments
- 5,779 credit card payments
- 3,548 store payments
- 2,130 payments via drop box or at front desk

**Collections – January**

- 16,812 accounts received a late charge
- Mailed 7,747 10-day delinquent notices, 6.2% of accounts
- Mailed 1,391 48-hour delinquent notices, 1.1% of accounts
- 236 accounts eligible for disconnect
- 223 accounts actually disconnected (including accounts that had been disconnected-for-non-payment that presented NSF checks for their reconnection)
- 0.19% write-off to revenue

**Meter Statistics – Fiscal Year to January 31**

- 2 meter retrofits completed
- 707 meter exchanges completed
- 944 new business meter sets completed
- 122,178 meters currently installed



## STAFF REPORT

**TO:** Chairman and Board Members  
**THRU:** Mark Foree, General Manager  
**FROM:** Robert Charpentier  
**DATE:** February, 2017  
**SUBJECT:** Web & Social Media Overview for January 2017 + Five-Year Review

### Web & Social Media Overview – January 2017 + Five-Year Review

#### Highlights

- **Website Overview – Trends over the Last Five Years:** annual visitor numbers have increased 29% since 2012. Mobile use grew from 13% to 36% in the same period.
- **Social Media Engagement Grows:** TMWA’s Facebook and Twitter followers have increased by 32% and 15% respectively since February of 2016.
- **2016 Post-Drought Traffic Decline:** 2016 visits to tmwa.com dropped by 6% compared to 2015. User traffic analysis indicates this is largely attributable to elevated interest in drought and conservation content during the historic, 2015 drought year. Online account registration grew, increasing 10.4%, from 104,195 to 115,044, in 2016.

#### tmwa.com — Website Review – Trends Over the Last Five Years

User traffic to the tmwa.com website over the last five years has grown from 313,891 visitors in 2012 to 471,014 in 2015 followed by a 6% drop in 2016 due to diminishing drought-related visits. The overall traffic increase in the last five years has been 29%. In 2017 we will be paying close attention to see if the website’s new, responsive formatting will deliver a bump in traffic from mobile devices.

<b>Year</b>	<b>Visits</b>	<b>New</b>	<b>Returning</b>	<b>Pages/Visit</b>	<b>Avg. Visit Duration</b>	<b>Bounce Rate</b>
2016 .....	441,686.....	55% .....	45% .....	1.54.....	1:12 min .....	34%
2015 .....	471,014.....	48% .....	52% .....	1.61.....	1:23 min .....	25%
2014 .....	377,618 .....	47% .....	53% .....	1.65 .....	1:36 min .....	39%
2013 .....	342,275 .....	55% .....	45% .....	1.63 .....	2:04 min .....	26%
2012 .....	313,891 .....	55% .....	45% .....	1.73 .....	1:53 min .....	36%

**Growth in Mobile Traffic 2011 - 2016**

There has been substantial growth in the number of users who access tmwa.com via mobile devices – from a little over seven percent in 2011 to nearly a third of all users in 2015.

2011.....	7%	2014.....	27%
2012.....	13%	2015.....	31%
2013.....	21%	2016.....	36%

**Website Results for YTD 2017 vs. 2016**

This admittedly-thin sampling of web data wouldn't normally be useful but the numbers do indicate year-over-year traffic numbers are trending upward again after the drought-related surge of 2015, and subsequent drop in 2016, created a statistical dip in an otherwise steady rise. January of 2015 generated a large bump in visitor numbers vs 2014 or 2016. 2015 saw 38% more user sessions and 51% more page views than the same period in 2014 and 17% more user sessions and 28% more page views than in 2016.

**Top Content (January 2017)**

The most visited pages on tmwa.com (listed below) are quite different from what we have seen in the past. After the homepage—our most visited page—traffic previously went mostly to our residential payment, employment and “contact us” pages. It remains to be seen if this change is the result of the new website's content organization.

<b>Rank</b>	<b>Page</b>	<b>Pageviews</b>	<b>%Pageviews</b>
1 .....	Homepage .....	29,671 .....	63%
3 .....	Bidding Opportunities .....	1,943 .....	4%
2 .....	Contact Us .....	1,814 .....	3.8%
4 .....	Billing .....	1,350 .....	3%
5 .....	Lake Levels.....	1,348 .....	3%

**Growth by Platform 2016 vs. 2015:**

Desktop Users .....	-12%
Mobile Phone .....	+14%
Tablet Use .....	-13%

**Traffic to tmwa.com came from the following sources (Jan. 2017):**

		<b>32,995</b> % of Total: 100.00% (32,995)
<input type="checkbox"/>	1. (direct) / (none)	<b>16,277</b> (49.33%)
<input type="checkbox"/>	2. google / organic	<b>10,686</b> (32.39%)
<input type="checkbox"/>	3. tmwa.com / referral	<b>2,278</b> (6.90%)
<input type="checkbox"/>	4. bing / organic	<b>1,440</b> (4.36%)
<input type="checkbox"/>	5. yahoo / organic	<b>955</b> (2.89%)
<input type="checkbox"/>	6. website-analytics.online / referral	<b>223</b> (0.68%)
<input type="checkbox"/>	7. outlook.live.com / referral	<b>134</b> (0.41%)
<input type="checkbox"/>	8. myaccount.tmwa.com / referral	<b>82</b> (0.25%)
<input type="checkbox"/>	9. tmwastorage.com / referral	<b>79</b> (0.24%)
<input type="checkbox"/>	10. newtoreno.com / referral	<b>75</b> (0.23%)

**TMWA Social Media**

Currently TMWA has **1472 Twitter followers** and **1712 Facebook fans**. 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 customers 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. It's a great way to understand both the scope and complexity of the many processes and projects we manage here at TMWA

**"About TMWA" Videos:**

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

**"TMWA How-to" videos:**

- [How to Perform a Home, Self Water Audit](#) (NEW!)

- [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:](http://www.communityforestry.org:)
- [www.tmwastorage.com:](http://www.tmwastorage.com:)
- [www.tmwalandscapguide.com:](http://www.tmwalandscapguide.com:)
- [www.truckeeriverfund.org:](http://www.truckeeriverfund.org:)



## STAFF REPORT

**TO:** Chairman and Board Members  
**THRU:** Mark Foree, General Manager  
**FROM:** John Zimmerman, Manager, Water Resources  
**DATE:** 6 February 2017  
**SUBJECT:** **Report Water Resources and Annexation Activity**

---

### **RULE 7**

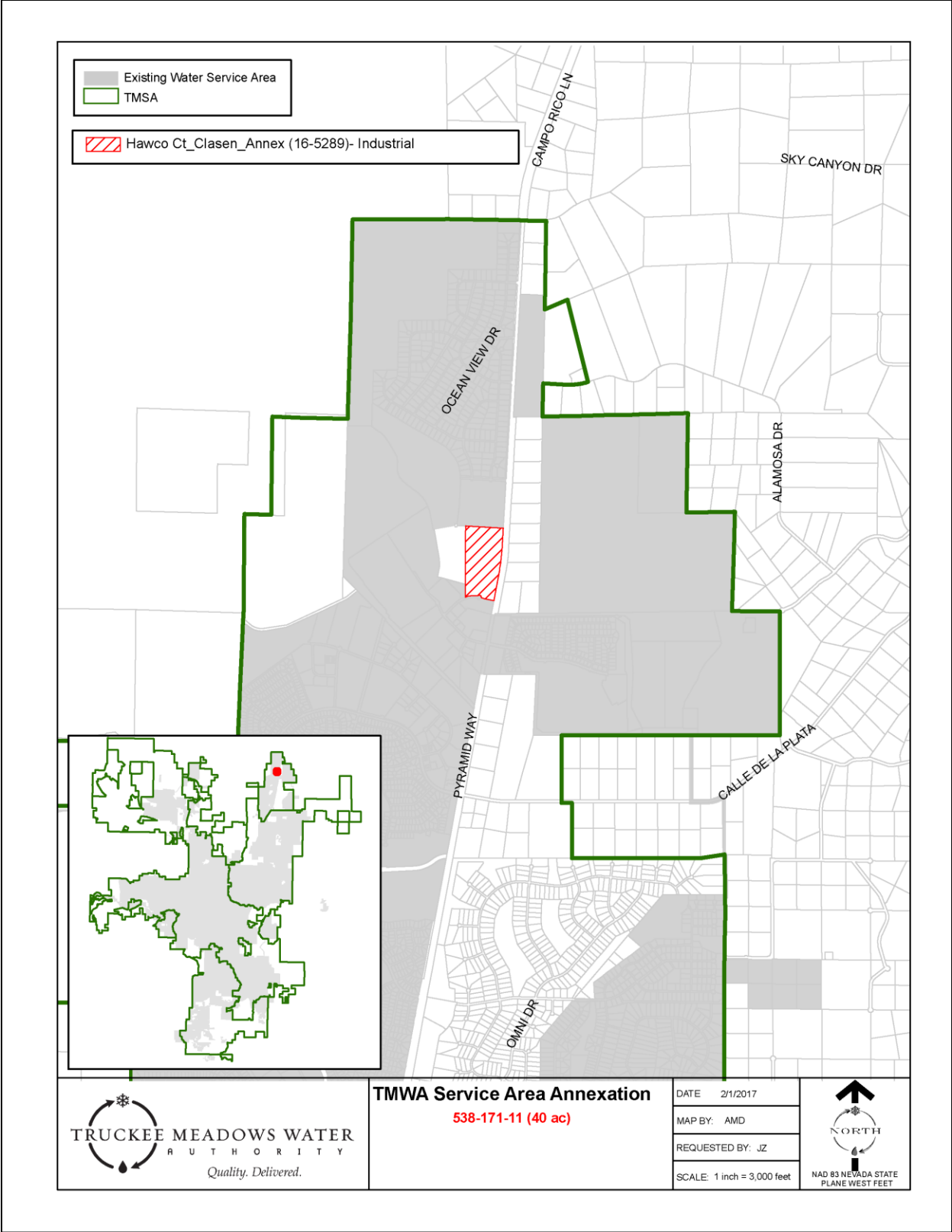
Rule 7 water resource purchases and will-serve commitment sales against purchased water resources through this reporting period:

Beginning Balance	6,494.52 AF
Purchases of water rights	37.10 AF
Refunds	0.00 AF
Sales	– 251.23 AF
Adjustments	46.50 AF
Ending Balance	6,326.89 AF

Price per acre foot at report date: \$7,500

### **WATER SERVICE AREA ANNEXATIONS**

A 40-acre industrial development in Spanish Springs. (See attached map).





## **TMWA Board Meeting**

**Wednesday, February 15, 2017**

### **Press Clippings**

**January 12, 2017 – February 8, 2017**





# Washoe Updates On Bridges, Roads, Weather And More

By KUNR STAFF • JAN 9, 2017

[Tweet](#)[Share](#)[Google+](#)[Email](#)



Andrea Landis

## **Monday, 6:20 p.m. update:**

The following information has been compiled by KUNR from local press releases:

### **WEATHER:**

*The National Weather Service in Reno is predicting snow and increased winds through Wednesday. The flood risk is decreasing. However, officials urge residents to avoid the Truckee River and flooded areas. First responders are still urging the public to stay away from the Truckee River. The water is very cold and very fast and hypothermia can set in quickly. In addition, there is a continuing risk of falling trees due to high winds and saturated ground. Trees could fall without warning.*

### **WATER ISSUES:**

*Residents of the River Belle Mobile Home Park in Verdi are asked to boil water for at least 10 minutes until further notice.*

*Areas serviced by Truckee Meadows Water Authority are not affected by this warning. Water in the Autumn Hills area is safe to drink and the sewage system is fully functional.*

# Storms deliver big boost in water supply with more to come

[Benjamin Spillman](#) , bspillman@rgj.com Published 3:29 p.m. PT Jan. 9, 2017 | Updated 22 hours ago



[Buy Photo](#)

The Truckee River on the left crested on Monday Jan. 9, 2017 (Photo: Andy Barron/RGJ) [Buy Photo](#)

The amount of water flowing into Lake Tahoe and critical western Nevada river basins is surging thanks to a parade of rain and snowstorms.

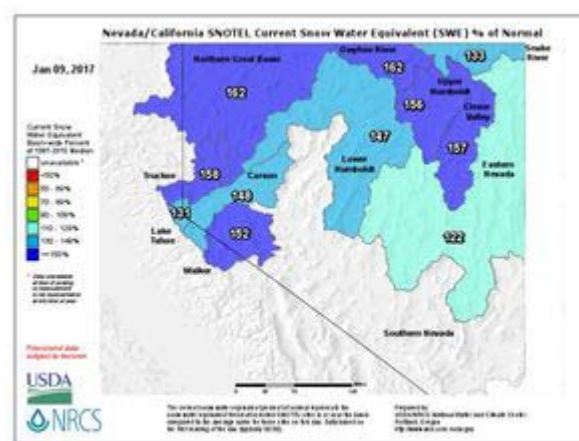
And the amount of water in storage for the Truckee Meadows is at an all-time high, although that has as much to do with deal-making among players on the Truckee River as it does with recent storms.

Still, the mix of snowmelt and rainfall that flooded the Truckee and Carson rivers in the past 48 hours is part of an ongoing series of storms that have pushed the region well above average for this time of year in terms of precipitation.

“It is pretty incredible really how much that storm added,” said Jeff Anderson, hydrologist for the Nevada Natural Resources Conservation Service, which tracks snow and water in the mountains.

For example, the amount of water stored in snow in the Tahoe Basin was 62 percent of normal on Jan. 1. In the Truckee River basin it was 84 percent of normal.

On Monday the readings showed the Tahoe Basin surged to 131 percent of normal and the Truckee River basin to 158 percent of normal. The Carson River basin jumped from 80 to 148 percent of normal.



[SCRIBD](#)

Tahoe area snowpack

Also, since the beginning of the water year in October, Lake Tahoe has risen about 18 inches. That's well ahead of the rate of rise the lake typically sees between October and the traditional peak in late spring or early summer.

During the winter of 2010-11 the lake rose more than five feet, Anderson said.

"That is the kind of rise that can happen in a big year," he said.

As far as water storage goes much of the water from recent storms surged down the Truckee River on its way to Pyramid Lake so it wasn't captured for drinking water.

But the availability of water in general as well as the recently signed Truckee River Operating Agreement has helped the Truckee Meadows Water Authority increase the amount in storage to nearly 40,000 acre feet, the most it's had on hand since 1985, the earliest date for which online records are available.

It's not just water storage that's affected. The increase in the amount of water volume locked in the snow changes the characteristics of the snowpack from powder to a denser pack often referred to as Sierra cement.

That type of snow tends to melt slower which means there could be skiing in the mountains well into the latter days of spring.

"What it is going to do is ensure a longer ski season," Anderson said.

Meteorologist Scott McGuire of the National Weather Service said there's nothing unusual about rain and snow hammering the Sierra Nevada during winter months.

But the most recent storm is the strongest in more than a decade.

"We haven't seen that set up in 11 years," McGuire said.

And there's more to come.

The forecast for Reno calls for rain and light snow through Thursday.

At higher elevations, such as Slide Mountain where Mt. Rose Ski Tahoe is located, there is the potential for more than four feet of snow by the end of this week. An additional than three feet of snow is possible at Incline Village.

Top of Form

Bottom of Form

"There is an abundance of energy out in the Pacific and the jet stream is lined up perfectly," McGuire said.

Even an incredible week of moisture, however, guarantees nothing.

If the storm door closes and the skies go dry the moisture deficit that's marked the past several years in the Sierra Nevada could continue.

"Just like that it could dry out," Anderson said

## TMWA Says Water is Safe to Drink

*Posted: Jan 10, 2017 11:12 AM PST <em class="wnDate">Tuesday, January 10, 2017 2:12 PM EST</em>Updated: Jan 10, 2017 11:12 AM PST <em class="wnDate">Tuesday, January 10, 2017 2:12 PM EST</em>*



From Truckee Meadows Water Authority:

Truckee Meadows Water Authority (TMWA) says it wants to assure all TMWA customers that at no time during the flood event was the water system ever compromised. The water from TMWA is, and has been, safe to drink. Despite flood conditions throughout the Truckee Meadows this last weekend, the TMWA delivery system suffered no significant damage.

"Without a doubt we watch things very closely during a flood event," said Will Raymond, Water Operations Supervisor. "We were definitely in an all-hands-on-deck mode throughout the weekend. I'm happy to say we got through it in one piece and our customers can rest assured their water is safe to drink."

Once again, TMWA wants to emphasize that all customers within their service area should feel comfortable and confident that their water was never compromised and the water is safe to drink.

If there are any questions from TMWA customers regarding water quality, please feel free to contact TMWA's Water Quality department at 834-8118 or **[waterquality@tmwa.com](mailto:waterquality@tmwa.com)**.

From Truckee Meadows Water Authority

Link to video report here: <http://www.ktvn.com/story/34227827/tmwa-says-water-is-safe-to-drink>

## Truckee Meadows Water Authority says drinking water is safe



*By Staff/TMWA Release |*

Posted: Tue 12:40 PM, Jan 10, 2017 |

Updated: Tue 2:11 PM, Jan 10, 2017



**RENO, Nev. (KOLO) - TMWA STATEMENT:**

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# Recovery and Clean-Up Face Parts of Northern Nevada After Flooding

JANUARY 9, 2017 BY [BOB CONRAD](#) 1 COMMENT [Email](#)



Image: Washoe County.

The region is cleaning up and recovering from flooding that occurred yesterday and today. Officials continued to ask the public to stay away from the Truckee River.

“Teams are working around the clock to assess and document damage,” according to Washoe County. “This includes reopening roads, when safe, and turning traffic signals back on. The Regional Transportation Commission (RTC) will be offering free rides through tonight at midnight.”

Officials are urging citizens to avoid travel unless it is necessary. Drivers should be extra cautious of standing water and debris on roads.

Residents of Verdi’s River Belle Mobile Home Park are asked to boil water for at least 10 minutes until further notice.

“Areas serviced by Truckee Meadows Water Authority are not affected by this warning. Water in the Autumn Hills area is safe to drink and the sewage system is fully functional,” officials said.

## Road Closures

The Washoe County Sheriff’s Office is warning the public to pay attention to road signs that advise of impassable conditions over Donner Pass.

Road closure information is posted here: [Washoe County's website](#)

Multiple vehicles have gotten stuck on Henness Pass Road above Dog Valley.

“This is not a safe I-80 alternate route, despite some GPS directions. WCSO advises people to stay in Reno until the road has been cleared,” officials said.

## Southeast Connector

The Southeast Connector Project saw some flood damage, but according to the RTC, it was to be expected.

“Once the creek water entered the construction site, the water did come into contact with stockpiles of soil containing mercury, however those stockpiles were surrounded with berms of soil without mercury,” said the RTC’s Michael Moreno. “A total of 12 stockpiles of soil containing mercury are located between South Meadows Parkway and Mira Loma Drive. ...It appears 11 of the 12 stockpiles are undamaged.

“One stockpile appears to have had a partial failure of the clean soil berm. However, we are unable to ascertain the degree of contact, if any, of the actual stockpile of soil containing mercury which may have experienced erosion. Once the floodwater recedes, the project team will be able to more closely inspect and assess the situation,” Moreno added.

He stressed that mercury concentrations are likely to be lower than what occurs naturally in Steamboat Creek.

“We do not expect there to be a risk to the public health and the environment,” he explained

## Sutcliffe Without Running Water

*Posted: Jan 11, 2017 10:46 PM PST <em class="wnDate">Thursday, January 12, 2017 1:46 AM EST</em>Updated: Jan 11, 2017 10:46 PM PST* Residents in Sutcliffe are still without running water and the timeline for a permanent fix is still up in the air.

Anyone who does not live in the area is asked to stay away while the community recovers. All fishing and recreation is closed at the lake until further notice.

William R. Crutcher says he got power back at his house around 7 p.m. Tuesday night after it went out Monday, but his faucets are still dry.

His home of 35 years is just one in Sutcliffe with no running water. He and his wife can't do chores like the dishes or laundry and until recently, couldn't flush the toilet.

As a local firefighter, Kenny Phoenix is using water, not to fight flames, but help residents. He is going around the neighborhood filling jugs of non-potable water for people to use. He's focusing on homes with children or elderly or handicapped residents.

"At this point in time, our priority is water. To restore water," says Alan Mandell, Vice-Chairman of the Pyramid Lake Paiute Tribe.

The timeline for getting the water restored is up in the air. The pump house that fills the tanks supplying Sutcliffe's water is inaccessible.

"We can't get to it to fix it," says Mandell, "so they have a couple of solutions that they're looking at to try and get some water in those tanks."

A liaison with the state emergency management visited the area Wednesday to assess damages. Donated bottled water is available for residents and the Red Cross is sending out case workers to homes starting Thursday.

The Nevada Department of Transportation says it will take an "extreme" amount of work to repair Highway 446. Flood water washed out the road forcing people to take a 90 minute detour from Sutcliffe to Nixon.

Heavy equipment helped clear mud and debris off of Sutcliffe Dr. With no vegetation left after the Tule fire this summer, there was little to nothing stopping water from rushing into the community.

"The rain, the fire, it's just been a dramatic year here so far and we've all stuck together and we're handling it, which is great," says Crutcher.

Tribal members and officials held a community meeting Wednesday night. Most residents worried about the water problems, as well as access to health services with Highway 446 out.

Officials discussed solutions like bringing in two large portable shower units for the community, mobile health clinics, and van/shuttle service to get medications to people and people to appointments if they need assistance.

"There's a lot of departments," says Mandell, "both tribal departments and outside agencies that have contributed greatly to the efforts."

Anyone that needs information should call the tribe's flood hotline at (775) 574-1000.

## Water master elated by storms' gifts to Reno, Tahoe

**BENJAMIN SPILLMAN**

[BSPILLMAN@RGJ.COM](mailto:BSPILLMAN@RGJ.COM)

Chad Blanchard is not a man prone to colorful language.

Blanchard is the federal water master in Reno who oversees sharing of the Truckee River between towns, tribes, farms and wildlife.

The job requires a negotiator's ear for word choice.

But when it comes to describing the amount of water that's flowed into Lake Tahoe and the Truckee River basin in recent days even Blanchard slips into superlatives.

"We have had a supreme year, a wonderful year so far before this," Blanchard said Tuesday morning. "But including this event it has been great."

Here are some of the numbers that have Blanchard, and others who watch water for a living, so impressed.

Since Oct. 13, Lake Tahoe's lowest point for the year, about 72 billion gallons flowed into the lake. Of that, more than 39 billion has come since Jan. 1.

That equates to about 222,000 acrefeet of water. An acre-foot is enough to serve an entire household for a year.

The impressive inflows have pushed the lake level up nearly 1.9 feet in the nearly three months since Oct. 15. It typically takes an entire year for the lake to rise that much.

"It is an extreme amount of water we have seen," Blanchard said.

The big numbers don't stop at the shore of Lake Tahoe.

The snowpack in the Truckee River basin is up to 163 percent of normal as of Tuesday. At the SNOTEL site at Mt. Rose Ski Tahoe it's at 204 percent of normal, the sixth highest level it's been at since 1980, according to Jeff Anderson, hydrologist for the Natural Resources Conservation Service. Precipitation this water year, a period that starts Oct. 1 and ends Sept. 30, is at 206 percent of normal in the Truckee River basin. The only years with a better start were 1997 and 1982, according to Anderson. And all this water doesn't include snow that's currently dumping on the region.

The National Weather Service in Reno reported that in the 24 hours ending late Tuesday morning 38 inches of snow fell at Mt. Rose Ski Tahoe, 36 inches fell at Northstar on the north side of the lake and 23 inches at Kirkwood on the south side of the lake. There are more storms on the way during the coming two weeks. How much moisture they deliver and the number and intensity of storms that follow will determine whether the region ends the winter with small or modest drought relief or whether Blanchard will keep using superlatives.

## Creating Nature from Our Flood Waters

*Posted: Jan 12, 2017 1:19 PM PST* *Updated: Jan 12, 2017 1:50 PM PST*  
*Thursday, January 12, 2017 4:19 PM EST*  
*Thursday, January 12, 2017 4:50 PM EST*



Besides the havoc and damage our floods have caused, at least they provided the first real test for the Truckee River Restoration Project, a huge 14-year effort to bring nature back along 11 miles of the river. Chris Sega, the project manager for the Nature Conservancy, told us it was a massive undertaking: "It was pretty daunting at first when I started working here. The scale of it was very large."

We saw it for ourselves last year. We watched as bulldozers and excavators moved 100,000 tons of dirt, lowering the ground alongside the river between the Tracy Power Plant and USA Parkway east of Sparks. On days like these the river is full and active, only this time with a new floodplain. Come spring, the area alongside the river will all be muddy ground...perfect conditions to grow all the cottonwoods and thickets to bring back nature. Sega pointed out where the new forest will grow: "This area in here is where we've lowered the floodplain on the north side of the channel."

For Sega, the first flood waters over the last few days gave all the answers he has wanted for 14 years since the project first began. "It functioned as expected. Yeah, it's good."

The work was finished a month ago, just in time for the storms. The new lowered floodplain is covered in water for the first time, working as it should. Preventing floods is not even the Nature Conservancy's prime objective. The group brings things back to nature. For the river, that meant returning it to its original design. As Sega told us, "We're going to create a surface here that will grow new riparian forests."

Come spring, they'll bring seeds out for when this is muddy ground. A thicket of cottonwoods and willows will then take over. Even that, he said, helps flood control: "The roots of the trees and things will anchor the floodplain and keep things from moving around too much down here." The trees will then bring back the birds and wildlife. The clock will be set back over 100 years there with water spreading naturally over land, nature's original flood control...all part of the plan.

There's more online on the Truckee River Restoration Project...what it costs, how to donate, the upcoming re-vegetation and more.

Click the link below:

<http://www.nature.org/ourinitiatives/regions/northamerica/unitedstates/nevada/placesweprotect/truckee-river-project>

# Reno's irrigation ditches fail during floods, damaging homes

[Anjeanette Damon](#), [adamon@rgj.com](mailto:adamon@rgj.com) Published 6:00 a.m. PT Jan. 13, 2017 | Updated 43 minutes ago

When Craig DePolo got up in the middle of the rainstorm about 1 a.m. Sunday to check on the irrigation ditch that runs behind his property, he saw just a trickle of water along the bottom.

Twelve hours later, the water roared through the Steamboat Ditch, coming within inches of its rim. Just down the road from DePolo's Vincent Lane home, the ditch would actually breach, sending torrents of floodwater through the ranches dotting Quilici Drive and the surrounding area.

"We just started making sandbags," DePolo said, describing how neighbors formed teams to help protect each other's properties in the foothills above southwest Reno, rushing from one critical area to the next to fight the floodwaters.

The residents ignored the county's call to evacuate the area.

"We were going to stay and fight," DePolo said. "We figured it was up to us."

DePolo, a researcher at the Nevada Bureau of Mines and Geology, knew well what could happen to that ditch as the massive rainstorm hit Reno and the Sierra. In addition to studying the hydrology of Reno's ditch network, DePolo was here in 2005, when a similar storm caused breaches and run-overs, flooding dozens of homes in southwest Reno.

He and his neighbors on Vincent Lane were able to keep the water out of their houses this year. Not everyone was so lucky.

Leanna Ranieri and her fiancé Kit Carson launched a similar attack against the floodwater coming from the Last Chance Ditch that runs behind their home on Pineridge Drive. They deployed more than 100 sandbags and draped the back of their house with heavy-duty tarp, but the young couple still ended up with a flooded kitchen and master bedroom, and three feet of water in their basement.

There was just no fighting the deluge.

"There's dirt and mud all over the floor in the basement. Our cabinets are ruined. The kitchen floor is bowing already," Ranieri said. "I am at a loss for words. That's my home. We literally just moved there."

Sunday was the second time in just over a decade that the area experienced a catastrophic failure of the ditch system, which both Washoe County and the city of Reno rely on as part of their storm water systems.



Flood water bursts through a retaining wall in Leanna Ranieri's home in southwest Reno. (Photo: Provided by Leanna Ranieri)

Storm water overflowed from each of the three ditches that form the storm water systems: Lake, Last Chance and Steamboat. Water rushed down Aquila Avenue, Sagittarius Drive, Bermuda Circle, Manzanita Lane, Lakeside Drive and other streets Sunday afternoon.

It ended up in homes on Pineridge Drive and basements along Aquila Avenue. It washed away driveways and pasture land throughout southwest Reno.

The worst breach occurred on Steamboat Ditch, prompting emergency officials to call for the voluntary evacuation of hundreds of homes in the area of Quilici Drive.

The ditches date back to the 1860s, when ranchers in south Reno needed irrigation water from the Truckee River. Still today the ditches, which are owned by private companies, carry irrigation water in the spring and summer to agricultural land before ending in the Steamboat Creek.

As Reno grew, the ditches also began to collect the city and county's storm water, as well as continuing to collect runoff from the hills.

About 15 years ago, the city of Reno formalized its relationship with three of the 11 active ditch companies, entering into agreements that cemented the 150-year-old ditches as part of the community's storm water conveyance system.

Washoe County also has similar agreements with various ditch companies.

Under the agreements, the governments pay the ditch companies for part of their maintenance costs. For instance, in 2015, Reno paid the three companies a total of \$327,000. Those agreements also indemnify the ditch companies from any damages caused by storm water, placing the liability on the city.

The agreements have had their benefits, said Councilwoman Naomi Duerr, who also sits on the board of the Lake Ditch Co.

For instance, the ditches are now cleaned out twice a year, in the spring and fall, instead of once. The city also works to ensure the ditches are free of debris and are in good shape before major storms such as Sunday's.



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Water from the Steamboat Ditch floods Sagittarius Drive in Reno. (Photo: Anjeanette Damon/RGJ)

Reno public works director John Flansberg said city crews spent the days before this recent storm ensuring all of the spillway gates were open and clear so that water could flow as freely as possible in the storm.

That didn't necessarily happen before the agreements, Duerr said.

We're very lucky to have these relationships (with the ditch companies)," Duerr said. "It's not something we've had before."

DePolo said that work was evident when the floodwater came Sunday.

"Reno has been really aggressive about cleaning the ditches," DePolo said. "They took this storm 110 percent seriously."

Despite the work, the storm was too much for the ditches, which were never intended to act as a storm drain when they were built.

Councilwoman Jenny Brekhus said it's time for the city to rethink its reliance on the ditches.

"These ditches are almost historic and antique," Brekhus said. "And they were designed for a different purpose."

While the Truckee River has always been the focus for flood planning, Brekhus said the city needs to pay more attention to the ditches, as well. Flooding from the ditches affects neighborhoods throughout the city and unincorporated county. Often, residents are unaware of the danger, believing they live out of harm's way because they aren't in the path of the Truckee River.

"Reno needs to look inward to its neighborhoods with its ditches and place a priority on that," she said.

A few months ago, Duerr said, the city did an initial look at what it would cost to create a storm water district. The rough estimate: \$100 million.

"That would require tearing up streets, putting in pipe, acquiring right of way, repaving streets," Duerr said.

Flansberg said the ultimate price tag could be much more.

If the city insists on using the ditches as a storm water system, it should make sure homeowners are protected from overflows, Ranieri said.

"They need to build a wall behind all the houses that protects the houses or something," she said. "The city should be providing this for our community."



Leanna Ranieri and Kit Carson ended up with feet of water in their basement from the flooded Last Chance Ditch. (Photo: Provided by Leanna Ranieri)

Her property, which the couple had just purchased in August, was so inundated that the water came up out of the soil, as well as cascading over the ground.

“It was going through the ground and flooding our entire property,” she said. “It was just gushing down. There was no way we could stop it.”

Ranieri said the couple did not have flood insurance because they aren’t in a flood zone. She’s not sure how they will find the money to repair their home.

Norm Dianda, president of the Last Chance Ditch Co., said both the city and his company constantly monitor and maintain the ditch.

Dianda said he personally walked the ditch Saturday and Sunday, along with a crew of two maintenance people. They cleared grates and spillways. When the ditch overflowed near Evans Creek on Lakeside Drive, they used heavy equipment to remove the blockage.

“The ditch company puts everything forward to make sure doing everything we can and the city and county do the same,” he said. “But there comes a point when Mother Nature is just too strong.”

During storms in 1986, he said, one homeowner’s “whole backyard slid right into the ditch and blew the bank out.”

“I don’t know if you could ever get it all done to guarantee there would never be flooding,” he continued. “That would be an impossible chore.”

Dianda, who lives in the Quilici Drive area that saw evacuations because of the Steamboat Ditch, said this storm produced more runoff than he’s seen in his lifetime.

“I have been living on Holcomb Ranch Road for 50 years and I’ve never seen the creeks run as high as they ran this time,” he said. “And once there is so much water, it can’t get through.”

The city of Reno is still assessing storm damage. Flansberg said crews would eventually make it out to assess where the ditches failed and why.



The Last Chance Ditch nears its rim on Pineridge Drive in southwest Reno. (Photo: Anjeanette Damon/RGJ)

“I would say in the overall, yes, I have been concerned with the ditches and that being a major storm water backbone for the city,” he said. “What we will do is look at the locations we had failures, what was the cause and then determine what types of projects we could put in that might mitigate those locations where we had issues.”

Short of putting in a whole new storm water system, the city could install more drains or spillways to help take the pressure off the ditches, Duerr said.

Even that can be expensive. On Wednesday, for instance, the council approved a \$4.1 million storm water drain project for the Highland Canal in northwest Reno. That project, necessary to protect the Chalk Bluff water treatment plan from storm water, is funded mostly by the Truckee Meadows Water Authority.

Still, Brekhus said, it’s time to come up with a better solution for southwest Reno.

“There comes a time where you have to take big city approaches, and a big city approach is setting up a storm water district,” Brekhus said.

# Anatomy of a flood: How a a three-day flood receded in Reno-Sparks

[Siobhan McAndrew](#), smcandrew@rgj.com Published 5:47 p.m. PT Jan. 13, 2017 | Updated 10:59 p.m. PT Jan. 13, 2017



Student employee Mallory Goodrick feeds livestock after they were returned to the University of Nevada, Reno Farm following the flooding of the Truckee River this past weekend on Jan. 10, 2017. (Photo: JASON BEAN/RGJ, RENO GAZETTE-JOURNAL-USA TODAY NETWORK) Buy Photo

For four days, 400 cattle stood in the thick brown mud on higher ground. They were wet, cold and tired from the two-mile saunter from flood-prone fields of the University of Nevada, Reno main farm station off east McCarran Boulevard in Reno.

Bo Kindred knows all too well that cows walk slowly.

It was the third time in three months that he, some students and the cattle made the trek from the university's farm in southeast Reno to what is known as Dairy Hill, a three-acre plot that is considered safe, but cramped, ground for livestock when there's a threat of a flood.

The two previous storms had failed to deliver the expected wallop. This one was different.

Over the last week, what officials called a "perfect storm" overwhelmed Northern Nevada. It filled homes with water, left roads washed out and shut schools and state offices. The recovery is still ongoing as storms and snow continue to test the region.

The threat started a week ago when city and county officials warned of the dangers being set up by a weather system that would dump precipitation while temperatures rose. The Truckee River would flood.

By Friday, Jan. 6, an official emergency command center was operational. Reno and Sparks mayors pleaded with residents to stay home and away from water.

That's when Kindred, who started working at the university farm bordered by the Truckee River and McCarran Boulevard while in college in 1996, made the decision to move his animals



Livestock is brought back to the University of Nevada, Reno Farm and fed following the flooding of the Truckee River this past weekend on Jan. 10, 2017. (Photo: JASON BEAN/RGJ, RENO GAZETTE-JOURNAL-USA TODAY NETWORK)

### **A storm that could change your life**

Kindred, now an assistant director of the station, oversees an operation that includes beef cattle and 50 sheep. Some cows are sold and some butchered and sold through Wolf Pack meats, a processing plant. Others are part of university research on nutrition and vaccines. Sheep are used by agricultural students, who are taught how to care for the animals.

Eight-hundred low-lying acres that are home to the cattle and sheep were likely to flood.

Reno, Sparks and Washoe County declared states of emergency. Gov. Brian Sandoval vowed state support including from the National Guard.

“What you do during this storm could change your life,” said Washoe County Sheriff Chuck Allen.

Kindred remembers the 2005 flood when 400 sheep drowned.

“It was tragic,” Kindred said. “We had other fields that were flooding and put those sheep in a field that wasn’t flooding. There were about 10 of us in the field trying to get the sheep in rising knee-deep water after a levee broke.”

“We were grabbing sheep and dragging them out,” he said. “We never expected that field to flood, but when it got dark we knew we couldn’t do anything. We knew it would be bad overnight.”

For the Collins family, being trapped creates worries beyond a full pantry.

The family’s 5-year-old son Jimmy suffers from life-threatening seizures.

“We made some pretty intensive plans for how we’d care for Jimmy if we got cut off,” Collins said. She said it included making sure they had enough of the food for Jimmy’s special diet, printed recipes instead of relying on the computer and plans if an ambulance was needed but the bridge was closed.

By Saturday night, snow melted across the city. Rain began to fall.

### **No knowing what to expect**

It was still raining Sunday morning when people flocked to downtown Reno and neighborhood parks along the river to see the rushing water.

“We don’t know what to expect,” said Jason Sterrett of Northern Nevada Juniors Volleyball.

His volleyball studio is in the heart of industrial Sparks, where officials said floodwaters could be the worst.

“There’s a lot of activity down here. Everyone is waiting to see.”

Sparks officials feared its industrial area would be hard hit.

“We are worried,” said Sparks spokesman Adam Mayberry.

Sparks announced it would close many streets in the city by 1 p.m.

As Sunday turned to late afternoon, roads began to flood and close around the area. Toll Road in south Reno became a river surrounded by large pools of water and mud.

“It’s like a kayak park here,” said Reno resident Jodi Tenenbaum, who worked with neighbors Sunday in Caughlin Ranch to fill sandbags



A picture of Jodi Tenenbaum's backyard in Caughlin Ranch on Sunday, Jan. 8, 2017 (Photo: Provided to the RGJ)

She watched her backyard fill with water.

“We were well prepared overall but had a lot of challenges” said Washoe County manager John Slaughter Sunday. “I’ll sleep tonight, but who knows what to expect when we wake up.”

While many slept as floodwaters reached peak levels and crested, Steve Coltra worked.

The foreman for Q&D Construction was stationed on an excavator on downtown’s Sierra Street Bridge.

“It’s a big arm,” said Coltra, who worked overnight Sunday into Monday, clearing debris and trees from the flowing river. He estimates he grabbed the equivalent of 100 trees.

“I was pulling out large trees, some 40 feet,” said Coltra, who would have just seconds upon seeing something in the river before he grabbed it with a large claw.

He said the force of the river surprised him.

“You could feel the backend of the machine lift off the ground,” he said as he dipped into the raging river over and over again.

“Put the bucket too far in there and the whole thing could tip in the water,” he said.



Buy Photo

Red Cross volunteer Alix Txe (Photo: Siobhan McAndrew/RGJ)

Alix Txe woke up at Wooster High early Monday morning.

Txe, an American Red Cross volunteer, started nearly 24 hours earlier helping people check in to a shelter at the high school off Plumb Lane in Reno.

The shelter filled to more than 200 people when volunteers, city officials and police tried to warn homeless living along the Truckee River.

“People who are homeless are in a constant state of emergency,” said Txe.

Txe stayed through the shelter closing at 7 p.m. as city and county officials praised efforts and started assessing damaged areas.

“For some people now, leaving the shelter, they are back in a state of emergency, even if nothing big happened with the flood,” Txe said. “Now they go back out into uncertain weather.”

The storm left some families feeling trapped.

Pam Berek’s street off Toll Road in south Reno has not been passable since storms washed away dirt roads in her neighborhood.

On a private road, Berek said the wheelchair van she uses to transport her teenage son won’t make the trip.

Even the Washoe County School District told Berek the road wasn’t drivable so her son, Carson, has not been to school.

“Even once these storm pass, the damage has been done,” she said. “The road has too much damage now.”

For animals, weather can be stressful.

“We wanted to get the cattle home as soon as possible,” said UNR’s Kindred.

He woke up early Tuesday morning to start moving the 400 cattle back home.

“They are tired and hungry,” he said. “But everything with this went as it should.”



Buy Photo

Student employee Mallory Goodrick feeds livestock after they were returned to the University of Nevada, Reno Farm following the flooding of the Truckee River this past weekend on Jan. 10, 2017. (Photo: JASON BEAN/RGJ, RENO GAZETTE-JOURNAL-USA TODAY NETWORK)

# Climate fight takes center stage at Lake

## Tahoe

[Benjamin Spillman](#), bspillman@rgj.com Published 9:56 a.m. PT Jan. 13, 2017 | Updated 10:31 a.m. PT Jan. 13, 2017

### Lakeside climate conference exposes political fault lines over scientific warnings



California Sen. Kevin DeLeon, who supports aggressive measures to combat human-caused climate change, conducts an interview in South Lake Tahoe on Jan. 12, 2017. (Photo: Contributed photo)

There wasn't much of a crowd when [California Sen. Kevin DeLeón](#) took the stage at Harveys Lake Tahoe Hotel and Casino for a defiant speech about climate policy during the Donald Trump era.

The speech coincided with a blizzard that was burying the region in snow and making Lake Tahoe difficult to access even with a 4x4.

But neither weather nor small audience diminished the passion DeLeón showed on the issue of climate change.

DeLeón said President-elect Trump, who in [2012 claimed the Chinese created the concept of climate change to harm U.S. manufacturing](#), wouldn't deter California from aggressive policy aimed at drastically cutting fossil fuel emissions to reduce the rate of planetary warming.

"If you don't do something about this sooner rather than later there will be an existential threat to who we are as a species," said DeLeón, D-Los Angeles.

The talk was part of [Operation Sierra Storm](#), a conference for meteorologists from around the country.

DeLeón wasn't the only one to discuss the issue in apocalyptic terms.

Also among the speakers was climate scientist [Richard Somerville](#), a climate scientist and professor emeritus at Scripps Institution of Oceanography at University of California, San Diego.

Somerville is also one of the scientists who operate the [Doomsday Clock](#). Created in 1947 the clock is a symbolic device scientists use to estimate how close global civilization is to apocalypse.

It was created with atomic bombs in mind but the factors it considers now include nuclear proliferation and climate change.

“Climate change if you don’t do anything about it does threaten humanity,” Somerville said, “We have taken control of the climate. We are the ones with our hand on the thermostat and your kids and their kids are going to have to deal with it.”

Scientists have known since the 1800s that the earth’s atmosphere acts as a blanket that traps heat, a phenomena known as the greenhouse effect.

As fossil fuel use has expanded around the globe the burning of fossil fuels contributes to the effect by emitting carbon dioxide into the atmosphere which leads to more heat being trapped and planetary warming.

Since 1960 the [concentration of carbon in the atmosphere](#) has increased from fewer than 320 to nearly 406 parts per million.

Along with the carbon increase, each decade since the 1960s has been warmer, globally, than the previous decade and the three [hottest years](#) on record have come since 2014.

The implications of the current warming rate are daunting. They include catastrophic sea level rise, widespread species extinction and conditions so extreme it will be difficult for societies to adapt.

And the key to slowing the problem down, according to Somerville and [97 percent of scientists](#) who study the issue, is to drastically reduce the output of carbon dioxide from fossil fuel use.

“For long-term climate change, the amount of warming depends on the total amount of carbon dioxide emitted into the atmosphere by people: past, present and future,” Somerville said.



Climate scientist and Doomsday Clock operator Richard Somerville interviewed by a Chicago television station reporter in South Lake Tahoe on Jan. 12, 2017. (Photo: Contributed photo)

In the United States federal, state and local governments, along with private companies, have made huge efficiency gains when it comes to fossil fuel consumption through everything from better buildings to more fuel efficient cars and trucks to increased use of renewable energy sources that don’t rely on burning oil, coal or natural gas.

But previous efforts haven’t been enough to reduce the warming trend to a more tolerable level.

Last year countries from around the world, including leading carbon emitters such as the United States, China and India, signed the [Paris Agreement](#), a voluntary agreement to attempt to limit the global temperature increase to 1.5 degrees Celsius above pre-industrial levels.

During his presidential campaign Trump threatened to [cancel the agreement](#) and also pledged to [increase development of fossil fuels](#).

Trump also nominated [former oil executive Rex Tillerson](#) for Secretary of State and Oklahoma Attorney General Scott Pruitt, who as recently as October [refused to accept the scientific data](#) that shows the burning of fossil fuels is causing the planet to warm too fast for societies to readily adapt.

Members of the Republican party, who as a group have been [slower to acknowledge and quicker to outright deny climate change findings](#), also control Congress.

The promises and controversial nominations have prompted scientists and political leaders who recognize the threat of climate change to consider how to proceed without help from the federal government.

“These appointments should come as no surprise given Mr. Trump’s denial of climate science,” DeLeón said. “Political leadership is needed now more than ever.”

DeLeón cited California’s decades-old quest to limit auto emissions, an effort that contributed to increased fuel efficiency nationwide as an example of leadership.

More recently the California Legislature and [Gov. Jerry Brown approved Senate Bill 350](#), a bill from DeLeón that calls on California to get half of its energy from renewable sources and double energy efficiency in all buildings by 2030. California also [recently enacted Senate Bill 32](#), which calls on the state to limit greenhouse gas emissions to 1990 levels by 2020.

“Our climate leadership is not going to take a back seat to any other state or any other country,” DeLeón said in an interview with the Sacramento Bee.

He said California is seeking support from other non-national governments in the United States and beyond. So far, according to DeLeón, 165 jurisdictions in 33 countries on six continents have signed [memorandums of understanding that outline a path to greenhouse gas reductions](#).

Nevada is not on that list.

The two states share the Sierra Nevada, Lake Tahoe and roughly 600 miles of border.

And [while they do cooperate with federal and local governments on managing Lake Tahoe](#), Nevada hasn’t kept up with California’s aggressive climate goals.

[Assemblyman Justin Watkins, D-Las Vegas](#), highlighted bill requests that would restore incentives for rooftop solar and restrict fracking, a controversial method of extracting fossil fuels, in the state as examples of pending legislation that could reduce greenhouse gas output from Nevada.

“The legislative session will have a lot to say about reducing our carbon footprint as a state,” Watkins said.

Watkins also said it’s reasonable for the Legislature to consider more measures, especially if the federal government cuts back.

“If we have a federal government that is no longer willing to carry the water that is why we have state law,” Watkins said.

He said it’s important for political leaders to acknowledge scientific data that shows humans are changing the climate.

But he stopped short of saying the state should increase funding for more academic research on the subject or pick up the tab if federal money falls short.

“It is impractical to say if all federally funded research is cut in the state of Nevada we would pick up the tab,” Watkins said.

Republican [Gov. Brian Sandoval](#) cited a litany of efforts by Nevada to improve efficiency in energy and water use.

Sandoval is one of 17 governors, including Brown, to sign the [Governors’ Accord for a New Energy Future](#). It’s a pledge to expand the use of clean energy, including in transportation, but it doesn’t include greenhouse gas reduction goals like the California legislation.

Sandoval also [signed a bill in 2013](#) that required the retirement or elimination of 800 megawatts of power from coal burning sources.

It also required 900 megawatts of new power from cleaner sources, including 350 from renewables.

It put Nevada in compliance with proposed requirements of the federal clean power plan.

But in an email response Sandoval declined to support future federal research and funding into the implications of climate change in Nevada, the Great Basin, the Sierra Nevada and across the west.

He also declined to answer whether he thinks the existence of human caused global climate change is an area for political debate or whether the conversation should advance to avoidance and adaptation.

Somerville said he’s hopeful the United States will continue the fight on climate change if for no other reason an increasing number of citizens across the political spectrum say global warming is occurring, it’s mostly caused by human activity and they are worried about it.

“There are no liberal or conservative thermometers. There are no Republican or Democratic satellites,” Somerville said. “Whether to act to meet the challenge of global warming should not depend on your politics.”

## A Check Up for the Truckee River

*Posted: Jan 17, 2017 2:16 PM PST <em class="wnDate">Tuesday, January 17, 2017 5:16 PM EST</em>Updated: Jan 17, 2017 2:21 PM PST <em class="wnDate">Tuesday, January 17, 2017 5:21 PM EST</em>*

By John Potter

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The river flows 121 miles from lake to lake, the lifeblood of the Truckee Meadows...a prime source of irrigation and all that it grows in the valleys. Sometimes calm, sometimes fierce...and today churning and rushing after our recent bounty from the sky. Today it was visited by a U.S. Geological Survey field crew to find out just how healthy the Truckee River is right now after the storms, collecting new stream flow data and watching for potential hazards.

Wearing a smile while he was watching the noisy rapids near John Champion Park, USGS Hydrologic Technician Douglas Hutchinson told us, "Water is very precious in an arid state like Nevada, so every drop counts."

The results they got today (Tuesday) were very exact. Have you ever heard of the acoustic Doppler River Current Profiler? They put the boat-like machine into the river where it measures water velocity, which in turn tells the story of how the Truckee is now. Hutchinson described how it works: "It measures the particles in the water as they're going by in the flow. It doesn't measure the water. It measures how fast the particles in the water are flowing by."

Above, up on the footbridge, USGS hydro tech Emil Stockton received the real time numbers via Bluetooth, and broke them down for us: "Normal flows this time of year would be around 300-500 CFS. Today it's coming in about 1,100 CFS."

That's cubic feet per second, and a reading more than double what's normal. This area near downtown has been used for these measurements since 1906, back when they used a brass instrument to get their numbers. Either way, it's an important measurement. They know the information they get here could possibly save lives downstream. Hutchinson told us the measurements "are so we can give people a heads up to move their property or themselves out of the way of a potential high flow event coming through."

There are automated gauges up and down the river, reporting water level readings for flood and landslide warnings and watches...vital information safeguarding lives and protecting property. The USGS comes out in person every 6 weeks to get these velocity flow measurements with the \$60,000 profiler, always in the same spot for consistent readings. Hutchinson says "We're trying to keep the flow confined into 1 channel. It's very difficult to try and collect data when it's spread all over the valley."

Today's verdict? The river's back in the black...an A-plus grade at least for now.

You can always keep in touch with the Truckee's flow yourself through the USGS website, where you can see all the flow numbers from each remote location along the river. Just click below:

[https://waterdata.usgs.gov/nv/nwis/uv/?site\\_no=10348000&PARAMeter\\_cd=00065,00060](https://waterdata.usgs.gov/nv/nwis/uv/?site_no=10348000&PARAMeter_cd=00065,00060)

# Boil water order issued for Sutcliffe community near Pyramid Lake

by News 4-Fox 11 Digital Staff

Tuesday, January 17th 2017



AA

SUTCLIFFE, Nev. (News 4 & Fox 11) — A boil water order has been issued for the Sutcliffe community effective immediately, according to a statement from the Pyramid Lake Paiute Tribe.

Officials say residents are discouraged from bathing in the water, but that it is okay for washing clothes and dishes.

Damage from recent flooding disrupted water service in Sutcliffe this past weekend, requiring deliveries from the Red Cross and National Guard.

Tribal officials say water is being "recharged into the system" over the next few days and will have a smell of chlorine due to the purification process.

State Route 446, which connects Sutcliffe to Nixon, remains closed, according to the Nevada Department of Transportation.

Contractors will also be making emergency repairs to Pyramid Highway and State Route 447, or the Gerlach Highway, which can result in some delays, an NDOT spokesperson said in a statement.

Pyramid Lake is still off limits for boating and fishing, with a reopening still to be determined, officials said in a statement Tuesday.

## **Special to NNBW:**

### **From water to web: TMWA debuts new website from Noble Studios**

Heroes to the greater Reno/Sparks area, the water experts at Truckee Meadows Water Authority (TMWA) work tirelessly year-round to ensure the highest-quality drinking water to more than 385,000 northern Nevada residents. And much like all community-valued organizations, effective communication and digital presence matter significantly to their business.

TMWA choose Noble Studios to redesign its website to create a compelling user experience that would help to tell its own unique story of customer-focused water service. Noble Studios is proud to announce that the all-new TMWA.com has launched. The new website, which has been fully redesigned, shines a light on this invaluable organization and what it does for the community.

“Truckee Meadows Water Authority is an organization that we are all passionate about, not only because they’re our neighbors, but because our region’s water is an invaluable resource in need of a larger spotlight,” said Noble Studios’ CMO and partner Michael Thomas in a press release. “It’s a great feeling to be able to bring best practices that we’ve learned from working with high-level clients back to our own hometown.”

The newly branded website is responsive on all devices and features intuitive navigation, making it easier for TMWA customers to access important tools and resources. The homepage features dynamic widgets designed to illustrate the Truckee River’s ever-changing water flow and reserves. And, as part the overall content strategy, TMWA.com features an all-new blog, which houses articles covering such water-related topics as home winterization, facility tours, ongoing workshops and more.

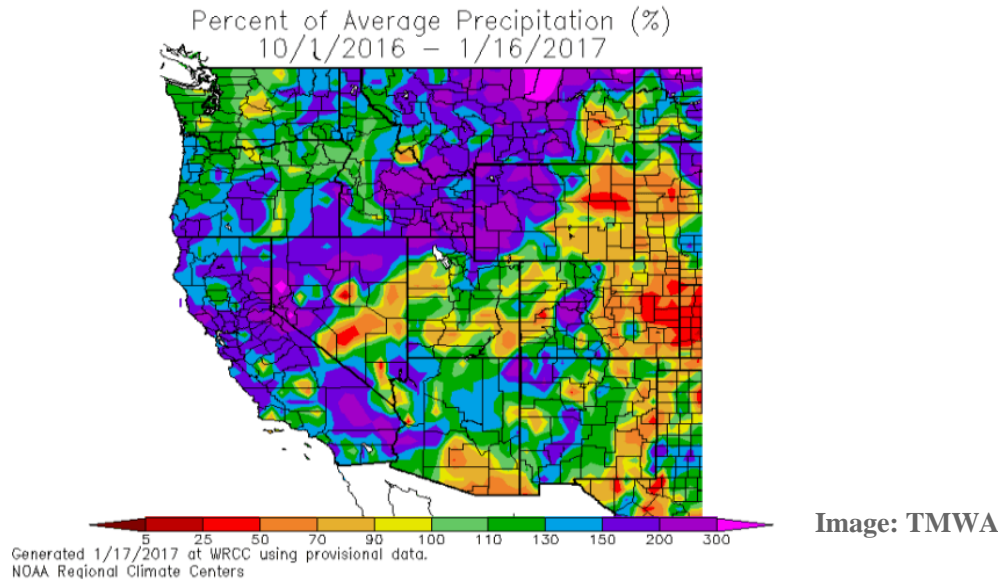
Noble Studios also provided its photography and videography services to the project. The website now includes beautiful imagery and video of the Truckee River as well as TMWA’s state-of-the-art facilities and expert researchers, which illustrate the organization’s dedication to producing the highest-quality water for its community.

Headquartered in Reno, Nev., Noble Studios has worked with and continues to support other northern Nevada businesses, including the University of Nevada, Reno, the Discovery Museum, and most recently, the Reno Sparks Convention and Visitors Authority (RSCVA).

Experience TMWA’s new website by visiting <<http://www.tmwa.com>>

# Normal River Flow Expected Next Two Years Thanks to Recent Precipitation

JANUARY 18, 2017 BY [CARLA O'DAY LEAVE A COMMENT](#)



By Carla O'Day

This year has started off as one of the best for precipitation in recent history for the Reno-Lake Tahoe region, and another series of storms expected to hit in the next few days should improve the outlook even more, according to the Truckee Meadows Water Authority (TMWA).

Thanks to above average precipitation this month, more TMWA drought reserves than ever are currently in storage, the Lake Tahoe snowpack is about double its average levels, and normal Truckee River flows are expected the next two years.

“The region is experiencing one of the best water starts in recent history,” Bill Hauck, TMWA senior hydrologist told board members Wednesday. “At the end of December, snowpack levels were starting to fall off a bit. As of this morning, our water supply situation is in really good shape.”



Image: Washoe County.

Lake Tahoe is about 4.2 inches above its rim, rising more than two inches since October.

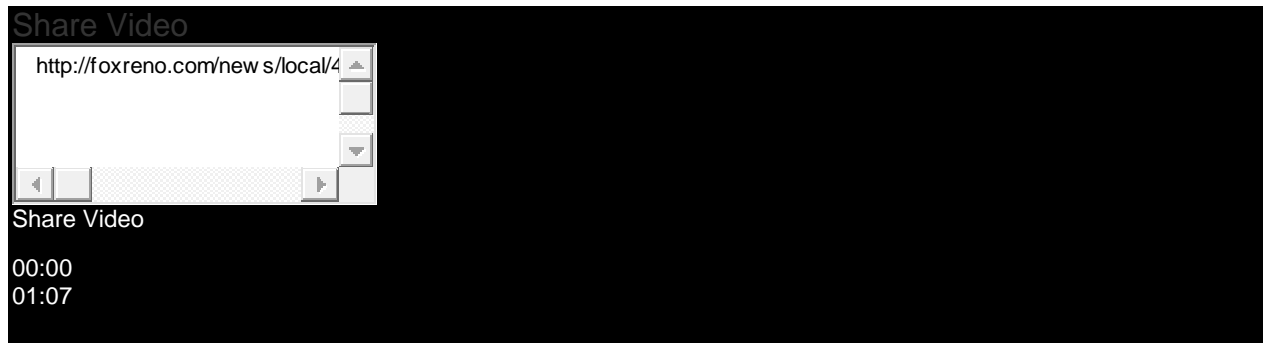
After dealing with drought last year, extraordinary amounts of snow and rain that fell the first part of January caused flooding, street closures, school cancellations and potholes, among other things. But as rough as it was for commuters, it was as good for the area's water supply.

“It wasn't easy to deal with the drought, but call it a godsend,” said Washoe County Commissioner Vaughn Hartung, a TMWA board member

# 4 Nevada watersheds receive funding to improve water quality

by News 4-Fox 11 Digital Staff

Thursday, January 19th 2017



AA

RENO, Nev. (News 4 & Fox 11) — Four watersheds in Nevada will receive federal funding to improve water quality, the U.S. Department of Agriculture announced on Thursday.

Sheckler Reservoir, Stillwater Marsh, Soda Lake-Carson River and South Branch-Carson River, all in Churchill County, will be the beneficiaries.

They are four of 197 high-priority watersheds across the U.S. that will receive \$33 million, with the goal of helping landowners improve the water quality.

The National Water Quality Initiative helps farmers and ranchers put into place conservation practices, like nutrient management and conservation cropping practices.

## **NSDC & Heritage Bank of Nevada work to facilitate loan for US Geomatics' Midtown location**

US Geomatics, Inc., a Nevada-based corporation providing professional land surveying and mapping services for public and private businesses, has purchased a building at 1071 Haskell Street in the Midtown Reno office and retail district that will serve as new company headquarters.

To finance the \$275,000 project, US Geomatics, Inc. (UGI) capitalized on an advantageous rate of just 4.091 percent on an SBA loan arranged through Nevada State Development Corporation (NSDC). Heritage Bank of Nevada also participated in the financing.

UGI owner Glen Armstrong says the new location will put the company in a superb position to grow while operating more efficiently.

"Since we opened UGI in 2004, this will be the first time that we have a true fixed operating cost that's going to save us an average of nearly \$7,000 a year in rent just for starters," Armstrong said. "Additionally, the layout of this building is going to allow us to grow while providing the flexibility we need to grow the business moving forward."

As UGI grows and expands, the new property's basement area can be utilized for additional office space while providing storage space for the firm's present needs, Armstrong pointed out.

"UGI's new location is in the rapidly redeveloping Midtown Reno office and retail district," said Roger Kadz, Vice President/Business Development Officer with Nevada State Development Corporation. "Nobody has a crystal ball, but with a little luck in the real estate market, they have an excellent opportunity to turn what would have been rent payments into a strong equity position. UGI will likely have an excellent chance of seeing some real appreciation over the next several years of business operations."

Services provided by UGI include topographic and hydrographic surveys, photogrammetric control, remote GPS survey, GIS, resource-grade GPS and data collection, water rights surveying and mapping, forensic surveying, aerial topographic surveys, public works and engineering support, project planning and management, legal description preparation, and ALTA/ACSM land title surveying for all of Nevada, Northern California, and Oregon.

Clients of UGI include federal, state and local agencies, large- and small-ies companies, commercial and residential real estate developers, private landowners, and large-scale water rights users. Key customers of the company include The Truckee Meadows Water Authority, Ormat Nevada, Inc., and Tectonics Design Group.

UGI markets through industry-related professional organizations, advertisements in industry-specific publications, word of mouth, and a prominent online presence.

For more information on Nevada State Development Corporation, please visit <http://www.nsdcc.com>.

For more information on US Geomatics, please visit [usgeomatics.com](http://usgeomatics.com)

# What's ahead for the Tahoe Pyramid Bikeway

Janet Phillips 2:45 p.m. PT Jan. 24, 2017

Construction work starts this summer on the next-to-last stretch of the Tahoe Pyramid Bikeway through the Truckee Canyon west of Reno. Engineering work is underway to complete the last steep section in 2018.

When these last four miles are finished, bike riders from Reno will be able to ride to Truckee and on to Lake Tahoe, realizing a dream of many local adventurers and creating another tourist draw for the region.

The **Truckee Meadows Water Authority** opened to the public its utility maintenance road into the Truckee Canyon at Verdi in 2013. The trail runs along the canyon walls, through a forest and then by the Truckee River starting at the Fleish footbridge.

The utility road, temporarily closed for construction, is expected to reopen in March. And the section near Floriston is now impassable because of mud, fallen rocks and debris left over from the Truckee River flood on Jan. 8. Volunteers will be sought for a cleanup of debris and rocks on the trail planned for May.

But an inspection just after the flood showed not a single rock had fallen in a 300-foot section built last year across a field of boulders. It is in amazing shape and we are one boulder field closer to completion.

After the cleanup in May, people interested in riding or hiking an intermediate trail may want to check out the section from Floriston, through Farad, to the Fleish footbridge. This 6.3-mile segment runs along the Truckee River.

Elsewhere, the Bikeway is closed at the Nature Conservancy east of Reno and Sparks because of flood damage, and I suspect the trail at the Pyramid Paiute Indian Reservation is also impassable.

Returning to the Truckee Canyon, trailwork will begin this spring at Hirschdale Road, below Interstate 80 near Boca Reservoir. The trail starts by crossing an old bridge over the river and then runs on top of the old roadbed of U.S. 40 for a mile. Then a trail will have to be cut across the slopes below Interstate 80 to Iceland, across from the giant log cabin on the other side of the canyon.

Firms interested in construction bidding are now being sought.

The last two miles, scheduled for 2018 construction, will be very difficult and current plans call for a quarter-mile section to be cantilevered off the side of Interstate 80. This is around the big curve west of Floriston where CalTrans had to build a retaining wall to hold up the freeway.

Jonathan Pease, a Reno geotechnical engineer, being assisted by several engineering students from the University of Nevada, Reno, is working to locate the trail as close to the Truckee River as possible.

This steep section will take up much of a \$2 million federal grant for the last four miles of the project. That grant requires \$300,000 in matching funds, of which about half was raised last year.

On the California side of the canyon, the Truckee Donner Recreation and Park District is accepting the grant and will be issuing contracts for the work required.

Volunteers on a non-profit board oversee the Tahoe Pyramid Bikeway project since it began in 2006. Since then, 93 percent of the money raised by the nonprofit has gone into trail construction.

About 75 percent of a bike route is now open along the Truckee River's 116-mile journey from Lake Tahoe to Pyramid Lake. That includes the work of the Town of Truckee, which opened five miles of Legacy trail two years ago, and other agencies in California and Nevada.

*Janet Phillips, based in Reno, is the founder and president of the Tahoe Pyramid Bikeway*

## Where to put the water?



STEVE RANSON / LVN |

A canal system in the Stillwater area east of Fallon could deliver thousands of acre feet of water to the Stillwater National Wildlife Refuge to mitig...



STEVE RANSON / LVN |

Harmon Reservoir is one of four reservoirs in the valley that has enough storage space for excess runoff if Lahontan Reservoir fills up.



STEVE RANSON / LVN |

Many canals heading east of Fallon are dry but ready to carry excess water if needed.



steve ranson / lvn |

Excessive vegetation in the Carson River could block water to cause localized flooding.



STEVE RANSON / LVN |

Harmon Reservoir is coming to life with more water.



STEVE RANSON / LVN |

The Carson River has the potential to overflow in the county's low-lying areas such as Bafford Lane.

Since December Lahontan Valley ranchers and farmers have been euphoric because of the increasing snowpack in the Sierra Nevada mountain range that will eventually fill Lahontan Reservoir.

Yet, water always presents itself with a good news, bad news scenario.

First and foremost, farmers expect to have a banner growing year with the abundance of water, something they haven't seen since 2012 when the reservoir filled up.

Now, the bad news, especially for those who live downstream from the Lahontan Dam.

Once the snowpack melts and sends cold mountain water rushing down the Carson River to Lahontan, the reservoir will rapidly reach capacity, thus triggering a plan to redirect water to mitigate any lowland flooding.

Water master Kelly Herwick of the Truckee-Carson Irrigation District is soon to become a genie with a magic ball once the water roars down the mountain.

“We’re now at a point to figure out the forecast of how much (precipitation) is in the mountain and how much will be coming into the Carson River,” Herwick said.

Because of the deep snowpack in the Sierra, which ranges upward to 26-feet deep in the Lake Tahoe Basin, Churchill County, state and federal officials are juggling with numbers and scenarios. Earlier this month, TCID officials shut off water from the Truckee River to the Truckee Canal, which also flows into Lahontan, because of an operating agreement.

Bureau of Reclamation hydrologists constantly monitor the added accumulation of water. For the time being, water from the Truckee River will keep flowing into Pyramid Lake.

TCID relies on the lessons learned from previous years when flooding occurred downstream from the reservoir and through the Carson River corridor to the Carson Sink northeast of Fallon. If Herwick sees the reservoir filling up faster than predicted, he said Reclamation then guides TCID on precautionary drawdowns. TCID then follows a procedure to send extra water to the Stillwater National Wildlife Refuge in one or all three irrigation canals, marshes, reservoirs such as Harmon or Sheckler or Carson Lake south of the Greenhead Hunting Club on Pasture Road.

The fourth and final scenario, he said, is sending the water to the Carson Sink to mitigate any potential flooding in low-lying areas.

“In 2011, we had precautionary drawdown,” Herwick said, noting Lahontan Reservoir had about 191,000 acre feet of water on May 1. “We had quite a lot of storage with the reservoir. The drawdown worked out pretty good.”

Each acre-foot of water equals less than 326,000 gallons of water and is enough to cover one acre of land one-foot deep.

A similar scenario occurred during the winter of 1996-97 when a Pineapple Express weather pattern from the South Pacific moved over the Sierra in late December 1996, melting a substantial snowpack and sending water down the Truckee and Carson rivers that flooded low-lying areas from Minden to Fallon.

Rusty Jardine, TCID’s district manager, said his agency meets weekly with Reclamation via videoconferencing to discuss the forecast and modeling done to determine snow totals.

Additionally, Jardine said TCID is constantly in contact with the National Weather Service.

Churchill County Sheriff Ben Trotter said similar concerns are occurring now as they did in 2011 with the spring runoff. He said the flooding upstream on the Carson and Truckee rivers combined with the Sierra snowpack are causing officials to evaluate the county’s readiness.

“We are asking for residents who live along the river to make sure you don’t have any cross fences in the river or obstructions that would block flow or collect debris when water is released into the river later in the year,” Trotter strongly advised.

Herwick said residents who live near the river should be aware of any structures or debris that could impede the river’s flow.

In 2011, Trotter and local officials issued the same advice and warnings about eyeballing the river and reporting any obstructions to TCID or the sheriff’s office.

Jardine said TCID has applied for a state permit to clear out the river channel of any debris and other obstacles from the Carson River

## THE OPINION OF THE RGJ EDITORIAL BOARD

### Community members tell us the priorities we need to focus on

With Reno's mayor and Nevada's governor giving recent speeches on their priorities, we took the pulse of what people in our community think.

This came in the form of seeking public members for the RGJ Editorial Board, which operates separately from news coverage and weighs in on key issues affecting the community. We asked applicants to tell us what five topics they thought the board should focus on in its editorials.

We tallied the picks from about 125 submissions. Far and away, education was considered the most important, with about 60% choosing it.

Jeff Shaffer, a retired Democrat, said he thinks it is important to follow "the effects of the recently passed Washoe county tax increase on the educational system, how the monies raised are being used, if the tax increase negatively affected the business community and if the school board as newly constituted can start effectively managing the system."

Others just want to make sure children get a good education. William Esselstein, a Republican and former attorney, said the editorial board needs to look at the "effectiveness of current education programs in preparing students as citizens, parents and productive members of their communities."

The second most important issue was keeping an eye on local government. Dan Webb, a Reno CPA and Republican, expressed this view colorfully: "The radiant array of incompetence and dysfunction of our local boards needs neon."

A close third were concerns over growth. Applicants tackled this view from different angles.

For instance, Mia Brink – a Democrat and schoolteacher – said, "Long-time residents are noticing a shift in traffic patterns and impatience in what used to be an easy trip to the store."

Robert D. Parker, a Republican living in Galena Forest Estates and a former aerospace executive, said the board should focus on "projected population growth and its impact on water supplies."

Another worry is that the population boom will affect our quality of life

An almost equal number of applicants were concerned about issues often linked to growth: the environment, economic development and homelessness.

Jackie McKinney, a Reno Democrat who works at a women's shelter, said, "The homeless population in Reno and Sparks is insanely high and while we have great local resources, the organizations cannot accommodate everyone that needs assistance. We need to be better community members to those who man, a Sparks carpenter and Republican, said he thinks it is important to continue the growth but also to make sure we maintain the "small town vibe" that brought him here in the first place.

Health care was key for about 1 in 5 applicants. Dianne Wright, who has no party affiliation but considers herself a fiscal conservative and a social liberal, said she's worried about expected changes to the system because of the new Trump

administration. Her words echo something a number of people brought up: volunteerism and community involvement.

Tony Verde, a Midtown resident with independent/ Libertarian leanings, summed it up with a question: "How can the diverse talents of individuals/ communities across all socio-economic strata be enticed to work together to make Reno not only The Biggest Little City in the World but more importantly: The Best Little City to Live and Work In."

This desire to work together was mentioned by 1 in 6 applicants under the label of improving public discourse in a toxic political environment.

Even for those who did not prioritize bringing people together rather than separating into political rivalries, a large segment of applicants expressed the desire to listen more than they talk and to understand rather than judge.

Deno Paolini, a right-leaning independent voter and former small-business owner in Reno, said it this way: "I believe in building consensus while listening and valuing the ideas and opinions of others."

If these applicants are at all representative of this community, the RGJ Editorial Board is likely to reach its goal of moving the conversation forward on important issues affecting Northern Nevada.

"I was denied health insurance when trying to move to Nevada due to a pre-existing condition," she said. have nothing left."

# California Water Diverters Scramble to Satisfy New Reporting Rules

Written by [Matt Weiser](#) Published on Jan. 27, 2017 Read time Approx. 6 minutes

Regulations adopted in 2015 require water-rights holders to gather better information on their diversions and report it more frequently. Attorney Amy Steinfeld helps shed light on the complicated new rules.



Rudy Mussi watches his grandson, Lorenzo, as the boy tries to turn a water valve on the family's almond orchard in the Sacramento-San

Joaquin Delta near Stockton, Calif., in March 2015. Thousands of farmers like Mussi, and many other water users, are working to meet new requirements to report more information on their water diversions to help the state manage water resources more closely. *Rich Pedroncelli, Associated Press*

A crucial deadline passed quietly on January 1 that has big repercussions for the future of California's water.

It was the first of several deadlines that enforce [new requirements](#) for water diverters to precisely measure and report the amount of water they take from the state's streams. Some 12,000 people and businesses that hold state water rights, large and small, are bound by the new rules.

These water users were required in the past to report their water use. But there were few requirements to ensure accurate reporting. As a result, the information reported to the state has been spotty, unreliable and difficult to access.

All this came to light during the drought, as state officials found they didn't have solid information to guide their conservation efforts.

The new reporting rules are more complicated, creating some confusion for water diverters. Fortunately Amy Steinfeld, an attorney at the law firm Brownstein Hyatt Farber Schreck, developed a handy infographic [cheat sheet](#) to help clients and others understand what's required and when. Water Deeply recently interviewed Steinfeld, who is based in Santa Barbara, for the lowdown on these regulations.

## Water Deeply: Can you sum up these rules for us?



Santa Barbara-area attorney Amy Steinfeld is helping clients and others understand what's required of water diverters after a new law takes effect. (Photo Courtesy Amy Steinfeld, Brownstein Hyatt Farber Schreck)

Amy Steinfeld: There are really three pieces to this new law that I think not everyone is really aware of. The first piece is that it requires more accurate measurement of diversions for all water right holders. Second, it requires all water users to report their water use annually. Previously, if you had a small livestock pond you only had to report every three years. So it's quite a change for some users.

The third piece is really a placeholder that gives the state board authority to allow for increased reporting. If, for example, the drought continues, the state board has the ability to require more frequent reporting if they find annual reporting is not adequate.

With the measurement changes, there are two ways to comply. You can install and certify a measurement device, and the state board has given all kinds of examples. Or if you don't want to install a measuring device on each diversion, you can come up with your own measurement method as long as you can certify that method meets the requirements. So if you're a really big diverter, you can have a professional certify your measuring device or method is actually accurate to about 10 percent.

## Water Deeply: Why are these new rules needed?

Steinfeld: This law is bringing water users into the 21st century with their reporting. The state is no longer allowing you to send water diversion reports in via the mail. You have to go online and submit electronically. California is not the first to do this. Colorado has actually gone a step further by requiring real-time reporting.

Of course, it was really the drought that spurred this on and produced the need for real-time accurate data. Because in 2015, the water board called for water users to predict what they were going to divert and report back on actual use. But what they got back, apparently, was insufficient for their purposes. So at that point, the state realized they needed to come up with some consistent way to make sure people had some accurate reporting device. So they devised these very complicated regulations where everyone would be required to comply and it would be a uniform way of monitoring compliance.

## Water Deeply: Will these regulations encourage conservation?

Steinfeld: I think just by using newer technology, yes. You could be aware of how, for example, your water use was increasing if you are diverting from a lake or river. You could know very accurately how much you are using on a golf course on a particular day and correlate that with the temperature that day. So it may allow your land manager to make more precise decisions about how much water you actually need on a given day. Because if you're just measuring water on a monthly basis, it's really hard to get a handle on your hourly or daily use. So it may influence some decisions on how you're actually using water.

## Water Deeply: Are these rules a hardship for water diverters?

Steinfeld: Public agencies and investor-owned utilities, they have very sophisticated ways of measuring their water diversions because they provide water to the public. It's really the smaller clients we're hearing concerns from – small farmers, cattle ranchers and also wineries that have, for example, small ponds on their property. Not only do you have to now go out and hire a professional, you also have to pay for the device, you have to pay for someone to certify it and you have to pay for someone to maintain it.

Also, if you're going to be doing any work in a streambed to install the device, you may have to get a state permit and a local permit for that work. They are requirements for everyone who diverts over 10 acre-feet [around 12,000 cubic meters] annually, so it's a pretty low threshold. It does present a drastic change, I would say in the way water users operate.

There are potential fines of \$500 per day for noncompliance. It is a lot. We've heard the state board is going to give some people time to comply because they understand this is a big change.

## Water Deeply: How much does it cost to comply?

Steinfeld: The measurement requirement is not new. The piece that's new is that you must do it using a certified measuring device. A lot of existing users may have something installed, for example, on their canal gate. They may have an existing flow meter. If you're one of the lucky ones and your existing measuring device actually meets all these requirements, all you have to do is get a contractor to certify your device. If that's the case, it would be a few hundred dollars. But for the large diverters, it could be up to \$20,000, especially if you have a reservoir. It's much more complex if you have storage on your property.

There's also the ongoing measuring and maintenance costs. Unless you're going to put an automated system in, if you divert over 500 acre-feet [around 600,000 cubic meters], the requirement is to measure on a daily basis. So you're going to have to have one of your farm workers go out there and keep the written log every single day. So it's also going to increase your staff time. And some farms may not have someone on the property on a daily basis.

Once people get past the initial concern about how expensive and onerous this is, I think it's going to help individual users make better water decisions for themselves. There are these great automated systems out there to ease your ability to keep these records – and I assume they're pretty expensive. They transmit electronically to your laptop, and you're able to download them on a regular basis. We have some clients looking at that because that's going to take the guesswork out of it.

## Water Deeply: What else are you hearing from clients?

Steinfeld: A lot of people believe this is an intrusion into private property rights. What's different about this law is that it applies to existing water users, including people who may have been using water for over 100 years. So I can see how people see this as an invasion of property rights. Also, if you have a farmer who is also pumping groundwater, they were just hit with the Sustainable Groundwater Management Act and this huge change in how groundwater is managed. And there are quite a few farmers who utilize both surface water and groundwater. So they're being hit on both ends.

## Water Deeply: Given all this effort, do you feel this information will be useful to the state?

Steinfeld: I think so. It's important for future policy and planning decisions. And also, it's going to help water users protect their senior rights. Especially when you have a very sensitive stream system that may not have sufficient flows for all users, it's going to help these users maintain their senior water rights and identify the junior users who perhaps cannot pump during certain seasons.

Overall, with the prolonged drought, we no longer have the luxury of wasting water. So I think this is really going to help the state and its people understand water use through more accurate measurement, and also help the state understand climate change and how the drought is impacting various stream systems. I don't imagine a lot of this data will actually see the light of day. It's just too much information for anyone to absorb. But I think it's in line with what other Western states are doing. It's taking the water industry and water users into the 21st century. It's no longer something we can just have a guessing game about.

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## Wild Ride Awaits for Water Issues Under Trump

Like his vow to build a border wall, Trump's promises around water issues will be difficult to fulfill. And the path to get there could be disruptive for water agencies and the environment.

Written by [Matt Weiser](#) Published on Jan. 20, 2017 Read time Approx. 8 minutes



Donald Trump toured the Flint Water Plant and Facilities, on Wednesday, Sept. 14, 2016, in Flint, Mich. He has vowed to triple funding for a federal loan program to help local agencies upgrade their water infrastructure. *Evan Vucci, Associated Press*

Donald Trump made some big campaign promises about water during his election campaign. Now that he has been elected president, those promises could dramatically shake up how water is managed in the arid West.

In one of his few direct statements about water, Trump has said he wants to invest in treatment systems to prevent problems caused by aging distribution lines, citing as an example the drinking-water contamination in the Michigan city of Flint. To do this, he proposes to triple funding for a federal loan program, called the state revolving fund, from the current \$2 billion to \$6 billion.

This could be a boon to local water and wastewater utilities struggling to pay for decaying infrastructure.

Paradoxically, Trump has also vowed to slash Clean Water Act regulations. In particular, he is targeting rules adopted by the Obama administration to protect wetlands and marshes, the nation's natural water filters.

Like Trump's vow to build a wall on the Mexican border, these proposed changes would encounter a host of inconvenient realities associated with government. Working that out is certain to be disruptive, whatever the outcome.

"Certainly what we're hearing out of the Trump administration is encouraging to the water utility sector," said G. Tracy Mehan, executive director of government affairs at the American Water Works Association. "But I don't know how you triple the state revolving fund. There's just a lot of unknowns."

The AWWA, based in Denver, CO, has identified a need to spend \$1 trillion rebuilding the nation's drinking water systems over the next 25 years – just to maintain existing levels of service. The [state revolving fund](#), a federal low-interest loan program overseen by the Environmental Protection Agency, is the backbone of infrastructure funding for water utilities.

But Mehan – who was an assistant administrator for water programs at the EPA during the George W. Bush administration – said adding \$4 billion to the loan program would be a tall order; it would require cutting a similar amount from other government programs. Mehan said it's "really unclear" how that will happen in a Congress that fights to protect every dollar spent on existing programs.

Trump also plans to convince private investors to spend \$1 trillion on public infrastructure projects. He claims he can entice them to do this by giving them generous [tax credits](#).

But Mark Lubell, director of the Center for Environmental Policy and Behavior at the University of California, Davis, said tax breaks are not enough to drive that kind of investment because there is no profit being offered.

"They're not going to invest in a flood management system, for example, where they get no revenue from somebody – even with the tax breaks," Lubell said. "That's where we need to convince the Trump officials that a more traditional infrastructure plan is consistent with their strategy."

The way to do that, he said, is to highlight the economic benefits that come with building environmental infrastructure. Projects like levee construction, floodplain restoration, modern water lines and sewage treatment facilities all support thousands of jobs; they foster domestic manufacturing and protect the nation from disasters and health crises that harm economic productivity.

"If you connect those issues to climate change or endangered species, I don't think that's going to fly in a new Trump administration," Lubell said. "But what would fly is an economic argument."

Trump, the first property developer to be elected president, has vowed to eliminate the so-called [Clean Water Rule](#) (also known as the "waters of the U.S. rule") adopted by the outgoing Obama administration. This regulation was crafted to clarify decades of uncertainty about which water bodies are subject to development restrictions under the Clean Water Act.

The rule resulted from a lengthy regulatory process triggered by court rulings. Its goal is to protect surface water expanses – marshes, wetlands, floodplains and small streams – that act as natural filters and conduits for drinking-water sources.

Lubell said eliminating the rule would not be simple; it would require a new rulemaking process that would likely take years. Simply suspending it would mean the regulations reverted to their prior state, which were a source of frustration because they were vague.

"He doesn't realize what it takes to change a regulation or rule," Lubell said. "You can't just go and magic-wand everything, which he apparently thinks is possible."

One water arena where Trump's team may have a lot of influence is dams. The new [water infrastructure bill](#) approved by Congress in December gives certain cabinet secretaries unprecedented powers to enlarge existing dams and build new ones.

The normal path to federal dam building involves a thorough environmental review by a federal agency such as the Bureau of Reclamation. Then the project is vetted by a congressional authorizing committee, such as the House Natural Resources Committee, which determines if the project is a wise investment of public dollars and a worthy environmental risk.

These practices were pushed through a generation ago by then-president Ronald Reagan to rein in pork-barrel spending.

The new legislation, however, allows the interior secretary single-handedly to approve new dams without congressional authorization. The secretary can also rely on environmental reviews done by a third party.

It also grants the army secretary powers to enlarge Army Corps of Engineers dams for water storage in cases where they now mainly provide flood control.

The bill allocates \$335 million for new reclamation dam projects. That is not enough to fund even one new dam, but it could jump-start a number of projects with the assumption that more federal money will be allocated later.

Therein lies the problem, says Ronald Stork, a senior policy adviser at Friends of the River. The existing approval process was created to ensure a reservoir proposal is based on reliable cost estimates and avoids unforeseen obstacles that could halt construction – such as insufficient water to fill it.

That is a concern with projects like the proposed Temperance Flat dam on California's San Joaquin River. The California Water Resources Control Board, which allocates water rights, has already determined the river is “fully appropriated” – meaning it has no water left for new storage projects.

“The rules have been set up to make sure we don’t have circumstances where these half-baked projects get authorization,” said Stork, who has monitored federal water projects for decades. As a result, he said, “the administration is likely to not be a gatekeeper any more.”



Republican congressman Ryan Zinke, shown campaigning in Columbia Falls, Mont., in 2014, is Donald Trump’s choice to lead the Interior Department, an agency with broad responsibility over water issues, endangered species and public lands. Zinke has acted as a congressman to shortcut environmental regulations. (Brenda Ahearn via Associated Press)

Trump's nominee for interior secretary is Montana congressman Ryan Zinke, a Republican who has already shown a desire to shortcut regulations for new water projects.

Zinke supported a controversial bill by Rep. David Valadao (R-Hanford) that would have amended the Endangered Species Act to free up water supplies in California. It would also have erased a Bureau of Land Management (BLM) finding that the San Joaquin River canyon to be dammed by Temperance Flat is eligible for federal Wild and Scenic River status.

Valadao recently introduced [a new version of the bill](#), no doubt hoping it will face better odds in the new Republican-controlled Congress.

Zinke also sponsored bills in 2015 requiring the Federal Energy Regulatory Commission to extend licenses for hydro-power development at two existing Montana dams. The licenses expired because the projects either had insufficient funding or no power lines existed to serve them. The bills became law when they were tacked on to the Energy Policy Modernization Act, [approved by Congress in April](#).

As interior secretary, Zinke will be in charge of both the Bureau of Reclamation and the BLM, as well as the U.S. Fish and Wildlife Service, the federal agency that protects freshwater and terrestrial endangered species.

In 2015, Zinke received a [3 percent rating](#) from the League of Conservation Voters for his actions on environment-related legislation in the House. He supported bills to weaken the Clean Water Act, eliminate stream buffers at surface mining projects and allow large logging projects on federal land to skip environmental reviews.

Trump's appointments to a slightly more obscure agency, the Federal Energy Regulatory Commission (FERC), have received little attention but could have lasting impacts. Within months of inauguration, Trump will be able to seat a new majority on the commission, as well as a new chairman.

The FERC issues federal licenses for hydro-power dams, typically with 50-year terms. Many of the licenses for large dams in the West are now coming due for renewal. In California, for instance, there are 22 hydro-power relicensings pending and another 18 expected to come forward in the next four years.

A 1986 law required the FERC to give equal consideration to energy and environmental issues. It also required it to seek recommendations from federal natural resources agencies during dam relicensing.

As a result, in many recent proceedings it compelled dam owners to install fish ladders for the first time and increase water releases for aquatic habitat and recreation.

But Stork said the federal agencies under Trump could stop making those recommendations, and the new FERC commissioners could place less value on them.

"There is a probability that the resources agencies ... are going to be essentially asked to stand down on their environmental mission for the duration of this administration," said Stork. "They don't have to change the law to do that. They just have to stop enforcing the law or, basically, reinterpret their mission."

That would be a big setback for river environments affected by dams. But it would save dam owners billions of dollars and lots of red tape.

Some states have their own rigorous environmental laws that may help take the sting out of any changes in federal policy. California, for instance, has its own clean water law, known as the Porter-Cologne Act, and its own Endangered Species Act, both of which are more rigorous than federal law. So it might be able to avoid backsliding on some environmental reforms.

“I don’t think they can drive it in that direction in California, because we’re a blue state with a healthy Democrat-controlled legislature and a governor that holds environmental values pretty strongly,” said Tim Quinn, executive director of the Association of California Water Agencies. “We don’t want to see those regulations go away at all.”

The ACWA represents 430 public agencies – urban and rural – responsible for 90 percent of the water supplied to California’s farms and cities.

Quinn notes that Trump was elected, in part, by exploiting the issues that divide rural and urban voters. One of those, he said, is water, which makes it an issue that California and other Western states can use to connect with the Trump administration.

“In California, the rural-urban split is not entirely about water, but water is a huge factor in that,” said Quinn. “If we offer up ways to heal those wounds around one of the issues that divides us, I choose to believe we can get them interested.”

#### **About the Author**

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# Why Water Regulations Are Spurring Action on Tackling Homelessness

The social and environmental problems that result from homeless encampments in the Bay Area are being addressed by a surprising regulation – cleaning up stormwater.

Written by [Robin Meadows](#) Published on Jan. 19, 2017 Read time Approx. 7 minutes



A woman balances herself as she crosses a creek in the Jungle, a homeless encampment in San Jose, Calif., in March 2014. Eventually, environmental and social concerns prompt homeless encampments to be cleaned out or cleaned up. *Marcio Jose Sanchez, AP*

California has nearly one quarter of the nation's homeless people – the most of any state by far – and thousands of them live in the Bay Area. Many are in outdoor encampments that lack basic services most people take for granted, including clean water, sewer hookups and garbage collection. Human waste and the pathogens in it are untreated, and refuse piles up and escapes.

And, out of all the social and environmental costs of homelessness, the trash that blows from encampments into waterways may help spur a solution to this problem in the Bay

Area. Under a new resolution by the San Francisco Bay Regional Water Quality Control Board, trash from homeless encampments now falls under the stormwater permit that requires Bay Area cities and counties to get storm drains virtually trash-free by 2022.

“I was personally shocked that the homeless problem was going to be addressed through the stormwater program – that this was the strongest regulatory driver,” says Brett Calhoun, a Santa Clara Valley Water District (SCVWD) water quality specialist.

Bay Area efforts to keep trash out of storm drains, and so out of streams and the Bay, began in 2009. However, cities soon recognized that homeless encampments are a major source of trash in waterways. “Creeks have become a haven for homeless people to hide from society in general,” says Tom Mumley of the regional water board. “If you pick a stream adjacent to an urban area, you’re generally going to find an encampment there.”

But it probably won’t be obvious. Take the stretch of Coyote Creek that winds along Wool Creek Drive in the City of San Jose. From the curb, it looks like a nature reserve. It’s thick with oaks, sycamores and willows, and birds sing high above. But a single step into the ribbon of trees is all it takes to see what they hide: a homeless encampment. Rough stairs cut into the ground, leading to a tent site carved into the stream bank, resembling a small cave. The earthen wall provides shelter from the elements and hides the site from view of the elementary school grounds across the street.

The land slopes steeply down to the creek, and a sycamore stands between the tent site and the slope. While this makes the site feel more secure, the tree’s unseasonably brown leaves say it’s dead or dying. The understory plants, which shelter salamanders and other ground-dwelling animals, are gone. And the stream bank is badly eroded. One good rain will wash loose soil down the slope and into the creek, where it will clog and bind gravel like cement. Steelhead need loose gravel for laying eggs as well as for overwintering fry habitat.

This encampment is vacant, except for the eye-popping amount of trash left behind. Layer upon layer of food containers, cardboard boxes, fabric, plastic bags and refuse too matted and weathered to recognize. The stream bank is littered all the way down to the water, so that heavy rain will also wash plenty of trash into the creek.

Due to a combination of open waterways and sizable homeless populations, streamside encampments are particularly common in Contra Costa County, Oakland and San Jose, and all three municipalities are addressing the issue. Contra Costa County cleans up encampments in flood control channels along streams, for example, while Oakland closes more than 100 encampments per year and prioritizes those within 250ft (75m) of waterways. So far, however, only San Jose is participating in a formal plan to clean up trash from homeless encampments under the stormwater permit’s new provision, along with partners including the Santa Clara Valley Water District (SCVWD) and Santa Clara County.

The San Jose area also has the largest homeless population of the three municipalities. According to the Annual Homeless Assessment Report to Congress, in 2015 Santa Clara County was number eight nationwide for homelessness – 6,556 people lacked housing during the cold of winter – and number three for chronic homelessness. Most of the county’s homeless live in San Jose, where the relentless rise in rent drives people out of their homes, according to a 2014 report by the San Francisco Center for Economic Development.



A homeless tent is seen on the banks of Coyote Creek on Feb. 28, 2014, in San Jose, Calif. (Marcio Jose Sanchez, AP)

The two waterways that meander through the heart of San Jose – Coyote Creek and the Guadalupe River – are a haven for the homeless. “The city has a small urban core that’s bookended by riparian corridors, which let people stay out of sight,” says Ray Bramson, who manages the San Jose Housing Department’s Homelessness Response Team. He has worked to help the homeless since participating in AmeriCorps in North Carolina right out of college: “People were living on the streets – I saw a terrible need.”

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Historically, when the city cleaned up encampments along creeks, people moved right back in. “Just going in and picking up garbage doesn’t go to the core of the issue for keeping creeks clean,” Calhoun says. “Source control is a better approach.” So officials sought a long-lasting solution to encampments. “The question was how to get homeless people permanently out of creeks,” Bramson says.

In 2011, San Jose began testing a possible answer: combining encampment cleanup with social services for the people living there, including individualized help, job placement and housing. The million-dollar pilot program, funded largely by a grant from the U.S. Environmental Protection Agency, took four years and focused on the largest encampment in San Jose and, according to news reports, the entire country.

Dubbed the Jungle and notorious nationwide, this encampment initially had 176 people living along a stretch of Coyote Creek that runs between two large parks. Once the people were out of the riparian area and into the social services system, it took more than two weeks to deal with the mess they left behind. Cleanup crews removed 618 tons (560 tonnes) of debris; 2,850 gallons (10,800 liters) of biowaste; 1,200 needles and 315 shopping carts. The final step was keeping homeless people from moving back in: Park rangers, who are police officers, patrol the area to deter entrenched encampments.

Building on this successful approach, San Jose and its partners established an encampment cleanup program under the stormwater permit. It’s a big job. More than 1,200 people lived along the city’s waterways in 2013. While that was down to fewer than 800 last year, it’s “still an enormous number,” says Bramson. Last year workers cleaned up 158 encampments along the city’s 140 miles (225km) of waterways.

Just a mile from the encampment with the cave dug into the streambank, cleanup is underway at another encampment along Coyote Creek near Tully Road. It’s flanked by a community garden on one side and by a library, elementary school and baseball diamond on the other. The streambank is terraced into two levels of tent sites, which extend through the trees far along the creek. There are also toilet pits. The air smells sour and jumbles of trash are everywhere. Take-out cups, cereal boxes, bread bags, sheets, foil packets, wads of paper, tarps and so much more. It’s overwhelming.

A crew wearing gloves and heavy boots hauls furniture – mattresses, metal bedframes, an olive green couch, a black office chair – into a sanitation truck. Paramedics stand by in case of injury, needle sticks or exposure to human waste. Park rangers and their police vehicles stand by in case of trouble.

At the far end of the encampment, a man and woman have packed what they can into crates but have yet to vacate. Dozens of other people stand in a nearby parking lot, surrounded by bicycles, trash bags and shopping carts full of belongings. “They’ll move right back in,” Calhoun says. A park ranger says that as the program reaches homeless people who want help, encampments can become concentrated with difficult cases. This encampment, he adds, is hyperconcentrated with methamphetamine users who have refused social services.

To understand the homeless population better, the Contra Costa County Flood Control and Water Conservation District commissioned a 2013 U.C. Berkeley study on encampments along waterways. “We wanted to know why people were setting up camps in our creeks under bridges,” says hydrologist Mark Boucher. Somewhat surprisingly, the study found that privacy rather than water is the main draw. “Usually when they don’t bother people, people don’t bother them,” he explains.

Another surprise was that the homeless population has several subgroups. “We’d never thought of the homeless that way – it was eye-opening even to homeless programs,” says Boucher, who serves as a liaison between the flood control district and social services. He’s also befriended a homeless man, shepherding him through the steps of getting help.

The subgroups include the newly homeless, who have just lost jobs and homes, and are the easiest to find and reintegrate into society. In contrast, old-timers are well-hidden and tidy, making them harder to reach. Hardest of all to reach may be veterans, who live singly or in pairs and, thanks to their military training, know how to hide in plain sight.

Besides job loss and skyrocketing housing costs, common causes of homelessness include disabilities and substance abuse. The 2015 Homeless Census & Survey found that 30 percent of homeless people in Santa Clara County have physical disabilities, 39 percent have mental illnesses and 38 percent abuse drugs or alcohol. “Homelessness is a multifaceted problem and needs a multifaceted solution,” Boucher says. “It takes massive collaboration to attack the issue, you have to fill up the holes where the need is.” He works with partners including government agencies, nonprofits and the religious community. Likewise, it takes massive collaboration for the stormwater management community to clean up urban runoff. And curbing litter and pollution in stormwater involves regulations and outreach aimed at all people living, working and traveling throughout the Bay Area, not just the homeless.

For all the complexity of the causes, however, homeless people obviously have something simple in common: They need homes. Demand far outweighs available resources but new funding is in the works. A state initiative called “No Place Like Home” was signed into law in July and will provide \$2 billion for housing for people who are chronically homeless due to mental illness. And Bay Area voters authorized several measures in November that will house the homeless. A sales tax will provide \$1.2 billion for homeless housing and services in San Francisco, and bonds will provide \$580 and \$950 million, respectively, for affordable housing in Alameda and Santa Clara counties.

Last year’s Homeless Census & Survey also found that 93 percent of respondents in Santa Clara County want permanent housing. “We need to help these people live a better life than along creeks,” says Calhoun. “It’s not where they want to be either.”

*This story first appeared on [Estuary News](#). Read the [original here](#)*

## **Controller: California water district misspending "shocking"**

*Posted: Jan 31, 2017 11:36 AM PST <em class="wnDate">Tuesday, January 31, 2017 2:36 PM EST</em>Updated: Jan 31, 2017 11:36 AM PST <em class="wnDate">Tuesday, January 31, 2017 2:36 PM EST</em>*

By SCOTT SMITH  
Associated Press

FRESNO, Calif. (AP) - State officials accuse a central California irrigation district of misspending, giving employees free housing, interest-free loans and concert tickets.

State Controller Betty Yee on Tuesday announced the findings of a probe into the Panoche Water District. Based in Firebaugh, California it delivers irrigation water to farmers in Merced and Fresno counties.

Yee called the lack of oversight shocking and potentially illegal.

Yee says the district gave \$86,000 in interest-free loans to its employees and six employees received free housing; it provided 50 cars to employees.

Yee says employees used district credit cards to buy Raiders and Oakland A's tickets and attend a Katy Perry concert.

Yee says she's considering what action to take to hold officials accountable.

Panoche officials didn't immediately respond to a request for comment by The Associated Press.

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## Tahoe region had shovel-busting snow month

[Benjamin Spillman](#), bspillman@rgj.com Published 7:06 p.m. PT Feb. 1, 2017 | Updated 15 hours ago

Lake Tahoe-area residents who shoveled their own walks in January have something to boast about.

They're the most prolific Tahoe snow-shovelers in generations.

Nearly an entire winter's worth of snow fell on the region during the first three weeks of January, burying buildings and ensuring full reservoirs and steady stream flows in coming months.

The region's snowpack jumped from 62 percent of normal at the beginning of the month to 191 percent by the end.

In terms of precipitation it was the biggest January in the Tahoe, Truckee and Carson river basins since at least 1981, when the SNOTEL measuring system went into place.

And in Tahoe City, Calif., January was among the highest-precipitation months recorded since 1910.

"What Tahoe experienced in January was historic in many, many ways," said hydrologist Jeff Anderson, who tracks snowpack for the Nevada Natural Resources Conservation Service. "No one else has experienced what they did, back maybe 100 years."

It was a similar story at Slide Mountain, where a SNOTEL station on the grounds of Mt. Rose Ski Tahoe tracks snowfall.

On Wednesday there was 150 inches of snow depth and the water content measured nearly 50 inches.

That's 212 percent of the median for Feb. 1 and 134 percent of normal for even April 1, which means there is already more snow on the ground than usually falls all winter.

All told for the month, 295 inches of snow, which adds up to more than 24 feet, fell on the site.

The robust snowpack has ramifications for the region's drought, as well. According to the U.S. Drought Monitor only 6 percent of Nevada is in drought and 23 percent is abnormally dry.

## Prolonged snow nourishes Northern Nevada, Lake Tahoe



MOLLY MOSER/Nevada Appeal |

Hydrologists of USDA Natural Resources Conservation Service measure snowpack score at Mount Rose summit on Wednesday.



MOLLY MOSER/Nevada Appeal |

Hydrologist Jeff Anderson of NRCS Nevada scales a measuring pole full of snow at Mount Rose summit on Wednesday.

**MT. ROSE SUMMIT** — The series of freak snowstorms that occurred in January is described as unforgettable, as it was the most historic weather month in 36 years.

According to measurements taken by the Nevada Irrigation District, snowpack sits at 169 percent of average in the mountains that supply NID according to an NID release.

And although NID expects sufficient water supplies this year, the State Water Resources Control Board emergency drought regulations have not been lifted and statewide water use restrictions remain in effect.

“This has obviously been a very wet start to winter,” said NID Water Resources Supt. Sue Sindt. “The precipitation total at Bowman has already exceeded the annual total and we are only in the first part of February and more storms are in the forecast.”

The storms guided Northern California and Nevada out of drought conditions, and Lake Tahoe may have a chance for full capacity, said a hydrologist for the United States Department of Agriculture Natural Resources Conservation Service at Mount Rose on Wednesday.

“January 2017 is something we’ll be talking about for years to come,” said Jeff Anderson. “We received three to four times of the amount of snowfall this month as we would typically get in a normal year.”

That’s basically a whole winter’s worth of snowfall. Think of it as three Januarys back-to-back-to-back.

Through depths of snow, hydrologists measured the snowpack core at the summit of Mount Rose.

The sensor reported 150 inches of snow depth and 49.4 inches of water content. In other terms, that’s more than four feet of water in the snowpack. That’s twice as much snow than what the area would typically have in a normal year, Anderson said, and that’s not including a dry year.

The normal peak amount for April 1 is at 134 percent.

Obviously, this is great news for Lake Tahoe. Thanks to the storms, the lake stored 2.6 feet of water, said Chad Blanchard of the Truckee-Carson Federal Water Master’s Office.

“This is more than the typical, annual rise for the year,” Blanchard said. “We can include the water sitting in the snow and what we’ll receive from upcoming storms. It’s a unique type of year as there’s a chance it will fill up at its natural rim.”

Snowpack at Lake Tahoe Basin tripled. It went from 62 percent to 191 percent in a month’s period, which is sixth best since the mid-1950s.

It’s possible this could make up for the loss during the drought. The Sierra missed about a year and a half of precipitation, about 74 inches at Mount Rose. The average is 55 inches.

But based on the precipitation the area already has, Anderson said we have a full year’s worth of water.

With more forecasts of winter storms making its way, Blanchard said to embrace it instead of dreading it.

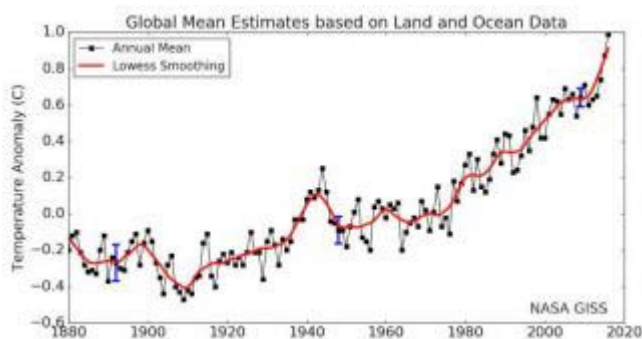
“There’s always a threat when we have a large rainstorm and high snow levels,” he said. “It’s a risk with the extremely wet soil conditions and low elevation. Although it increases the threat, it’s great for the water supply.”

## 2016 was the warmest-ever year; what does it mean for Lake Tahoe?



File photo |

Lake Tahoe's water temperature has risen over the years.



Courtesy NOAA |

This graph shows NOAA's land-ocean temperature index, 1880 to present, showing rising temperatures over the years. The solid black line is the g...

More Online View the report from NOAA here: <https://www.ncdc.noaa.gov/sotc/summary-info/global/201612>

Check out NASA's coverage here: <https://www.nasa.gov/feature/goddard/2016/climate-trends-continue-to-break-records>

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Learn about the UC Davis Tahoe Environmental Research Center, find out more about what they do and view their calendar of upcoming events here: <http://terc.ucdavis.edu/>

The 2016 State of the Lake report is located here: <http://terc.ucdavis.edu/stateofthelake/sotl-reports/2016/07-meteorology.pdf>

Top scientists announced in January that last year was the hottest year on record — an announcement they've made three years in a row, with 2014, 2015 and now 2016 each being declared warmer than the previous year.

That news isn't particularly shocking to those living in the Sierra who have witnessed firsthand the effects of a multi-year drought on [tree mortality](#) and snowfall.

Even the lake is getting warmer, according to researchers at the University of California, Davis, Tahoe Environmental Research Center. As the Sun [reported](#) last August after a UC Davis TERC presentation, climate change is having a clear impact on Lake Tahoe.

But since the region just had multiple feet of snow dumped on it in January, does that mean 2017 could be the year things go back to normal?

It's complicated, but the short answer is probably not, scientists say.

Data from the National Oceanic and Atmospheric Administration and the [National Aeronautics and Space Administration](#) shows the average global temperature of the Earth was higher in 2016 than it has been since the data first started being recorded in 1880.

In fact, according to NOAA, the average temperature across global land and ocean surfaces in 2016 was 1.69 degrees Fahrenheit (0.94 Celsius) above the 20th century average.

And while data from one year means very little, the trend of increasing temperatures over recent years tells a very different tale. 2014 and 2015 were also record-breaking years in terms of high global temperatures. 2009 was yet another hot year, but it doesn't end there.

According to [data from NASA](#), the 10 warmest years on record all have occurred since 2000 — and the record goes back 136 years.

"With climate change in general, the principle is that you're not drawing inferences on any given year — you're drawing inferences on trends," said UC Davis limnologist Dr. Steve Sadro, who studies lakes in the Sierra.

Sadro said that while he is only beginning to focus on the Tahoe area, there's more variation in weather patterns in the Sierra because of its elevation. What we do know, he said, is that we're moving toward more extremes with regard to climate variability in the Sierra.

Sadro's focus is how climate change is affecting lakes like Tahoe. Lakes can be affected by a whole host of variables, including how much snowfall there is in a given year, ice coverage, exposure to solar radiation and whether or not the lake is fed by a groundwater source, just to name a few.

He said that climate change is affecting temperature and precipitation, but just how those factors will change in the Sierra isn't clear since there's so much variability in mountain environments.

Therefore, one month of heavy snowfall, or even one year, does not mean there will continue to be heavy snowfall.

"The frequency of drought years is going up and the severity of drought is increasing," Sadro said. "Does that mean we're never going to have wet years? No."

The [2016 State of the Lake report](#) issued by TERC shows that since 1910, since local records were kept, the number of days with below-freezing air temperatures has declined.

There have been years with many days of below-freezing temperatures, but the trend over time shows that the average number has declined by about 30 days since 1910. The report also shows average monthly temperatures have been increasingly warmer locally, which is consistent with the finding that global temperatures continue to rise.

As for local snow, which is what most of us are here for, it's important to remember we've seen strong winters in the past, and they aren't not necessarily indicative of what's to come.

The [USDA Monthly Snow Data record](#) shows that on Jan. 1 of this year, Squaw Valley's Gold Coast SNOTEL site had 36 inches of snow. On the same date in 2011, 103 inches of snow were recorded, but what followed was a drought that the California Department of Water Resources called "[the driest consecutive three-year period on record in terms of statewide precipitation.](#)"

As for the trend, TERC's State of the Lake report shows that despite a wide range of variation since 1910, the percent of precipitation that falls on the Tahoe-area is down.

"Snow has declined as a fraction of total precipitation, from an average of 51 percent in 1910 to 33 percent," according to the report.

Dr. Steve Sadro will give a community [presentation](#) on climate change and lake temperature in the Sierra Nevada on Feb. 9 at the UC Davis TERC campus at 921 Country Club Dr., Incline Village, Nev. The presentation is from 5:30-7 p.m. There is a suggested donation of \$5.

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## DIRECTIONS 2017: ENGINES OF CHANGE

**HIGH-SPEED GROWTH**

## URBAN REDEVELOPMENT &amp;

Speakers at Chamber event highlight bright indicators for the future of Reno

**MIKE HIGDON** [MHIGDON@RGJ.COM](mailto:MHIGDON@RGJ.COM)

This year's Chamber event, called Directions 2017: Engines of Change, painted a much brighter picture of Northern Nevada's economic future compared to last year. Speakers described a region that has made major strides in development and growth since the recession and even since 2015, most notably transforming from the state with the highest unemployment to the second fastest growing job market in the country.

"I said we couldn't have 4 percent job growth year over year," said Mike Kazmierski, CEO of the Economic Development Authority of Western Nevada. "But it's happening and it's being projected that we'll see more. Our historic job growth was 2 percent. This is not business as usual."

Kazmierski predicted Nevada would be at full employment soon. He also hinted at another 3,200 jobs coming from new or relocating companies in the next 18 months — thanks to EDawn.

Eight speakers presented a diverse set of indicators for the future of Reno: physical health, economic growth, small business growth, urban revitalization, civic engagement and commerce.

Several speakers turned the audience of mostly business owners and executives' attention toward workforce training. They said in order to attract and retain talent, the state needs to focus its energy on education.

"We need to increase the number of Nevadans with post-secondary degrees and credentials," said Manny Lamarre, executive director of the Governor's Office of Workforce Innovation. "You need a trained and educated workforce. Employers are saying people are showing up to work without a degree. That's not career ready."

Lamarre said his new department in the Governor's Office of Economic Development will present a bill to the Nevada Legislature in hopes of making the Office of Workforce Innovation permanent.

Lt. Gov. Mark Hutchison said this is the perfect time to engage in politics because American life is political — everything is affected by an election.

Without workforce training and improved education, Nevada will continue to see more income disparity, said Frederick Steinman, an economic development specialist at the university. A focus on talent can close the wage gap in the region, which will in turn help people keep up with the rapidly increasing cost of living, according to Steinman and Kazmierski.

Steinman also said Northern Nevada is more interconnected than ever. People commute from ex-urban counties to work in urban centers. For example, 74 percent of people who live in Carson City work in Carson City, while the rest commute to surrounding cities and counties.

As genXers look toward retirement and boomers settle into it, the consumer base of the region will also change, driving more consumption toward health care, Steinman said.

That's one of the reasons Renown Health and the Desert Research Institute partnered with 23andMe to conduct regional DNA testing.

"Worrying about health insurance keeps people up at night," said Anthony Slonin, CEO of Renown Health. "We have to think differently about community health if we're going to be successful."

The 23andMe project, which uses genetic testing to determine ancestry, also helps the hospital build a regional database of health indicators. Slonin said he hopes their database can help doctors find early indicators for genetic diseases, such as cancer.

"If we can identify cancer three years earlier, wow, we can really get somewhere," he said. Renown's goal is to build a database of 100,000 people.

While Slonin talked about residents' health, Tom Murphy, senior fellow at the Urban Land Institute, reiterated Reno's need for improved urban health.

"Cities don't change or succeed by accident; they succeed or fail by intentionality," Murphy said.

The city of Reno previously hired Murphy's team to give recommendations for improving the 5.7-mile Virginia Street corridor.

"It typifies the good, bad and ugly of Reno, doesn't it," Murphy asked the crowd.

He noted that boomers are looking for the same thing as millennials: vibrant, artistic, culturally relevant, walkable or bikable urban environments. Millennials in particular, are less likely to own a car, preferring other modes of transportation, he said.

Reno needs to invest in making the corridor into a place where both generations can enjoy their evolving predilections, he said.

At the end, Kazmierski said for Reno to achieve all of these things, it must address its affordability problem. He showed the audience the increasing cost of real estate and rent, while incomes increase modestly.

"If you can't afford a house what do you do? Rent a trailer, sleep on the river or rent an apartment," he said.

But he is bullish on Reno and in favor of managed growth even at the cost of what others consider historic and salvable, such as the motels demolished in downtown.

"In case you didn't notice, we're growing," he said. "But not everyone likes growth; people in line or waiting in traffic aren't happy with (EDAWN) right now."

Similar to many of Kazmierski's public addresses, he said there's always more work to be done.

"This is not a bubble. There is no projection in the future and some of the numbers are slowing down," he said. "The best thing you can do is attract talent to the region: friends, family, alumni. Reno-Sparks is an opportunity and they need to come here."

**"We need to increase the number of Nevadans with post-secondary degrees and credentials."**

# Lake Tahoe Gained 8.7 Billion Gallons Of Water In Just 2 Days



**Trevor Nace , Contributor**

Opinions expressed by Forbes Contributors are their own.



Lake Tahoe has gained billions of gallons of water in the recent months (Credit: Wikipedia)

Lake Tahoe has had a great past few months, receiving 8.7 billion gallons of water in just two days. It hasn't stopped there; the lake has been receiving tremendous amounts of water lately to fill the lake above its natural rim level.

The sudden rise in lake level is a result of several winter storms that hit the lake in late 2016 and early 2017. The National Weather Service calculated that since Jan 1st of 2017 the lake has gained over 40 billion gallons of water. The stormy weather and heavy rains don't appear to be slowing down with sequential blizzards hitting the region in almost weekly intervals.

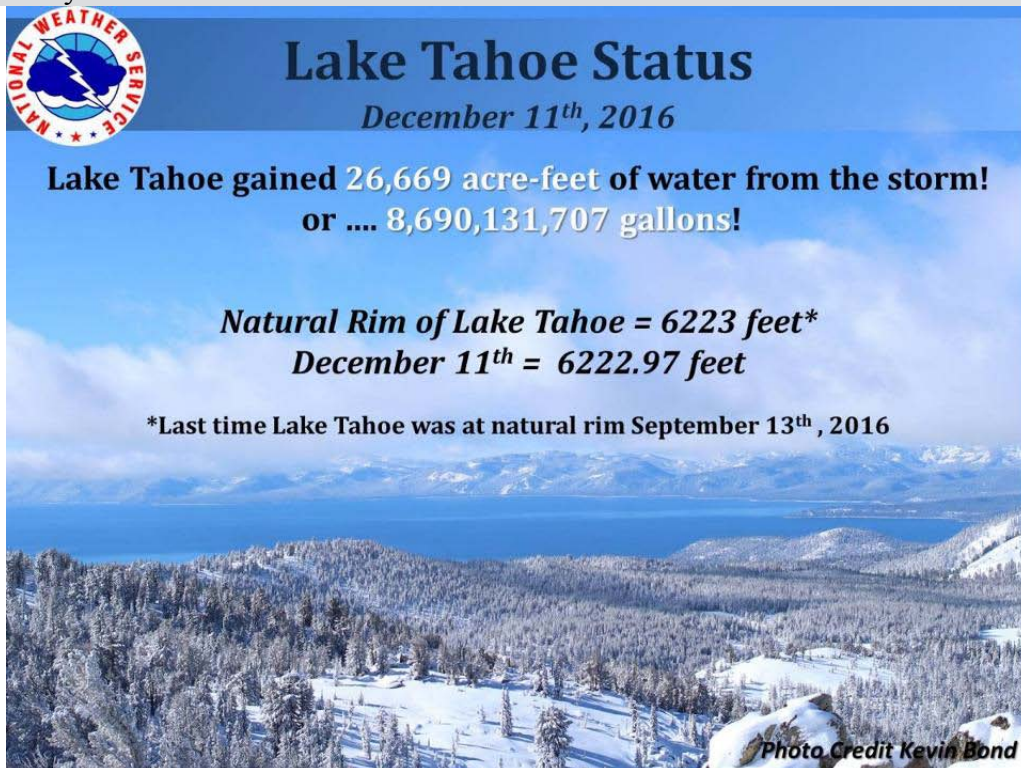
NOAA calculated that in the two-day span from December 9th through 11th Lake Tahoe gained 8,690,131,707 gallons of fresh water. The natural rim of Lake Tahoe is 6,223 feet and on December 11th the height got up to 6,222.97 feet.

## USGS 10337000 LAKE TAHOE A TAHOE CITY CA



Lake Tahoe water level from December 6th through December 13th shows rapid 8.9-billion-gallon increase (Credit: USGS)

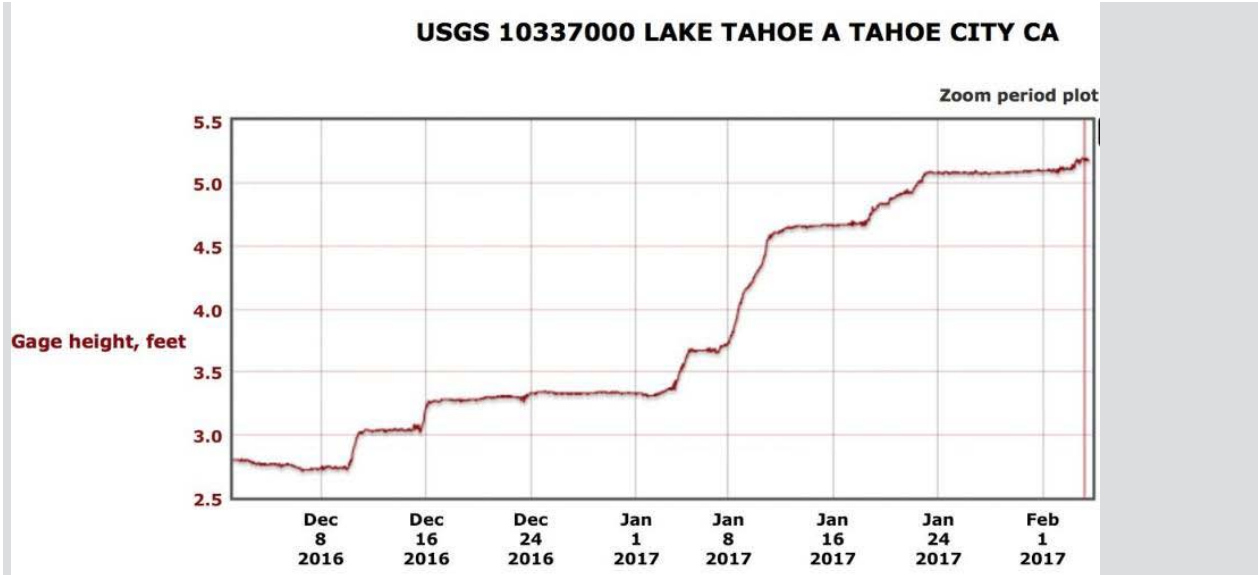
That's the equivalent of filling 13,158 Olympic size swimming pools. It is early in the winter season for Lake Tahoe to gain so much water and a good sign for drought conditions in southern California this year.



Lake Tahoe gained 8.9 billion gallons of water in 2 days (Credit: National Weather Service)

Last year this time [Lake Tahoe's level](#) was 6,222.1 feet, whereas this year the level is 6,225.2, over 3 feet higher. With Lake Tahoe's surface area of 191 square miles, adding three feet of water amounts to a tremendous addition to the lake's water storage. In fact, the total Lake Tahoe volume is estimated at [39 trillion gallons of water](#).

Lake Tahoe is the second deepest lake in the United States and is fed by 63 tributaries that drain 505 square miles known as the Lake Tahoe Watershed. Although approximately half of the water entering the lake is from rain or snow falling directly onto the lake surface. The only outlet is the Truckee River, but doesn't tell the whole story of water leaving the lake. In fact, [some estimates](#) point to over 100 billion gallons of water evaporates from the lake every year. This is enhanced by the high elevation, low cloud cover, and large surface area of the lake.



Lake Tahoe water level since December 1st 2016 has risen almost 2.5 feet. (Credit: USGS)

This is good news for residents of southern California who have witnessed one of the most extreme drought seasons in recent memory for the past few years. The Sierra Nevada runoff is at its highest level in 22 years. It's going to be a little easier to be a California resident, at least for a short while.

*Trevor Nace is a geologist, Forbes contributor, and adventurer. Follow him on Twitter [@trevornace](#)*

## **Audit: California water authority mismanaged millions**

*Posted: Feb 07, 2017 6:36 AM PST <em class="wnDate">Tuesday, February 7, 2017 9:36 AM EST</em>Updated: Feb 07, 2017 6:36 AM PST <em class="wnDate">Tuesday, February 7, 2017 9:36 AM EST</em>*

LOS ANGELES (AP) - An audit finds a wastewater treatment authority that serves a large swath of the high desert northeast of Los Angeles mismanaged millions of dollars in federal emergency management funds.

The Los Angeles Times reports Tuesday (<http://lat.ms/2ljF9H6>) that auditors determined the Victor Valley Water Reclamation Authority did not comply with numerous regulations on Federal Emergency Management Agency contracts worth nearly \$32 million.

The agency - which serves cities including Victorville, Hesperia and Apple Valley - got the money after major flooding six years ago led to a ruptured pipeline.

A spokesman says officials are disappointed by the report and that the agency had responded in detail to concerns raised by auditors.

The audit was conducted by the Office of Inspector General of the Department of Homeland Security.

Information from: Los Angeles Times, <http://www.latimes.com/>

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