



TRUCKEE MEADOWS WATER AUTHORITY
Board of Directors

AGENDA

NEW DAY: Thursday, December 13, 2018 at 10:00 a.m.
Sparks Council Chambers, 745 4th Street, Sparks, NV

Board Members

Chair Vaughn Hartung
Member Neoma Jardon
Member Jenny Brekhus
Member Kristopher Dahir

Vice Chair Ron Smith
Member Bob Lucey
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 (775) 834-8002 at least 24 hours before the meeting date.
3. Staff reports and supporting material for the meeting are available at TMWA and on the TMWA website at <http://www.tmwa.com/meeting/> or you can contact Sonia Folsom at (775) 834-8002. Supporting material is made available to the general public in accordance with NRS 241.020(6).
4. 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.
5. Asterisks (*) denote non-action items.
6. 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.
7. 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**).
8. 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 October 17, 2018 meeting of the TMWA Board of Directors (**For Possible Action**)

1. The Board may adjourn from the public meeting at any time during the agenda to receive information and conduct labor-oriented discussions in accordance with NRS 288.220 or receive information from legal counsel regarding potential or existing litigation and to deliberate toward a decision on such matters related to litigation or potential litigation.

6. Discussion and action on adoption of Resolution No. 269: A resolution to approve the implementation and/or possible deferral of the 2.5% customer rate increases previously adopted in Resolution No. 250 and currently scheduled for implementation in 2019, 2020, and 2021 — Michele Sullivan (**For Possible Action**)
7. Discussion and action on adoption of Resolution No. 270: A resolution to approve the closure of the §501-c-9 Post Retirement Medical and Life Insurance plan and Trust to future employees — Michele Sullivan (**For Possible Action**)
8. Discussion and action on adoption of Resolution No. 271: A resolution to approve the Comprehensive Annual Financial Report for Fiscal Year ended June 30, 2018 — Matt Bowman (**For Possible Action**)
9. Discussion and action on establishing a Legislative Subcommittee for the 2019 Legislative Session, appointment of Board members to Subcommittee and establishing the process to review legislative activities — John Zimmerman and Steve Walker, TMWA Lobbyist (**For Possible Action**)
10. Update regarding recommendation to broaden the purpose of the meter retrofit fee, summary of public outreach regarding the same, and possible direction to staff — John Zimmerman and John Enloe (**For Possible Action**)
11. PUBLIC HEARING ON RATE AMENDMENT
 - a. Public comment — limited to no more than three minutes per speaker*
 - b. Introduction and first reading of amendments to Rule 7 regarding modification of the purpose and amount of the Meter Retrofit Fee — John Zimmerman and John Enloe (**For Possible Action**)

CLOSE PUBLIC HEARING

12. Discussion and action, and possible direction to staff regarding the status of acquisition of the West Reno Water System and Due Diligence objections and cure activities, and possible authorization to General Manager to terminate or amend Acquisition Agreement and/or proceed with closing — John Zimmerman and John Enloe (**For Possible Action**)
13. Discussion and action, and possible direction to staff regarding the reappointment of John Enloe to represent TMWA on the Carson-Truckee Water Conservancy District Board — Mark Foree (**For Possible Action**)
14. Discussion and action, and possible approval or direction to staff regarding Reno-Sparks Chamber appointment of Ann Silver as primary representative to the Standing Advisory Committee to fill the vacancy in the Reno-Sparks Chamber appointee position, for term ending December 31, 2019 — Sonia Folsom (**For Possible Action**)

15. Discussion and action, and possible approval or direction to staff regarding appointments to the Standing Advisory Committee to fill vacancies in existing positions whose terms expire December 31, 2018, such appointments to be made for new terms from January 1, 2019 to December 31, 2020 from the following list of candidates: (1) Neil McGuire, primary representative, irrigation customer; (2) Mike Schulewitch, primary representative, multi-family customer; (3) Donald Kowitz, primary representative, commercial customer; (4) Bruce Gescheider, alternate representative, commercial customer; (5) Robert Chambers, primary representative, senior citizen customer; (6) Karl Katt, alternate representative, senior citizen customer; (7) Ken McNeil, primary representative, at-large 1 customer; (8) Ken Becker, alternate representative, at-large 1 customer; (9) Jordan Hastings, primary representative, at-large 2 customer; (10) Carol Litster, primary representative, residential 1 customer; (11) Dale Sanderson, alternate representative, residential 1 customer; (12) Harry Culbert, primary representative, residential 2 customer; (13) Fred Arndt, alternate representative, residential 2 customer; (14) Jerry Wager, primary representative, residential 3 customer; and (15) Scot Munns, alternate representative, residential 3 customer — Sonia Folsom **(For Possible Action)**
16. Discussion and action on scheduling regular board meeting dates and times for the Calendar Year 2019 — Sonia Folsom **(For Possible Action)**
17. General Manager's Report*
18. Public comment — limited to no more than three minutes per speaker*
19. Board comments and requests for future agenda items*
20. Adjournment **(For Possible Action)**

TRUCKEE MEADOWS WATER AUTHORITY
DRAFT MINUTES OF THE OCTOBER 17, 2018
MEETING OF THE BOARD OF DIRECTORS

The Board of Directors met on Wednesday, October 17, 2018, at Truckee Meadows Water Authority, 1355 Capital Blvd., Reno, Nevada. Chair Hartung called the meeting to order at 10:32 a.m.

1. ROLL CALL

Members Present: Jenny Brekhus, ***Kristopher Dahir, Naomi Duerr, **Neoma Jardon, Vaughn Hartung, *Bob Lucey, and Ron Smith.

A quorum was present.

**Member Lucey left at 12:20 p.m.*

***Member Jardon left at 1:00 p.m.*

****Member Dahir left at 1:03 p.m.*

2. PLEDGE OF ALLEGIANCE

The Pledge of Allegiance was led by Jim Ainsworth.

3. PUBLIC COMMENT

Carmen Ortiz, Sun Valley Citizen Advisory Board Chair and Sun Valley General Improvement District Board Trustee, on behalf of Sun Valley residents requested the TMWA Board to not raise water rates this fiscal year due to TMWA being in a sound fiscal position.

Jeff Church, Reno resident, representing Reno-Tax Revolt, reasoned with the Board to vote no on WC1, property tax increase (see attached).

4. APPROVAL OF THE AGENDA

Chair Hartung requested agenda item #15 be heard after agenda #5.

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

5. APPROVAL OF THE MINUTES OF THE SEPTEMBER 19, 2018 MEETING

Upon motion by Member Smith, second by Member Dahir, which motion duly carried by unanimous consent of the members present, the Board approved the September 19, 2018 minutes.

15. DISCUSSION AND ACTION, AND REQUEST TO AUTHORIZE THE GENERAL MANAGER TO EXECUTE AN INTERLOCAL COOPERATIVE AGREEMENT BY AND BETWEEN THE STATE OF NEVADA DIVISION OF ENVIRONMENTAL PROTECTION (NDEP), THE WASHOE COUNTY DISTRICT BOARD OF HEALTH (THE DISTRICT) AND TRUCKEE MEADOWS WATER AUTHORITY FOR ENGINEERING DESIGN REVIEW OF CERTAIN PUBLIC WATER SYSTEM INFRASTRUCTURE

Danny Rotter, TMWA Engineering Manager, presented the staff report stating all three entities have agreed on an interlocal agreement (ILA) to streamline the approval process and delegate engineering plan review to TMWA with audit and oversight functions by NDEP and the District. Oversight includes performing an audit of not more than 15% of projects approved by TMWA in the previous quarter. The District will invoice TMWA for the time spent to perform the audits.

The Board expressed satisfaction and appreciated all parties agreeing to move forward with TMWA's high standards, becoming more efficient in turnaround times, and giving authority to TMWA for comprehensive review and approval of distribution infrastructure that falls under the scope of TMWA's Design and Construction Standards. Staff is currently modifying the standard details to ensure clarity of what is required for the separation of water and sewer lines.

Upon motion by Member Jardon, second by Member Duerr, which motion duly carried by unanimous consent of the members present, the Board approved to authorize the General Manager to execute the Interlocal Agreement between the State of Nevada Division of Environmental Protection, the Washoe County District Board of Health and Truckee Meadows Water Authority for engineering design review of certain public water system infrastructure.

6. PRESENTATION OF TMWA'S FISCAL YEAR 2018 CUSTOMER SATISFACTION STUDY

Sara Hart, InfoSearch International Research Director, presented the FY 2018 Customer Satisfaction Study to the Board.

Member Lucey requested to reopen agenda item #15.

Upon motion by Member Jardon, second by Member Lucey, which motion duly carried by unanimous consent of the members present, the Board approved to reopen agenda item #15.

15. REOPENED – DISCUSSION AND ACTION, AND REQUEST TO AUTHORIZE THE GENERAL MANAGER TO EXECUTE AN INTERLOCAL COOPERATIVE AGREEMENT BY AND BETWEEN THE STATE OF NEVADA DIVISION OF ENVIRONMENTAL PROTECTION (NDEP), THE WASHOE COUNTY DISTRICT BOARD OF HEALTH (THE DISTRICT) AND TRUCKEE MEADOWS WATER AUTHORITY FOR ENGINEERING DESIGN REVIEW OF CERTAIN PUBLIC WATER SYSTEM INFRASTRUCTURE

Member Lucey questioned, and expressed issue with, the clause in the ILA that any one of the parties can terminate the agreement at any time with or without cause, stating concern of reverting back to the way things have been conducted thus far.

Mark Foree, TMWA General Manager, replied that if the ILA is terminated, it would have to go before the respective board to approve the termination. Michael Pagni, TMWA General Counsel, added this clause was subject of discussion amongst all parties; the compromise was that it was agreed that any termination would have to go to the respective boards for approval to terminate.

There was no further comment and item #15 was closed.

6. PRESENTATION OF TMWA’S FISCAL YEAR 2018 CUSTOMER SATISFACTION STUDY

Ms. Hart continued since 2002, InfoSearch has conducted a telephone survey every year; a random sample size of 500 customers (400 residential and 100 commercial) polled. Customer satisfaction for FY18 was 91% and has remained stable at 91%-93% for the last six years, which is extremely high and rare for an organization to maintain in any industry. Customers continue to express high satisfaction regarding TMWA’s ability to maintain adequate water supply and secure the region’s water supply, quality of water, but would prefer a more understandable water bill and greater use of public input; the level of concern (0 “not concerned” to 10 “very concerned”) they indicated regarding community growth is slowly trending up at 7; regarding droughts significantly decreased to 6.3 and providing sufficient water supply to 5.3. Finally, the price relative to value of water quality/service has been consistent at 74% for the last 3-years.

Discussion followed regarding who is responsible for the water bill (many Reno residents are tenants) to fully understand conception about water supply and service (staff calls customers back to resolve any issues or misconception); that rates do not increase during the summer, rather people use more water; to educate the community on the housing crisis/growth (staff working on communicating that message to the community); people becoming more concerned about water supply and water conserved is not used for growth; community misconception of flood as it pertains to TMWA’s service (TMWA staff has invited the Truckee River Flood Management Authority to participate in Smart About Water Day); concern about

flood waters having containments that could potentially affect drinking water quality; and to better communicate with TMWA's customers (staff is evaluating potential vendors for a web application).

7. DISCUSSION AND ACTION, AND POSSIBLE DIRECTION TO STAFF REGARDING THE 2020-2040 WATER RESOURCE PLAN OUTLINE AND PUBLIC OUTREACH PLAN, AND DRAFT WATER SUPPLY SCENARIOS

Kara Steeland, TMWA Hydrologist, presented on the 2020-2040 Water Resource Plan ("2040 WRP") draft outline and public outreach plan. Ms. Steeland indicated there will be significant changes in formatting and drafting the plan to make it an easy to use document; the content will be forward looking and provide alternative future water supply and demand scenarios, as well as policy recommendations. In addition, staff will engage the public beginning this fall to gauge the community's concerns and interests.

At this point the Board expressed preference with staff going in this direction to appeal to the general audience and address misconceptions prevalent in the community; requested staff look into case studies and address effluent water management and new building technology and provide alternate examples (to be used as a policy guide for other local agencies); and to bring back a more in-depth draft and policies to the Board as staff continues developing the 2040 WRP.

Bill Hauck, Senior Hydrologist, presented on the different supply scenarios that will be included in the 2040 WRP: 1) Design Drought – TMWA's 8-year drought from 1987-1994 to create a 20-year planning scenario; 2) Multiple Linked Historic Droughts – link the 2012-2015 drought with the 1987-1994 drought with additional average water years to create a 20-year planning scenario; and 3) Warm-Dry or Hot-Dry Future Climate –similar to the US Bureau of Reclamation's Truckee River Basin Study, published in August 2015. Staff is also working with the Desert Research Institute (DRI) and Precision Engineering to complete an evaporation study in the Lake Tahoe Basin in 2019. That study will be presented to the Board at a later date.

Discussion followed regarding other options, or scenarios, of storing water and to consider long range options (such as Bedell Flat) and the use of alternate water sources (such as flood water).

Upon motion by Member Duerr, second by Member Dahir, which motion duly carried by unanimous consent of the members present, the Board approved the 2020-2040 Water Resource Plan outline and public outreach plan, and draft water supply scenarios recommended by staff.

8. UPDATE ON THE STATUS OF TMWA'S POSSIBLE ACQUISITION OF THE WEST RENO WATER COMPANY WATER SYSTEM, STATUS OF DUE DILIGENCE INVESTIGATION, STATUS OF ANCILLARY AGREEMENTS WITH SJP RENO PROPERTY, RENO LAND DEVELOPMENT AND BT SOUTH, AND DISCUSSION AND DIRECTION TO STAFF AND AUTHORIZATION FOR GENERAL MANAGER ON POSSIBLE AMENDMENTS TO ACQUISITION AGREEMENT

John Zimmerman, TMWA Water Resources Manager, informed the Board staff has continued with due diligence and are preparing the closing documents. At the September meeting the Board authorized the General Manager to extend the due diligence period by 30-days if necessary. The extension was necessary and gave staff and the parties involved more time to resolve the issues identified thus far and extends TMWA's right to terminate the agreement in its sole discretion without cause. Staff will provide a final update at the next Board meeting.

Discussion followed confirming staff would need to finalize the agreement by the end of 2018; who would be responsible if any of the wells failed (TMWA staff have reviewed water quality and pump tests, and three of five will be production wells based on capacity and necessary improvements); TMWA would be responsible to rehabilitate or construct new wells as required; TMWA would only extend water service to the currently approved development and existing residents/commercial businesses as TMWA does not approve land use entitlements; an additional charge could be added if water quality goes bad or a new well needs to be drilled; and Member Jardon requested a final update on additional legal fees outside of Mr. Pagni's normal retainer and suggested that other parties should pay the cost of TMWA legal fees, not TMWA, which suggestion was echoed by Chair Hartung. Mr. Pagni also confirmed staff is still negotiating the final purchase price and who has responsibility for certain costs upon final agreement.

Upon motion by Member Brekhus, second by Member Jardon, which motion duly carried by unanimous consent of the members present, the Board authorized the General Manager to make possible amendments to acquisition agreement and update the Board on legal fees.

Chair Hartung recessed at 12:13 p.m.

Chair Hartung reconvened at 12:20 p.m.

9. DISCUSSION AND ACTION, AND POSSIBLE DIRECTION TO STAFF ON APPROVAL OF THE ANNEXATION OF THE STONEGATE DEVELOPMENT INTO THE TMWA RETAIL WATER SERVICE AREA

Mr. Pagni disclosed conflict of interest as his firm represents the Stonegate Development on project entitlement issues and accordingly did not participate in the item. Chair Hartung asked about TMWA's substitute legal representative and Mr. Foree replied that Mr. Zimmerman provided legal review of the proposed annexation agreement.

Scott Estes, TMWA Engineering Director, presented the staff report to the Board to approve the annexation of Stonegate development into TMWA's service area.

Discussion revolved around the length of the pipeline and who would own and maintain (it is approximately seven miles and TMWA would own and maintain it); the Stonegate Developers will pay for the construction of all water facilities required for TMWA to provide water service. Stonegate is working on developing additional onsite groundwater sources to support peak capacity. In the past, a similar long pipeline extension was made to Wingfield Springs (about five miles long). Future growth in

the north valleys will be supplied based on the dedications of up to 8,000 acre feet (AF) of Fish Springs groundwater resource and the Stonegate development would use 2,000 AF of that dedication. To insure reliable water service, Stonegate will be required to develop onsite wells or construct an emergency intertie with Great Basin Water Company.

Member Brekhus expressed concerns about the distance outside of TMWA's service area to support this development as well as stating she did not support it at the City of Reno Council even though it was approved by Reno City Council. Mr. Enloe reminded the Board they accepted the request for TMWA to provide retail water service to the Stonegate development, and authorized TMWA to provide the City of Reno with an Acknowledgment of Water Service letter for the project at its December 2017 meeting.

Upon motion by Member Jardon, second by Member Dahir, which motion duly carried five to one with Member Brekhus dissenting and Member Lucy absent, the Board approved the annexation of the Stonegate Development into the TMWA retail water service area and authorized the General Manager to finalize and execute the final agreement.

Mr. Foree recommended to continue agenda items #10 and #11 and if time allows to hear them at the end of the meeting.

Upon motion by Member Jardon, second by Member Duerr, which motion duly carried by unanimous consent of the members present, the Board approved moving agenda items #10 and #11 to the end of the meeting if time allowed or continue to the next meeting.

12. REQUIRED COMMUNICATION FROM EIDE BAILLY IN REGARDS TO TMWA'S ANNUAL FINANCIAL AUDIT

Sandra Tozi, TMWA Senior Accountant, presented the required communication from TMWA's external auditors, Eide Bailly, which set expectations for conducting and completing the audit of TMWA's financial statements for fiscal year ended June 30, 2018.

13. PRESENTATION OF PRELIMINARY FUNDING PLAN FOR FISCAL YEARS 2019 THROUGH 2023, DISCUSSION AND POSSIBLE DIRECTION TO STAFF

Michele Sullivan, TMWA Chief Financial Officer, presented the 5-year funding plan for FY 2019-2023. TMWA is in a good financial position and Ms. Sullivan will be recommending the Board defer the scheduled 2.5% rate increase scheduled for implementation in May 2019. Ms. Sullivan proposed the Board defer the implementation of the three previously approved rate increases to May 2020, 2021 and 2022 at a maximum of 2.5% each; staff will continue to monitor the closing of the funding gap between recurring revenues and the cost of servicing TMWA customers, based on the Funding Plan annually.

The Board expressed appreciation to staff for taking a financially strategic approach in not moving forward with the 2019 rate increase and deferring all three to 2020 thru 2022; staff will continue monitoring TMWA's financial position and funding gap; and understands the importance of communicating the deferral of the rate increase to the community.

Upon motion by Member Duerr, second by Vice Chair Smith, which motion duly carried by unanimous consent of the members present, the Board accepted the funding plan for Fiscal Years 2019 through 2023 and staff recommendation to bring back the deferral of the 2.5% rate increase for 2019, 2020, and 2021 to 2020, 2021, and 2022 for Board approval at the next meeting.

14. DISCUSSION AND ACTION, AND POSSIBLE DIRECTION TO STAFF REGARDING THE POSSIBLE CLOSURE OF THE §501-C-9 POST RETIREMENT MEDICAL AND LIFE INSURANCE PLAN AND TRUST TO FUTURE EMPLOYEES

Ms. Sullivan presented the staff report to close the §501-c-9 Post Retirement Medical and Life Insurance plan and Trust to future employees and ensure current employees would not be affected by the closure. This also applies to TMWA employees in the International Brotherhood of Electrical Workers (IBEW) Local 1245 contract.

Upon motion by Member Dahir, second by Vice Chair Smith, which motion duly carried by unanimous consent of the members present, the Board approved the closure of the §501-c-9 Post Retirement Medical and Life Insurance plan and Trust to future employees to be brought back as a resolution at the next meeting.

16. DISCUSSION AND ACTION ON REQUEST FOR BOARD INPUT AND ACCEPTANCE OF GENERAL MANAGER PERFORMANCE OBJECTIVES FOR CONTRACT YEAR 2018/2019

Mr. Foree presented the general manager proposed objectives for 2018/2019.

Chair Hartung confirmed the purpose of (10) broadening the meter retrofit fee purpose for drought resiliency and water resource sustainability because the cost of retrofits would exceed the value of the retrofits. Mr. Foree replied yes.

Member Brekhus inquired if the Truckee River Fund (TRF) could be used for land acquisition or a new approach such as remediate uses closer to Reno/Sparks. Mr. Enloe replied yes, depending on the purpose and the TRF has funded very few projects in the Tahoe Basin, rather a lot projects are below the Tahoe dam; including sediment reduction and forest management activities. The TRF leverages projects taken on by numerous parties, including The Nature Conservancy and Truckee Donner Land Trust.

Upon motion by Vice Chair Smith, second by Chair Hartung, which motion duly carried by unanimous consent of the members present, the Board approved the General Manager performance objectives for contract year 2018/2019.

17. DISCUSSION AND ACTION, AND POSSIBLE DIRECTION TO STAFF REGARDING CANCELLING THE NOVEMBER BOARD MEETING AND RE-SCHEDULING DECEMBER BOARD MEETING TO DECEMBER 12, 2018 OR SUCH OTHER DATE APPROVED BY THE BOARD

Mr. Foree proposed cancelling the November 21, 2018 Board meeting as it falls directly before Thanksgiving and moving up the December 19, 2018 meeting to December 12, 2018 to allow more time for closing documents regarding the acquisition of the West Reno Water Company water system.

Discussion followed regarding the conflict with the City of Reno Council meeting on December 12, and Thursday, December 13 at 10:00 a.m. was proposed.

Upon motion by Vice Chair Smith, second by Member Brekhus which motion duly carried by unanimous consent of the members present, the Board approved cancelling the November Board meeting and rescheduling December Board meeting to December 13, 2018.

10. PRESENTATION OF TMWA GOALS AND OBJECTIVES RESULTS FOR FISCAL YEAR 2018

TMWA staff presented the goals and objectives results for fiscal year 2018. All goals and objectives were either met or far exceeded their target except for a few administrative goals that will be completed in FY 2019 and a couple of financial goals that will take time to meet the targets.

11. DISCUSSION AND ACTION, AND POSSIBLE DIRECTION TO STAFF ON THE PROPOSED TMWA GOALS AND OBJECTIVES FOR FISCAL YEAR 2019

Sonia Folsom, TMWA Executive Assistant, presented the proposed goals and objectives for FY 2019.

Upon motion by Member Duerr, second by Vice Chair Smith, which motion duly carried by unanimous consent of the members present, the Board approved the proposed TMWA Goals and Objectives for Fiscal Year 2019.

18. GENERAL MANAGER'S REPORT

Mr. Foree referenced the General Manager's Report for updates.

19. PUBLIC COMMENT

There was no public comment.

20. BOARD COMMENTS AND REQUESTS FOR FUTURE AGENDA ITEMS

There was no Board comment.

21. ADJOURNMENT

With no further discussion, Chair Hartung adjourned the meeting at 1:35 p.m.

Approved by the TMWA Board of Directors in session on _____.

Sonia Folsom, Recording Secretary

****Member Lucey was present for agenda items 1 thru 8, and 15 only.***

*****Member Jardon was present for agenda items 1 thru 13, and 15 only.***

******Member Dahir was present for agenda items 1 thru 15 only.***

No on WC1 Property Tax Increase: www.TaxYourselfNotMe.com

The next Community Homeless Advisory Board (CHAB) is tentatively Monday, Nov 5 at 9:30 AM, Location TBD but in past was Sparks City Hall.

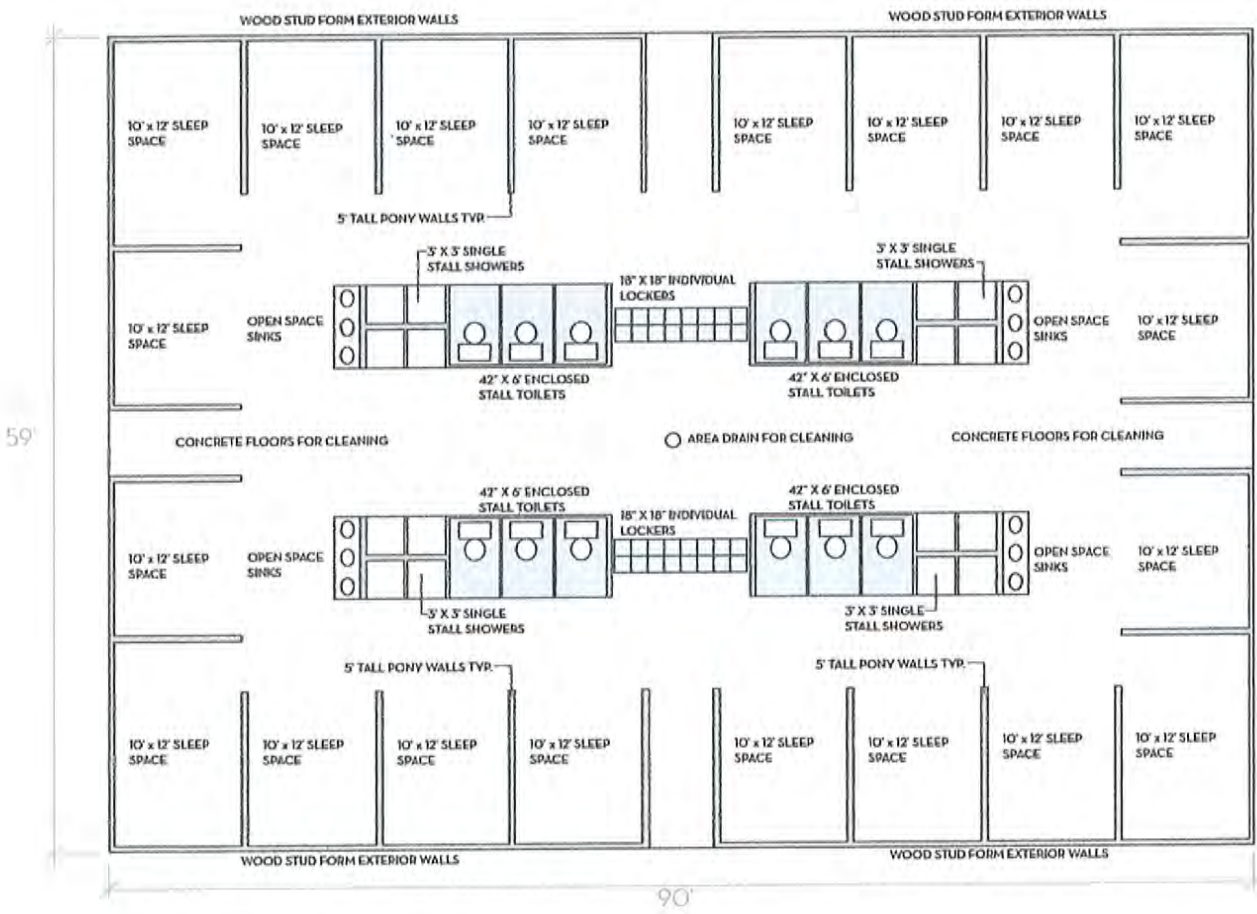
Survey of homeless and affordable housing issues. ewixsten@orgcode.com

HOMELESS/ AFFORDABLE HOUSING FORUM: A number of dedicated persons are working to put on a forum on homeless/ housing issues to the public and providers, We hope to have exhibitors there as well and make the event free for attendees. We are looking for speakers and a location so please contact: Nevadacop@earthlink.net if you would like to be heard.

LEGAL UPDATE: This case from Boise affects us. It is the Federal 9th Circuit Court of Appeals of which Reno is a part. Info on request but I have ideas to support designated camping areas in Reno-Washoe.

ROBERT MARTIN (et al) Plaintiffs-Appellants, v. CITY OF BOISE, No. 15-35845 D.C. No. 1:09-cv-00540-REB, OPINION: City's Camping and Disorderly Conduct Ordinances violated the Eighth Amendment's prohibition on cruel and unusual punishment. ... In Jones v. City of Los Angeles, 444 F.3d 1118, 1138 (9th Cir. 2006), a panel of this court concluded that "so long as there is a greater number of homeless individuals in Los Angeles than the number of available beds [in shelters]" for the homeless, Los Angeles could not enforce a similar ordinance against homeless individuals "for involuntarily sitting, lying, and sleeping in public." ... We agree with Jones's reasoning and central conclusion, however...violates the Eighth Amendment insofar as it imposes criminal sanctions against homeless individuals for sleeping outdoors, on public property, when no alternative shelter is available to them.

HOMELESS PADDOX LAYOUT DIAGRAM
SCALE 1/4" = 1'





STAFF REPORT

TO: TMWA Board of Directors
FROM: Michele Sullivan, Chief Financial Officer
THRU: Mark Foree, General Manager
DATE: December 13, 2018
Subject: **Discussion and action on adoption of Resolution No. 269: A resolution to approve the implementation and/or possible deferral of the 2.5% customer rate increases previously adopted in Resolution No. 250 and currently scheduled for implementation in 2019, 2020, and 2021**

RECOMMENDATION

Consistent with the Board's October 2018 recommendation and with the recommendation of the Standing Advisory Committee (SAC), the TMWA Board vote to approve Resolution 269 to effectively defer rate increases previously scheduled for implementation in May, 2019, 2020 and 2021 to May, 2020, 2021, and 2022.

DISCUSSION

Previous reports were presented and discussed with the Board during 2017 and the Board approved a 5 year rate adjustment plan at its April, 2017 meeting with Resolution 250. Those reports showed a \$13.2 million shortfall in operating revenues less operating expenses, debt payments and rehabilitative capital spending (funding gap) by fiscal year 2021 and the rate adjustment approved at that time included two 3% increases in May 2017 and May 2018, and three increases of 2.5% in May 2019, May 2020, and May 2021.

The first two increases of 3% were implemented as planned in May 2017 and May 2018. At the October 2018 Board meeting, staff presented TMWA's 2019-2023 Funding Plan (2019 FP). The most recent 2019 FP indicates that the funding gap has decreased to \$4.2 million by fiscal year 2021 (see Attachment A-1). Unseasonably warm summers in the last three years have resulted in increased water sales which affects future water sales projection models. Water flows in the Truckee River are projected to be sufficient to operate hydroelectric plants at near capacity levels in the near term. Increases in interest rates, and higher than anticipated cash balances resulted in higher than originally anticipated investment earnings. Some of these trends and assumptions could change, and at this point staff and the SAC recommend the Board elect to defer the 2.5% rate increases out to May 2020, May 2021, and May 2022 for reconsideration. The funding plan will be updated again in the fall of 2019, and the Board and SAC can reexamine the financial position of TMWA to decide if a rate increase is necessary.

12-13-18 BOARD Agenda Item 6
Attachment A-1

Truckee Meadows Water Authority
2019-2023 Funding Plan with No Rate Increases

<i>TMWA's Revenue Sufficiency and Cost of Service</i>	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Projected Rate Increases	0.0%	0.0%	0.0%	0.0%	0.0%
Operating Expenses	\$ 57,763,158	\$ 60,333,221	\$ 61,332,838	\$ 62,029,403	\$ 63,239,091
Principal and Interest on all outstanding debt	18,654,573	29,220,681	28,761,983	29,092,143	28,960,846
Rehabilitative Capital Spending	26,136,000	26,136,000	26,136,000	26,136,000	26,136,000
Total Projected Cost of Service	\$ 102,553,731	\$ 115,689,902	\$ 116,230,821	\$ 117,257,546	\$ 118,335,937
Recurring Revenues	\$ 109,667,673	\$ 111,425,202	\$ 111,988,504	\$ 112,861,415	\$ 113,746,795
Surplus (Deficiency)	\$ 7,113,942	\$ (4,264,700)	\$ (4,242,317)	\$ (4,396,131)	\$ (4,589,142)
Surplus (Deficiency) as a % of Cost of Service	6.9%	-3.7%	-3.6%	-3.7%	-3.9%
<i>Debt Service Coverage Ratios</i>	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Water Sales Revenues	100,626,513	101,794,124	103,303,189	104,124,970	105,001,972
Hydroelectric Sales	2,812,568	2,884,754	2,474,599	2,423,808	2,448,046
Other Operating Sales	3,404,500	3,164,500	2,741,645	2,769,061	2,796,752
Investment Income	2,824,092	3,581,824	3,469,071	3,543,576	3,500,025
Total Revenues	109,667,673	111,425,202	111,988,504	112,861,415	113,746,795
Operating Expenses	(59,463,158)	(61,533,221)	(61,332,838)	(62,029,403)	(63,239,091)
Net Revenues	50,204,515	49,891,981	50,655,666	50,832,012	50,507,704
Senior Lien Debt Service	15,700,800	26,243,800	25,888,000	26,333,500	26,332,750
Senior Lien DSC	3.20	1.90	1.96	1.93	1.92
Total Sr. Lien and SRF Debt Service	18,121,521	28,664,521	28,308,721	28,754,221	28,753,471
Total Sr. Lien and SRF DSC	2.77	1.74	1.79	1.77	1.76
Total Annual Debt Service incl. TECP Interest	18,654,573	29,220,681	28,761,983	29,092,143	28,960,846
Total Subordinate DSC	2.69	1.71	1.76	1.75	1.74
<i>TMWA's Cash Position</i>	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023
Unrestricted Cash and Investments (End of Year)	\$ 132,324,594	\$ 112,202,986	\$ 110,010,882	\$ 105,873,000	\$ 100,920,279
Funds Received for Fleish Hydroelectric	21,410,910	21,410,910	21,410,910	21,410,910	21,410,910
Unrestricted Cash Excluding Hydro Funds	\$ 110,913,684	\$ 90,792,076	\$ 88,599,972	\$ 84,462,090	\$ 79,509,369
Unrestricted Cash Reserves Policy Requirement	\$ 86,494,663	\$ 87,184,685	\$ 87,117,891	\$ 87,350,079	\$ 87,753,309

TRUCKEE MEADOWS WATER AUTHORITY

RESOLUTION NO. 269

A RESOLUTION ADOPTING THE DEFERRAL OF THE 2.5% CUSTOMER RATE INCREASES PREVIOUSLY ADOPTED IN RESOLUTION NO. 250 AND CURRENTLY SCHEDULED FOR IMPLEMENTATION IN 2019, 2020, AND 2021

WHEREAS, in April 2017, the Truckee Meadows Water Authority (the “Authority”) Board adopted Resolution No. 250 which provided for customer rate increases of 3% in May, 2017 and May, 2018 and rate increases of 2.5% in May, 2019, May 2020 and May 2021.

WHEREAS, Resolution No. 250 recommended the Board review the Authority’s financial position prior to implementing the 2.5% rate increases for 2019, 2020 and 2021 and evaluate whether the Authority’s financial position at that time warranted revising or deferring the adopted rate increases.

WHEREAS, the Authority prepared a funding plan to determine if recurring revenue covers the costs of service currently and in the next five years projections;

WHEREAS, the Authority implemented Phases 1 and 2 rate increases of 3 percent in May 2017 and 2018, and water sales revenue for FY2018 was \$2.6 million or 2.7% higher than the funding plan projection used in 2016;

WHEREAS, the Authority has determined projected recurring revenue is sufficient to cover projected cost of service by 2021, maintain a strong debt service coverage ratio and unrestricted cash balances are maintained at excellent levels sufficient to maintain investment grade credit ratings; and

WHEREAS, the Board desires to amend Resolution No. 250 to defer the 2.5 percent rate increases in Phases 3-5 currently scheduled for implementation in May 2019, 2020, and 2021 to May 2020, 2021 and 2022. The Board further desires the Board review the Authority’s financial position prior to implementation of each of the deferred Phase 3, 4 and 5 rate increases and evaluate whether the Authority’s financial position at the time warrants revising or deferring the adopted rates increase.

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of the Truckee Meadows Water Authority that:

The 2.5 percent rate increases adopted in Resolution No. 250 scheduled to be implemented in May 2019, 2020 and 2021 are hereby deferred for one year each, such that the rate increases shall be implemented as follows: i) Phase 3 Rates – commencing for the first billing cycle for May 2020; ii) Phase 4 Rates – commencing for the first billing cycle for May 2021; iii) Phase 5 Rates – commencing for the first billing cycle for May 2022. The Board may review the Authority’s overall financial position in late 2019, late 2020 and late 2021 to evaluate whether

Truckee Meadows Water Authority
Resolution No. 269 (continued)

the Phase 3, Phase 4 or Phase 5 rates remain appropriate to achieve intended effect based on the Authority's financial position at that time.

Upon motion of _____, seconded by _____, the foregoing Resolution was passed and adopted this 13th day of December, 2018, by the following vote of the Board:

Ayes: _____

Nays: _____

Abstain: _____ Absent: _____

Approved this 13th day of December, 2018

Chairman

STATE OF NEVADA,)
 : ss.
COUNTY OF WASHOE.)

On this 13th day of December, 2018 Vaughn Hartung, Chairman of the Board of Truckee Meadows Water Authority, personally appeared before me, a Notary Public in and for said County and State, and acknowledged that he executed the above instrument freely and voluntarily and for the purposes therein mentioned.

Notary Public



STAFF REPORT

TO: Chairman and Board Members
THRU: Mark Foree, General Manager
FROM: Michele Sullivan, Chief Financial Officer
DATE: December 3, 2018
SUBJECT: Discussion and action on adoption of Resolution No. 270: A resolution to approve the closure of the §501-c-9 Post Retirement Medical and Life Insurance plan and Trust to future employees

RECOMMENDATION

Based on discussion and input from the Board of Directors at the October, 2018 board meeting, staff presents Resolution 270 for board approval to close the §501-c-9 Post Retirement Medical and Life Insurance plan and Trust to future and new employees of TMWA as of December 31, 2018. The Standing Advisory Committee (SAC) also recommended closure of the plan by majority vote.

SUMMARY

As of the last actuarial valuation dated December 31, 2017 the PRMPT was funded at 102.2%. An actuarial valuation can be greatly affected by changes in health care costs, and return on investments. Currently, TMWA valuations are based on a 6.0% return on investments, with an estimated 6.25% inflation in annual medical costs through 2023, and 5.0% thereafter. A 1.0% fluctuation in either of these assumptions can result in \$1.0-\$1.4 million in overages or shortfalls for the trust. Also, actuarial valuations are performed on a closed group basis, meaning that only employees and retirees present as of the valuation date are considered. There is no assumption made for increases in headcount. TMWA contributes to the trust annually based on the Actuarially Determined Contribution. This amount is comprised of the present value of future benefits earned by active employees during the current year plus amortization of any unfunded actuarial accrued liability.

Closing the PRMPT to future employees of TMWA would limit the exposure that is inherent in the plan. No current employees of TMWA would be affected, as they were offered the benefit when they were hired. Many plans have been closed to new employees in the area, so it isn't expected that closing this plan will have any negative recruitment impact for TMWA.

This resolution modifies Resolution No. 6 (A Resolution Adopting Employee Wages and Benefits Provided to Management, Professional, Administrative and Technical Employees). Based on Title 22.2(3) of the Collective Bargaining Agreement (CBA) between TMWA and IBEW Local 1245, such modification would also apply to employees covered under the CBA.

TRUCKEE MEADOWS WATER AUTHORITY
(TMWA)

RESOLUTION NO. 270

A Resolution to close the TMWA §501-c9 Post Retirement Medical and Life Insurance Plan and Trust to new and/or future employees

WHEREAS, the Board has previously approved funding the §501-c9 Post Retirement Medical and Life Insurance Plan and Trust for TMWA employees as referenced in Resolution No. 6; and

WHEREAS, as of the date of this Resolution, the §501-c9 Post Retirement Medical and Life Insurance plan and Trust is currently valued at \$10,926,894, or fully funded at 102.2%; and

WHEREAS, the Board believes it fiscally prudent to close the plan and no longer make it available as a benefit to new or future employees of TMWA;

WHEREAS, the Board desires to amend Resolution No. 6 and close participation in the Post Retirement Medical and Life Insurance Plan benefit to new and future employees employed at TMWA after December 13, 2018. And based on Title 22.2(3) of the Collective Bargaining Agreement (CAB), between TMWA and IBEW Local 1245, such modification would also apply to employees covered under the CBA. No current TMWA employees will be affected.

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of the Truckee Meadows Water Authority: that the TMWA §501-c9 Post Retirement Medical and Life Insurance Plan and Trust benefit be closed and no longer made available as a benefit to new and future TMWA employees from and after December 13, 2018.

Upon motion of _____, seconded by _____, the foregoing Resolution was passed and adopted this 13th day of December, 2018, by the following vote of the Board:

Ayes: _____

Nays: _____

Abstain: _____ Absent: _____

Approved this ____ day of _____, 2018

Vaughn Hartung, Chairman

STATE OF NEVADA,)
 : ss.
COUNTY OF WASHOE.)

On this 13th day of December, 2018, Vaughn Hartung, Chairman of the Board of Truckee Meadows Water Authority, personally appeared before me, a Notary Public in and for said County and State, and acknowledged that he executed the above instrument freely and voluntarily and for the purposes therein mentioned.

Notary Public



To: TMWA Board of Directors
Thru: Mark Foree, General Manager
From: Matt Bowman, Financial Controller
Date: December 3, 2018
Subject: **Discussion and action on adoption of Resolution No. 271: A resolution to approve the Comprehensive Annual Financial Report for Fiscal Year ended June 30, 2018**

Recommendation

TMWA staff will present the Comprehensive Financial Report (CAFR) to the Board for the fiscal year ended June 30, 2018 for approval by resolution and request direction to the Chief Financial Officer to forward the appropriate documentation to the State of Nevada Department of Taxation within the prescribed deadline.

Summary

Pursuant to NRS 354.624, Truckee Meadows Water Authority (TMWA) is required to conclude an audit before November 30, 2018, and submit the audit report to the governing body not later than six months after the close of the fiscal year for which the audit is conducted.

The CAFR for the fiscal year ended June 30, 2018, includes the letter of transmittal, management's discussion and analysis, the audit report, the financial statements, required supplementary information, statistical schedules and the compliance section.

The financial statements include the Statement of Net Position (Balance Sheet) of the Truckee Meadows Water Authority as of June 30, 2018 and June 30, 2017, related Statements of Revenues, Expenses and Changes in Net Position (Income Statement) and the Statement of Cash Flows.

Audit Results

Of particular importance to TMWA is the auditor's opinion on the financial statements that TMWA was in compliance with *Generally Accepted Accounting Principles (GAAP)*, and Nevada Revised Statutes for the year ended June 30, 2018. The auditors had no findings in the financial statement audit.

Financial Performance

This staff report presents a summary of overall financial performance. Complete information is shown in the financial statements and the notes supporting the financial statements. Management's Discussion and Analysis (MD&A) in the financial section provides a detailed discussion of comparative financial performance with FY 2017.

TMWA experienced a solid financial year with change in net position ending up positive at \$37.7 million. Net cash flow reflected an increase of \$19.3 million. Cash balance at the end of the year was \$193.4 million. Preliminary results were presented to the Board and SAC in August and September, respectively, reflecting a change in net position of \$38.8 million. Following final reconciliations and various estimate adjustments, the change in net position was reduced to \$37.7 million or a decrease of \$1.1 million. Said adjustments are listed below –

- Decrease in revenue of \$111k due to year end unbilled revenue accrual
- Increase in operating expenses of \$4.7m due to:
 - \$3.1m pension adjustment for the implementation of GASB 68 by PERS
 - \$1.6m due to additional invoice accruals and reclassifications of project costs from capital to expense
- Decrease in depreciation expense of \$320k following final depreciation run
- Decrease in interest expense of \$161k related to Sr. Lien debt interest accruals
- Increase in developer contributions of \$3.7m following year-end final analysis (initial number was estimate based on historical actuals)

TMWA ended the year with a debt service coverage ratio of 2.97x compared to 2.80x for FY 2017.

Fiscal Year 2018 Actual to Budget comparison

Total operating revenues were very close to budget, ending up \$1.4 million or 1.4% higher than budget. A hot and dry summer and early fall of 2017 which caused more water usage and higher revenues, was offset by record precipitation in March 2018 which lowered revenues back to planned levels. As a consolidated water utility, even with population growth in the service area of 6.5%, water usage has decreased by 6.1% since fiscal year 2014, mainly due to conservation efforts implemented during drought periods.

Total operating expenses were also very close to budget, ending up \$0.4 million less than the budget of \$90.7 million, less than a 1% difference. Services and supplies expenses were \$2.5 million under budget due to lower maintenance, chemical and electric costs than anticipated. Salaries and wages costs were \$0.3 million less than budget due to position vacancies and turnover. Employee benefit spending was \$3.6 million higher than budget due to a GASB 82 (Pensions) adjustment of \$4.6 million offset by a lower than expected GASB 75 (OPEB) adjustment.

Total net nonoperating revenues and expenses were \$1.4 million favorable to budget. This variance was primarily due to lower interest expense.

Capital contributions of \$37.4 million were \$22.2 million above budget. Cash contributions from developers were \$5.4 million greater than budget and were attributable to increasing levels of

residential construction activity as the local economy improves. Non-cash Developer infrastructure contributions totaled \$15.0 million. These are not included in the budget.

Total capital spending was approximately \$29.1 million for fiscal year 2018, which was approximately \$13.9 million less than the \$43.0 million planned in the augmented capital budget. The primary reason for the underspend was the delay in construction of the Mt. Rose Water Treatment Plant due to delays in permitting and satisfying regulatory requirements.

Total cash and investments as of June 30, 2018 was \$193.4 million or \$32.0 million more than budget. Net cash provided by operating activities was \$4.0 million higher than budget due to slightly higher water revenues, higher hydroelectric revenue and lower operating expenses. Net cash used by capital and related financing activities were more favorable than budget by \$25.2 million. This is primarily due to \$13.9 million less in capital spending as discussed above. Additionally, interest paid was \$3.0 million less than budget due to the early payoff of interest related to the FY 2017 bond refinancing. The remaining change consisted mostly of higher developer cash contributions. The remaining \$2.8 million difference is due to higher cash at the start of FY 2018 than was anticipated when the budget was finalized during FY 2017.

Fiscal Year 2018 Actual to Prior Year Comparison

Total operating revenues increased \$4.5 million from fiscal year 2017. Water Sales were \$95.2 million, \$2.5 million or 2.7% greater than in fiscal year 2017. Water Sales were higher mainly due to a 3% rate increase implemented in the first billing cycle of May, 2018. Hydroelectric Sales were \$2.0 million or 110.0% greater than fiscal year 2017, due to consistently high river flows and very little downtime for repairs at the hydroelectric plants.

Operating expenses were \$90.3 million, \$8.0 million or 9.7% higher than fiscal year 2017. Spending on Salaries and Wages was \$1.5 million or 8.6% higher, due to a wage increase of approximately 3%, promotions and the addition of 12 employees. Six of the new employees were hired into apprenticeships to prepare for retirements occurring in the next two to three years. Employee Benefits were \$4.0 million or 44.6% higher mainly due to a \$4.6 million adjustment to pension expense related to GASB 82, offset by lower pension expense allocation from NVPERS by \$0.6 million, and \$0.2 million lower other post-retirement medical expense. Spending on Services and Supplies was \$1.9 million or 7.7% more than prior year, mainly due to \$1.3 million in maintenance expenses for dredging the channel at the Donner Lake dam.

Net Nonoperating Expenses were favorable \$5.4 million as compared to prior year. Lower interest expense in 2018 by \$5.2 million was due to the 2017 bond refunding. Other Nonoperating Expenses were \$0.2 million unfavorable mainly due to decrease in fair value of investments.

Total capital contributions were \$37.4 million, \$6.0 million less than prior year due primarily to an \$11.8 million insurance settlement related to Farad hydroelectric plant in FY 2017, offset by higher developer non-cash contributions of \$4.2 million and higher water meter retrofit proceeds of \$2.1 million due to the selling of more surface water rights in FY 2018.

Total cash and investments were \$19.4 million higher at June 30, 2018 compared to June 30, 2017. Net cash from operating activities was \$50.4 million while cash used for capital and related financing activities was \$32.2 million and interest received on investments was \$1.2

million. Restricted cash balances increased from \$41.8 million to \$45.7 million due primarily to cash received under the water meter retrofit program of \$2.4 million. Unrestricted cash increased from \$132.2 million to \$147.7 million. Included in the unrestricted cash balance is \$21.5 million in insurance settlements collected in FY 2016 and FY 2017 related to the Farad hydroelectric facilities and \$9.1 million designated as rate stabilization funds.

TRUCKEE MEADOWS WATER AUTHORITY
(TMWA)

RESOLUTION NO. 271

**A RESOLUTION APPROVING THE FINANCIAL STATEMENTS OF THE TRUCKEE
MEADOWS WATER AUTHORITY FOR FISCAL YEAR ENDED JUNE 30, 2018**

WHEREAS, TMWA is responsible for filing financial statements with various agencies, banks, and regulatory authorities; and

WHEREAS, pursuant to NRS 354.624, TMWA is required to file audited financial statements with the Nevada Department of Taxation, not later than six months after the close of the fiscal year being audited; and

WHEREAS, the TMWA Board is required to accept and approve the financial statements prior to filing of said statements with the Nevada Department of Taxation by December 31, 2018.

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of the Truckee Meadows Water Authority that the audited financial statements for the period ended June 30, 2018, as provided to the TMWA Board, are hereby accepted and approved and staff is directed to submit such information to the Nevada Department of Taxation.

Upon motion of _____, seconded by _____, the foregoing Resolution was passed and adopted December 13, 2018, by the following vote of the Board:

Ayes: _____

Nays: _____

Abstain: _____ Absent: _____

Truckee Meadows Water Authority
Resolution No. 271 (continued)

Approved this 13th day of December, 2018

Vaughn Hartung, Chairman

STATE OF NEVADA,)
 : ss.
COUNTY OF WASHOE.)

On this 13th of December, 2018, Vaughn Hartung, Chairman of the Board of Truckee Meadows Water Authority, personally appeared before me, a Notary Public in and for said County and State, and acknowledged that he executed the above instrument freely and voluntarily and for the purposes therein mentioned.

Notary Public



November 30, 2018

To the Board of Directors
Truckee Meadows Water Authority
Reno, Nevada

We have audited the financial statements of Truckee Meadows Water Authority (TMWA) as of and for the years ended June 30, 2018 and 2017, and have issued our report thereon dated November 30, 2018. Professional standards require that we advise you of the following matters relating to our audit.

Our Responsibility in Relation to the Financial Statement Audit under Generally Accepted Auditing Standards and Government Auditing Standards

As communicated in our letter dated March 8, 2018, our responsibility, as described by professional standards, is to form and express an opinion about whether the financial statements that have been prepared by management with your oversight are presented fairly, in all material respects, in accordance with accounting principles generally accepted in the United States of America. Our audit of the financial statements does not relieve you or management of its respective responsibilities.

Our responsibility, as prescribed by professional standards, is to plan and perform our audit to obtain reasonable, rather than absolute, assurance about whether the financial statements are free of material misstatement. An audit of financial statements includes consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control over financial reporting. Accordingly, as part of our audit, we considered the internal control of TMWA solely for the purpose of determining our audit procedures and not to provide any assurance concerning such internal control.

We are also responsible for communicating significant matters related to the audit that are, in our professional judgment, relevant to your responsibilities in overseeing the financial reporting process. However, we are not required to design procedures for the purpose of identifying other matters to communicate to you.

Planned Scope and Timing of the Audit

We conducted our audit consistent with the planned scope and timing we previously communicated to you.

Compliance with All Ethics Requirements Regarding Independence

The engagement team, others in our firm, as appropriate, our firm, and other firms utilized in the engagement, if applicable, have complied with all relevant ethical requirements regarding independence.

Qualitative Aspects of the Entity's Significant Accounting Practices

Significant Accounting Policies

Management has the responsibility to select and use appropriate accounting policies. A summary of the significant accounting policies adopted by TMWA is included in Note 1 to the financial statements. As described in Note 1 to the financial statements, TMWA adopted Governmental Accounting Standards Board (GASB) Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits Other Than Pensions*. Accordingly, Note 11 to the financial statements and the required supplementary information have been updated to disclose additional information for other postemployment benefits affecting TMWA. There have been no other initial selection of accounting policies and no changes in significant accounting policies or their application during 2018. No matters have come to our attention that would require us, under professional standards, to inform you about (1) the methods used to account for significant unusual transactions and (2) the effect of significant accounting policies in controversial or emerging areas for which there is a lack of authoritative guidance or consensus.

Significant Accounting Estimates

Accounting estimates are an integral part of the financial statements prepared by management and are based on management's current judgments. Those judgments are normally based on knowledge and experience about past and current events and assumptions about future events. Certain accounting estimates are particularly sensitive because of their significance to the financial statements and because of the possibility that future events affecting them may differ markedly from management's current judgments.

The most sensitive accounting estimates affecting the financial statements are:

- Liability and related disclosures for postemployment benefits other than pensions (OPEB)
- Liability and related disclosures for pension benefits
- Receivable for delivered but unbilled water sales revenue
- Allocation of administrative costs to capital assets
- Valuation of developer dedicated infrastructure and other donated capital assets

Management's estimate of the actuarial accrued liability for OPEB is based on third party actuarial valuation. Management's estimate of the pension liability is based on actuarial valuation; which are calculated based on the employee information submitted by TMWA to the Public Employees' Retirement System of the State of Nevada (PERS). Management's estimate of the delivered but unbilled water sales revenue is based upon number of days in the cycle and water usage.

Management's estimate of the allocation of administrative costs to capital assets is based upon the year-to-date construction salaries and wages relative to total construction and indirect salaries and wages. Management's estimate of the value of the developer dedicated infrastructure and other donated capital assets is based on acquisition value (as defined under GASB Statement No. 72) using engineering cost indices at the time of dedication or donation. We evaluated the key factors and assumptions used to develop these sensitive estimates in determining that they are reasonable in relation to the financial statements taken as a whole.

Financial Statement Disclosures

Certain financial statement disclosures involve significant judgment and are particularly sensitive because of their significance to financial statement users. The most sensitive disclosures affecting TMWA's financial statements relate to:

- Long term debt obligations
- Obligations for pensions and other postemployment benefits

The financial statement disclosures are neutral, consistent, and clear.

Significant Difficulties Encountered during the Audit

We encountered no significant difficulties in dealing with management relating to the performance of the audit.

Uncorrected and Corrected Misstatements

For purposes of this communication, professional standards require us to accumulate all known and likely misstatements identified during the audit, other than those that we believe are trivial, and communicate them to the appropriate level of management; of which there were none. Further, professional standards require us to also communicate the effect of uncorrected misstatements related to prior periods on the relevant classes of transactions, account balances or disclosures, and the financial statements as a whole; of which there were none.

Disagreements with Management

For purposes of this letter, professional standards define a disagreement with management as a matter, whether or not resolved to our satisfaction, concerning a financial accounting, reporting, or auditing matter, which could be significant to TMWA's financial statements or the auditor's report. No such disagreements arose during the course of the audit.

Representations Requested from Management

We have requested certain written representations from management that are included in the management representation letter dated November 30, 2018.

Management's Consultations with Other Accountants

In some cases, management may decide to consult with other accountants about auditing and accounting matters. Management informed us that, and to our knowledge, there were no consultations with other accountants regarding auditing and accounting matters.

Other Significant Matters, Findings, or Issues

In the normal course of our professional association with TMWA, we generally discuss a variety of matters, including the application of accounting principles and auditing standards, operating and regulatory conditions affecting the entity, and operating plans and strategies that may affect the risks of material misstatement. None of the matters discussed resulted in a condition to our retention as TMWA's auditors.

Modification of the Auditor's Report

We have made the following modification to our auditor's report. An emphasis of matter paragraph was included to address a change in accounting principle.

This information is intended solely for the information and use of Truckee Meadows Water Authority Board of Directors and management of Truckee Meadows Water Authority and is not intended to be, and should not be, used by anyone other than these specified parties.



Reno, Nevada



NEVADA

COMPREHENSIVE ANNUAL FINANCIAL REPORT

For the Years Ended June 30, 2018 and 2017

PREPARED BY: Michele Sullivan, CPA
Chief Financial Officer

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November 30, 2018

To the Board of Directors, Our Customers, and Bondholders:

We are pleased to submit the Comprehensive Annual Financial Report (CAFR) for the Truckee Meadows Water Authority (TMWA) for the fiscal year ended June 30, 2018. The purpose of the report is to provide the Board of Directors, our customers, and bondholders as well as other interested parties with reliable financial information about TMWA. TMWA's Finance Department has prepared the CAFR in accordance with Generally Accepted Accounting Principles (GAAP).

Management assumes full responsibility for the completeness and reliability of the information contained in this CAFR, based upon a comprehensive framework of internal control established for this purpose. Because the cost of internal control should not exceed benefits, the objective is to provide reasonable rather than absolute assurance that the financial statements are free of any material misstatements.

Nevada Revised Statutes and bond covenants require that an independent certified public accounting firm selected by the Board of Directors audit TMWA's financial statements on an annual basis. Eide Bailly, a firm of licensed certified public accountants, has audited TMWA's basic financial statements as of and for the fiscal years ended June 30, 2018 and 2017. The independent auditor's report is presented in the Financial Section of this report. TMWA complies with the Local Government Budget and Finance Act as embodied in Chapter 354 and Public Investments as embodied in Chapter 355 of the Nevada Revised Statutes.

The CAFR consists of four sections:

Introduction Section - This section is comprised of the letter of transmittal which contains information relative to TMWA's background, a listing of TMWA's principal officers, organizational chart and other relevant information to assist the reader in understanding TMWA's operations, financial condition, and accomplishments.

Financial Section - This section consists of TMWA's basic financial statements, supplementary financial information and independent auditor's report on the basic financial statements. This section also includes Management's Discussion and Analysis (MD&A), which provides a narrative overview and explanation of the results reflected in the basic financial statements. The financial statements presented in this section were prepared in accordance with GAAP. TMWA's financial activities are reported as an enterprise fund (proprietary fund type).

Statistical Section - This section is comprised of selected financial, operational and demographic information generally presented annually and includes statistics for the past ten years.

Compliance Section - This section consists of information regarding TMWA's compliance with state statutes, in particular, conformance with the Local Government Finance Act.

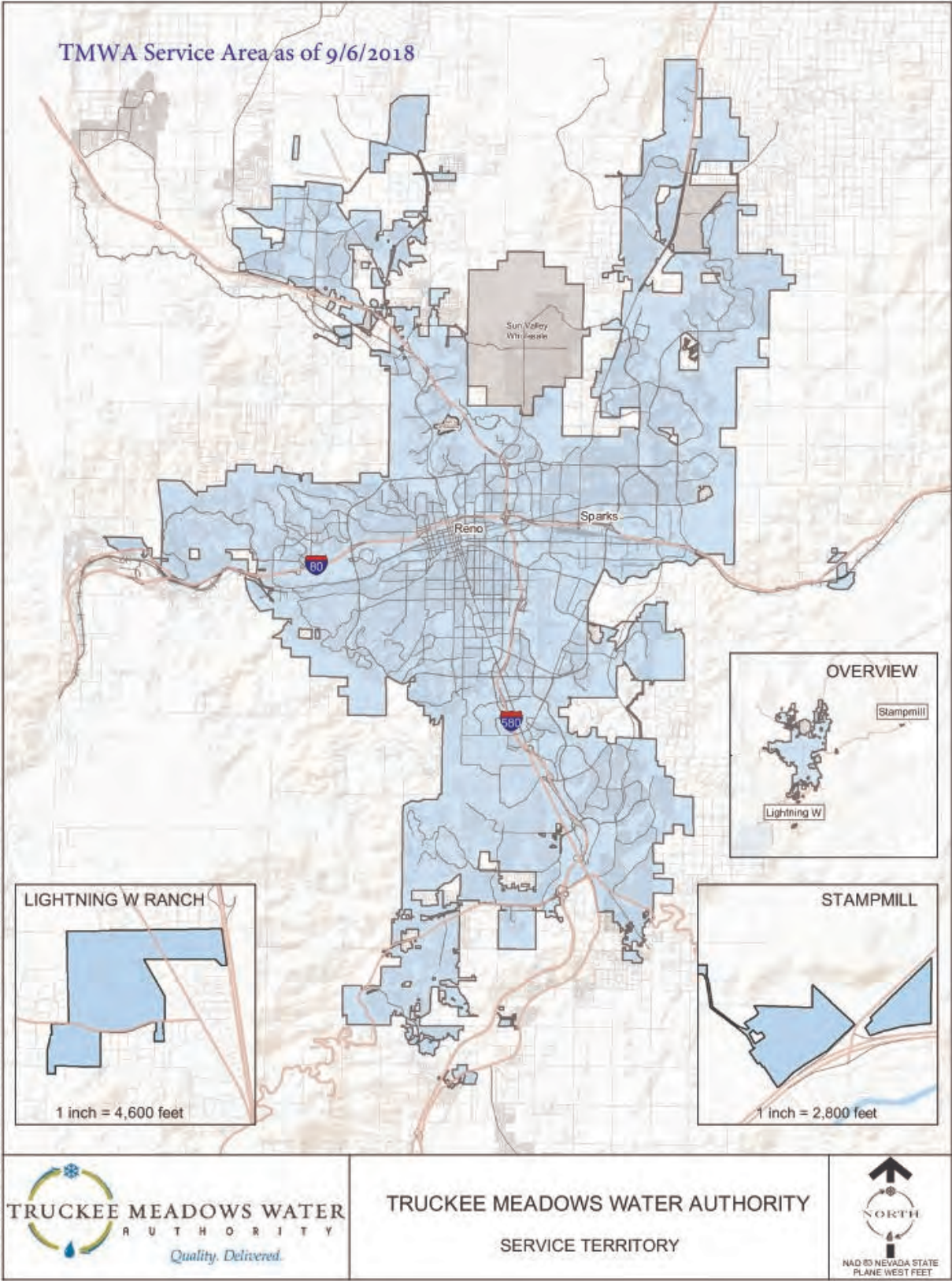
REPORTING ENTITY

TMWA was formed as a Joint Powers Authority (JPA) pursuant to Chapter 277 of the Nevada Revised Statutes and is a political subdivision of the State of Nevada. TMWA is separate from its member agencies: City of Reno, City of Sparks and Washoe County. TMWA was formed in November 2000 for the purpose of acquiring the assets of the water division of Sierra Pacific Power Co. (SPPCo), a subsidiary of Sierra Pacific Resources, now known as NV Energy, with the goal of retaining local control over the water resources of the area. TMWA took over the water system assets on June 11, 2001. Amendments to the JPA were approved by the Attorney General's Office of the State of Nevada effective February 3, 2010. The amendments were made in anticipation of the consolidation of TMWA, Washoe County's water utility and another water utility named South Truckee Meadows General Improvement District (STMGID). The consolidation of the water utilities occurred on January 1, 2015 with TMWA as the continuing entity. There are no component units associated with this financial reporting entity.

TMWA has no financial interdependence with its member agencies. TMWA has broad powers to finance, construct and operate the water system, for the diversion, treatment, distribution, and sale of treated water to retail and wholesale customers. TMWA has full authority to set water rates for services subject to the approval of the TMWA Board of Directors, without approval by other entities. TMWA is a tax-exempt entity for purposes of federal taxes and State of Nevada property and sales and use taxes, as well as other state taxes. TMWA pays property taxes in Nevada and Sierra Counties of California for the privilege of storing water in private and federal reservoirs. TMWA has no taxing authority.

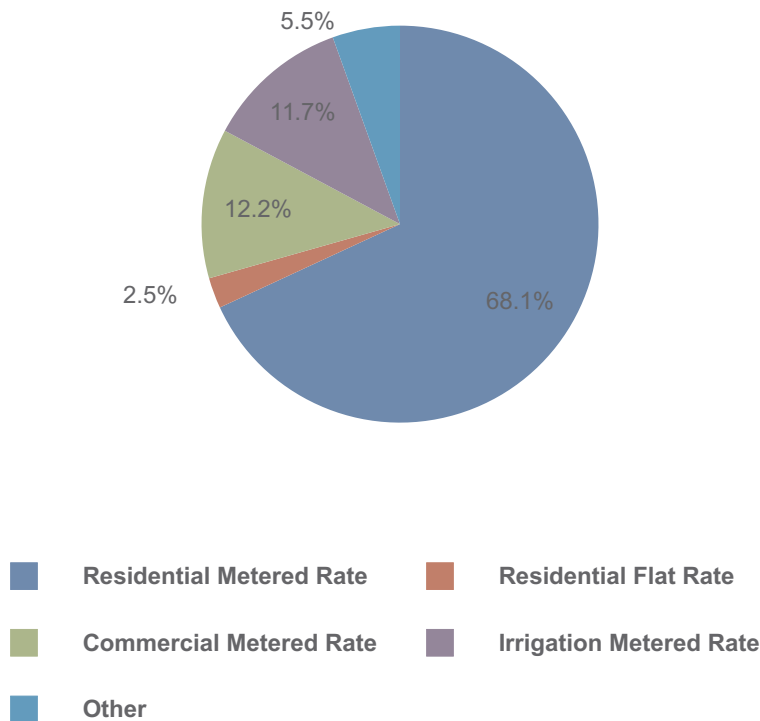
TMWA has over 125,000 service connections and one wholesale customer. TMWA operates within the Truckee Meadows service area. TMWA has only one wholesale customer, the Sun Valley General Improvement District (SVGID) located north of the Reno-Sparks main metropolitan area. SVGID is wholly dependent upon TMWA water deliveries since this district has no source of water supply. There is one water delivery contract associated with this wholesale connection.

The following map reflects the TMWA service territory.



The following graph depicts the proportion of operating revenues by class for fiscal year 2018:

TMWA Operating Revenues \$101.8 Million



The metering of the water system, which began under Sierra Pacific in 1995, presents various operational solutions for TMWA. These solutions present the opportunity to collect accurate data on water usage by customer class. This allows TMWA to make more accurate cost of service analyses, to make water rates more equitable across customer classes, and to better anticipate future water resource and water facility requirements. Since the acquisition of the water system, TMWA has metered nearly 100% of water services. Currently, there are less than 275 water services that do not have a meter installed and are billed on a flat rate and these represent problematic services with multiple customers on a single service line.

The Board adopted a goal in August 2003, to maintain a senior lien debt coverage ratio of at least 1.5 times recurring revenues less operating expenses divided by annual debt service. This calculation excludes developer facility charges and other fees associated with new development. This coverage target is sufficient to meet minimum debt service coverage requirements, fund reconstruction of the water system on primarily a pay-as-you-go basis and manage TMWA's senior lien bonding capacity to allow for potential future senior lien bond sales if necessary. These measures were deemed necessary to maintain water system infrastructure in a prudent manner and insure that

TMWA's bondholders are adequately protected. There are no other restrictions, commitments, or other limitations that would restrict the unrestricted cash assets for use in meeting TMWA's obligations. TMWA's senior lien coverage (excluding developer fees and charges) was approximately 2.97x and with certain developer fees and charges was approximately 4.37x as of June 30, 2018.

ECONOMIC OUTLOOK AND WATER RESOURCES

The Reno-Sparks metropolitan area enjoys a moderate climate, offers a wide variety of year-round recreational opportunities, and has a favorable tax structure. It is also centrally located in the Pacific region affording efficient distribution of goods throughout the western United States. Northern Nevada's favorable business tax environment nurtures steady growth in TMWA's service area and nearby communities in manufacturing, distribution, warehousing and industrial businesses. TMWA's service area has experienced steady growth since TMWA's inception in 2001, with overall population gains in Washoe County of 28 percent. Taxable sales in Washoe County continues to grow with an increase of 6.8% in fiscal year 2018 compared with 5.8% and 10.7% in fiscal years 2017 and 2016 respectively. Unemployment rates have decreased significantly since the recession, from highs in 2011 of over 13% to an unemployment rate of 3.5% in June of 2018, which was slightly lower than the national average of 4.0%. Total nonfarm employment has increased 3.9% in fiscal year 2018 and 5.7% in fiscal year 2017. The total civilian labor force has also increased 3.4% in fiscal year 2018 and 4.2% in fiscal year 2017. There has been improvement in the local economy in fiscal years 2017 and 2018 with the return of meaningful residential and commercial construction activity.

TMWA's service area also continues to expand. The Board of Directors voted in October 2018 to approve annexation of a planned development north of the current service area for retail water service. If the development is completed as planned it will add over 5000 service connections. The developer will pay for all water line extensions and infrastructure needed to complete the project. As of the filing date of this CAFR, TMWA is nearing completion of a possible acquisition of West Reno Water Company's water system. This would expand TMWA's service area to the west and development is planned for over 3500 service connections. Developer contributions and federal grants will pay for this expansion.

To meet water demands in the future, TMWA prepared a very detailed Water Resource Plan (WRP) for the years 2016-2035 during fiscal year 2016. That plan was adopted by the Board in March 2016, and was previously updated during fiscal year 2010. The WRP addresses current water resources, future water resources, and water rights availability as well as defined drought standards which conclude that TMWA can utilize the aforementioned water resources to meet incremental water demands required by growth for the next twenty years and beyond. The focal point of the WRP is the population and water demand forecasts for the TMWA consolidated water utility service territory.

Historically, to complement this water resource planning effort, a comprehensive Water Facility Plan (WFP) for the years 2010-2030 was developed. The original WFP was adopted by the TMWA Board in December of 2004 and updated in 2010. The WFP evaluates the infrastructure required to supply, treat and deliver water to customers over the life of the plan and determines infrastructure requirements in Capital Improvement Plan needs to serve growth based upon population and water

demand forecasts in the WRP. An updated WFP is currently being developed based on water demand projections defined in the 2016-2035 WRP. Spending on the acquisition of water rights has been essentially suspended because TMWA has a sufficient inventory of water rights to issue will-serve commitments for the foreseeable future, although opportunistic purchases will be considered. Any given year, as much as 80% or more of the water supply to TMWA's service area is supplied from surface water from the Truckee River. As such, TMWA played a critical role in negotiating and implementing the Truckee River Operating Agreement (TROA). TMWA is a primary signatory to the TROA along with the Pyramid Lake Paiute Tribe (PLPT), the States of Nevada and California, and the Federal Government. TROA is intended to provide TMWA customers with benefits regarding a new, revised operation of the Truckee River system that provides additional drought supplies for existing as well as new customers. These lengthy and complex negotiations, which include interstate allocations of Truckee River water rights, were concluded when TROA was signed by the aforementioned parties on September 6, 2008 at a signing ceremony in Reno. TMWA made available to the PLPT certain water rights that met requirements to put TROA into effect in October 2015. In November 2015 remaining related lawsuits were dismissed and TROA became effective December 1, 2015 providing significant additional drought resources for TMWA's service area and completing a multi-decade effort.

TMWA owns and operates 27,000 acre-feet of reservoir storage comprised of 9,500 and 17,500 acre-feet in Donner Lake and Independence Lake, respectively (both owned and controlled by TMWA). In addition to the owned storage, as a result of TROA, TMWA can access additional storage capacity in certain federal lakes and reservoirs, including Lake Tahoe. Currently, TMWA has between 30,000 and 40,000 acre feet stored in these reservoirs.

To further drought resiliency for the community that TMWA serves, TMWA constructed the North Valley's Integration Project which ties in the Fish Springs Ranch infrastructure into TMWA's North Valleys water system providing access to approximately 8,000 acre feet of groundwater resources in the Honey Lake ground water basin which is located approximately 35 miles north of the Reno-Sparks metropolitan area. This project was completed in fiscal year 2017.

Since the implementation of TROA, TMWA's Privately Owned Stored Water (POSW) has more than doubled. Record precipitation in Western Nevada during the winter of 2016/2017 ended drought conditions for the TMWA service area. TMWA does not expect to use POSW to serve customers for the next two to three years. When combining TMWA's existing POSW surface water resources, the groundwater resources of the Honey Lake basin, the extensive drought storage benefits of TROA and the expansion of Aquifer Storage and Recovery (ASR) groundwater recharge efforts, the TMWA service area is well positioned with regards to drought resiliency.

WATER QUALITY

TMWA's highest priority is the protection of public health through modern water treatment techniques and water quality monitoring efforts. TMWA's primary source of water is the Truckee River, which sources at Lake Tahoe and other tributaries to the Truckee River, travels into Nevada through the Reno-Sparks Metropolitan area with the terminus of the river at Pyramid Lake, a distance of approximately 120 miles. The river's water quality is excellent; however, additional steps are taken to purify the water to meet safe drinking water standards that were set forth by the United States Department of Environmental Protection in the early 1990's. TMWA owns and operates the

84 million gallons per day (MGD) Chalk Bluff Water Treatment Plant and the 37.5 MGD Glendale Water Treatment Plant. Attesting to TMWA's commitment to the protection of public health, TMWA's Chalk Bluff Water Treatment Plant received the Presidents Award from the Partnership for Safe Water in 2015. This prestigious recognition places the Chalk Bluff plant as one of 42 surface water treatment plants in the United States that have been so recognized. This recognition exemplifies TMWA staff's experience, passion, and commitment to producing and delivering outstanding water quality to customers. TMWA has requalified for this award successfully on an annual basis.

TMWA spends approximately \$1 million annually monitoring water quality by analyzing nearly 11,000 samples at over 180 locations throughout the TMWA water system. TMWA strictly complies with current drinking water standards, including the revised arsenic standards as promulgated by the United States Environmental Protection Agency, and administered by the Nevada Department of Environmental Protection, Bureau of Safe Drinking Water.

WATER CONSERVATION

Efficient use of water within the Truckee Meadows extends this vital resource through periods of drought in this high desert climate. Therefore, water conservation has been, and will continually be, a high-priority at TMWA. Not only does conservation promote water-efficient behavior, such efforts also reduce peak-day demand and help defer future investments in costly improvements to infrastructure. The purpose of water conservation at TMWA is to promote smart use of water through several programs. During a Drought Situation, TMWA enhances its conservation efforts to ensure drought storage is sufficient over the drought period.

Water-Efficiency Codes

TMWA's Rule 2 provides water-efficiency codes to which customers must adhere. First, customers must not use water excessively (i.e., no waste). TMWA also requires that its customers adhere to a three-day-a-week irrigation schedule. This watering restriction helps prevent overwatering, as well as, reduces peak-day demand. TMWA also requires no irrigation on Mondays to allow its system to recharge. Additionally, TMWA requires no irrigation between noon and 6 p.m. from Memorial Day to Labor Day. These water-efficiency codes have been successful in managing customer demands over time.

The Water Meter Retrofit Program

Under TMWA's Water Meter Retrofit Program, unmetered services are retrofitted with a meter. Customers without meters pay a flat, monthly water rate, thus have no simple way to know their water usage and have less monetary incentive to conserve. Through a charge of \$1,830 for every acre-foot of new surface water demand, developers and others have provided funding for this program. As of June 30, 2018, TMWA estimates that less than 275 water services do not have a meter installed.

Water Pricing Structure

TMWA has an inverted, tiered-rate billing structure in which customers are charged increasing rates based on the amount of water they use. This billing structure provides a “price signal” to customers who cross into a higher tier, thereby encouraging efficient use of water.

Water Usage Review Program

The Water Usage Review Program assists TMWA customers with issues with their water meter or their water delivery system. When a water usage review is requested, TMWA staff will go onsite to check meter accuracy as well as detect for leaks in the customer’s system. If a leak is detected, staff will work with the customer to attempt to identify the leak source. Staff will also review the usage history of the service to determine water usage behavior. Once completed, staff will notify the customer regarding any leaks that were detected, make recommendations on how to reduce water consumption, and teach customers how to check for leaks in the future.

Water Watcher Program

During the irrigation months (April to October), TMWA ramps up its conservation efforts by hiring additional seasonal conservation consultants. These consultants are trained to monitor the TMWA service territory and ensure its water-efficiency codes are being adhered to. They also respond to water waste reports by the public. They provide customers with information about TMWA’s water-efficiency codes and identify any leaks or sources of water waste in outdoor irrigation. This program not only promotes efficient use of water, but also facilitates lower monthly bills.

Landscape Retrofit Program

The Landscape Retrofit Program promotes water-efficiency measures on municipal landscapes. The program includes financial support of landscape augmentation projects by institutional irrigators. Projects supported under this program promote replacement of turf grass with drought-tolerant vegetation, tree conservation, and smart landscaping educational programs.

Water Conservation Education Program

TMWA has a strong educational program designed to teach customers about the benefits of conservation and techniques that can help them use water responsibly. Educational initiatives include a free workshop series, direct communication (bill inserts, emails, in-person, etc.), public presentations and events, as well as, a multi-media campaign. TMWA also partners with other local organizations to provide grade school students in the Truckee Meadows with information regarding our water sources, water quality and watershed protection.

FINANCIAL INFORMATION

Internal Controls

TMWA employs various internal controls for the safeguarding of assets against losses from unauthorized use or disposition. TMWA's management is responsible for establishing and maintaining a system of internal controls designed to meet these objectives. Another purpose of internal controls is to ensure that accounting data are compiled to allow for the preparation of financial statements in accordance with generally accepted accounting principles. The internal control structure is designed to provide reasonable assurance that these objectives are met. When establishing or reviewing internal controls, management weighs the cost to implement such controls over the benefits derived from implementing such controls. TMWA's management is constantly looking for opportunities to improve or redesign internal controls. A key component of TMWA's internal controls is its budgetary controls.

Budgetary Controls

TMWA is legally required to prepare, present to the TMWA Board and adopt an annual budget in conformance with Chapter 354 of the Nevada Revised Statutes. These statutes comprise the Administration of Local Government Finance Act, which stipulates that the Board be presented with a tentative budget by April 15 of each year, with formal adoption of the budget after a public hearing in May of each year. The adopted budget is then filed with the Nevada Department of Taxation.

TMWA is also required to prepare a Capital Improvement Plan for review and formal acceptance by the TMWA Board. This plan is a comprehensive compilation of all capital projects and capital outlays expected during the ensuing five fiscal year period. TMWA's Board is kept informed of TMWA's financial performance throughout the fiscal year at scheduled Board meetings. The General Manager, as the chief administrative officer, is authorized to approve all expenses that are within the approved budget. This authority is conferred upon the General Manager by virtue of the TMWA Cooperative Agreement between the City of Reno, City of Sparks, and the County of Washoe. This arrangement allows for the efficient operation of TMWA. TMWA routinely prepares five year financial forecasts in conjunction with the Capital Improvement Plan.

BUDGET ANALYSIS AND VARIANCES

Actual total operating revenues of \$101.8 million were \$1.4 million or 1.4% above the revised budget for fiscal year ended June 30, 2018. Charges for water sales were \$95.2 million or 0.9% over budget. TMWA water sales were higher due to record heat in July, August and September of 2017, during the peak of the irrigation season. Even so, customers continue to practice responsible water use. As a consolidated water utility, even with population growth in the service area of 6.5%, water usage has decreased by 6.1% since fiscal year 2014, mainly due to conservation efforts implemented during drought periods.

Total operating expenses of \$90.3 million were approximately \$0.4 million under the budget of \$90.7 million. Operating expenses before depreciation were \$0.9 million over budget. Service and supplies expenses were \$2.5 million under budget, with \$1.9 million due to lower maintenance

expenses. All essential maintenance was performed. Savings on chemical expenses of \$0.6 million were experienced due to improved water quality in the Truckee River, and electrical expenses were \$0.3 million lower than budget as operators continue to apply power management practices to the system. Spending on operating salaries and wages was \$0.3 million less than budget due mainly to vacant positions and turnover, while employee benefit spending was \$3.6 million higher than budget. Actuarial evaluations related to GASB No. 82 resulted in a \$4.6 million adjustment to pension expense. Adjustments related to GASB 75 for accrual of liabilities related to employee post retirement medical plans were \$0.8 million lower than expected. Neither of the GASB adjustments related to employee benefits have any current year cash flow effect.

Total net nonoperating revenues and expenses were \$1.4 million favorable to budget. This variance was primarily due to lower interest expense.

Capital contributions of \$37.4 million were \$22.2 million above budget. Cash contributions from developers were \$5.4 million greater than budget and were attributable to increasing levels of residential construction activity as the local economy improves. Developer infrastructure contributions are not included in the budget, but total \$15.0 million in noncash contributions in fiscal year 2018.

Total capital spending was approximately \$29.1 million for fiscal year 2018, which was approximately \$13.9 million less than the \$43.0 million planned in the augmented capital budget. The primary reason for the underspend was the delay in construction of the Mt. Rose Water Treatment Plant due to delays in permitting and satisfying regulatory requirements.

As reflected in the Statement of Cash Flows, TMWA funded the operating budget, debt service requirements and capital spending from operating revenues, capital contributions and investment income. As of June 30, 2018, TMWA has approximately \$147.7 million of unrestricted cash and investments to fund future operations and capital projects.

TMWA complied with bond covenants during fiscal year 2018 with respect to funding cash reserves. TMWA's renewal and replacement reserve is fully funded at \$10 million. The operations and maintenance reserve fund, which TMWA is required to maintain at a balance equal to one-sixth of TMWA's revised final operating budget, contained \$9.5 million as of June 30, 2018. As of June 30, 2018 TMWA still retained a \$1.8 million water rate stabilization reserve of which \$0.5 million is restricted and \$1.3 million included as a reservation of unrestricted net position. Subsequent to year end at the September 18, 2018 Board of Director's meeting, the Board voted to adopt a resolution to increase the Rate Stabilization Fund (RSF) to a maximum of 3% of annual projected water sales for a three-year period, which results in a current maximum of \$9.2 million. The previous maximum funding amount was \$7 million. The Board also voted at that meeting to designate funds to the RSF at the current maximum amount. As of September 18, 2018 the fund is designated at \$9.2 million, with \$0.5 million in restricted funds, and \$8.7 million included as a reservation of unrestricted net position. It is the Board's intention to use the fund in lieu of a customer rate increase if an unusual shortfall in water sales revenue occurs.

ACKNOWLEDGEMENTS

The timely preparation of this report could not be done without the assistance of TMWA finance personnel, the management team and employees of TMWA. We would like to thank the Board of Directors, TMWA customers, and the development community, for their commitment to the long-term operational and financial stewardship of TMWA.

A handwritten signature in dark ink, appearing to read "Mark Foree". The script is fluid and cursive.

Mark Foree, P.E.
General Manager

A handwritten signature in dark ink, appearing to read "Michele Sullivan". The script is fluid and cursive.

Michele Sullivan, CPA
Chief Financial Officer

**Truckee Meadows Water Authority
List of Principal Officials
June 30, 2018**

TMWA Board of Directors

Geno Martini, City of Sparks Mayor, Chairman of the Board (Outgoing, effective through June 30, 2018)

Vaughn Hartung, Washoe County Commissioner, Chairman of the Board (Effective as of July 1, 2018, formerly Vice Chairman)

Ron Smith, Sparks Council Member, Vice Chairman (Effective as of July 1, 2018)

Kristopher Dahir, Sparks Council Member (Incoming, effective as of July 1, 2018)

Bob Lucey, Washoe County Commissioner

Jenny Brekhus, City of Reno Council Member

Naomi Duerr, City of Reno Council Member

Neoma Jardon, City of Reno Council Member

Management

Mark Foree, PE, General Manager

Scott Estes, PE, Director of Engineering

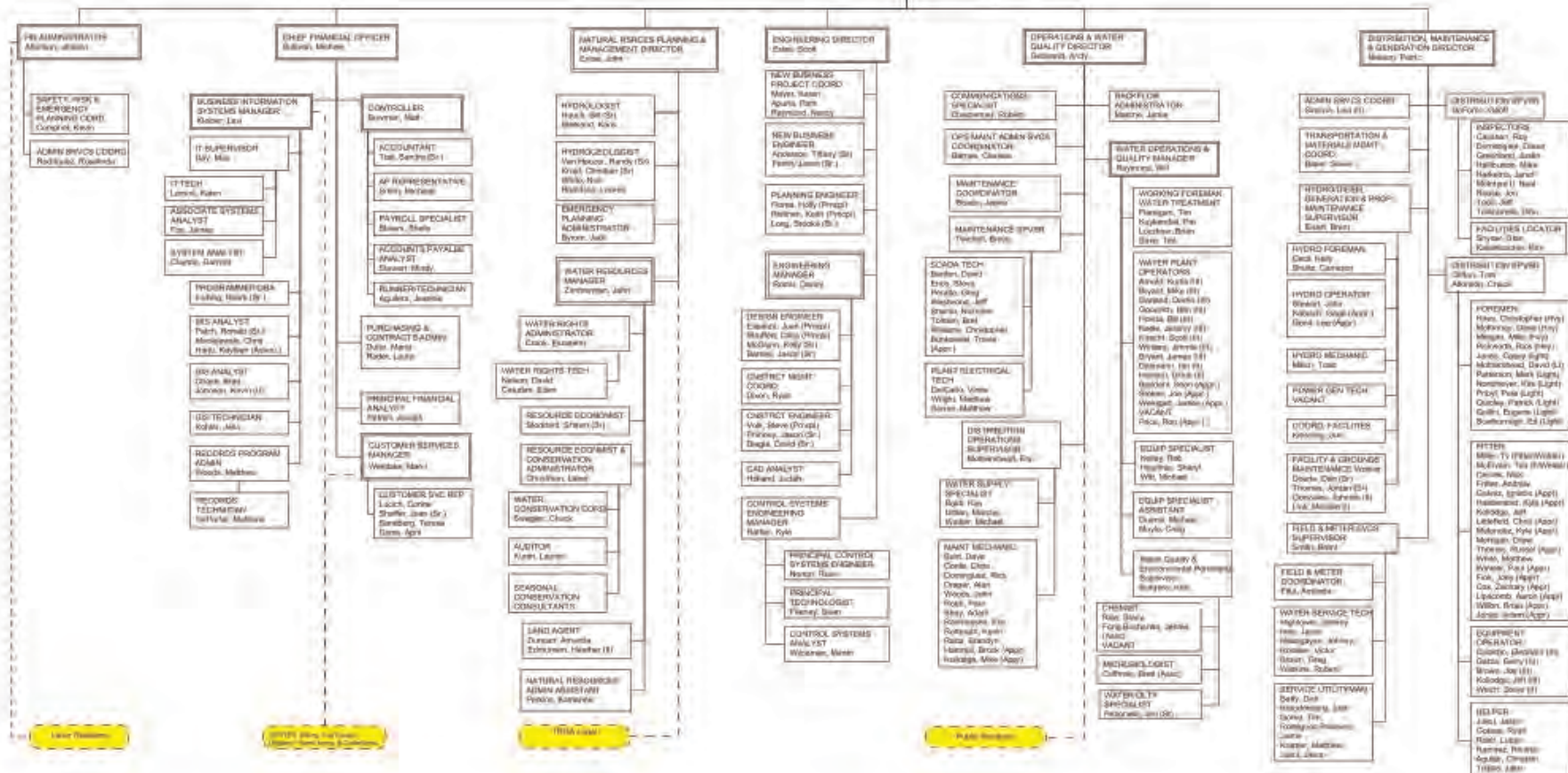
Mike Pagni, General Counsel

John Enloe, Director of Natural Resources Planning and Management

Andy Gebhardt, Director of Operations and Water Quality

Pat Nielson, Director of Distribution, Maintenance, and Generation

Michele Sullivan, CPA, Chief Financial Officer

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Nevada**

For its Comprehensive Annual
Financial Report
for the Fiscal Year Ended

June 30, 2017

Christopher P. Morrell

Executive Director/CEO

Independent Auditor's Report

To the Board of Directors
Truckee Meadows Water Authority
Reno, Nevada

Report on the Financial Statements

We have audited the accompanying financial statements of Truckee Meadows Water Authority (TMWA), which comprise the statements of net position as of June 30, 2018 and 2017, and the related statements of revenues, expenses and changes in net position and statements of cash flows for the years then ended, and the related notes to the financial statements, which collectively comprise the TMWA's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of TMWA, as of June 30, 2018 and 2017, and the respective changes in financial position and cash flows for the years then ended in conformity with accounting principles generally accepted in the United States of America.

Change in Accounting Principle

As discussed in Notes 1 and 14 to the financial statements, TMWA has adopted the provisions of GASB Statement No. 75, *Accounting and Financial Reporting for Other Postemployment Benefits Other Than Pensions*, which has resulted in a restatement of the net position as of July 1, 2016. Our opinion is not modified with respect to this matter.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis on pages 18 through 29, the schedules of changes in net OPEB liability and related ratios on pages 68 through 69, the schedules of contributions on pages 70 through 71, the schedules of TMWA's share of net pension liability – PERS on page 72, and the schedules of TMWA contributions –PERS on page 73 be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Information

Our audit was conducted for the purpose of forming an opinion on the financial statements that collectively comprise TMWA's basic financial statements. The introductory section, the schedules of revenues, expenses and changes in net position – budget and actual, and statistical section are presented for purposes of additional analysis and are not a required part of the basic financial statements.

The schedules of revenues, expenses and changes in net position – budget and actual are the responsibility of management and were derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. Such information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the schedules of revenues, expenses and changes in net position – budget and actual are fairly stated in all material respects in relation to the basic financial statements as a whole.

The introductory and statistical sections have not been subjected to the auditing procedures applied in the audit of the basic financial statements and, accordingly, we do not express an opinion or provide any assurance on them.

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated November 30, 2018, on our consideration of TMWA's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of TMWA's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering TMWA's internal control over financial reporting and compliance.

A handwritten signature in cursive script that reads "Eide Bailly LLP".

Reno, Nevada
November 30, 2018

MANAGEMENT'S DISCUSSION AND ANALYSIS

This section of TMWA's Comprehensive Annual Financial Report presents management's discussion and analysis of TMWA's financial performance during the fiscal years ended June 30, 2018, June 30, 2017, and June 30, 2016. This section should be read in conjunction with the transmittal letter at the front of this report and TMWA's financial statements following this section.

FINANCIAL HIGHLIGHTS

TMWA's Net Position (in millions)

	<u>June 30, 2018</u>	<u>Restated June 30, 2017</u>	<u>June 30, 2016</u>
Unrestricted Current Assets	\$ 164.1	\$ 149.2	\$ 116.0
Restricted Current Assets	13.3	8.6	21.5
Long-Term Restricted and Other Assets	32.9	33.7	66.8
Net Other Postemployment Benefits Asset	0.2	—	—
Capital Assets, net	952.7	941.7	930.8
Total Assets	<u>1,163.2</u>	<u>1,133.2</u>	<u>1,135.1</u>
Deferred Outflow of Resources	14.5	17.9	10.2
Total Assets & Deferred Outflow of Resources	<u>1,177.7</u>	<u>1,151.1</u>	<u>1,145.3</u>
Total Current Liabilities	59.0	108.6	123.1
Long Term Debt Outstanding	409.2	372.3	406.7
Net Pension Liability	37.3	35.8	26.9
Net Other Postemployment Benefits Liability	0.8	1.7	—
Total Liabilities	<u>506.3</u>	<u>518.4</u>	<u>556.7</u>
Deferred Inflow of Resources	3.4	2.5	3.6
Net Investment in Capital Assets	533.1	506.7	478.5
Restricted	30.1	28.6	40.6
Unrestricted	<u>104.9</u>	<u>95.0</u>	<u>65.9</u>
Total Net Position	<u><u>\$ 668.1</u></u>	<u><u>\$ 630.3</u></u>	<u><u>\$ 585.0</u></u>

Financial Position

Fiscal Year 2018 Summary

In the fiscal year ended June 30, 2018, total net position increased by approximately \$37.7 million, the result of recording operating income, net nonoperating income and capital contributions.

Total Unrestricted Current Assets increased by \$15.0 million from June 30, 2017. Unrestricted cash increased \$15.5 million due to continued growth in the service area which increases cash contributions from developers. Total cash and investment balances, both restricted and unrestricted increased by \$19.3 million in fiscal year 2018.

Most of TMWA's net position is in Capital Assets. Capital Assets, net of accumulated depreciation increased by \$11.0 million in fiscal year 2018 as increases in capital assets from capital expenditures and contributions were greater than depreciation expense. Depreciation expense was \$32.8 million.

Total Current Liabilities decreased by \$49.6 million mainly due to decreases in commercial paper. TMWA paid off \$9.2 million of its commercial paper, and refunded another \$44.2 million into long term fixed rate senior lien bonds. Decreases in commercial paper were offset by an increase of \$2.3 million in interest payable at year end, mainly due to the timing of the 2017 bond refunding which resulted in more interest payments on that debt prior to year end in fiscal year 2017. Other current liabilities, including vendor accounts payable, retention and contracts payable were \$1.5 million higher than prior year due to timing of vendor payments.

Long Term Debt increased \$36.9 million, mainly due to the refunding of \$44.2 million of commercial paper, which resulted in long term senior lien debt of \$38.8 million, with a premium on the sale of \$5.8 million.

During fiscal year 2018 GASB 75 related to postretirement medical benefits was adopted. Based on an actuarial analysis, TMWA booked a net asset for its Section 501-c-9 plan known as the TMWA Post-Retirement Medical Plan and Trust (PRMPT) of \$0.2 million as of June 30, 2018. This plan is slightly overfunded as of the actuarial measurement date of December 31, 2017. As of the previous actuarial measurement date of December 31, 2016 this plan had a net liability of \$0.8 million. The Section 115 Trust plan measurement date was the same, and TMWA booked a liability of \$0.8 million for this plan. As of the previous measurement date for the Section 115 Trust, there was a liability of \$0.9 million. Detailed information about TMWA's postretirement medical benefits can be found in Note 11 to TMWA's financial statements.

Fiscal Year 2017 Summary

In the fiscal year ended June 30, 2017, total net position increased by approximately \$46.6 million, the result of recording operating income, net nonoperating income and capital contributions.

Total Unrestricted Current Assets increased by \$33.2 million from June 30, 2016. Unrestricted cash increased \$32.4 million due to several transactions, some of which were one-time in nature. Cash received in an insurance settlement of \$11.8 million was related to damage at the Farad hydroelectric plant. After many years of litigation, this case was settled in fiscal year 2017. \$5.1 million in cash

was received related to the release of commitments with two banks which provided guaranteed interest rates of 5.5% on TMWA's Debt Service Reserve Fund and Operating and Maintenance Reserve balances. In fiscal year 2017, TMWA refunded its 2007 Bonds, and is no longer required to keep a minimum debt service reserve fund related to Senior Lien Debt. This released \$32.9 million from Long-Term Restricted and Other Assets, which drives the change of \$32.5 million in that asset category. The \$32.9 million was used to pay down the senior lien debt outstanding in the 2017 bond refunding. Restricted Current Assets decreased by \$12.9 million. This is mainly due to a decrease in cash reserved for current debt service. Total cash balances, both restricted and unrestricted decreased by \$13.0 million in fiscal year 2017.

Most of TMWA's net position is in Capital Assets. Capital Assets, net of accumulated depreciation increased by \$10.9 million in fiscal year 2017 as increases in capital assets from capital expenditures and contributions were greater than depreciation expense. Depreciation expense was \$32.2 million.

Deferred Outflows of Resources increased \$7.7 million due to higher allocations for pension liabilities based on the actuarial analysis performed for Nevada Public Employees Retirement System (NVPERS).

Long Term Debt Outstanding decreased \$34.4 million due to the 2017 bond refunding, and Total Current Liabilities also decreased \$14.6 million due to lower current portion of debt and interest outstanding. Net Pension Liability increased \$8.9 million and relates to TMWA's proportionate share of the net pension liability of the NVPERS.

TMWA retroactively adopted GASB 75 related to other postretirement benefit plans in fiscal year 2018 which resulted in adjustments to fiscal year 2017 financial statements. The impact to 2017 was an increase in the Net Other Postemployment Benefits Liability of \$1.7 million, an increase in Deferred Outflows of \$0.6 million, and a decrease in Employee Benefits Expense of \$0.1 million. Detailed information about TMWA's postretirement benefit plans can be found in Note 11 to TMWA's financial statements.

TMWA's Changes in Net Position
(in millions)

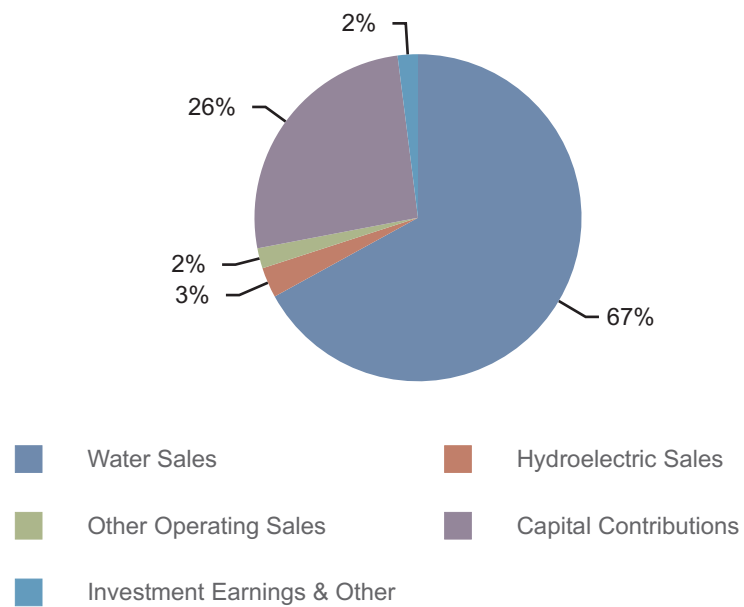
	<u>June 30, 2018</u>	<u>Restated June 30, 2017</u>	<u>June 30, 2016</u>
Operating Revenues	\$ 101.8	\$ 97.3	\$ 91.9
Operating Expenses	90.3	82.3	80.6
Operating Income	<u>11.5</u>	<u>14.9</u>	<u>11.3</u>
Nonoperating Revenues (Expenses) net	<u>(11.2)</u>	<u>(11.7)</u>	<u>(9.5)</u>
Income before Capital Contributions	0.3	3.2	1.8
Capital Contributions	37.4	43.4	19.3
Change in Net Position	<u>37.7</u>	<u>46.6</u>	<u>21.1</u>
Net Position - BOY	630.3	585.0	563.9
Restatement of Beginning Net Position (Deficit)	—	(1.3)	—
Net Position - EOY	<u>\$ 668.1</u>	<u>\$ 630.3</u>	<u>\$ 585.0</u>

TMWA's Revenues
(In millions)

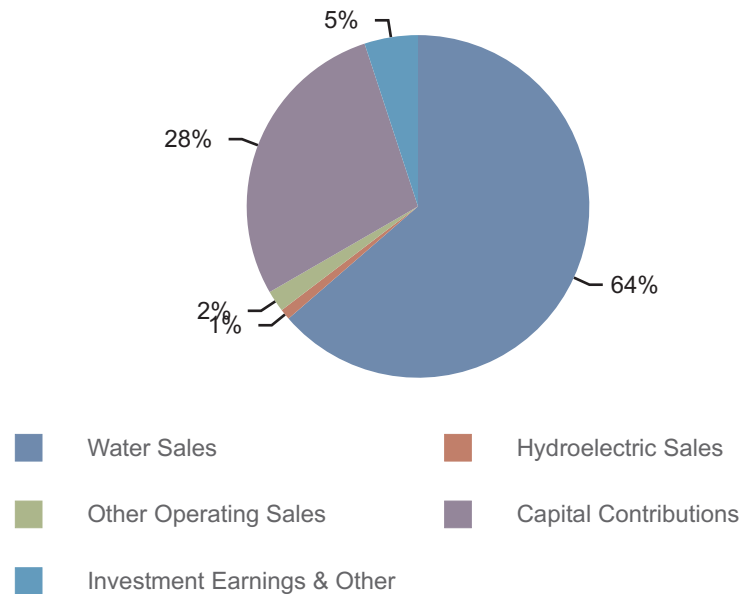
	<u>June 30, 2018</u>	<u>June 30, 2017</u>	<u>June 30, 2016</u>
Revenues			
Operating Revenues			
Water Sales	\$ 95.2	\$ 92.7	\$ 87.5
Hydroelectric Sales	3.8	1.8	1.2
Other Operating Sales	2.8	2.8	3.2
	<u>101.8</u>	<u>97.3</u>	<u>91.9</u>
Nonoperating Revenues			
Investment Earnings	2.3	7.2	6.7
Other	0.1	—	6.5
	<u>2.4</u>	<u>7.2</u>	<u>13.2</u>
Capital Contributions	37.4	43.4	19.3
Total Revenues	<u>\$ 141.6</u>	<u>\$ 147.9</u>	<u>\$ 124.4</u>

The table above and the graphs that follow represent the makeup of TMWA's total revenues for fiscal years ended June 30, 2018, 2017 and 2016:

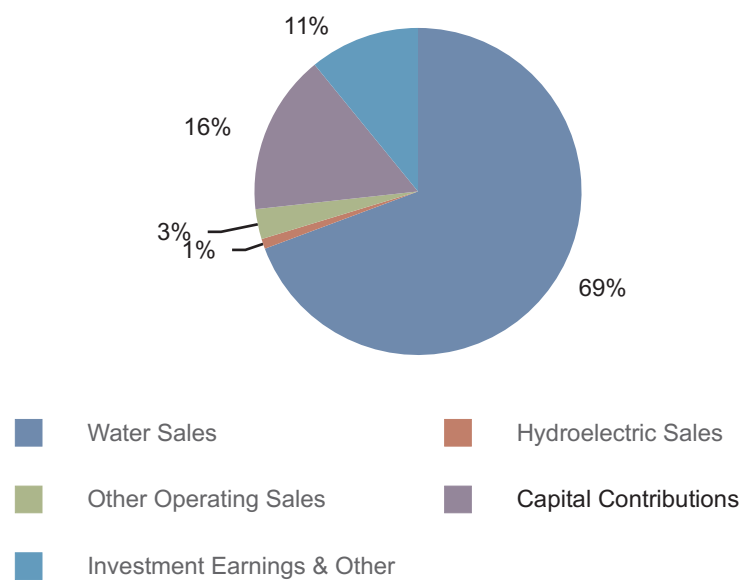
Total Revenues for the Year Ended June 30, 2018



Total Revenues for the Year Ended June 30, 2017



Total Revenues for the Year Ended June 30, 2016



Results of Operations-Revenues

Fiscal Year 2018 Summary

For fiscal year 2018, total operating revenues increased \$4.5 million from fiscal year 2017. Water Sales were \$95.2 million, \$2.5 million or 2.7% greater than in fiscal year 2017. Water Sales were higher mainly due to a 3% rate increase implemented in the first billing cycle of May, 2018. Hydroelectric Sales were \$2.0 million or 110.0% greater than fiscal year 2017, due to consistently high river flows and very little downtime for repairs at the hydroelectric plants.

Investment Earnings were \$2.3 million in fiscal year 2018, \$4.9 million lower than fiscal year 2017. This is mainly due to termination of two forward delivery agreements, one with JP Morgan, and one with Bank of New York Mellon, as part of the 2017 bond refunding. These banks are no longer required to provide a 5.5% interest rate on a portion of TMWA's debt reserves and O&M reserves balances, so they paid TMWA \$5.1 million dollars in fiscal year 2017 for the release of these commitments.

For fiscal year 2018, Capital Contributions decreased by \$5.9 million. This decrease was primarily due to a contribution received in fiscal year 2017 from NV Energy (NVE) from a court awarded payment by their insurers for flood damage to the Farad Hydroelectric Plant river diversion dam for \$11.8 million, that was paid to TMWA in accordance with an agreement with NVE. Offsetting was increased developer contributed infrastructure at \$15.0 million, an increase of \$4.2 million or 39.1% due to a continued upward trend in construction in the service area. Contributions to the water meter retrofit program were \$2.0 million higher than 2017 due to increased sales of surface water will-serve rights which result in the collection of this fee. Other contributions were \$0.4 million lower than prior year.

Fiscal Year 2017 Summary

For fiscal year 2017, total operating revenues increased \$5.4 million from fiscal year 2016. Water Sales were \$92.7 million, \$5.2 million or 5.9% greater than in fiscal year 2016. Water Sales were higher mainly due to a record number of days with no precipitation in the service area during July and August of 2016, the peak of the irrigation season, which resulted in significant increases in water usage. A 3% rate increase implemented in the first billing cycle of May, 2017 also contributed \$0.5 million in additional Water Sales revenue to fiscal year 2017. Hydroelectric Sales were \$0.6 million or 52.2% greater than fiscal year 2016, due to higher river flows in the last half of the 2017 fiscal year, which allowed for more opportunity to operate hydroelectric generation plants. Other Operating Sales were \$0.4 million lower than fiscal year 2016, mainly due to additional fees collected in fiscal year 2016.

Investment Earnings were \$7.2 million in fiscal year 2017, \$0.5 million or 7.0% greater than fiscal year 2016. This is mainly due to termination of two forward delivery agreements, one with JP Morgan, and one with Bank of New York Mellon, as part of the 2017 bond refunding. These banks are no longer required to provide a 5.5% interest rate on a portion of TMWA's debt reserves and O&M reserves balances, so they paid TMWA \$5.1 million dollars for the release of these commitments. In the prior year ended 2016, TMWA received a similar settlement from Bank of America for \$4.4 million as part of the 2016 bond refunding.

In fiscal year 2017, there were no Other Nonoperating Revenues, and in fiscal year 2016 there were \$6.2 million mainly due to \$7.0 million in water rights sold to the Pyramid Lake Paiute Tribe as part of the implementation of TROA, offset by a \$0.6 million loss on disposal of assets.

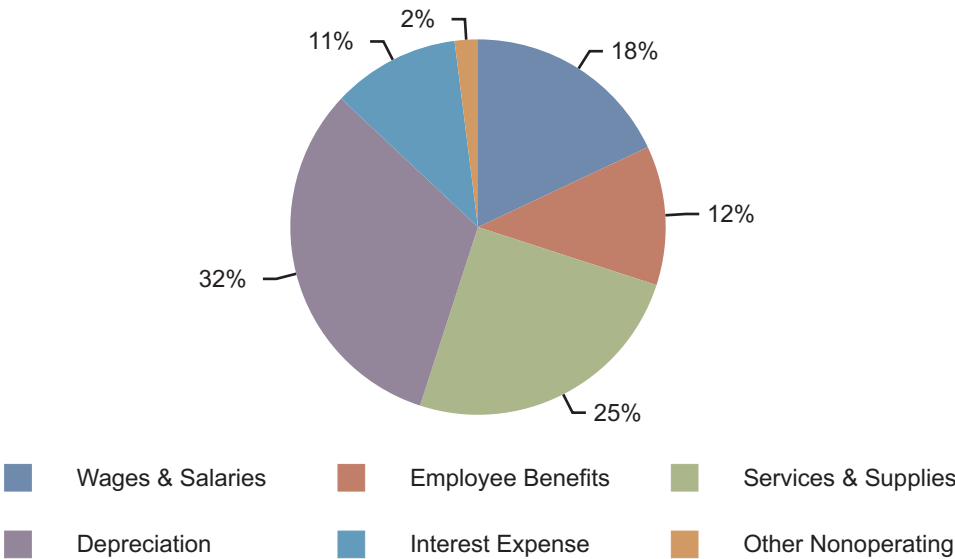
For fiscal year 2017, Capital Contributions increased by \$24.1 million. This increase was primarily due to a contribution from NV Energy from a court awarded payment by their insurers for flood damage to the Farad Hydroelectric Plant river diversion dam for \$11.8 million, that was paid to TMWA in accordance with an agreement with NVE. Various developer connection fees and water rights will-serve sales increased by \$9.4 million or 95.8% due to more robust residential construction, as the economy improved in the TMWA service area. Developer contributed infrastructure was \$10.8 million, an increase of \$2.3 million or 27.7% due to increased construction in the service area. Grants received were \$1.2 million, or \$1.0 million greater than fiscal year 2016 due to grants received related to TROA implementation.

TMWA's Expenses
(in millions)

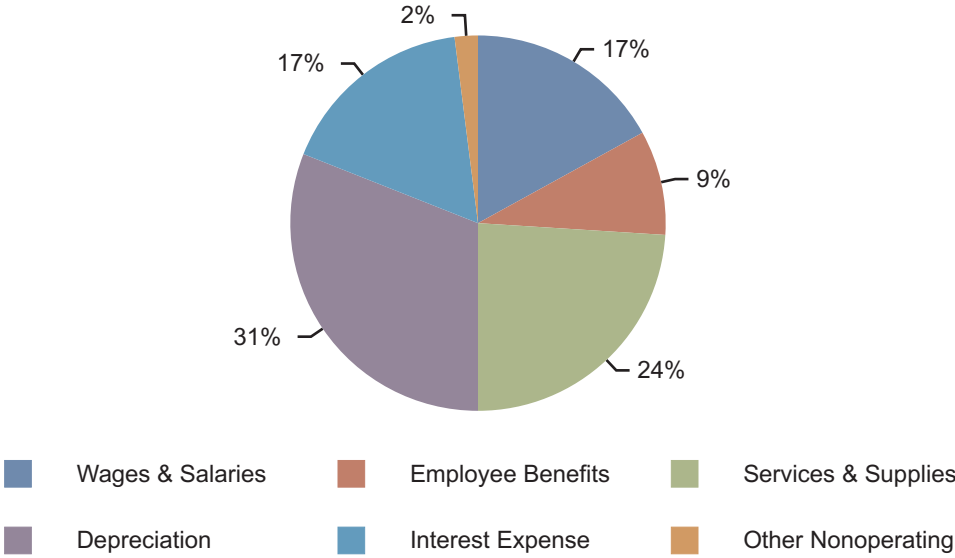
	June 30, 2018	Restated June 30, 2017	June 30, 2016
Expenses			
Operating Expenses			
Wages & Salaries	\$ 18.7	\$ 17.3	\$ 16.5
Employee Benefits	12.9	8.9	6.4
Services & Supplies	25.8	24.0	25.6
Depreciation	32.8	32.2	32.1
	<u>90.2</u>	<u>82.4</u>	<u>80.6</u>
Nonoperating Expenses			
Interest Expense	11.7	17.0	21.5
Other Nonoperating Expenses	1.8	1.9	1.2
	<u>13.5</u>	<u>18.9</u>	<u>22.7</u>
Total Expenses	<u><u>\$ 103.7</u></u>	<u><u>\$ 101.3</u></u>	<u><u>\$ 103.3</u></u>

The table above and the graphs that follow represent the makeup of total operating and non-operating expenses for the years ended June 30, 2018, 2017 and 2016:

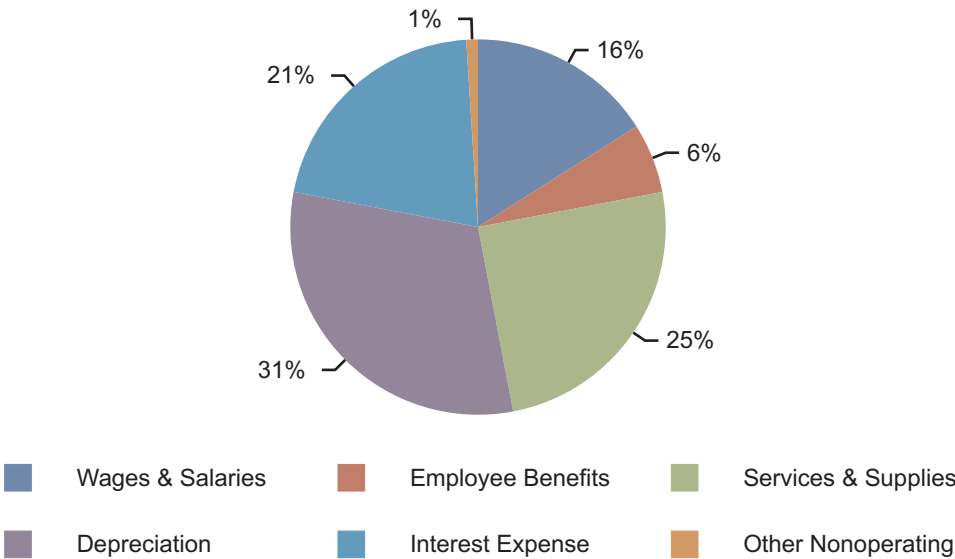
Total Expenses for the Year Ended June 30, 2018



Total Expenses for the Year Ended June 30, 2017



Total Expenses for the Year Ended June 30, 2016



Results of Operations-Expenses

Fiscal Year 2018 Summary

Operating expenses were \$90.3 million, \$8.0 million or 9.7% higher than fiscal year 2017. Spending on Wages and Salaries was \$1.5 million or 8.6% higher, due to a wage increase of approximately 3%, promotions and addition of 12 employees. Six of the new employees were hired into apprenticeships to prepare for retirements occurring in the next two to three years. Employee Benefits were \$4.0 million or 44.6% higher mainly due to a \$4.6 million adjustment to pension expense related to GASB 82, offset by lower pension expense allocation from NVPERS by \$0.6 million, and \$0.2 million lower other post retirement medical expense. Spending on Services and Supplies was \$1.9 million or 7.7% more than prior year, mainly due to \$1.3 million in maintenance expenses for dredging the channel at the Donner Lake dam.

Net Nonoperating Expenses were favorable \$5.4 million as compared to prior year. Lower interest expense in 2018 by \$5.2 million was due to the 2017 bond refunding. Other Nonoperating Expenses were \$0.2 million unfavorable mainly due to decrease in fair value of investments.

Fiscal Year 2017 Summary

Operating expenses were \$82.3 million, \$1.7 million or 2.2% higher than fiscal year 2016. Spending on Wages and Salaries was \$0.8 million or 4.6% higher, due to a modest wage increase of approximately 2%, promotions and addition of two employees. Employee Benefits were \$2.5 million or 39.6% higher mainly due to a \$2.3 million increase in NVPERS actuarial estimates related to the proportion of TMWA's pension liability. Also included in Employee Benefits is a retroactive adjustment related to GASB 75 for Other Postemployment Benefits expense of \$0.5 million. Detailed information about TMWA's postretirement benefit plans can be found in Note 11 to TMWA's financial statements. Spending on Services and Supplies was \$1.6 million or 6.3% less than prior year. Expenses related to the repair of Fleish penstock project were expensed for a loss of \$0.6 million in the prior year. Power costs were lower by \$0.2 million in the current year, and professional services were lower \$1.2 million due to work performed internally, especially in hydrology and construction engineering. Offsetting were \$0.2 million in higher chemicals expenses.

Net Nonoperating Expenses were favorable \$3.8 million as compared to prior year. Lower interest expense in 2017 by \$4.5 million was due to the 2016 bond refunding. Other Nonoperating Expenses were \$0.7 million unfavorable due to decrease in fair value of investments by \$0.4 million, and payment of \$0.2 million in litigation settlements.

CAPITAL ASSETS

At June 30, 2018, TMWA's total capital assets were \$1,374.3 million before accumulated depreciation of \$421.6 million, for a net book value of \$952.7 million. Included in the total capital assets reported on the Statement of Net Position was \$29.2 million in construction work in progress.

At June 30, 2017, TMWA's total capital assets were \$1,330.9 million before accumulated depreciation of \$389.2 million, for a net book value of \$941.7 million. Included in the total capital assets reported on the Statement of Net Position was \$20.8 million in construction work in progress.

Detailed information about TMWA's capital assets can be found in Note 5 to TMWA's financial statements.

LONG-TERM DEBT

At June 30, 2018, TMWA had \$441.9 million in total reported debt outstanding. This amount reflects \$389.9 million in total outstanding principal indebtedness, and \$52.0 million net bond premium. Of the \$389.9 million in total reported debt outstanding, \$32.7 million was due within in one year and is classified as short term indebtedness. Included in short term debt is TMWA's tax exempt commercial paper notes (TECP). TMWA intends to re-market the \$30.0 million in outstanding tax-exempt commercial paper notes as maturities come due, but all the TECP is classified as a short term indebtedness since the TECP notes mature in less than or equal to 270 days.

Total outstanding principal indebtedness of \$389.9 million as of June 30, 2018 reflects a decrease of \$17.2 million or 4.2% from total outstanding principal of \$407.1 million as of June 30, 2017. Total outstanding principal indebtedness of \$407.1 million as of June 30, 2017 reflects a decrease of \$73.2 million or 15.2% from total outstanding principal of \$480.3 million as of June 30, 2016.

During fiscal year 2017, TMWA received credit ratings from Standard and Poor's of AA+, an upgrade from AA in fiscal year 2016, and maintained ratings from Moody's of Aa2. During fiscal year 2018, TMWA maintained both of these credit ratings.

Detailed information about TMWA's indebtedness can be found in Note 6 to TMWA's financial statements.

CONTACTING TMWA's FINANCIAL MANAGEMENT

This financial report was prepared for the benefit of the customers, bond investors, and the Board of Directors of the Truckee Meadows Water Authority. The Comprehensive Annual Financial Report was prepared to provide interested parties with a general overview of the Truckee Meadows Water Authority's accountability for the financial resources it manages. For questions or additional information, please contact the Truckee Meadows Water Authority's Finance Department at P.O. Box 30013, Reno, Nevada 89509-3013.

	2018	Restated 2017
Assets		
Current assets		
Cash and investments	\$ 147,708,109	\$ 132,203,954
Accounts receivable, net	13,588,805	14,803,390
Due from others	309,092	333,417
Due from other governments	312,954	9,559
Interest receivable	782,611	595,161
Prepaid assets and other assets	1,436,188	1,222,604
	<u>164,137,759</u>	<u>149,168,085</u>
Restricted current assets		
Cash and investments		
Water meter retrofit program	4,717,726	2,369,793
Current bond debt service	8,538,712	6,250,183
	<u>13,256,438</u>	<u>8,619,976</u>
Total current assets	<u>177,394,197</u>	<u>157,788,061</u>
Restricted noncurrent assets		
Cash and investments		
Future bond debt service	3,286,363	3,242,632
Operations and maintenance	9,440,056	8,797,778
Renewal and replacement	19,180,630	20,672,290
Water rate stabilization	500,000	500,000
	<u>32,407,049</u>	<u>33,212,700</u>
Noncurrent assets		
Capital assets, not depreciated	159,065,468	150,655,018
Capital assets, depreciated	793,652,691	791,037,884
Prepaid bond insurance and other assets	506,069	510,360
Net other postemployment benefits	232,223	—
	<u>953,456,451</u>	<u>942,203,262</u>
Total noncurrent assets	<u>985,863,500</u>	<u>975,415,962</u>
Total assets	<u>1,163,257,697</u>	<u>1,133,204,023</u>
Deferred Outflow of Resources		
Bond refundings	2,939,628	3,154,276
Net pension liability	11,138,222	14,239,295
Other postemployment benefits	443,895	548,505
	<u>14,521,745</u>	<u>17,942,076</u>
Total deferred outflow of resources	<u>14,521,745</u>	<u>17,942,076</u>
Total Assets and Deferred Outflow of Resources	<u>\$ 1,177,779,442</u>	<u>\$ 1,151,146,099</u>

	2018	Restated 2017
Liabilities		
Current liabilities payable from unrestricted current assets		
Accounts payable	\$ 4,373,577	\$ 3,028,060
Contracts and retention payable	4,209,220	3,305,406
Accrued liabilities	4,028,764	3,912,374
Due to other governments	2,864,640	3,738,649
Accrued interest payable	347,867	384,147
Current portion of long-term debt	31,854,526	85,205,701
Customer deposits and amounts due to developers	2,766,275	2,729,962
	<u>50,444,869</u>	<u>102,304,299</u>
Current liabilities payable from restricted current assets		
Current portion of long-term debt	885,000	850,000
Interest payable	7,653,712	5,400,183
	<u>8,538,712</u>	<u>6,250,183</u>
Total current liabilities	<u>58,983,581</u>	<u>108,554,482</u>
Noncurrent liabilities		
Net pension liability	37,323,782	35,783,246
Long-term debt, net of current portion	409,187,994	372,259,981
Net other postemployment benefits liability	826,542	1,683,574
	<u>447,338,318</u>	<u>409,726,801</u>
Total noncurrent liabilities	<u>447,338,318</u>	<u>409,726,801</u>
Total liabilities	<u>506,321,899</u>	<u>518,281,283</u>
Deferred Inflow of Resources		
Net pension liability	2,449,195	2,410,007
Bond refundings	107,535	127,250
Other postemployment benefits	824,624	—
	<u>3,381,354</u>	<u>2,537,257</u>
Total deferred inflows of resources	<u>3,381,354</u>	<u>2,537,257</u>
Total liabilities and deferred inflow of resources	<u>509,703,253</u>	<u>520,818,540</u>
Net Position		
Net investment in capital assets	533,058,874	506,700,472
Restricted for water meter retrofit program	4,717,726	2,369,793
Restricted for debt service	885,000	850,000
Restricted for operations and maintenance reserve	4,840,056	4,197,778
Restricted for renewal and replacement reserve	19,180,630	20,672,290
Restricted for water rate stabilization	500,000	500,000
Unrestricted	104,893,903	95,037,226
	<u>668,076,189</u>	<u>630,327,559</u>
Total net position	<u>668,076,189</u>	<u>630,327,559</u>
Total Liabilities, Deferred Inflow of Resources and Net Position	<u>\$ 1,177,779,442</u>	<u>\$ 1,151,146,099</u>

12-13-18 BOARD Agenda Item 8
Truckee Meadows Water Authority
Statements of Revenues, Expenses, and Changes in Net Position
Years Ended June 30, 2018 and 2017

	2018	Restated 2017
Operating Revenues		
Charges for water sales	\$ 95,181,554	\$ 92,687,260
Hydroelectric sales	3,757,043	1,788,934
Other operating sales	2,873,495	2,791,989
Total operating revenues	<u>101,812,092</u>	<u>97,268,183</u>
Operating Expenses		
Salaries and wages	18,735,892	17,257,014
Employee benefits	12,919,692	8,931,738
Services and supplies	25,835,318	23,980,864
Total operating expenses before depreciation	57,490,902	50,169,616
Depreciation	32,820,720	32,169,578
Total operating expenses	<u>90,311,622</u>	<u>82,339,194</u>
Operating Income	<u>11,500,470</u>	<u>14,928,989</u>
Nonoperating Revenues (Expenses)		
Investment earnings	2,313,513	7,209,113
Net increase (decrease) in fair value of investments	(934,120)	(342,257)
Gain (loss) on disposal of assets	133,972	(155,722)
Amortization of bond/note issuance costs	(942,927)	(1,183,526)
Interest expense	(11,720,356)	(16,968,911)
Other nonoperating expense	(12,749)	(243,000)
Total nonoperating revenues (expenses)	<u>(11,162,667)</u>	<u>(11,684,303)</u>
Income (Loss) before Capital Contributions	<u>337,803</u>	<u>3,244,686</u>
Capital Contributions		
Grants	348,248	1,226,863
Water meter retrofit program	2,379,206	341,074
Developer infrastructure contributions	15,017,446	10,797,854
Developer will-serve contributions (net of refunds)	6,652,819	7,950,666
Developer capital contributions-other	6,448,549	6,062,247
Developer facility charges (net of refunds)	6,464,559	5,116,956
Contributions from others	100,000	11,855,511
Net capital contributions	<u>37,410,827</u>	<u>43,351,171</u>
Change in Net Position	37,748,630	46,595,857
Net Position, Beginning of Year	630,327,559	584,982,314
Restatement of Beginning Net Position	<u>—</u>	<u>(1,250,612)</u>
Net Position, End of Year	<u>\$ 668,076,189</u>	<u>\$ 630,327,559</u>

12-13-18 BOARD Agenda Item 8
Truckee Meadows Water Authority
Statements of Cash Flows
Years Ended June 30, 2018 and 2017

	<u>2018</u>	<u>2017</u>
Operating Activities		
Cash received from customers	\$ 103,087,315	\$ 95,999,034
Cash paid to employees	(27,042,296)	(25,619,259)
Cash paid to suppliers	<u>(25,662,867)</u>	<u>(22,492,461)</u>
Net Cash from Operating Activities	<u>50,382,152</u>	<u>47,887,314</u>
Capital and Related Financing Activities		
Acquisition and construction of capital assets	(29,059,520)	(31,121,251)
Interest paid on financing	(14,218,602)	(16,172,525)
Principal paid on financing	(2,655,702)	(14,004,694)
Proceeds from refunding bonds	44,601,977	172,268,662
Redemption of commercial paper notes	(53,400,000)	(4,400,000)
Proceeds transferred to refunding escrow	—	(207,049,766)
Proceeds from capital debt issuance	—	732,529
Proceeds from capital asset disposal	1,270,325	5,340
Contributions for water meter retrofit program	2,379,206	341,074
Contributions from developers-will-serve letters	6,652,819	7,950,666
Contributions from developers-other	6,448,549	6,062,247
Contributions from developers-facility charges	6,464,559	5,116,956
Contributions from others	—	11,855,511
Grants	240,493	1,262,453
Bond/note issuance costs	<u>(942,927)</u>	<u>(1,158,127)</u>
Net Cash used for Capital and Related Financing Activities	<u>(32,218,823)</u>	<u>(68,310,925)</u>
Investing Activities		
Payments received on loan receivables	3,703	20,793
Interest received	<u>1,167,934</u>	<u>7,403,545</u>
Net Cash from Investing Activities	<u>1,171,637</u>	<u>7,424,338</u>
Net Change in Cash and Cash Equivalents	<u>19,334,966</u>	<u>(12,999,273)</u>
Cash and Cash Equivalents, Beginning of Year	<u>174,036,630</u>	<u>187,035,903</u>
Cash and Cash Equivalents, End of Year	<u><u>\$ 193,371,596</u></u>	<u><u>\$ 174,036,630</u></u>

	2018	Restated 2017
Reconciliation of Operating Income to Net Cash from Operating Activities		
Operating Income	\$ 11,500,470	\$ 14,928,989
Adjustments to reconcile operating income to net cash from operating activities		
Depreciation	32,820,720	32,169,578
Other nonoperating expenses	(12,749)	(243,000)
OPEB expense	386,482	432,963
OPEB contributions	(546,504)	(548,504)
Pension expense	7,243,153	5,792,926
Pension contributions	(2,562,356)	(5,037,877)
Changes in assets and liabilities		
Accounts receivable, net	1,214,585	(1,222,409)
Due from others	24,325	(19,462)
Due from other governments	(97,190)	—
Prepaid assets	(212,992)	29,246
Accounts payable	1,345,514	118,934
Accrued liabilities	116,390	(87,763)
Due to customers and developers	36,313	(27,277)
Due to other governments	(874,009)	1,600,970
Total adjustments	38,881,682	32,958,325
Net Cash from Operating Activities	<u>\$ 50,382,152</u>	<u>\$ 47,887,314</u>
Non-Cash Capital and Related Financing Activities		
Developer infrastructure contributions	\$ 15,017,446	\$ 10,797,854
Amortization of bond insurance expenses	—	474,107
Amortization of net bond premium	(4,935,241)	(2,242,859)
Amortization of refunding allowances to interest expense	194,934	181,981

Note 1 - Summary of Significant Accounting Policies

The financial statements of the Truckee Meadows Water Authority (TMWA) have been prepared in conformity with accounting principles generally accepted in the United States of America (GAAP) as applied to governmental entities. A summary of the more significant accounting policies applied in the preparation of the accompanying basic financial statements follows.

Reporting Entity and Purpose

TMWA is a Joint Powers Authority (JPA) formed in November 2000 under the Joint Powers Legislation of the State of Nevada, pursuant to a Cooperative Agreement among the City of Reno, Nevada, the City of Sparks, Nevada, and Washoe County, Nevada. TMWA was formed to purchase water assets (the Water System), undertake the water utility operations, and to develop, manage, and maintain supplies of water for the benefit of the Truckee Meadows communities. TMWA purchased the existing water system originally operated by Sierra Pacific Power Company (SPPCo), now known as NV Energy, Inc.

TMWA is governed by a seven-member Board of Directors appointed by:

- Reno City Council (3 seats)
- Sparks City Council (2 seats)
- Washoe County (2 seats)

The cities and county representatives are not required to be elected officials. Modifications to the JPA were approved by the governing bodies in December 2009 which changed the at-large seat into a second seat for Washoe County. The amendments to the JPA were approved by the Attorney General's Office of the State of Nevada (State) effective February 3, 2010. The amendments were made in anticipation of the consolidation of TMWA and Washoe County's Community Services Department's water utility (WCWU) and the merger of another water utility named South Truckee Meadows General Improvement District (STMGID). The transfer of operations of WCWU and the merger of STMGID occurred on January 1, 2015 with TMWA as the continuing entity.

Basis of Accounting

TMWA's activities are accounted for as an enterprise fund (proprietary fund type). A fund is an accounting entity with a self-balancing set of accounts established to record the financial position and results of operations of the governmental entity. Activities of enterprise funds resemble activities of business enterprises; the purpose is to obtain and use economic resources to meet its operating objectives. The financial statements for TMWA are reported using the economic resources measurement focus and the accrual basis of accounting. Under this method, revenues are recognized at the time they are earned and expenses are recognized when the related liabilities are incurred.

A proprietary fund distinguishes operating revenues and expenses from nonoperating items. Operating revenues and expenses generally result from an exchange transaction such as providing services and producing and delivering goods in connection with a proprietary fund's principal ongoing operations. Nonoperating revenues and nonoperating expenses result from nonexchange transactions or ancillary services.

TMWA applies all applicable Governmental Accounting Standards Board (GASB) pronouncements in accounting and reporting for proprietary activities.

When both restricted and unrestricted resources are available for use, it is TMWA's policy to use unrestricted resources first, then restricted resources as they are required.

Budgets and Budgetary Accounting

TMWA adheres to the Local Government Budget and Finance Act (Act) incorporated within the Statutes of the State of Nevada. The Act and TMWA policy include the following major procedures to establish budgetary data:

- On or before April 15, the General Manager of TMWA submits to the Board of Directors a tentative budget for the fiscal year commencing the following July 1.
- Public hearings on the tentative budget are held in May.
- Prior to June 1, at the public hearing, the Board of Directors indicates changes, if any, to be made to the tentative budget and adopts a final budget by the favorable vote of a majority of the members of the Board. The final budget must then be forwarded to the Nevada Department of Taxation for final approval.
- Any revisions that alter total appropriations must be approved in advance by the Board. Formal budgetary integration is employed as a management control device during the year.
- Budgets are adopted on a basis consistent with accounting principles generally accepted in the United States of America (GAAP). Appropriations lapse at year end.
- In accordance with State statute, actual expenses may not exceed the sum of operating and nonoperating appropriations.

The budget reflected in the financial statements has been amended from the original amounts in accordance with State statute for the years ended June 30, 2018 and 2017. This presentation for fiscal year 2018 and 2017 is included as Supplementary Information.

Cash and Investments

Cash balances are, to the extent practical, invested as permitted by law. Monies that are not required for immediate obligations are invested.

Investments authorized by State statutes and TMWA's bond resolutions include, but are not limited to, U.S. Treasury instruments, U.S. government agency securities, agency issued mortgage backed securities (FNMA, FHLMC, GNMA), corporate notes meeting certain rating standards, money market mutual funds meeting certain criteria, certificates of deposit, repurchase agreements, commercial paper meeting certain standards, bankers acceptances, long-term forward sale contracts and guaranteed investment contracts meeting certain rating standards, the State's Local Government Investment Pools, medium-term obligations of municipal issuers in the State that meet certain rating standards, and asset backed securities that meet certain rating standards. Investments are reported at fair value, including the investment with LGIP which is equal to TMWA's original investment plus monthly allocation of interest income, and realized and unrealized gains and losses, which is the same as the value of the pool shares.

Restricted cash and investments are monies that are restricted by legal or contractual requirements.

Cash Equivalents

Cash equivalents include short-term highly liquid investments (3 months or less at time of purchase) that are both readily convertible to known amounts of cash, and so near their maturity that they present insignificant risk of changes of value. Based on the nature of the investment policies, all amounts are available on demand and are, therefore, classified as cash equivalents on the Statements of Cash Flows.

Accounts Receivable

Accounts receivable is comprised of amounts due from TMWA's customers, net of an allowance for uncollectible accounts. Amounts due from TMWA's customers are comprised of amounts billed and an estimate of amounts earned but unbilled for water deliveries prior to fiscal year end.

Restricted Assets

Certain proceeds of TMWA's water revenue bonds, as well as certain resources set aside for their repayment, are classified as restricted assets on the Statements of Net Position because their use is limited by applicable bond covenants as follows:

- Current bond debt service - used to segregate resources accumulated for debt service payments over the next twelve months.
- Future bond debt service - used to report resources set aside to make up potential future deficiencies in the current bond debt service.
- Operations and maintenance - used to report resources set aside to subsidize potential deficiencies from TMWA's operation that could adversely affect debt service payments.
- Renewal and replacement - used to report resources set aside to subsidize potential deficiencies in cash flow for replacement of water facilities.
- Water rate stabilization - used to report resources set aside to stabilize customer rates if significant water revenue fluctuations occur.

Certain assets of TMWA are classified as restricted assets on the Statements of Net Position because they were derived from contributions from developers to fund the water meter retrofit program as mandated by Public Law 101-618.

Prepaid Items

Certain payments to vendors reflect costs applicable to future accounting periods and are recorded as prepaid items. Prepaid items have been classified as current.

Capital Assets

All purchased property, plant, and equipment is stated at cost. TMWA capitalizes all assets with a cost of at least \$5,000 and a useful life greater than one year. The cost of maintenance and repairs that do not increase productive capacity or materially extend the life of an asset are not capitalized. Developer contributed capital assets are recorded at acquisition value in the year of contribution to TMWA.

Depreciation is computed using the straight-line method over the assets' estimated useful lives (in years) as follows:

	Years		Years
Distribution mains	60-75	Hydroelectric facilities	20-80
Plants	15-50	Canals	15-50
Services	15-60	Reservoirs	20-75
Pump stations	15-50	Vehicles	5-10
Tanks	65-75	Furniture and fixtures	10
Wells	15-50	Computer hardware and software	3-5
Pressure reducing stations	25	Lab equipment	5
		Administration buildings	50

Deferred Outflows/Inflows of Resources

In addition to assets, the Statements of Net Position report a separate section for deferred outflows of resources. This separate financial statement element represents consumption of net position that applies to a future period(s) and so will not be recognized as an outflow of resources (expense) until then. TMWA's deferred outflows of resources is its deferred charge on refunding which results from the difference in the carrying value of refunded debt and its acquisition price. This amount is deferred and amortized over the shorter of the life of the refunded or refunding debt. In addition, TMWA has deferred outflows of resources related to pensions and other post-employment benefits.

In addition to liabilities, the Statements of Net Position may report a separate section for deferred inflows of resources. This separate financial statement element represents an acquisition of net position that applies to a future period(s) and so will not be recognized as an inflow of resources (revenue) until that time. TMWA has deferred inflows of resources related to bond refundings, pensions and other post-employment benefits.

Pensions

For purposes of measuring the net pension liability and pension expense, information about the fiduciary net position of the Public Employees' Retirement System of the State of Nevada (PERS) Base Plan (Base Plan) and additions to/deductions from Base Plan's fiduciary net position have been determined on the same basis as they are reported by the Base Plan. For this purpose, benefit payments (including refunds of employee contributions) are recognized when due and payable in accordance with the benefit terms. Investments are reported at fair value.

Reclassifications

Certain amounts in the prior year statements have been reclassified for comparison purposes to conform to current year presentation.

Compensated Absences

Under contract, employees are permitted to accumulate earned but unused vacation and sick pay benefits. The liability for compensated absences is accrued as amounts are earned by employees to the extent it is likely TMWA will ultimately pay those benefits. The liability is included in accrued liabilities in the accompanying Statements of Net Position.

Classification of Revenues

Operating revenues consist of water sales, hydroelectric sales, miscellaneous fee income, and various reimbursements of operating expenses. Nonoperating revenues consist essentially of income derived from investments, and reimbursement for nonoperating activities. Developer facility charges, will-serve contributions, and other contributions reflect payments primarily for water service. Developer infrastructure contributions are an estimation of the value of infrastructure built by developers and permanently dedicated to TMWA.

New Accounting Pronouncements

In June 2015, GASB issued Statement No. 75, *Accounting and Financial Reporting for Postemployment Benefits other than Pensions*. This Statement is effective for periods beginning after June 15, 2017. The objective of this Statement is to improve accounting and financial reporting by state and local governments for postemployment benefits other than pensions. It also improves information provided by state and local governmental employers about financial support for OPEB that is provided by other entities. Implementation of Statement No. 75 did have an impact on the TMWA's financial statements for the fiscal year ended June 30, 2017. As a result of the implementation of Statement No. 75, amounts previously reported in TMWA's financial statements for the year ended June 30, 2017 were restated. See Note 14 - Prior Period Adjustment for more information.

In June 2018, the GASB issued Statement No. 89, *Accounting for Interest Cost Incurred before the End of a Construction Period*, which is effective for fiscal years beginning after December 15, 2019. Earlier application is encouraged. The objectives of this Statement are (1) to enhance the relevance and comparability of information about capital assets and the cost of borrowing for a reporting period and (2) to simplify accounting for interest cost incurred before the end of a construction period. Statement 89 supersedes applicable sections of previously issued statement 62 and requires that interest costs incurred before the end of a construction period are recognized as an expense in the period incurred and not included in the construction costs of the related asset. This statement is to be applied prospectively. TMWA has early adopted this standard as of the year ended June 30, 2018.

In November 2016, the GASB issued Statement No. 83, *Certain Asset Retirement Obligations*, which is effective for fiscal years beginning after June 15, 2018. Earlier application is encouraged. The objective of this Statement is to provide financial statement users with information about asset retirement obligations that were not addressed in GASB standards by establishing uniform accounting and financial reporting requirements for these obligations. TMWA is currently evaluating how the adoption of Statement No. 83 will affect TMWA's financial position, results of operations or cash flow, but a material affect is not expected.

In March 2017, the GASB issued Statement No. 85, *Omnibus 2017*, which is effective for fiscal years beginning after June 15, 2017. Earlier application is encouraged. The objective of this Statement is to address practice issues that have been identified during the implementation and application of certain GASB Statements. This Statement addresses a variety of topics including issues related to blending component units, goodwill, fair value measurement and application, and postemployment benefits (pensions and other postemployment benefits). Statement No. 85 will not affect TMWA's financial position, results of operation or cash flow.

In May 2017, the GASB issued Statement No. 86, *Certain Debt Extinguishment Issues*, which is effective for fiscal years beginning after June 15, 2017. Earlier application is encouraged. The primary objective of this Statement is to improve consistency in accounting and financial reporting for in-substance defeasance of debt by providing guidance for transactions in which cash and other monetary assets acquired with only existing resources – resources other than the proceeds of refunding debt – are placed in an irrevocable trust for the sole purpose of extinguishing debt. This Statement also improves accounting and financial reporting for prepaid insurance on debt that is extinguished and notes to financial statements for debt that is defeased in substance. Statement No. 86 does not have any affect on TMWA's financial position, results of operation or cash flow at this time.

In June 2017, the GASB issued Statement No. 87, *Leases*, which is effective for fiscal years beginning after December 15, 2019. Earlier application is encouraged. The objective of this Statement is to better meet the information needs of financial statement users by improving accounting and financial reporting for leases; enhancing the comparability of financial statements between governments; and also enhancing the relevance, reliability (representational faithfulness), and consistency of information about the leasing activities of governments. TMWA does not expect the adoption of Statement No. 87 to have a material affect on TMWA's financial position, results of operation or cash flow.

In April 2018, the GASB issued Statement 88, *Certain Disclosures Related to Debt, including Direct Borrowings and Direct Placements*, which is effective for fiscal years beginning after June 15, 2018. Earlier application is encouraged. The primary objective of this Statement is to improve the information that is disclosed in notes to financial statements related to debt, including direct borrowings and direct placements. It also clarifies which liabilities governments should include when disclosing information related to debt. TMWA does not expect the adoption of Statement No. 88 to have a material affect on TMWA's financial position, results of operation or cash flow.

Note 2 - Compliance with Nevada Revised Statutes and the Nevada Administrative Code

TMWA conformed to all significant statutory constraints on its financial administration during the year.

Note 3 - Accounts Receivable, Net

Accounts receivable, net consisted of the following:

	June 30, 2018	June 30, 2017
Billed amounts	\$ 5,598,849	\$ 6,185,181
Earned, but unbilled amounts	8,287,402	8,868,924
	13,886,252	15,054,105
Allowance for uncollectible accounts	(297,447)	(250,715)
Accounts receivable, net	<u>\$ 13,588,805</u>	<u>\$ 14,803,390</u>

Note 4 - Cash and Investments

In accordance with State statutes, TMWA's cash is deposited with insured banks. All money deposited by TMWA that is not within the limits of insurance must be secured by collateral.

As of June 30, 2018, TMWA had the following investments and maturities:

	Less than 1 Year	1 - 3 Years	4 - 5 Years	Total
Investments				
U.S. Treasuries	\$ 13,725,538	\$ 9,103,904	\$ 20,250,408	\$ 43,079,850
U.S. Agencies	55,729,990	35,667,945	16,791,191	108,189,126
LGIP	3,286,363	—	—	3,286,363
Money Market Mutual Funds	26,345,520	—	—	26,345,520
Certificates of Deposit	1,244,937	3,686,092	5,792,653	10,723,682
Total Investments	100,332,348	48,457,941	42,834,252	191,624,541
Total Cash	1,747,055	—	—	1,747,055
Total Cash and Investments	<u>\$ 102,079,403</u>	<u>\$ 48,457,941</u>	<u>\$ 42,834,252</u>	<u>\$ 193,371,596</u>

As of June 30, 2017, TMWA had the following investments and maturities:

	Less than 1 Year	1 - 3 Years	4 - 5 Years	Total
Investments				
U.S. Treasuries	\$ 18,931,822	\$ —	\$ —	\$ 18,931,822
U.S. Agencies	31,326,931	56,012,317	—	87,339,248
LGIP	3,242,632	—	—	3,242,632
Money Market Mutual Funds	34,658,111	—	—	34,658,111
Corporate Notes	17,811,237	9,073,890	—	26,885,127
Corporate Commercial Paper	2,979,690	—	—	2,979,690
Total Investments	108,950,423	65,086,207	—	174,036,630
Total Cash	—	—	—	—
Total Cash and Investments	<u>\$ 108,950,423</u>	<u>\$ 65,086,207</u>	<u>\$ —</u>	<u>\$ 174,036,630</u>

Nevada Revised Statutes (NRS 355.170) set forth acceptable investments for Nevada governments. On September 20, 2017 the TMWA Board adopted an investment policy which extended TMWA's investment period from two years to five years. Nevada Revised Statutes and TMWA's investment policy set portfolio component thresholds to further limit its exposure to certain risks as set forth below.

Interest Rate Risk

Interest rate risk is the risk of possible reduction in the value of a security, especially a bond, resulting from a rise in interest rates. This risk can be mitigated by diversification of durations of fixed rate investments held in the investment portfolio. As a means of limiting TMWA's exposure to this risk, TMWA constantly monitors the bond futures market and ladders investments accordingly to maximize investment returns while balancing the investment maturities with spending requirements. TMWA follows State statute limits of investment in obligations of an agency of the United States or a corporation sponsored by the United States government to those maturing within ten years from the date of purchase.

Credit Risk

Credit risk is the risk that an issuer or other counterparty to an investment will not fulfill its obligations and is a function of the credit quality ratings of investments. TMWA follows State statute for reducing exposure to investment credit risk by investing in U.S. Agencies securities; "AAA" rated money market mutual funds that invest in securities issued by the U.S. Government or agencies of the U.S. Government, and the State of Nevada Local Government Pooled Investment Fund (LGIP). TMWA has a debt reserve fund with LGIP, which is an unrated external investment pool with investment duration of 142 days at June 30, 2018, and 310 days at June 30, 2017. Investments in U.S. Agencies are rated "AAA" and when investments are made in corporate commercial paper these investments are rated "A-1+"/"P-1". Investments in corporate notes are rated "A" or better.

Concentration of Credit Risk

Concentration of credit risk is the risk of loss attributed to the magnitude of a government's investment in a single issuer. Securities held by TMWA or by TMWA's custodians are diversified to eliminate risk of loss from over-concentration of assets in a specific maturity, a specific issuer, or a specific class of securities.

At June 30, 2018 and 2017, the following investments by issuer, exceeded 5% of TMWA's total investments:

	June 30, 2018		
Federal National Mortgage Association	\$	43,636,448	23%
U.S. Treasury Obligations		43,079,850	22%
Federal Home Loan Bank		38,784,938	20%
Federal Home Loan Mortgage Corporation		16,185,898	8%
	June 30, 2017		
Federal National Mortgage Association	\$	39,347,575	23%
Federal Home Loan Bank		25,580,936	15%
Federal Home Loan Mortgage Corporation		22,410,737	13%

Investments Measured at Fair Value

TMWA categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles. The hierarchy is based on the valuation inputs used to measure the fair value of the asset. Level 1 inputs are quoted prices in active markets for identical assets; Level 2 inputs are significant other observable inputs; Level 3 inputs are significant unobservable inputs. TMWA does not have any investments that are measured using Level 3 inputs.

TMWA has the following recurring fair value measurements as of June 30, 2018:

	Fair Value	Fair Value Measurements Using	
		Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)
Investments by fair value level			
U.S. Treasuries	\$ 43,079,850	\$ 43,079,850	\$ —
U.S. Agencies	108,189,126	—	108,189,126
Money Market Mutual Funds	26,345,520	26,345,520	—
Certificates of Deposit	10,723,682	—	10,723,682
	188,338,178	<u>\$ 69,425,370</u>	<u>\$ 118,912,808</u>
LGIP	<u>3,286,363</u>		
	<u>\$ 191,624,541</u>		

TMWA has the following recurring fair value measurements as of June 30, 2017:

	Fair Value	Fair Value Measurements Using	
		Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)
Investments by fair value level			
U.S. Treasuries	\$ 18,931,822	\$ 18,931,822	\$ —
U.S. Agencies	87,339,248	—	87,339,248
Money Market Mutual Funds	34,658,111	34,658,111	—
Corporate Notes	26,885,127	—	26,885,127
Corporate Commercial Paper	2,979,690	—	2,979,690
	170,793,998	<u>\$ 53,589,933</u>	<u>\$ 117,204,065</u>
LGIP	3,242,632		
	<u>\$ 174,036,630</u>		

The following is a description of the valuation methodologies used by TMWA for its Level 2 assets:

U.S. Agencies – Valued using matrix pricing and market corroborated pricing models.

Corporate notes and commercial paper – Valued based on cash flow models that maximize the use of observable inputs for similar securities. This includes basing value on yields currently available on comparable securities of issues with similar credit ratings.

Certificates of deposit - Valued using interactive date pricing and reference data.

Note 5 - Capital Assets

Capital asset activity for the year ended June 30, 2018 follows:

	Beginning Balance	Increases	Decreases	Ending Balance
Capital assets, not being depreciated				
Construction in progress	\$ 20,805,718	\$ 27,508,378	\$ (19,114,756)	\$ 29,199,340
Land	20,143,555	16,828	—	20,160,383
Water rights	109,705,745	—	—	109,705,745
Total capital assets, not being depreciated	150,655,018	27,525,206	(19,114,756)	159,065,468
Capital assets, being depreciated				
Distribution mains	508,804,207	19,370,881	—	528,175,088
Water treatment (plants)	184,897,020	2,303,534	—	187,200,554
Services	141,319,729	5,466,090	—	146,785,819
Pump stations	64,044,824	959,790	(28,709)	64,975,905
Treated water storage (tanks)	89,951,119	1,113,116	(827,298)	90,236,937
Wells	71,104,932	2,009,549	(47,100)	73,067,381
Pressure regulating stations	10,006,789	674,730	(31,293)	10,650,226
Canals	41,254,883	—	—	41,254,883
Reservoirs	18,564,775	239,483	—	18,804,258
Vehicles	5,685,360	1,281,742	(18,167)	6,948,935
Furniture and fixtures	603,066	205,684	—	808,750
Computer hardware and software	2,660,991	770,421	—	3,431,412
Lab equipment	197,578	—	—	197,578
Hydroelectric facilities	28,262,890	—	—	28,262,890
Administrative buildings	12,839,231	1,572,559	—	14,411,790
Total capital assets, being depreciated	1,180,197,394	35,967,579	(952,567)	1,215,212,406
Less accumulated depreciation:				
Distribution mains	(110,436,571)	(9,551,104)	—	(119,987,675)
Water treatment (plants)	(80,189,760)	(5,830,652)	—	(86,020,412)
Services	(92,850,085)	(7,326,471)	—	(100,176,556)
Pump stations	(19,622,935)	(2,036,064)	21,020	(21,637,979)
Treated water storage (tanks)	(25,011,176)	(2,039,551)	360,875	(26,689,852)
Wells	(29,349,994)	(1,998,937)	112	(31,348,819)
Pressure regulating stations	(5,751,392)	(442,562)	26,548	(6,167,406)
Canals	(9,409,860)	(980,214)	—	(10,390,074)
Reservoirs	(5,712,987)	(548,860)	—	(6,261,847)
Vehicles	(2,620,881)	(728,380)	11,960	(3,337,301)
Furniture and fixtures	(455,831)	(57,742)	—	(513,573)
Computer hardware and software	(1,700,082)	(361,425)	—	(2,061,507)
Lab equipment	(111,590)	(34,394)	—	(145,984)
Hydroelectric facilities	(3,563,380)	(575,379)	—	(4,138,759)
Administrative buildings	(2,372,986)	(308,985)	—	(2,681,971)
Total accumulated depreciation	(389,159,510)	(32,820,720)	420,515	(421,559,715)
Total capital assets, being depreciated net	791,037,884	3,146,859	(532,052)	793,652,691
Total Capital Assets, Net	\$ 941,692,902	\$ 30,672,065	\$ (19,646,808)	\$ 952,718,159

Capital asset activity for the year ended June 30, 2017 follows:

	Beginning Balance	Increases	Decreases	Ending Balance
Capital assets, not being depreciated				
Construction in progress	\$ 17,666,963	\$ 19,153,325	\$ (16,014,570)	\$ 20,805,718
Land	19,821,360	321,804	391	20,143,555
Water rights	109,575,822	129,923	—	109,705,745
Total capital assets, not being depreciated	147,064,145	19,605,052	(16,014,179)	150,655,018
Capital assets, being depreciated				
Distribution mains	488,098,466	20,705,741	—	508,804,207
Water treatment (plants)	182,072,974	2,824,046	—	184,897,020
Services	138,518,880	2,800,849	—	141,319,729
Pump stations	63,979,314	223,914	(158,404)	64,044,824
Treated water storage (tanks)	89,572,480	480,947	(102,308)	89,951,119
Wells	64,622,905	6,482,027	—	71,104,932
Pressure regulating stations	8,846,137	1,260,543	(99,891)	10,006,789
Canals	40,689,804	565,079	—	41,254,883
Reservoirs	18,564,775	—	—	18,564,775
Vehicles	4,989,617	819,673	(123,930)	5,685,360
Furniture and fixtures	603,066	—	—	603,066
Computer hardware and software	2,574,691	86,300	—	2,660,991
Lab equipment	197,578	—	—	197,578
Hydroelectric facilities	24,989,996	3,272,894	—	28,262,890
Administrative buildings	12,720,435	118,796	—	12,839,231
Total capital assets, being depreciated	1,141,041,118	39,640,809	(484,533)	1,180,197,394
Less accumulated depreciation:				
Distribution mains	(101,217,796)	(9,217,543)	(1,232)	(110,436,571)
Water treatment (plants)	(74,606,063)	(5,575,904)	(7,793)	(80,189,760)
Services	(85,349,814)	(7,500,271)	—	(92,850,085)
Pump stations	(17,672,994)	(2,030,854)	80,913	(19,622,935)
Treated water storage (tanks)	(23,124,556)	(1,987,293)	100,673	(25,011,176)
Wells	(27,227,902)	(2,107,940)	(14,152)	(29,349,994)
Pressure regulating stations	(5,403,379)	(404,829)	56,816	(5,751,392)
Canals	(8,471,476)	(938,384)	—	(9,409,860)
Reservoirs	(5,168,494)	(544,493)	—	(5,712,987)
Vehicles	(2,190,609)	(538,127)	107,855	(2,620,881)
Furniture and fixtures	(398,276)	(57,555)	—	(455,831)
Computer hardware and software	(1,253,844)	(446,238)	—	(1,700,082)
Lab equipment	(77,196)	(34,394)	—	(111,590)
Hydroelectric facilities	(3,061,985)	(501,395)	—	(3,563,380)
Administrative buildings	(2,088,628)	(284,358)	—	(2,372,986)
Total accumulated depreciation	(357,313,012)	(32,169,578)	323,080	(389,159,510)
Total capital assets, being depreciated net	783,728,106	7,471,231	(161,453)	791,037,884
Total Capital Assets, Net	\$ 930,792,251	\$ 27,076,283	\$ (16,175,632)	\$ 941,692,902

Note 6 - Long-Term Debt

On June 8, 2005, TMWA entered into a loan contract with the State of Nevada Drinking Water State Revolving Fund (DWSRF) to fund TMWA's Arsenic Mitigation Project. TMWA made draws on this contract as construction proceeded, totaling \$4,669,565. The loan constitutes a special limited obligation of TMWA and the principal and interest on the loan will be payable solely from and secured by an irrevocable pledge of the net revenues derived from the operation of the Water System. This loan has a term of 20 years. This loan is subordinate to the 2015A Refunding Bonds, the 2016 Refunding Bonds, the 2017 Refunding Bonds, the 2018 Refunding Bonds, and any future senior lien bonds.

On May 3, 2006, TMWA issued \$150,745,000 in Series 2006 Refunding Bonds which constituted special limited obligations of TMWA. These bonds were sold to refund \$145,970,000 in maturities of the Series 2001A Bonds. The proceeds of the refunding bond issue were used to purchase U.S. Government securities that were placed in an irrevocable trust for the purpose of generating financial resources for the future debt service payments of the refunded Series 2001A Bonds. As a result, the refunded bonds were considered to be defeased and the liability was removed from TMWA's Statement of Net Position. The reacquisition price exceeded the net carrying amount of the old debt by \$5,901,299. The unamortized balance was being amortized as a component of interest expense over the remaining life of the newly issued debt, which had a shorter remaining life than the original life of the refunded debt. This advance refunding was undertaken to reduce total debt service payments over 27 years by \$10,016,065 and resulted in an economic gain of \$5,152,424. The funds in the irrevocable trust were distributed to 2001A bondholders as of July 1, 2011, the call date of the 2001A Bonds. On April 12, 2016, \$148,015,000 of the bonds were refunded with the Series 2016 Refunding Bonds (see below) on a current basis, with the remaining balance of \$400,000 paid on July 1, 2016.

On August 15, 2006, TMWA began an inaugural Tax-Exempt Commercial Paper (TECP) program that originally authorized the issuance of up to \$160,000,000 in TECP notes. The first draw was on August 16, 2006 for \$30,000,000, and a second draw was on December 5, 2006 for \$13,000,000. The proceeds from the first two draws were used solely to purchase water rights for future sale of will-serve commitments to developers. A third draw was made on February 15, 2008 for \$25,000,000 to fund certain construction projects on an interim basis. A fourth draw was made on June 28, 2011 for \$11,400,000 for the purpose of redeeming the remaining outstanding Series 2001A Bonds which were callable on July 1, 2011. TMWA redeemed the \$11,400,000 issued in the fourth draw on December 10, 2012. TMWA issued a fifth draw for \$27,000,000 on December 17, 2014 to refund, on an advanced basis, \$26,100,000 in Washoe County water obligations to effect the water utility consolidation between Washoe County and TMWA with proceeds transferred to escrow on the date of issuance. The funds in escrow were distributed to the Washoe County bondholders as of July 1, 2015, the call date of the bonds. On various dates in fiscal year 2016, TMWA redeemed \$7,200,000. On September 7, 2016, TMWA redeemed \$4,400,000. This left an outstanding balance of \$83,400,000 as of June 30, 2017. On September 5, 2017 TMWA redeemed \$9,200,000, and on May 15, 2018 TMWA redeemed \$44,200,000 as part of the Series 2018 Water Revenue Refunding (see below). This left an outstanding balance of \$30,000,000 as of June 30, 2018. TMWA intends to pay off this balance over the next five years using proceeds from will-serve sales. Subsequent to fiscal year end 2018, in the first quarter of fiscal year 2019, TMWA paid off \$6,500,000 of the \$30,000,000 outstanding. TMWA has remaining authorization to issue \$53,600,000 as of June 30, 2018 and 2017, respectively. The TECP program is facilitated by a direct pay letter of credit (Liquidity Facility) between TMWA and Wells Fargo Bank. The stated amount of the Liquidity Facility is \$32,663,014. The average interest rate on the outstanding balance of TECP as of June 30, 2018 was 1.54% and June 30, 2017 was 0.89%. As of June 30, 2018, the total TECP notes outstanding were comprised of one tranche of \$30,000,000 with maturity of 51 days. As of June 30, 2017, the total TECP notes outstanding were comprised of five tranches ranging from \$10,000,000 to \$21,550,000 with maturities ranging from 31 to 67 days.

On January 17, 2007, TMWA issued \$218,975,000 in Series 2007 Refunding Bonds, which constituted special limited obligations of TMWA. These bonds were sold to refund \$212,275,000 in maturities of the Series 2001A Bonds. The proceeds of the refunding bond issue were used to purchase U.S. Government securities that were placed in an irrevocable trust for the purpose of generating financial resources for the future debt service payments of the refunded Series 2001A Bonds. As a result, the refunded bonds were considered to be defeased and the liability has been removed from TMWA's Statements of Net Position. The reacquisition price exceeded the net carrying amount of the old debt by \$15,284,819. The unamortized balance was being amortized as a component of interest expense over the original life of the old debt, which has a shorter remaining life in comparison to the remaining life of the refunding bonds. This advance refunding was undertaken to reduce total debt service payments over 24 years by \$18,192,500, and resulted in an economic gain of \$10,439,350. The funds in the irrevocable trust were distributed to 2001A bondholders as of July 1, 2011, the call date of the 2001A Bonds. On April 11, 2017, the bonds were refunded with the Series 2017 Refunding Bonds (see below) on a current basis.

On July 25, 2009, TMWA entered into a loan contract with the DWSRF, the 2009A DWSRF Loan, to partially fund TMWA's Mogul Bypass Siphon Project. The loan was provided through the American Recovery and Reinvestment Act (ARRA) stimulus funding provided by the federal government. TMWA made draws on this contract as construction proceeded, totaling \$2,401,120. The loan constitutes a special limited obligation of TMWA and the principal and interest on the loan will be payable solely from and secured by an irrevocable pledge of the net revenues derived from the operation of the Water System. This loan has a term of 20 years. This loan is subordinate to the senior lien 2015A Refunding Bonds, the 2016 Refunding Bonds, the 2017 Refunding Bonds, the 2018 Refunding Bonds, and any future senior lien bonds.

On February 11, 2010, TMWA entered into a loan contract with DWSRF, the 2010A DWSRF Loan, to fund TMWA's Glendale Water Treatment Plant Diversion Project. Total construction costs for the Glendale Diversion Project were less than expected. Consequently, TMWA requested and was granted that the remaining loan authorization be able to fund final improvements on the Highland Canal. During fiscal year 2013, the loan was finalized in the total amount of \$4,381,614. The loan constitutes a special limited obligation of TMWA and the principal and interest on the loan are payable solely from and secured by an irrevocable pledge of the net revenues derived from the operation of the Water System. This loan has a term of 20 years. This loan is subordinate to the, senior lien 2015A Refunding Bonds the 2016 Refunding Bonds, the 2017 Refunding Bonds, the 2018 Refunding Bonds as well as any future senior lien bonds.

On December 31, 2014, TMWA entered into a loan contract with the DWSRF, to transfer the remaining loan balance of the Washoe County Water Utility 2005 DWSRF loan to TMWA. The transfer was in conjunction with the transfer of operations of the Washoe County Water Utility into TMWA on January 1, 2015. The loan contract was entered into by the Washoe County Water Utility to construct the Longley Lane Water Treatment Facility, a facility that was transferred to TMWA. The loan balance of \$9,109,437 was transferred to TMWA under the same terms that existed with Washoe County as the TMWA 2014 DWSRF loan. The original balance of the loan was \$14,162,268. The loan constitutes a special limited obligation of TMWA and the principal and interest on the loan are payable solely from and secured by an irrevocable pledge of the net revenues, derived from the operation of the Water System. When it was transferred this loan had a remaining term of 10 years. This loan is subordinate to the senior lien 2015A Refunding Bonds, the 2016 Refunding Bonds, the 2017 Refunding Bonds, the 2018 Refunding Bonds as well as any future senior lien bonds.

On April 14, 2015, TMWA issued \$28,750,000 in Series 2015A Refunding Bonds which constitute special limited obligations of TMWA. These bonds were sold to refund on a current basis \$33,050,000 in maturities of the Series 2005A Bonds. The proceeds of the refunding bond issue were placed in an irrevocable trust for the purpose of generating financial resources to defease the callable portion of the Series 2005A Bonds. The Series 2005A refunded bonds are considered to be defeased and the liability has been removed from TMWA's Statement of Net Position. The net carrying amount of the old debt exceeded the reacquisition price by \$140,645. The unamortized

balance is being amortized as a component of interest income over the remaining life of the old and new debt, which has the same remaining life. This current refunding was undertaken to reduce total debt service payments over approximately 21 years by \$6,563,813 and resulted in an economic gain of \$4,575,309. The funds held in the irrevocable trust were distributed to 2005A bondholders as of July 1, 2015, the call date of the 2005A Bonds.

On July 30, 2015, TMWA entered into a loan contract with the DWSRF, the 2015B DWSRF Loan, to fund TMWA's surface and groundwater supplies in the North Valleys particularly the Stead area, Lemmon Valley area, and North Virginia Corridor. TMWA made draws on this contract as construction proceeded, totaling \$8,971,562. The loan constitutes a special limited obligation of TMWA and the principal and interest on the loan are payable solely from and secured by an irrevocable pledge of the net revenues derived from the operation of the Water System. This loan has a term of 20 years. This loan is subordinate to the senior lien 2015A Refunding Bonds, the 2016 Refunding Bonds, the 2017 Refunding Bonds, the 2018 Refunding Bonds as well as any future senior lien bonds.

On April 12, 2016, TMWA issued \$124,790,000 in Series 2016 Water Revenue Refunding Bonds which constitute special limited obligations of TMWA. These bonds were sold to refund \$148,015,000 in maturities of the Series 2006 Bonds. The proceeds of the refunding bond issue were used to purchase U.S. Government securities that were placed in an irrevocable trust for the purpose of generating financial resources for the future debt service payments of the refunded Series 2006 Bonds. As a result, the refunded bonds were considered to be defeased and the liability has been removed from TMWA's Statements of Net Position. The reacquisition price exceeded the net carrying amount of the old debt by \$3,092,808. The unamortized balance is being amortized as a component of interest expense over the original life of the old debt, which has a shorter remaining life in comparison to the remaining life of the refunding bonds. This current refunding was undertaken to reduce total debt service payments over 22 years by \$4,332,501, and resulted in an economic gain of \$15,025,124. The funds in the irrevocable trust were distributed to 2006 bondholders as of July 1, 2016, the call date of the 2006 Bonds.

On April 11, 2017, TMWA issued \$147,415,000 in Series 2017 Water Revenue Refunding Bonds which constitute special limited obligations of TMWA. These bonds were sold to refund \$214,290,000 in maturities of the Series 2007 Bonds. The proceeds of the refunding bond issue along with \$32,865,308 from TMWA's cash balances were used to purchase U.S. Government securities that were placed in an irrevocable trust for the purpose of generating financial resources for the future debt service payments of the refunded Series 2007 Bonds. As a result, the refunded bonds were considered to be defeased and the liability has been removed from TMWA's Statements of Net Position. The reacquisition price exceeded the net carrying amount of the old debt by \$289,903. The unamortized balance is being amortized as a component of interest income over the remaining life of the old and new debt, which has the same remaining life. This current refunding was undertaken to reduce total debt service payments over 14 years by \$15,301,534, and resulted in an economic gain of \$15,948,105. The funds in the irrevocable trust were distributed to 2007 bondholders as of July 1, 2017, the call date of the 2007 Bonds.

On May 15, 2018, TMWA issued \$38,835,000 in Series 2018 Water Revenue Refunding Bonds which constitute special limited obligations of TMWA. The proceeds of the bond issue of \$44,601,977 were used to refund or redeem \$44,200,000 in maturities of TECP (see above). This transaction was executed to provide a fixed rate of interest expense over the life of the refunding, which was effected by replacing variable rate TECP debt with fixed rate bonds.

The following schedules summarize the changes in long-term obligations as of June 30, 2018:

	Final Maturity Date	Authorized	Balance July 1, 2017	Additions	Deletions	Balance June 30, 2018	Due in 2018-2019
2005 Water Revenue							
DWSRF Bonds 3.21%	1/1/2025	\$ 4,669,565	\$ 2,358,926	\$ —	\$ 263,065	\$ 2,095,861	\$ 271,577
2009 A Water Revenue							
DWSRF ARRA Bonds 0.00%	7/1/2029	2,401,120	1,545,859	—	123,669	1,422,190	123,669
2010 A Water Revenue							
DWSRF Bonds 3.25%	1/1/2030	4,381,614	3,555,353	—	223,758	3,331,595	231,089
2014 Water Revenue							
DWSRF Bonds 2.82%	1/1/2025	9,109,437	7,176,120	—	811,889	6,364,231	834,864
2015-A Water Revenue							
Refunding Bonds 2.00%-5.00%	7/1/2036	28,750,000	27,920,000	—	850,000	27,070,000	885,000
2015-B Water Revenue							
DWSRF Bonds 2.62%	7/1/2035	8,971,562	8,971,562	—	382,517	8,589,045	393,327
2016 Water Revenue							
Refunding Bonds 5.00%	7/1/2037	124,790,000	124,790,000	—	—	124,790,000	—
2017 Water Revenue							
Refunding Bonds 4.00%-5.00%	7/1/2030	147,415,000	147,415,000	—	—	147,415,000	—
2018 Water Revenue							
Refunding Bonds 5.00%	7/1/2039	38,835,000	—	38,835,000	—	38,835,000	—
Subtotal		369,323,298	323,732,820	38,835,000	2,654,898	359,912,922	2,739,526
Plus unamortized net bond premium			51,182,862	5,766,977	4,935,241	52,014,598	
Total debt before TECP			374,915,682	44,601,977	7,590,139	411,927,520	
TECP		83,600,000	83,400,000	—	53,400,000	30,000,000	30,000,000
Total Debt		<u>\$ 452,923,298</u>	<u>\$ 458,315,682</u>	<u>\$ 44,601,977</u>	<u>\$ 60,990,139</u>	<u>\$ 441,927,520</u>	<u>\$ 32,739,526</u>

The following schedules summarize the changes in long-term obligations as of June 30, 2017:

	Final Maturity Date	Authorized	Balance July 1, 2016	Additions	Deletions	Balance June 30, 2017	Due in 2017-2018
2005 Water Revenue							
DWSRF Bonds 3.21%	1/1/2025	\$ 4,669,565	\$ 2,613,744	\$ —	\$ 254,818	\$ 2,358,926	\$ 263,065
2006 Water Revenue							
Refunding Bonds 3.50%-4.875%	7/1/2034	150,745,000	400,000	—	400,000	—	—
2007 Water Revenue							
Refunding Bonds 4.00%-5.00%	7/1/2030	218,975,000	214,290,000	—	214,290,000	—	—
2009 A Water Revenue							
DWSRF ARRA Bonds 0.00%	7/1/2029	2,401,120	1,669,527	—	123,669	1,545,859	123,669
2010 A Water Revenue							
DWSRF Bonds 3.25%	1/1/2030	4,381,614	3,772,013	—	216,660	3,555,353	223,757
2014 Water Revenue							
DWSRF Bonds 2.82%	1/1/2025	9,109,437	7,965,667	—	789,547	7,176,120	811,889
2015-A Water Revenue							
Refunding Bonds 2.00%-5.00%	7/1/2036	28,750,000	28,750,000	—	830,000	27,920,000	850,000
2015-B Water Revenue							
DWSRF Bonds 2.62%	7/1/2035	8,971,562	8,239,034	732,529	—	8,971,562	383,321
2016 Water Revenue							
Refunding Bonds 5.00%	7/1/2037	124,790,000	124,790,000	—	—	124,790,000	—
2017 Water Revenue							
Refunding Bonds 4.00%-5.00%	7/1/2030	147,415,000	—	147,415,000	—	147,415,000	—
Subtotal		700,208,298	392,489,985	148,147,529	216,904,694	323,732,820	2,655,701
Plus unamortized net bond premium			28,441,399	24,853,662	2,112,199	51,182,862	
Total debt before TECP			420,931,384	173,001,191	219,016,893	374,915,682	
TECP		137,000,000	87,800,000	—	4,400,000	83,400,000	83,400,000
Total Debt		<u>\$ 837,208,298</u>	<u>\$ 508,731,384</u>	<u>\$ 173,001,191</u>	<u>\$ 223,416,893</u>	<u>\$ 458,315,682</u>	<u>\$ 86,055,701</u>

Annual debt service requirements to maturity for TMWA's bonds and commercial paper are as follows:

Year Ending June 30,	Principal Payment	Interest Payment	Total Debt Service
2019	\$ 32,739,526	\$ 16,579,486	\$ 49,319,012
2020	2,829,058	17,215,713	20,044,771
2021	13,460,867	16,925,004	30,385,871
2022	13,599,193	16,361,528	29,960,721
2023	14,679,081	15,701,515	30,380,596
2024-2028	79,208,384	67,536,020	146,744,404
2029-2033	108,457,980	45,723,191	154,181,171
2034-2038	113,688,833	16,846,622	130,535,455
2039	11,250,000	562,500	11,812,500
Total	<u>\$389,912,922</u>	<u>\$ 213,451,579</u>	<u>\$ 603,364,501</u>

Because commercial paper notes have a maturity of less than 270 days, they are presented as maturing in the current year. It is the intent of TMWA that as TECP matures, the interest and principal will be remarketed into new commercial paper notes.

Note 7 - Net Position

Restricted Net Position

TMWA records the following restrictions of net position:

Restricted in accordance with bond covenants: TMWA's bond covenants require certain restrictions of TMWA's net position for operations and maintenance, debt service, renewal and replacement, and water rate stabilization.

Restricted for water meter retrofit program: This restriction was created to segregate the portion of net position derived from contributions made by developers to fund the water meter retrofit program as mandated by Public Law 101-618.

Restricted in accordance with the STMGID merger agreement: The merger agreement with STMGID required that certain funds transferred to TMWA by STMGID may only be used for three purposes: a) payment of contingent liabilities b) construction of facilities to move surface water into the STMGID water utility, and c) replacement, rehabilitation and/or repair of the STMGID facilities. The restricted amount of \$9,180,630 and \$10,672,290 as of June 30, 2018 and 2017, respectively, is included in the amount restricted for renewal and replacement.

Board Designation

At June 30, 2018 and 2017, the TMWA Board of Directors designated \$1,300,000 for water rate stabilization. This designation is not reflected as restricted net position, but is considered a designated portion of unrestricted net position.

Note 8 - Contingent Liabilities

Mt. Rose Fan Domestic Well Program: As part of the transfer of operations with the Washoe County water utility, TMWA also agreed to continue Washoe County's Mt. Rose-Galena Fan Domestic Well Mitigation Program, which provides for the reimbursement of specific well deepening costs or water system connection charges, incurred by property owners within the program area, whom experienced or will experience an "unreasonable adverse effect" as a result of municipal groundwater pumping. TMWA's continuation of the program provides continuity for domestic well owners in the specific program and provides protection of shared groundwater resources in the program area. TMWA's budget includes projected costs for administering the domestic well mitigation plan. In addition, TMWA's 2018-2022 Capital Improvement Plan lists several major construction projects to move surface water into the affected area during certain times of the year to mitigate adverse effects on groundwater levels.

Note 9 - Risk Management

TMWA is exposed to various risks of loss related to torts; theft of, damage to, and destruction of assets; errors and omissions; injuries to employees; and natural disasters. TMWA is responsible for group health insurance premiums payable to the City of Reno for coverage in the City's self-funded health insurance program. All other risks are covered by commercial insurance purchased from independent third parties. There have been no settlements in excess of insurance coverage for the past three years.

Note 10 - Defined Benefit Pension Plan and Other Employee Benefits

Defined Benefit Pension Plan

Plan Description

TMWA contributes to the Public Employees' Retirement System of the State of Nevada (PERS). PERS administers a cost-sharing, multiple-employer, defined benefit public employees' retirement system. PERS was established by the Nevada Legislature in 1947, effective July 1, 1948. PERS is administered to provide a reasonable base income to qualified employees who have been employed by a public employer and whose earnings capacities have been removed or substantially impaired by age or disability.

Benefits Provided

Benefits, as required by the Nevada Revised Statutes (NRS or statute), are determined by the number of years of accredited service at time of retirement and the member's highest average compensation in any 36 consecutive months with special provisions for members entering PERS on or after January 1, 2010 and July 1, 2015. Benefit payments to which participants or their beneficiaries may be entitled under the plan include pension benefits, disability benefits, and survivor benefits.

Monthly benefit allowances for members are computed as 2.5% of average compensation for each accredited year of service prior to July 1, 2001. For service earned on and after July 1, 2001, this multiplier is 2.67% of average compensation. For members entering PERS on or after January 1, 2010, there is a 2.5% multiplier. Members entering PERS on or after July 1, 2015 have a 2.25% multiplier. PERS offers several alternatives to the unmodified service retirement allowance which, in general, allow the retired employee to accept a reduced service retirement allowance payable monthly during his or her lifetime and various optional monthly payments to a named beneficiary after his or her death.

Post-retirement increases are provided by authority of NRS 286.575 - .579.

Vesting

Members are eligible for retirement at age 65 with five years of service, at age 60 with 10 years of service, or at any age with thirty years of service. Members entering PERS on or after January 1, 2010, are eligible for retirement at age 65 with five years of service, or age 62 with 10 years of service, or any age with thirty years of service. Members entering PERS on or after July 1, 2015 are eligible for retirement at age 65 with five years of service, or at age 62 with ten years of service, or at age 55 with thirty years of service, or at any age with 33 1/3 years of service.

The normal ceiling limitation on monthly benefits allowances is 75% of average compensation. However, a member who has an effective date of membership before July 1, 1985, is entitled to a benefit of up to 90% of average compensation. Members become fully vested as to benefits upon completion of five years of service.

Contributions

The authority for establishing and amending the obligation to make contributions and member contribution rates, is set by statute. New hires, in agencies which did not elect the Employer-Pay Contribution (EPC) plan prior to July 1, 1983, have the option of selecting one of two contribution plans.

Contributions are shared equally by employer and employee. Employees can take a reduced salary and have contributions made by the employer (EPC) or can make contributions by a payroll deduction matched by the employer. TMWA contributes under the employer-pay option.

PERS' basic funding policy provides for periodic contributions at a level pattern of cost as a percentage of salary throughout an employee's working lifetime in order to accumulate sufficient assets to pay benefits when due.

PERS receives an actuarial valuation on an annual basis indicating the contribution rates required to fund PERS on an actuarial reserve basis. Contributions actually made are in accordance with the required rates established by the Nevada Legislature. These statutory rates are increased/decreased pursuant to NRS 286.421 and 286.450.

The actuarial funding method used is the Entry Age Normal Cost Method. It is intended to meet the funding objective and result in a relatively level long-term contributions requirement as a percentage of salary.

The Employer-pay contribution (EPC) rate was 28% for both fiscal years June 30, 2018 and 2017.

TMWA's contributions were \$2,562,356 and \$5,037,877 for the years ended June 30, 2018 and 2017, respectively.

PERS Investment Policy

PERS' policies which determine the investment portfolio target asset allocation are established by the PERS Board. The asset allocation is reviewed annually and is designed to meet the future risk and return needs of PERS.

The following was the PERS Board adopted policy target asset allocation as of June 30, 2017 and 2016:

	Target Allocation	Long-Term Geometric Expected Real Rate of Return
Domestic Equity	42%	5.50%
International Equity	18%	5.75%
Domestic Fixed Income	30%	0.25%
Private Markets	10%	6.80%

As of June 30, 2017 and 2016, PERS' long-term inflation assumption was 2.75% and 3.50%, respectively.

Net Pension Liability

At June 30, 2018, TMWA reported a liability for its proportionate share of the net pension liability of \$37,323,782. The net pension liability was measured as of June 30, 2017, and the total pension liability used to calculate the net pension liability was determined by an actuarial valuation as of that date.

At June 30, 2017, TMWA reported a liability for its proportionate share of the net pension liability of \$35,783,246. The net pension liability was measured as of June 30, 2016, and the total pension liability used to calculate the net pension liability was determined by an actuarial valuation as of that date.

TMWA's proportion of the net pension liability was based on TMWA's share of contributions in PERS pension plan relative to the total contributions of all participating PERS employers and members. At June 30, 2017 and 2016, TMWA's proportion was .2806 and .2674 percent, respectively.

Pension Liability Discount Rate Sensitivity

The following presents the net pension liability of TMWA measured as of June 30, 2017 and 2016, calculated using the discount rate of 7.50% and 8.00%, respectively, and what TMWA's net pension liability would be if it were calculated using a discount rate that is one percentage-point lower or one percentage-point higher than the discount rates used in each year's valuation:

	1% Decrease in Discount Rate (6.50%)	Discount Rate (7.50%)	1% Decrease in Discount Rate (8.50%)
Net Pension Liability, June 30, 2017	\$ 56,423,138	\$ 37,323,782	\$ 21,461,468
	1% Decrease in Discount Rate (7.00%)	Discount Rate (8.00%)	1% Decrease in Discount Rate (9.00%)
Net Pension Liability, June 30, 2016	\$ 52,753,951	\$ 35,783,246	\$ 22,042,152

Pension Plan Fiduciary Net Position

Detailed information about the pension plan's fiduciary net position is available in the PERS Comprehensive Annual Financial Report, available on the PERS website, www.nvpers.org.

Actuarial Assumptions

TMWA's June 30, 2018 net pension liability was measured as of June 30, 2017, and the total pension liability used to calculate the net pension liability was determined by an actuarial valuation as of that date. TMWA's June 30, 2017 net pension liability was measured as of June 30, 2016, and the total pension liability used to calculate the net pension liability was determined by an actuarial valuation as of that date. The total pension liability was determined using the following actuarial assumptions, applied to all periods included in the measurement:

	June 30, 2017	June 30, 2016
Inflation Rate	2.75%	3.50%
Payroll Growth	5.00% including inflation	5.00% including inflation
Investment Rate of Return	7.50%	8.00%
Productivity Pay Increase	0.50%	0.75%
Projected Salary Increases	4.25% to 9.15%, depending on service. Rates include inflation and productivity increases	4.60% to 9.75%, depending on service. Rates include inflation and productivity increases
Consumer Price Index	2.75%	3.50%
Other Assumptions	Same as those used in the June 30, 2017 funding actuarial valuation	Same as those used in the June 30, 2016 funding actuarial valuation

Mortality rates for non-disabled male regular members were based on the RP-2014 Combined Healthy Mortality Table projected to 2020 with Scale MP-2016, set forward one year for spouses and beneficiaries. Mortality rates for non-disabled female regular members were based on the RP-2000 Combined Healthy Mortality Table, projected to 2013 with Scale AA, set back one year. The mortality table used in the actuarial valuation to project mortality rates for all disabled regular members is the RP-2000 Disabled Retiree Mortality Table projected to 2013 with Scale AA, set forward three years.

Actuarial assumptions used in the June 30, 2017 and 2016 valuations were based on the results of the experience review completed in 2017 and 2013, respectively.

The discount rate used to measure the total pension liability was 7.50% and 8.00% as of June 30, 2017 and June 30, 2016, respectively. The projection of cash flows used to determine the discount rate assumed that employee and employer contributions will be made at the rate specified in statute. Based on that assumption, the pension plan's fiduciary net position at June 30, 2017 and 2016, was projected to be available to make all projected future benefit payments of current active and inactive employees. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability as of June 30, 2017 and June 30, 2016.

Pension Expense, Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions

For the years ended June 30, 2018 and 2017 TMWA recognized pension expense of \$9,796,032 and \$5,470,650, respectively.

At June 30, 2018, TMWA reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	\$ —	\$ 2,449,195
Changes in assumptions or other inputs	2,476,078	—
Net difference between projected and actual earnings on pension plan investments	242,337	—
Changes in the employer's proportion and differences between the employer's contributions and the employer's proportionate contributions	5,857,451	—
TMWA contributions subsequent to the measurement date	2,562,356	—
	<u>\$ 11,138,222</u>	<u>\$ 2,449,195</u>

\$2,562,356 reported as deferred outflows of resources related to pensions resulting from TMWA contributions subsequent to the measurement date will be recognized as a reduction of the net pension liability in the year ended June 30, 2019.

For the year ended June 30, 2017, TMWA recognized pension expense of \$5,792,926. At June 30, 2017, TMWA reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	\$ —	\$ 2,410,007
Net difference between projected and actual earnings on pension plan investments	3,345,751	—
Changes in the employer's proportion and differences between the employer's contributions and the employer's proportionate contributions	5,855,667	—
TMWA contributions subsequent to the measurement date	5,037,877	—
	<u>\$ 14,239,295</u>	<u>\$ 2,410,007</u>

\$5,037,877 reported as deferred outflows of resources related to pensions resulting from TMWA contributions subsequent to the measurement date was recognized as a reduction of the net pension liability in the year ended June 30, 2018.

The average of the expected remaining service lives of all employees that are provided with pensions through PERS (active and inactive employees) determined at July 1, 2016 (the beginning of the measurement period ended June 30, 2017) is 6.39 years.

Other estimated amounts reported by TMWA as deferred outflows of resources and deferred inflows of resources related to pensions at June 30, 2018 will be recognized in pension expense as follows:

<u>Year Ending June 30,</u>	
2019	\$ 698,106
2020	2,233,901
2021	1,583,869
2022	529,609
2023	854,720
Thereafter	226,466

Additional Information

The PERS Comprehensive Annual Financial Report (CAFR) is available on the PERS website at www.nvpers.org under Quick Links – Publications.

Deferred Compensation Plans

All employees of TMWA are eligible to participate in a Section 457 Deferred Compensation Plan, monies of which are maintained in a trust, separate from the general assets of TMWA. In addition to the Section 457 Deferred Compensation Plan, all employees are eligible to participate in a Section 401(a) Money Purchase Retirement Plan, monies of which are maintained in a trust, separate from the general assets of TMWA. For the years ended June 30, 2018 and June 30, 2017, TMWA had matching contributions totaling \$1,181,760, and \$1,066,019, respectively.

Note 11 - Other Post-Employment Benefit (OPEB) Plans

TMWA has two Other Post-Employment Benefit (OPEB) Plans referred to as the §501(c)(9) and §115 plans. The §501(c)(9) plan was established for the benefit of transferred employees from Sierra Pacific Power Company and all new hires. The §115 Plan plan was formed to provide post-employment benefits for employees who transferred from Washoe County as a result of the water utility consolidation. Both plans reference the Internal Revenue Code sections that the plans were formed under. Both plans' investments are held by the Nevada Retirement Benefits Investment Board.

Census data as of June 30, 2018 for both plans is as follows:

	<u>§501(c)(9) Plan</u>	<u>§115 Plan</u>
Retirees receiving benefits	38	3
Retirees eligible for but not receiving benefits	1	—
Active employees	194	19
Total	<u>233</u>	<u>22</u>

Census data as of June 30, 2017 for both plans is as follows:

	§501(c)(9) Plan	§115 Plan
Retirees receiving benefits	36	1
Retirees eligible for but not receiving benefits	1	—
Active employees	181	21
Total	218	22

Plan Descriptions, Eligibility Information and Funding Policies

§501(c)(9) Plan

Plan Description. The §501(c)(9) plan known as the Truckee Meadows Water Authority Post-Retirement Medical Plan and Trust (Plan), is a single-employer defined benefit OPEB plan that was established to provide eligible TMWA employees with post-employment health benefits. The Plan was amended to provide post-retirement life insurance benefits in July 2011. Pursuant to Nevada State Administrative Regulations, adopted in September 2008, the Plan is governed by not less than three, but not more than five trustees. Four trustees were appointed by the TMWA Board of Directors, two from non-represented employees and two from represented employees. The Plan issues a financial report that includes the financial statements and required supplementary information. That report may be obtained by contacting TMWA in writing at P.O. Box 30013, Reno, NV 89520-3013.

Eligibility. There are three employee classifications eligible for benefits: a pre-January 1, 1998 collective bargaining unit group, a post-December 31, 1997 collective bargaining unit group, and a group for management, professional, and administrative (MPAT) personnel regardless of date of hire. Eligibility requirements benefit levels, employee contributions, and employer contributions are amended through TMWA's collective bargaining agreements for its represented employees and by the TMWA Board of Directors with respect to MPAT employees.

Employees must have at least ten years of service to be eligible for benefits and must be at least 55 years of age. The pre-January 1, 1998 group of represented employees will receive a subsidy as a percentage of the total health premium, dependent upon years of service and age of retirement, with a maximum subsidy of 85% with 20 years of credited service. Employees with 20 or more years of service electing the Medicare Risk Contract would pay nothing towards health premiums. For this group dependents are also covered. The post-December 31, 1997 group of represented employees will receive a total subsidy of \$1,250 times years of service towards health care premiums. This amount does not grow with interest and once exhausted a retiree may convert to COBRA, but only for the 18 month continuation period. For MPAT employees, the annual subsidy is \$235 times years of service, up to 30 years, prorated for each month of retirement while under the age of 65. On or after the age of 65, the subsidy is \$105 times years of service prorated for each month of retirement while age 65 and older. If an MPAT employee retires and draws benefits before age 62, the subsidy is reduced by 5% for each full year retirement precedes 62.

There is no extra subsidy for spousal or dependent coverage except continuation benefits provided for under COBRA. Retirees are responsible for the remaining portion of premiums.

Funding Policy. Beginning in fiscal year 2011, the plan has funded retiree benefits through its Voluntary Employee Benefit Association (VEBA) that TMWA established as an irrevocable trust for funding of the post-employment health benefits. TMWA funds the plan based on the actuarially determined contribution (ADC) each year.

§115 Plan

Plan Description. On December 17, 2014, TMWA formed The Truckee Meadows Water Authority OPEB Trust Fund (§115 Plan), a single-employer defined benefit OPEB plan that was established to provide certain eligible TMWA employees with post-employment health benefits. This specific plan was formed to provide post-employment benefits to qualified transferred Washoe County employees as a result of the water utility transfer of operations. STMGID had no employees and was contractually operated by Washoe County. Twenty-five employees transferred from Washoe County to TMWA, of which two had no post-employment benefits, and were subsequently enrolled in the Truckee Meadows Water Authority Post-Retirement Medical Plan and Trust (§501(c)(9) Plan). Of the remaining 23 transferred employees, one left the employment of TMWA to work for another public agency, which disqualified the individual from future benefits from the §115 Plan, resulting in 22 remaining transferred employees that are entitled to benefits as of June 30, 2018. The §115 Plan is a closed plan that will provide future benefits to the remaining eligible transferred employees and no new beneficiaries can be enrolled in this plan.

Eligibility. There are two employee classifications eligible for benefits in this plan: Tier I and Tier II classifications.

For Tier I employees/retirees that have at least ten years but less than 15 years of combined full-time employment with Washoe County and/or TMWA the maximum benefits payable by the Trust will be 50% of the premium for coverage of such retiree under the benefit plans. For Tier I employees that have at least fifteen years but less than twenty years of combined full-time employment with Washoe County and/or TMWA the maximum benefits payable by the Trust will be 75% of the premium for coverage of such retiree under the benefit plans. For Tier I employees that have at least twenty years of combined full-time employment with Washoe County and/or TMWA the maximum benefits payable by the Trust will be 100% of the premium for coverage of such retiree under the benefit plans.

For Tier I employees who have attained the Medicare Eligibility Age during a Trust Plan Year must enroll in and pay the cost of Medicare Part “A” and Medicare Part “B” or Medicare Part “C” coverage and TMWA will become the secondary payer regardless of whether the retiree enrolls in the Medicare program or not. The Medicare Eligibility Age is currently defined as age 65 but will be changed if Medicare changes the eligibility age.

For Tier II employees/retirees the maximum benefits to be paid by the Trust who have not attained the age of 65 is to be the same amount of the premium paid for group health coverage by an employer for coverage of non-state employees under the Nevada State Public Employee Benefit Plan (PEBP) Retiree Health Insurance plan. The 2003 Nevada Legislature passed legislation (AB 286) that afforded public employees of Nevada political subdivisions the opportunity to enroll, upon their retirement in the PEBP Retiree Health Plan and obligated public employers of enrolled retirees to pay a portion of the medical premium on the retiree’s behalf (the Subsidy). Tier II Retirees are entitled to receive the Subsidy from the Trust towards their coverage under the employer Benefit Plans rather than the PEBP Retiree Health Plan.

For Tier II employees/retirees who have attained the Medicare Eligibility Age (currently age 65) or older will instead receive the equivalent of the State of Nevada’s Medicare Exchange Retiree HRA contribution subsidy based upon the combined years of service with Washoe County and/or TMWA and must elect Medicare. Medicare then becomes the primary carrier, and the Benefits Plans funded by the Trust are to become secondary. The Medicare Eligibility Age is currently defined as age 65 but will be changed if Medicare changes the eligibility age.

In order to receive the benefits described the Tier II employee must be an employee of TMWA immediately prior to drawing their retirement benefits.

Funding Policy. The plan funds retiree benefits through an irrevocable trust for funding of the post-employment health benefits. TMWA funds the Plan based on the actuarially determined contribution (ADC) each year.

OPEB Expense and Net Position

Total OPEB Expense recognized for fiscal years June 30, 2018 and 2017 is below:

	§501(c)(9) Plan	§115 Plan	Total
2018	\$ 182,959	\$ 100,914	\$ 283,873
2017	\$ 329,386	\$ 122,894	\$ 452,280

Changes in Net Position for each plan for the measurement period ended December 31, 2017 is below:

	§ 501(c)(9) Plan			§115 Plan		
	Total OPEB Liability	Fiduciary Net Position	Net OPEB (Asset)/ Liability	Total OPEB Liability	Fiduciary Net Position	Net OPEB (Asset)/ Liability
Balance at Fiscal Year Ending June 30, 2017	\$ 10,062,447	\$ 9,268,879	\$ 793,568	\$ 1,677,294	\$ 787,288	\$ 890,006
<i>Measurement Date - December 31, 2016</i>						
Changes During the Period:						
Service Cost	284,073	—	284,073	54,769	—	54,769
Interest Cost	612,850	—	612,850	103,644	—	103,644
Expected Investment Income	—	560,422	(560,422)	—	49,833	(49,833)
Employer Contributions	—	445,063	(445,063)	—	103,441	(103,441)
Auditing Fees	—	(15,500)	15,500	—	(6,000)	6,000
Investment & Administrative Fees	—	(2,612)	2,612	—	(780)	780
Legal Fees	—	(19,268)	19,268	—	(788)	788
Retiree Contributions In	—	93,172	(93,172)	—	930	(930)
Retiree Contributions Out	—	(93,172)	93,172	—	(930)	930
Benefit Payments	(264,699)	(264,699)	—	(9,334)	(9,334)	—
Investment Experience	—	954,609	(954,609)	—	76,171	(76,171)
Net Changes	632,224	1,658,015	(1,025,791)	149,079	212,543	(63,464)
Balance at Fiscal Year Ending June 30, 2018	\$ 10,694,671	\$ 10,926,894	\$ (232,223)	\$ 1,826,373	\$ 999,831	\$ 826,542
<i>Measurement Date - December 31, 2017</i>						

Changes in Net Position for each plan for the measurement period ended December 31, 2016 is below:

	§ 501(c)(9) Plan			§115 Plan		
	Total OPEB Liability	Fiduciary Net Position	Net OPEB (Asset)/ Liability	Total OPEB Liability	Fiduciary Net Position	Net OPEB (Asset)/ Liability
Balance at Fiscal Year Ending June 30, 2016	\$ 9,442,131	\$ 8,733,520	\$ 708,611	\$ 1,529,690	\$ 611,402	\$ 918,288
<i>Measurement Date - December 31, 2015</i>						
Changes During the Period:						
Service Cost	273,146	—	273,146	52,663	—	52,663
Interest Cost	576,050	—	576,050	94,941	—	94,941
Expected Investment Income	—	536,863	(536,863)	—	35,423	(35,423)
Employer Contributions	—	244,429	(244,429)	—	151,176	(151,176)
Auditing Fees	—	(12,900)	12,900	—	(8,900)	8,900
Investment & Administrative Fees	—	(2,490)	2,490	—	(675)	675
Legal Fees	—	(1,663)	1,663	—	(1,138)	1,138
Retiree Contributions In	—	90,145	(90,145)	—	—	—
Retiree Contributions Out	—	(90,145)	90,145	—	—	—
Benefit Payments	(228,880)	(228,880)	—	—	—	—
Investment Experience	—	—	—	—	—	—
Net Changes	620,316	535,359	84,957	147,604	175,886	(28,282)
Balance at Fiscal Year Ending June 30, 2017	<u>\$ 10,062,447</u>	<u>\$ 9,268,879</u>	<u>\$ 793,568</u>	<u>\$ 1,677,294</u>	<u>\$ 787,288</u>	<u>\$ 890,006</u>
<i>Measurement Date - December 31, 2016</i>						

A schedule of the plan's deferred resources as of June 30, 2018 is below:

	§501(c)(9) Plan		§115 Plan	
	Deferred Outflows of Resources	Deferred Inflows of Resources	Deferred Outflows of Resources	Deferred Inflows of Resources
Net Difference Between Projected and Actual Earnings on Investments	\$ —	\$ 763,687	\$ —	\$ 60,937
Contributions Made Subsequent to the Measurement Date	324,529	—	119,366	—
Total	<u>\$ 324,529</u>	<u>\$ 763,687</u>	<u>\$ 119,366</u>	<u>\$ 60,937</u>

A schedule of the Plan's deferred resources as of June 30, 2017 is below:

	§501(c)(9) Plan		§115 Plan	
	Deferred Outflows of Resources	Deferred Inflows of Resources	Deferred Outflows of Resources	Deferred Inflows of Resources
Contributions Made Subsequent to the Measurement Date	\$ 445,063	\$ —	\$ 103,442	\$ —
Total	<u>\$ 445,063</u>	<u>\$ —</u>	<u>\$ 103,442</u>	<u>\$ —</u>

TMWA will recognize the Contributions Made Subsequent to the Measurement Date in the next fiscal year. In addition, future recognition of other deferred resources as of June 30, 2018 is shown below.

Year ended June 30,	§501(c)(9) Plan	§115 Plan
	Deferred Inflows Recognized in OPEB Expense	Deferred Inflows Recognized in OPEB Expense
2019	\$ (190,922)	\$ (15,234)
2020	(190,922)	(15,234)
2021	(190,922)	(15,234)
2022	(190,921)	(15,235)

Actuarial Valuation Assumptions

The total OPEB liability as of December 31, 2017 was determined using the following actuarial assumptions.

Healthcare trend rate (both plans) - TMWA plan medical premiums and per capita claims costs are assumed to increase at the following rates:

Effective January 1	Premium Increase	Effective January 1	Premium Increase
2019	6.3%	2023	5.3%
2020	6.0%	2024	5.0%
2021	5.8%	2025	5.0%
2022	5.5%	Thereafter	5.0%

Additional significant assumptions are listed below for each plan:

Assumption	§501(c)(9) Plan	§115 Plan
Valuation Date	December 31, 2017	December 31, 2017
Funding Method	Entry Age Normal Cost, level percent of pay	Entry Age Normal Cost, level percent of pay
Asset Valuation Method	Market value of assets	Market value of assets
Mortality	<i>Males:</i> RP-2000 Combined Healthy Table <i>Females:</i> RP-2000 Combined Healthy Table set back 1 year The rates described above were then adjusted to anticipate future mortality improvements each year until the payments anticipated in any future year occur.	<i>Males:</i> RP-2000 Combined Healthy Table <i>Females:</i> RP-2000 Combined Healthy Table set back 1 year The rates described above were then adjusted to anticipate future mortality improvements each year until the payments anticipated in any future year occur.
Long-Term Return on Assets and Discount Rate	6.0% Based on estimated future returns of the Retirement Benefits Investment Board. Rate is applied to all periods of projected benefit payments.	6.0% Based on estimated future returns of the Retirement Benefits Investment Board. Rate is applied to all periods of projected benefit payments.
Participants Valued	Only current active employees and retired participants and covered dependents are valued, excluding those who transferred to TMWA from Washoe County. No future entrants are considered in this valuation.	Only current active employees and retired participants who transferred to TMWA from Washoe County and covered dependents are valued. This plan is closed to new members.
Salary Increase	4.0% per year	4.0% per year
Assumed Wage Inflation	3.0% per year; a component of assumed average annual payroll increases	3.0% per year; a component of assumed average annual payroll increases
General Inflation Rate	2.75% per year	2.75% per year
Medicare Eligibility	All individuals are assumed to be eligible for Medicare Parts A and B at age 65.	All individuals are assumed to be eligible for Medicare Parts A and B at age 65.
Employer Cost Sharing	IBEW Pre - 1998 Hires: Increases in the PRMPT-paid portion of healthcare premiums are assumed to increase at the same rates as medical trend (described above). IBEW Post-1997 Hires: The \$1,250 service multiplier is assumed to remain fixed at its current level in all future years. Retirees are expected to exhaust the lifetime allowance 4 years following retirement. MPAT: The \$235 (pre-65) and \$105 (post-65) service multipliers are assumed to remain fixed at their current level in all future years.	Tier 1: Increases in the Trust-paid portion of healthcare premiums are assumed to increase at the same rates as medical trend (described above). Tier 2: The TMWA subsidy provided prior to age 65 is assumed to increase at the same rates as medical trend. The subsidy provided at ages 65 and above is assumed to increase by 4.5% per year.

The discount rate used for the measurement period ended December 31, 2017 is 6.0%. Medical Cost Inflation was assumed to start at 6.25% and grade down to 5.0% for years 2024 and thereafter. The impact of a 1% increase or decrease in these assumptions is shown in the charts below for the two measurement periods.

December 31, 2017

§501(c)(9) Plan	Discount Rate			Medical Cost Inflation		
	Discount Rate		Discount Rate	Medical Trend		Current
	- 1%	Discount Rate		- 1%	Medical Trend	
Total OPEB Liability	\$ 11,927,167	\$ 10,694,671	\$ 9,639,197	\$ 9,647,634	\$ 10,694,671	\$ 12,067,197
Increase (Decrease)	1,232,496		(1,055,474)	(1,047,037)		1,372,526
% Increase (Decrease)	11.5%		(9.9)%	(9.8)%		12.8%
Net OPEB Liability (Asset)	\$ 1,000,273	\$ (232,223)	\$ (1,287,697)	\$ (1,279,260)	\$ (232,223)	\$ 1,140,303
Increase (Decrease)	1,232,496		(1,055,474)	(1,047,037)		1,372,526
% Increase (Decrease)	530.7%		(454.5)%	(450.9)%		591.0%

§115 Plan	Discount Rate			Medical Cost Inflation		
	Discount Rate		Discount Rate	Medical Trend	Current	Medical Trend
	-1%	Discount Rate	+1%	-1%	Medical Trend	+1%
Total OPEB Liability	\$ 2,093,203	\$ 1,826,373	\$ 1,605,093	\$ 1,559,685	\$ 1,826,373	\$ 2,180,680
Increase (Decrease)	266,830		(221,280)	(266,688)		354,307
% Increase (Decrease)	14.6%		(12.1)%	(14.6)%		19.4%
Net OPEB Liability (Asset)	\$ 1,093,372	\$ 826,542	\$ 605,262	\$ 559,854	\$ 826,542	\$ 1,180,849
Increase (Decrease)	266,830		(221,280)	(266,688)		354,307
% Increase (Decrease)	32.3%		(26.8)%	(32.3)%		42.9%

December 31, 2016

§501(c)(9) Plan	Discount Rate			Medical Cost Inflation		
	Discount Rate		Discount Rate	Medical Trend	Current	Medical Trend
	- 1%	Discount Rate	+ 1 %	- 1%	Medical Trend	+ 1 %
Total OPEB Liability	\$ 11,261,843	\$ 10,062,447	\$ 9,036,913	\$ 9,112,523	\$ 10,062,447	\$ 11,306,158
Increase (Decrease)	1,199,396		(1,025,534)	(949,924)		1,243,711
% Increase (Decrease)	11.9%		(10.2)%	(9.4)%		12.4%
Net OPEB Liability (Asset)	\$ 1,992,964	\$ 793,568	\$ (231,966)	\$ (156,356)	\$ 793,568	\$ 2,037,279
Increase (Decrease)	1,199,396		(1,025,534)	(949,924)		1,243,711
% Increase (Decrease)	151.1%		(129.2)%	(119.7)%		156.7%

§115 Plan	Discount Rate			Medical Cost Inflation		
	Discount Rate		Discount Rate	Medical Trend	Current	Medical Trend
	- 1%	Discount Rate	+ 1 %	- 1%	Medical Trend	+ 1 %
Total OPEB Liability	\$ 1,934,330	\$ 1,677,294	\$ 1,464,972	\$ 1,433,099	\$ 1,677,294	\$ 2,001,771
Increase (Decrease)	257,036		(212,322)	(244,195)		324,477
% Increase (Decrease)	15.3%		(12.7)%	(14.6)%		19.3%
Net OPEB Liability (Asset)	\$ 1,147,042	\$ 890,006	\$ 677,684	\$ 645,811	\$ 890,006	\$ 1,214,483
Increase (Decrease)	257,036		(212,322)	(244,195)		324,477
% Increase (Decrease)	28.9%		(23.9)%	(27.4)%		36.5%

Note 12 - Commitments

TMWA has committed \$1,400,000 to further enhancement of the Truckee River as mitigation for operation of the Farad hydroelectric plant, which has yet to be transferred.

TMWA has committed \$850,000 as a contribution to the Truckee River Fund of the Community Foundation of Western Nevada, for the purposes of water shed protection and enhancements to the Truckee River that will benefit the water customers of TMWA. This payment was made in August 2018.

Note 13 - Subsequent Events

In September 2018, TMWA reduced its outstanding commercial paper balance from \$30,000,000 to \$23,500,000 with a payment from unrestricted cash of \$6,500,000.

Note 14 - Prior Period Adjustment

Change in Accounting Principal

Following the implementation of GASB Statement No. 75, amounts previously reported for the year ended June 30, 2017 were restated as follows: Statements of Net Position - deferred outflow of resources increased by \$548,505 and net other post employment benefits liability increased by \$1,683,574; Statements of Revenues Expenses and Changes in Net Position - employee benefits decreased by \$115,543 and beginning net position decreased by \$1,250,612. Additionally, amounts were restated in the Statement of Cash Flows in the Reconciliation of Operating Income to Net Cash from Operating Activities including an increase to OBEP expense of \$432,963 and decrease to OPEB contributions of \$548,504.

Required Supplementary Information

Truckee Meadows Water Authority

12-13-18 BOARD Agenda Item 8
Truckee Meadows Water Authority
Schedules of Changes in Net OPEB Liability and Related Ratios
Last Ten Fiscal Years

	2018	2017
§501(c)(9) Plan		
<u>Total OPEB Liability</u>		
Service Cost	\$ 284,073	\$ 273,146
Interest	612,850	576,050
Changes of benefit terms	—	—
Differences between expected and actual experience	—	—
Changes of assumptions	—	—
Benefit payments	(264,699)	(228,880)
Total OPEB Liability - Beginning	<u>10,062,447</u>	<u>9,442,131</u>
Total OPEB Liability - Ending	<u>\$ 10,694,671</u>	<u>\$ 10,062,447</u>
<u>Plan Fiduciary Net Position</u>		
Contributions - employer	\$ 445,063	\$ 244,429
Net investment income	1,515,031	536,863
Benefit payments	(264,699)	(228,880)
Auditing fees	(15,500)	(12,900)
Investment & administrative fees	(2,612)	(2,490)
Legal fees	(19,268)	(1,663)
Retiree contributions in	93,172	90,145
Retiree contributions out	(93,172)	(90,145)
Net change in plan fiduciary net position	<u>1,658,015</u>	<u>535,359</u>
Plan fiduciary net position - beginning	<u>9,268,879</u>	<u>8,733,520</u>
Plan fiduciary net position - ending	<u>\$ 10,926,894</u>	<u>\$ 9,268,879</u>
Net OPEB liability - ending	<u>\$ (232,223)</u>	<u>\$ 793,568</u>
Plan fiduciary net position as a percentage of total OPEB liability	102.2 %	92.1%
Covered-employee payroll	<u>\$ 15,993,551</u>	<u>\$ 13,944,136</u>
Net OPEB liability as a percentage of covered-employee payroll	(1.5)%	5.7%

Notes to Schedule

Historical information is required only for measurement periods for which GASB 75 is applicable. Future years' information will be disclosed up to 10 years as information becomes available.

12-13-18 BOARD Agenda Item 8
Truckee Meadows Water Authority
Schedules of Changes in Net OPEB Liability and Related Ratios
Last Ten Fiscal Years

	2018	2017
§115 Plan		
<u>Total OPEB Liability</u>		
Service Cost	\$ 54,769	\$ 52,663
Interest	103,644	94,941
Changes of benefit terms	—	—
Differences between expected and actual experience	—	—
Changes of assumptions	—	—
Benefit payments	(9,334)	—
Total OPEB Liability - Beginning	<u>1,677,294</u>	<u>1,529,690</u>
Total OPEB Liability - Ending	<u>\$ 1,826,373</u>	<u>\$ 1,677,294</u>
<u>Plan Fiduciary Net Position</u>		
Contributions - employer	\$ 103,441	\$ 151,176
Net investment income	126,004	35,423
Benefit payments	(9,334)	—
Auditing fees	(6,000)	(8,900)
Investment & administrative fees	(780)	(675)
Legal fees	(788)	(1,138)
Retiree contributions in	930	—
Retiree contributions out	(930)	—
Net change in plan fiduciary net position	<u>212,543</u>	<u>175,886</u>
Plan fiduciary net position - beginning	<u>787,288</u>	<u>611,402</u>
Plan fiduciary net position - ending	<u>\$ 999,831</u>	<u>\$ 787,288</u>
Net OPEB liability - ending	<u>\$ 826,542</u>	<u>\$ 890,006</u>
Plan fiduciary net position as a percentage of total OPEB liability	54.7%	46.9%
Covered-employee payroll	<u>\$ 1,630,635</u>	<u>\$ 1,658,227</u>
Net OPEB liability as a percentage of covered-employee payroll	50.7%	53.7%

Notes to Schedule

Historical information is required only for measurement periods for which GASB 75 is applicable. Future years' information will be disclosed up to 10 years as information becomes available.

	2018	2017
§501(c)(9) Plan		
Actuarially Determined Contribution	284,882	445,063
Contributions in relation to the actuarially determined contribution	324,529	445,063
Contribution deficiency (excess)	(39,647)	—
Covered-employee payroll	15,993,551	13,944,136
Contributions as a percentage of covered employee payroll	2.0%	3.2%
§115 Plan		
Actuarially Determined Contribution	119,366	103,441
Contributions in relation to the actuarially determined contribution	119,366	103,441
Contribution deficiency (excess)	—	—
Covered-employee payroll	1,630,635	1,658,227
Contributions as a percentage of covered employee payroll	7.3%	6.2%

Notes to Schedule

Historical information is required only for measurement periods for which GASB 75 is applicable. Future years' information will be disclosed up to 10 years as information becomes available.

Healthcare trend rate (both plans) - TMWA plan medical premiums and per capita claims costs are assumed to increase at the following rates:

Effective January 1	Premium Increase	Effective January 1	Premium Increase
2019	6.3%	2023	5.3%
2020	6.0%	2024	5.0%
2021	5.8%	2025	5.0%
2022	5.5%	Thereafter	5.0%

Additional significant assumptions are listed below for each plan:

Assumption	§501(c)(9) Plan	§115 Plan
Valuation Date	December 31, 2017	December 31, 2017
Funding Method	Entry Age Normal Cost, level percent of pay	Entry Age Normal Cost, level percent of pay
Asset Valuation Method	Market value of assets	Market value of assets
Mortality	<p><i>Males:</i> RP-2000 Combined Healthy Table <i>Females:</i> RP-2000 Combined Healthy Table set back 1 year</p> <p>The rates described above were then adjusted to anticipate future mortality improvements each year until the payments anticipated in any future year occur.</p>	<p><i>Males:</i> RP-2000 Combined Healthy Table <i>Females:</i> RP-2000 Combined Healthy Table set back 1 year</p> <p>The rates described above were then adjusted to anticipate future mortality improvements each year until the payments anticipated in any future year occur.</p>
Long-Term Return on Assets and Discount Rate	6.0% Based on estimated future returns of the Retirement Benefits Investment Board. Rate is applied to all periods of projected benefit payments.	6.0% Based on estimated future returns of the Retirement Benefits Investment Board. Rate is applied to all periods of projected benefit payments.
Participants Valued	Only current active employees and retired participants and covered dependents are valued, excluding those who transferred to TMWA from Washoe County. No future entrants are considered in this valuation.	Only current active employees and retired participants who transferred to TMWA from Washoe County and covered dependents are valued. This plan is closed to new members.
Salary Increase	4.0% per year	4.0% per year
Assumed Wage Inflation	3.0% per year; a component of assumed average annual payroll increases	3.0% per year; a component of assumed average annual payroll increases
General Inflation Rate	2.75% per year	2.75% per year
Medicare Eligibility	All individuals are assumed to be eligible for Medicare Parts A and B at age 65.	All individuals are assumed to be eligible for Medicare Parts A and B at age 65.
Employer Cost Sharing	<p>IBEW Pre - 1998 Hires: Increases in the PRMPT-paid portion of healthcare premiums are assumed to increase at the same rates as medical trend (described above).</p> <p>IBEW Post-1997 Hires: The \$1,250 service multiplier is assumed to remain fixed at its current level in all future years. Retirees are expected to exhaust the lifetime allowance 4 years following retirement.</p> <p>MPAT: The \$235 (pre-65) and \$105 (post-65) service multipliers are assumed to remain fixed at their current level in all future years.</p>	<p>Tier 1: Increases in the Trust-paid portion of healthcare premiums are assumed to increase at the same rates as medical trend (described above).</p> <p>Tier 2: The TMWA subsidy provided prior to age 65 is assumed to increase at the same rates as medical trend. The subsidy provided at ages 65 and above is assumed to increase by 4.5% per year.</p>

Truckee Meadows Water Authority
 Truckee Board of Directors
 Schedules of TMWA's Share of Net Pension Liability
 Public Employees' Retirement System of Nevada (PERS)
 Last Ten Fiscal Years

	2017	2016	2015	2014
TMWA's proportion of the net pension liability	0.2806%	0.2674%	0.2345%	0.2139%
TMWA's proportionate share of the net pension liability	\$ 37,323,782	\$ 35,783,246	\$ 26,869,406	\$ 22,293,306
TMWA's covered payroll	\$ 17,947,692	\$ 16,314,669	\$ 14,077,995	\$ 12,573,558
TMWA's proportionate share of the net pension liability as a percentage of its covered payroll	207.96%	219.33%	190.86%	177.30%
Plan fiduciary net position as a percentage of the total pension liability	74.42%	72.23%	75.13%	76.30%

Notes to Schedule

Historical information is required only for measurement periods for which GASB 68 is applicable. Future years' information will be disclosed up to 10 years as information becomes available.

	2018	2017	2016	2015
Statutorily required contribution*	\$ 2,562,356	\$ 5,037,877	\$ 4,534,811	\$ 3,629,441
Contributions in relation to the statutorily required contribution*	\$ 2,562,356	\$ 5,037,877	\$ 4,534,811	\$ 3,629,441
Contribution (deficiency) excess	\$ —	\$ —	\$ —	\$ —
Employer's covered payroll	\$ 18,259,883	\$ 17,947,692	\$ 16,314,669	\$ 14,077,995
Contributions as a percentage of covered payroll	14.03%	28.07%	27.80%	25.78%

Notes to Schedule

Historical information is required only for measurement periods for which GASB 68 is applicable. Future years' information will be disclosed up to 10 years as information becomes available.

*Contributions for 2018 reflect employer-paid contributions only due to GASB No. 82, which classifies contributions as member contributions for the purposes of GASB No. 68 if they are made by an employer to satisfy what are actually deemed to be member contribution requirements.

Supplementary Information
June 30, 2018 and 2017

Truckee Meadows Water Authority

12-13-18 BOARD Agenda Item 8
Truckee Meadows Water Authority
Schedule of Revenues, Expenses, and Changes in Net Position - Budget and Actual
Year Ended June 30, 2018

	Final Budget	Actual	Variance
Operating Revenues			
Charges for water sales	\$ 94,303,278	\$ 95,181,554	\$ 878,276
Hydroelectric sales	2,990,391	3,757,043	766,652
Other operating sales	3,131,500	2,873,495	(258,005)
Total operating revenues	100,425,169	101,812,092	1,386,923
Operating Expenses			
Salaries and wages	19,024,704	18,735,892	288,812
Employee benefits	9,303,274	12,919,692	(3,616,418)
Services and supplies	28,312,357	25,835,318	2,477,039
Total operating expenses before depreciation	56,640,335	57,490,902	(850,567)
Depreciation	34,061,148	32,820,720	1,240,428
Total operating expenses	90,701,483	90,311,622	389,861
Operating Income	9,723,686	11,500,470	1,776,784
Nonoperating Revenues (Expenses)			
Investment earnings	1,342,692	2,313,513	970,821
Net change in fair value of investments	—	(934,120)	(934,120)
Gain (loss) on disposal of assets	—	133,972	133,972
Bond/note issue costs and amortization of bond insurance	(468,624)	(942,927)	(474,303)
Interest expense	(13,394,016)	(11,720,356)	1,673,660
Other nonoperating expense	—	(12,749)	(12,749)
Total nonoperating revenues (expenses)	(12,519,948)	(11,162,667)	1,357,281
Income (Loss) before Capital Contributions	(2,796,262)	337,803	3,134,065
Capital Contributions			
Grants	200,004	348,248	148,244
Water meter retrofit program	781,488	2,379,206	1,597,718
Developer infrastructure contributions	—	15,017,446	15,017,446
Developer will-serve contributions (net of refunds)	5,034,744	6,652,819	1,618,075
Developer capital contributions-other	4,345,296	6,448,549	2,103,253
Developer facility charges (net of refunds)	4,826,436	6,464,559	1,638,123
Contributions from others	—	100,000	100,000
Net capital contributions	15,187,968	37,410,827	22,222,859
Change in Net Position	\$ 12,391,706	\$ 37,748,630	\$ 25,356,924

12-13-18 BOARD Agenda Item 8
Truckee Meadows Water Authority
Schedule of Revenues, Expenses, and Changes in Net Position - Budget and Actual
Year Ended June 30, 2017

	Final Budget	Actual	Variance
Operating Revenues			
Charges for water sales	\$ 91,196,093	\$ 92,687,260	\$ 1,491,167
Hydroelectric sales	1,755,890	1,788,934	33,044
Other operating sales	2,471,500	2,791,989	320,489
Total operating revenues	95,423,483	97,268,183	1,844,700
Operating Expenses			
Salaries and wages	18,319,615	17,257,014	1,062,601
Employee benefits	8,736,336	8,931,738	(195,402)
Services and supplies	25,730,715	23,980,864	1,749,851
Total operating expenses before depreciation	52,786,666	50,169,616	2,617,050
Depreciation	33,247,620	32,169,578	1,078,042
Total operating expenses	86,034,286	82,339,194	3,695,092
Operating Income	9,389,197	14,928,989	5,539,792
Nonoperating Revenues (Expenses)			
Investment earnings	2,231,304	7,209,113	4,977,809
Net change in fair value of investments	—	(342,257)	(342,257)
Gain (loss) on disposal of assets	—	(155,722)	(155,722)
Bond/note issue costs and amortization of bond insurance	(474,444)	(1,183,526)	(709,082)
Interest expense	(16,930,176)	(16,968,911)	(38,735)
Other nonoperating expense	—	(243,000)	(243,000)
Total nonoperating revenues (expenses)	(15,173,316)	(11,684,303)	3,489,013
Income (Loss) before Capital Contributions	(5,784,119)	3,244,686	9,028,805
Capital Contributions			
Grants	1,191,168	1,226,863	35,695
Water meter retrofit program	450,000	341,074	(108,926)
Developer infrastructure contributions	—	10,797,854	10,797,854
Developer will-serve contributions (net of refunds)	8,189,633	7,950,666	(238,967)
Developer capital contributions-other	5,328,086	6,062,247	734,161
Developer facility charges (net of refunds)	4,509,144	5,116,956	607,812
Contributions from others	11,805,511	11,855,511	50,000
Net capital contributions	31,473,542	43,351,171	11,877,629
Change in Net Position	\$ 25,689,423	\$ 46,595,857	\$ 20,906,434

Statistical Section

Truckee Meadows Water Authority

This part of the Truckee Meadows Water Authority comprehensive annual financial report presents detailed information as a context for understanding what the information in the financial statements, note disclosures, and required supplementary information says about the Authority's overall financial health.

<u>Section Contents</u>	<u>Schedule No.</u>
Financial Trends These schedules contain trend information to help the reader understand how the Authority's financial performance and well-being have changed over time.	1-6
Revenue Capacity These schedules contain information to help the reader assess the factors affecting the Authority's ability to generate its water sales and other revenues.	7-8
Debt Capacity These schedules present information to help the reader assess the affordability of the Authority's current levels of outstanding debt, and its ability to issue additional future debt.	9
Demographic and Economic Information These schedules offer demographic and economic indicators to help the reader understand the environment within which the Authority's financial activities take place and to help make comparisons over time and with other utilities.	10-12
Operating Information These schedules contain information about the Authority's operations and resources to help the reader understand how the Authority's financial information relates to the services it provides and the activities it performs.	13-17
Debt Ratios These schedules contain information about changes in the Authority's debt and its debt in relation to service connections.	18-19

Sources: Unless otherwise noted, the information in these schedules is derived from the comprehensive annual financial reports for the relevant year.

12-13-18 BOARD Agenda Item 8
Truckee Meadows Water Authority
Schedule No. 1 - Net Position by Component
Last Ten Fiscal Years

	Fiscal Year			
	2018	2017	2016	2015*
Net Position				
Net investment in capital assets	\$ 533,058,874	\$ 506,700,472	\$ 478,543,111	\$ 444,402,572
Restricted	30,123,412	28,589,861	40,505,804	42,158,803
Unrestricted	<u>104,893,903</u>	<u>95,037,226</u>	<u>65,933,399</u>	<u>77,312,759</u>
Total Net Position	<u>\$ 668,076,189</u>	<u>\$ 630,327,559</u>	<u>\$ 584,982,314</u>	<u>\$ 563,874,134</u>

* Fiscal Year 2015 reflects the first year of the water utility consolidation as discussed in Note 1 of the Financial Statements.

12-13-18 BOARD Agenda Item 8
Truckee Meadows Water Authority
Schedule No. 1 - Net Position by Component
Last Ten Fiscal Years

Fiscal Year					
2014	2013	2012	2011	2010	2009
\$ 232,327,785	\$ 227,319,870	\$ 222,418,497	\$ 223,410,534	\$ 220,473,195	\$ 204,972,595
25,198,683	22,644,404	13,678,852	22,873,643	23,515,136	23,947,116
54,036,550	51,471,349	57,107,888	41,907,040	43,968,725	56,186,497
<u>\$ 311,563,018</u>	<u>\$ 301,435,623</u>	<u>\$ 293,205,237</u>	<u>\$ 288,191,217</u>	<u>\$ 287,957,056</u>	<u>\$ 285,106,208</u>

12-13-18 BOARD Agenda Item 8
Truckee Meadows Water Authority
Schedule No. 2 - Changes in Net Position
Last Ten Fiscal Years

Fiscal Year	Operating Revenues	Operating Expenses	Operating Income	Total Nonoperating Revenues/ (Expenses)	Income/ (Loss) before Capital Contributions	Capital Contributions	Special Item	Change in Net Position
2018	\$101,812,092	\$ 90,311,622	\$ 11,500,470	\$ (11,162,667)	\$ 337,803	\$ 37,410,827	\$ —	\$ 37,748,630
2017	97,268,183	82,339,194	14,928,989	(11,684,303)	3,244,686	43,351,171	—	46,595,857
2016	91,928,943	80,615,507	11,313,436	(9,491,450)	1,821,986	19,286,194		21,108,180
2015*	90,029,316	70,114,860	19,914,456	(23,526,380)	(3,611,924)	19,638,821	231,516,024	247,542,921
2014	84,315,390	59,317,860	24,997,530	(20,386,339)	4,611,191	5,516,204	—	10,127,395
2013	85,577,107	59,619,074	25,958,033	(20,675,251)	5,282,782	2,947,604	—	8,230,386
2012	81,790,499	56,622,273	25,168,226	(19,023,050)	6,145,176	1,109,062	—	7,254,238
2011	76,246,433	55,542,274	20,704,159	(21,802,941)	(1,098,782)	1,332,941	—	234,159
2010	75,667,848	58,388,775	17,279,073	(20,269,550)	(2,990,477)	5,841,325	—	2,850,848
2009	75,013,826	62,216,261	12,797,565	(19,873,120)	(7,075,555)	10,542,981	—	3,467,426

* Fiscal Year 2015 reflects the first year of the water utility consolidation as discussed in Note 1 of the Financial Statements.

12-13-18 BOARD Agenda Item 8
Truckee Meadows Water Authority
Schedule No. 3 - Operating Revenues by Customer Class
Last Ten Fiscal Years

	Fiscal Year			
	2018	2017	2016	2015*
Operating Revenues				
Revenues from water sales				
Residential unmetered water sales	\$ 2,505,160	\$ 2,446,144	\$ 3,725,916	\$ 9,366,307
Residential metered water sales	67,393,330	65,829,635	60,198,267	51,796,871
Commercial metered water sales	12,238,878	11,369,179	11,026,132	11,339,953
Irrigation metered & fire protection	11,878,580	11,887,395	11,554,063	11,123,168
Wholesale sales	1,165,606	1,154,907	1,029,954	2,560,399
Total water sales	95,181,554	92,687,260	87,534,332	86,186,698
Hydroelectric revenue	3,757,043	1,788,934	1,175,195	1,366,786
Other operating revenues	2,873,495	2,791,989	3,219,416	2,475,832
Total operating revenues	<u>\$ 101,812,092</u>	<u>\$ 97,268,183</u>	<u>\$ 91,928,943</u>	<u>\$ 90,029,316</u>

* Fiscal Year 2015 reflects the first year of the water utility consolidation as discussed in Note 1 of the Financial Statements.

12-13-18 BOARD Agenda Item 8
Truckee Meadows Water Authority
Schedule No. 3 - Operating Revenues by Customer Class
Last Ten Fiscal Years

Fiscal Year					
2014	2013	2012	2011	2010	2009
\$ 9,731,811	\$ 10,288,324	\$ 10,899,330	\$ 11,611,351	\$ 13,115,143	\$ 14,216,666
44,137,033	43,957,551	41,476,536	37,636,859	35,962,518	34,646,185
10,755,824	10,885,539	10,473,659	10,214,401	10,112,854	9,812,718
10,720,156	11,031,924	10,129,233	9,007,523	8,894,110	8,716,187
3,845,593	3,748,276	3,473,100	2,938,106	3,136,081	2,833,330.3
79,190,417	79,911,614	76,451,858	71,408,240	71,220,706	70,225,086.3
3,045,147	3,557,965	3,519,897	3,079,158	2,577,660	2769918
2,079,826	2,107,528	1,818,744	1,759,035	1,869,482	2,018,822
<u>\$ 84,315,390</u>	<u>\$ 85,577,107</u>	<u>\$ 81,790,499</u>	<u>\$ 76,246,433</u>	<u>\$ 75,667,848</u>	<u>\$ 75,013,826.3</u>

12-13-18 BOARD Agenda Item 8
Truckee Meadows Water Authority
Schedule No. 4 - Operating Expenses
Last Ten Fiscal Years

	Fiscal Year			
	2018	2017	2016	2015*
Salaries and wages	\$ 18,735,892	\$ 17,257,014	\$ 16,541,811	\$ 13,763,006
Employee benefits	12,919,692	8,931,738	6,364,279	5,271,735
Contract services	8,678,689	6,204,863	7,335,521	6,321,061
Utilities/power	5,322,771	5,201,870	5,386,413	5,449,347.43
Prof services (general/legal/media/leg)	2,905,859	2,258,454	2,512,154	3,132,132.46
Supplies	2,317,853	2,635,229	2,700,906	2,572,698.81
Chemicals	1,605,280	1,984,300	1,803,614	1,554,496.19
Insurance and claims	675,430	719,604	742,006	684,021.23
Leases and rentals	104,243	146,999	96,290	79,639.67
Other expenses	4,225,195	4,829,545	4,998,323	3,387,273.21
Total operating expenses before depreciation	57,490,904	50,169,616	48,481,317	42,215,411
Depreciation	32,820,720	32,169,578	32,134,190	27,899,449
Total Operating Expenses	<u>\$ 90,311,624</u>	<u>\$ 82,339,194</u>	<u>\$ 80,615,507</u>	<u>\$ 70,114,860</u>

* Fiscal Year 2015 reflects the first year of the water utility consolidation as discussed in Note 1 of the Financial Statements.

12-13-18 BOARD Agenda Item 8
Truckee Meadows Water Authority
Schedule No. 4 - Operating Expenses
Last Ten Fiscal Years

Fiscal Year					
2014	2013	2012	2011	2010	2009
\$ 12,007,022	\$ 11,128,162	\$ 11,049,337	\$ 11,180,101	\$ 11,619,701	\$ 11,665,974
5,045,922	4,819,187	4,537,531	4,378,347	4,429,266	4,528,891
4,826,066	4,868,532	5,090,741	5,488,432.36	6,623,575.8	5,848,255
5,189,312	4,571,453	4,432,932	6,639,620.01	7,384,879.38	7,292,830
2,538,097	1,610,614	1,254,751	1,909,575.26	2,751,236	2,755,823
1,736,763	1,522,106	1,155,351	1,112,418.82	1,319,905	1,496,065
1,383,824	1,333,002	1,361,144	1,653,424.13	1,443,176.84	1,231,681
501,300	534,577	608,352	647,983.2	611,404.64	644,638
70,196	74,595.51	84,843.57	69,471.58	124,562.51	—
3,802,687	3,810,819.53	3,645,076.02	3,318,783.64	3,754,602.83	4,310,112
37,101,189	34,273,048	33,220,057	36,398,157	40,062,310	39,774,269
22,517,885	22,349,225	22,322,217	21,990,618	22,153,951	20,817,485
<u>\$ 59,619,074</u>	<u>\$ 56,622,273</u>	<u>\$ 55,542,274</u>	<u>\$ 58,388,775</u>	<u>\$ 62,216,261</u>	<u>\$ 60,591,754</u>

12-13-18 BOARD Agenda Item 8
Truckee Meadows Water Authority
Schedule No. 5 - Nonoperating Revenues and Expenses
Last Ten Fiscal Years

Fiscal Year	Investment Earnings	Interest Expense	Grants	Gain/(Loss) on Disposal of Assets	Other Revenue or Expenses	Total Nonoperating Expenses
2018	\$ 2,313,513	\$ (11,720,356)	\$ —	\$ 133,972	\$ (1,889,796)	\$ (11,162,667)
2017	7,209,113	(16,968,911)	—	(155,722)	(1,768,783)	(11,684,303)
2016	6,737,745	(21,549,864)	—	6,460,373	(1,139,704)	(9,491,450)
2015*	2,127,009	(21,281,117)	—	(653,698)	(3,718,574)	(23,526,380)
2014	2,051,156	(21,282,412)	—	(136,300)	(1,018,783)	(20,386,339)
2013	2,007,375	(21,791,975)	—	(21,463)	(869,188)	(20,675,251)
2012	2,277,298	(21,786,675)	791,773	(611,086)	305,640	(19,023,050)
2011	2,322,169	(22,431,967)	274,837	(4,705)	(1,963,275)	(21,802,941)
2010	1,894,518	(22,291,259)	861,091	8,848	(742,748)	(20,269,550)
2009	\$ 3,635,126	\$ (23,481,043)	\$ 564,277	\$ 3,557	\$ (595,037)	\$ (19,873,120)

* Fiscal Year 2015 reflects the first year of the water utility consolidation as discussed in Note 1 of the Financial Statements.

12-13-18 BOARD Agenda Item 8
Truckee Meadows Water Authority
Schedule No. 6 - Capital Contributions by Source
Last Ten Fiscal Years

Fiscal Year	Developer Water Rights/ Will Serves	Developer Infrastructure	Developer Other	Water Meter Retrofit Program	Developer Facility Charges	From Other Governments	From Others	Total
2018	\$ 6,652,819	\$15,017,446	\$ 6,448,549	\$ 2,379,206	\$ 6,464,559	\$ 348,248	\$ 100,000	\$37,410,827
2017	7,950,666	10,797,854	6,062,247	341,074	5,116,956	1,226,863	11,855,511	43,351,171
2016	4,363,692	8,454,980	2,473,163	482,081	2,931,940	224,138	356,200	19,286,194
2015*	1,864,446	2,703,092	1,588,158	1,013,896	2,494,434	276,260	9,698,535	19,638,821
2014	1,529,129	1,723,023	410,447	479,488	963,660	343,628	66,829	5,516,204
2013	201,871	702,699	469,732	174,698	1,047,715	208,227	142,662	2,947,604
2012	173,599	263,249	153,475	173,094	263,089	—	82,556	1,109,062
2011	125,123	507,970	126,899	170,201	252,748	—	150,000	1,332,941
2010	133,305	4,088,095	184,791	248,618	437,933	—	748,583	5,841,325
2009	\$ (25,229)	\$ 6,905,953	\$ 541,325	\$ 359,297	\$ 773,955	\$ 179,242	\$ 1,808,438	\$10,542,980

* Fiscal Year 2015 reflects the first year of the water utility consolidation as discussed in Note 1 of the Financial Statements.

12-13-18 BOARD Agenda Item 8
Truckee Meadows Water Authority
Schedule No. 7 - Gallons of Water Sold and Revenues by Category
Last Ten Fiscal Years

Category	2018		2017	
	Gallons Sold (000)	Revenue	Gallons Sold (000)	Revenue
Residential-Unmetered (1)	—	\$ 2,505,160	—	\$ 2,446,145
Residential Metered	16,335,308	67,393,330	16,487,693	65,829,634
Commercial	4,232,836	12,238,878	4,277,917	11,887,395
Other (2)	2,698,977	11,878,580	2,749,795	11,369,179
Wholesale	591,624	1,165,606	613,051	1,154,907
Total	<u>23,858,745</u>	<u>\$ 95,181,554</u>	<u>24,128,456</u>	<u>\$ 92,687,260</u>

Category	2016		2015*	
	Gallons Sold (000)	Revenue	Gallons Sold (000)	Revenue
Residential-Unmetered (1)	—	\$ 3,725,916	—	\$ 9,366,307
Residential Metered	14,633,319	60,198,267	15,151,881	51,796,871
Commercial	4,086,057	11,026,132	4,350,417	11,339,953
Other (2)	2,579,408	11,554,063	2,913,757	11,123,168
Wholesale	542,875	1,029,954	1,598,995	2,560,399
Total	<u>21,841,659</u>	<u>\$ 87,534,332</u>	<u>24,015,050</u>	<u>\$ 86,186,698</u>

Category	2014		2013	
	Gallons Sold (000)	Revenue	Gallons Sold (000)	Revenue
Residential-Unmetered (1)	—	\$ 9,731,811	—	\$ 10,288,324
Residential Metered	11,581,326	44,137,033	11,916,455	43,957,551
Commercial	3,913,088	10,755,824	4,083,972	10,885,539
Other (2)	2,688,389	10,720,156	2,816,474	11,031,924
Wholesale	2,070,593	3,845,593	1,982,557	3,748,276
Total	<u>20,253,396</u>	<u>\$ 79,190,417</u>	<u>20,799,458</u>	<u>\$ 79,911,614</u>

Category	2012		2011	
	Gallons Sold (000)	Revenue	Gallons Sold (000)	Revenue
Residential-Unmetered (1)	—	\$ 10,899,330	—	\$ 11,611,351
Residential Metered	11,077,177	41,476,536	10,233,494	37,636,859
Commercial	3,902,183	10,473,659	3,925,081	10,214,401
Other (2)	2,543,132	10,129,233	2,279,226	9,007,523
Wholesale	1,831,821	3,473,100	1,573,720	2,938,106
Total	<u>19,354,313</u>	<u>\$ 76,451,858</u>	<u>18,011,521</u>	<u>\$ 71,408,240</u>

Category	2010		2009	
	Gallons Sold (000)	Revenue	Gallons Sold (000)	Revenue
Residential-Unmetered (1)	—	\$ 13,115,143	—	\$ 14,216,666
Residential Metered	9,940,587	35,962,518	11,319,330	34,646,185
Commercial	4,642,286	10,112,854	3,051,746	9,812,718
Other (2)	1,858,589	8,894,110	3,059,335	8,716,187
Wholesale	1,284,293	3,136,081	1,659,709	2,833,330
Total	<u>17,725,755</u>	<u>\$ 71,220,706</u>	<u>19,090,120</u>	<u>\$ 70,225,086</u>

* Fiscal Year 2015 reflects the first year of the water utility consolidation as discussed in Note 1 of the Financial Statements.

(1) Complete consumption information is not available for unmetered customers.

(2) These accounts include irrigation and non metered fire protection/sprinkler systems located on the premises of residential and commercial customers.

12-13-18 BOARD Agenda Item 8
Truckee Meadows Water Authority
Schedule No. 8 - Ten Largest Customers
June 30, 2018

Customer Name	Water Used (000s Gallons)	Total Revenue	% of Total Water Sales
1 Sun Valley Water	591,624	\$ 1,147,925	1.2%
2 Washoe County School District	322,038	978,645	1.0%
3 City of Reno	243,977	860,300	0.9%
4 Nevada Properties (Peppermill)	174,608	459,093	0.5%
5 City of Sparks	126,148	449,239	0.5%
6 Washoe County	145,433	447,275	0.5%
7 University of Nevada Reno	160,923	407,928	0.4%
8 Somerset HOA	104,502	367,202	0.4%
9 GSR Holdings, LLC	170,290	307,294	0.3%
10 Silver Legacy	91,767	252,242	0.3%
Totals	2,131,310	\$ 5,677,143	6.0%

City of Reno includes the Reno Housing Authority.

12-13-18 BOARD Agenda Item 8
Truckee Meadows Water Authority
Schedule No. 9 - Debt Service Coverage Ratios
Last Ten Fiscal Years

	Fiscal Year (in millions)			
	2018	2017	2016	2015*
Operating revenues ⁽¹⁾	\$ 95,182	\$ 92,687	\$ 87,534	\$ 86,187
Nonoperating revenues ⁽²⁾	8,944	11,790	11,132	5,970
Gross revenues	104,126	104,477	98,666	92,157
Operation and maintenance expenses ⁽³⁾	57,021	50,958	48,030	41,772
Taxes other than income taxes ⁽⁴⁾	470	462	451	443
Total expenses	57,491	51,420	48,481	42,215
Net Revenues	<u>\$ 46,635</u>	<u>\$ 53,057</u>	<u>\$ 50,185</u>	<u>\$ 49,942</u>
Senior Lien Annual Debt Service ⁽⁵⁾	<u>\$ 15,696</u>	<u>\$ 18,916</u>	<u>\$ 31,780</u>	<u>\$ 29,955</u>
Senior Lien Debt Coverage excluding SDCs	<u>2.97</u>	<u>2.80</u>	<u>1.58</u>	<u>1.67</u>
System Development Charges (SDCs):				
Developer facility charges	\$ 6,465	\$ 5,117	\$ 2,932	\$ 2,494
Developer capital contributions - other	6,449	6,062	2,473	1,588
Senior Lien Debt Coverage including SDCs ⁽⁶⁾	<u>3.79</u>	<u>3.40</u>	<u>1.75</u>	<u>1.80</u>

* Fiscal Year 2015 reflects the first year of the water utility consolidation as discussed in Note 1 of the Financial Statements.

⁽¹⁾ Includes retail residential, commercial, irrigation water sales, and wholesale water sales net of bad debt expense.

⁽²⁾ Reflects hydroelectric revenues, other miscellaneous operating revenues from fees and charges, as well as gross investment income.

⁽³⁾ Includes water supply, treatment, distribution, hydroelectric power plant maintenance, customer service, water resource planning, conservation programs, administration, and inspection services. Wages and salaries, employee benefits, and services and supplies comprise these expenses.

⁽⁴⁾ The Authority is required to pay property taxes on water rights and storage facilities located in California. During the reported fiscal years TMWA paid various counties in California for hydroelectric facilities, and water storage rights in California.

⁽⁵⁾ This schedule does not include the payments on the DWSRF loan or the tax-exempt commercial paper, which are subordinate to the 2015-A, 2016, 2017 and 2018 Refunding Bonds.

⁽⁶⁾ TMWA's bond covenants require a minimum coverage of 1.25x total principal and interest payments. In fiscal year 2012, TMWA defeased the remaining 2001-A bonds. This resulted in a one-time increase in the senior lien debt coverage ratio. Without this defeasance, the senior lien debt coverage ratio would be 1.52x. In fiscal year 2017 and 2018, TMWA deferred principal payments on debt which increased the debt coverage ratio.

12-13-18 BOARD Agenda Item 8
Truckee Meadows Water Authority
Schedule No. 9 - Debt Service Coverage Ratios
Last Ten Fiscal Years

Fiscal Year (in millions)					
2014	2013	2012	2011	2010	2009
\$ 79,190	\$ 79,912	\$ 76,452	\$ 71,408	\$ 71,221	\$ 70,225
7,176	7,672	7,643	7,253	6,669	9,197
86,366	87,584	84,095	78,661	77,890	79,422
35,850	36,672	33,851	32,802	35,979	39,646
440	429	422	418	419	416
36,290	37,101	34,273	33,220	36,398	40,062
<u>\$ 50,076</u>	<u>\$ 50,483</u>	<u>\$ 49,822</u>	<u>\$ 45,441</u>	<u>\$ 41,492</u>	<u>\$ 39,360</u>
<u>\$ 31,285</u>	<u>\$ 29,672</u>	<u>\$ 21,295</u>	<u>\$ 31,191</u>	<u>\$ 31,124</u>	<u>\$ 31,420</u>
<u>1.60</u>	<u>1.70</u>	<u>2.34</u>	<u>1.46</u>	<u>1.33</u>	<u>1.25</u>
\$ 964	\$ 1,048	\$ 263	\$ 253	\$ 438	\$ 774
410	470	153	127	185	541
<u>1.64</u>	<u>1.75</u>	<u>2.36</u>	<u>1.47</u>	<u>1.35</u>	<u>1.29</u>

12-13-18 BOARD Agenda Item 8
Truckee Meadows Water Authority
Schedule No. 10 - Schedule of Total Building Permits Issued by Jurisdiction/Member Entity
Last Ten Fiscal Years

Fiscal Year	Washoe County	City of Reno	City of Sparks
2018	4,241	6,096	3,935
2017	2,615	5,399	3,636
2016	2,121	5,144	3,712
2015	1,807	4,792	3,581
2014	1,669	4,316	2,579
2013	1,516	3,214	2,393
2012	1,578	2,917	2,463
2011	1,272	2,919	1,763
2010	1,279	3,030	2,007
2009	1,586	3,592	2,579

Source: As reported by each local governmental entity.

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12-13-18 BOARD Agenda Item 8
Truckee Meadows Water Authority
Schedule No. 11 - Selected Demographic and Economic Statistics for Washoe County
Last Ten Fiscal Years

Fiscal Year	Population (1)	Per Capita Income (2)	Median Age (3)	School Enrollment (4)	Total Personal Income (1)	Unemployment rate (Percent) (5)
2018	467,417	\$ 48	37.9	66,989	\$ 22,550,000	4.2%
2017	459,142	48	37.5	63,919	21,265,000	4.0%
2016	451,248	51	37.5	63,670	20,165,000	5.9%
2015	441,165	48	37.4	63,108	19,077,000	6.4%
2014	436,647	48	37.6	62,986	18,833,000	7.2%
2013	434,120	47	37.6	62,424	18,284,145	9.8%
2012	427,704	45	37.4	62,323	17,849,009	12.3%
2011	421,593	49	37.2	62,324	17,944,975	13.2%
2010	417,379	47	37.0	62,452	17,421,365	13.6%
2009	416,632	\$ 45	36.4	63,310	\$ 18,550,337	11.7%

Sources:

- (1) US Census-Nevada, 2008 - 2012.
Washoe County Community Development, 2013 - 2017.
Washoe County Schedule 4.1, 2018
- (2) U.S. Department of Commerce, 2008.
Washoe County Community Demographic Information 2009 - 2017.
Washoe County Schedule 4.1, 2018
- (3) Center for Regional Studies, University of Nevada, Reno 2009 - 2017.
Washoe County Schedule 4.1, 2018
- (4) Washoe County School District.
Washoe County Schedule 4.1, 2018
- (5) State Department of Employment, Training and Rehabilitation (DETR).
Washoe County Schedule 4.1, 2018
- (6) Washoe County Building and Safety Department.
- (7) Nevada State Department of Taxation.
Washoe County Schedule 4.1, 2018
- (8) Nevada State Gaming Control Board.
Washoe County Schedule 4.1, 2018
- (9) Reno/Tahoe International Airport. (RTIA)
Washoe County Schedule 4.1, 2018

12-13-18 BOARD Agenda Item 8
Truckee Meadows Water Authority
Schedule No. 11 - Selected Demographic and Economic Statistics for Washoe County
Last Ten Fiscal Years

Total Labor Force ⁽⁵⁾	Construction Activity Total Value ⁽⁶⁾	Number of New Family Units ⁽⁶⁾	Taxable Sales ⁽⁷⁾	Gross Income Gaming Revenue ⁽⁸⁾	Total Passenger Air Traffic ⁽⁹⁾
234,378	\$ 563,415,327	501	\$ 8,531,252,745	\$ 779,000,000	4,128,476
232,719	240,534,583	394	7,989,009,111	805,557,000	3,819,896
231,570	231,741,537	320	7,550,466,734	789,359,000	3,563,818
228,430	246,627,580	255	6,817,588,648	765,248,320	3,297,642
222,607	225,096,997	198	6,370,684,534	744,962,250	3,312,839
219,607	126,468,377	159	5,824,726,136	741,038,030	3,514,421
221,764	95,875,949	83	5,522,605,351	738,151,877	3,561,557
212,480	67,721,019	55	5,282,935,192	751,466,957	3,795,421
221,954	55,952,010	35	5,176,981,699	788,545,658	3,777,701
224,089	\$ 85,657,662	103	\$ 5,707,791,051	\$ 867,202,273	3,979,015

Employer	June 30, 2018			June 30, 2009		
	Employees	Rank	Percentage of Total County Employment	Employees	Rank	Percentage of Total County Employment
Washoe County School District	7,750	1	3.31%	8,750	1	4.17%
University of Nevada - Reno	4,750	2	2.03%	4,250	2	2.02%
Renown (Washoe) Medical Center	3,250	3	1.39%	2,250	5	1.07%
Washoe County	2,750	4	1.17%	3,250	3	1.55%
Peppermill Hotel Casino - Reno	2,250	5	0.96%	2,250	6	1.07%
Grand Sierra Resort	2,250	6	0.96%	—	—	—
Silver Legacy Resort Casino	2,250	7	0.75%	1,750	7	0.83%
Atlantis Casino Resort	1,750	8	0.75%	1,750	9	0.83%
International Gaming Technology	1,750	9	0.75%	2,750	4	1.31%
St. Mary's	1,750	10	0.75%	1,750	10	—
City of Reno	—	—	—	1,750	8	0.83%

Total Washoe Covered Employment	<u>234,378</u>	<u>210,082</u>
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Note: Each of the years reflect respective 4th quarter information. Nevada Revised Statute Chapter 612 stipulates that actual employment for individual employers may not be published. The number of employees is estimated using the midpoint.

Source: Nevadaworkforce.com

Nevada Employment and Unemployment Data (DES and Laus)

Washoe County Schedule 4.2

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12-13-18 BOARD Agenda Item 8
Truckee Meadows Water Authority
Schedule No. 13 - Customer and Water Sales by Category
Last Ten Fiscal Years

2018				
Category	Average Number of Accounts	% of Total Accounts	Fiscal Year Water Revenues ⁽¹⁾	% of Total Revenues
Residential-Unmetered	672	0.5%	\$ 2,505,160	2.6%
Residential Metered	111,963	91.3%	67,393,330	70.8%
Commercial	10,038	8.2%	12,238,878	12.9%
Other ⁽²⁾	2	—%	11,878,580	12.5%
Wholesale	2	—%	1,165,606	1.2%
Total	122,677	100.0%	\$ 95,181,554	100.0%

2017				
Category	Average Number of Accounts	% of Total Accounts	Fiscal Year Water Revenues ⁽¹⁾	% of Total Revenues
Residential-Unmetered	695	0.6%	\$ 2,446,144	2.6%
Residential Metered	109,939	91.2%	65,829,635	71.0%
Commercial and Irrigation	9,931	8.2%	11,369,179	12.3%
Other (2)	2	—%	11,887,395	12.8%
Wholesale	2	—%	1,154,907	1.2%
Total	120,569	100.0%	\$ 92,687,260	100.0%

2016				
Category	Average Number of Accounts	% of Total Accounts	Fiscal Year Water Revenues ⁽¹⁾	% of Total Revenues
Residential-Unmetered	2,062	1.7%	\$ 3,725,916	4.3%
Residential Metered	106,730	89.9%	60,198,267	68.8%
Commercial and Irrigation	9,873	8.3%	11,026,132	12.6%
Other (2)	3	—%	11,554,063	13.2%
Wholesale	1	—%	1,029,954	1.2%
Total	118,669	100.0%	\$ 87,534,332	100.0%

2015*				
Category	Average Number of Accounts	% of Total Accounts	Fiscal Year Water Revenues ⁽¹⁾	% of Total Revenues
Residential-Unmetered	6,224	5.2%	\$ 9,366,307	10.9%
Residential Metered	100,446	83.1%	51,796,871	60.1%
Commercial and Irrigation	9,648	8.0%	11,339,953	13.2%
Other (2)	4,528	3.7%	11,123,168	12.9%
Wholesale	2	—%	2,560,399	3.0%
Total	120,848	100.0%	\$ 86,186,698	100.0%

2014				
Category	Average Number of Accounts	% of Total Accounts	Fiscal Year Water Revenues ⁽¹⁾	% of Total Revenues
Residential-Unmetered	6,379	6.7%	\$ 9,731,811	12.3%
Residential Metered	76,422	80.0%	44,137,033	55.7%
Commercial and Irrigation	8,743	9.1%	10,755,824	13.6%
Other (2)	4,008	4.2%	10,720,156	13.5%
Wholesale	2	—%	3,845,593	4.9%
Total	95,554	100.0%	\$ 79,190,417	100.0%

12-13-18 BOARD Agenda Item 8
Truckee Meadows Water Authority
Schedule No. 13 - Customer and Water Sales by Category
Last Ten Fiscal Years

2013				
Category	Average Number of Accounts	% of Total Accounts	Fiscal Year Water Revenues ⁽¹⁾	% of Total Revenues
Residential-Unmetered	6,927	7.3%	\$ 10,288,324	12.9%
Residential Metered	75,113	79.3%	43,957,551	55.0%
Commercial	8,702	9.2%	10,885,539	13.6%
Other ⁽²⁾	3,965	4.2%	11,031,924	13.8%
Wholesale	2	—%	3,748,276	4.7%
Total	94,709	100.0%	\$ 79,911,614	100.0%
2012				
Category	Average Number of Accounts	% of Total Accounts	Fiscal Year Water Revenues ⁽¹⁾	% of Total Revenues
Residential-Unmetered	7,699	8.2%	\$ 10,899,330	14.3%
Residential Metered	73,836	78.3%	41,476,536	54.3%
Commercial and Irrigation	8,695	9.2%	19,245,940	25.2%
Other (2)	4,088	4.3%	1,356,952	1.8%
Wholesale	2	—%	3,473,100	4.5%
Total	94,320	100.0%	\$ 76,451,858	100.0%
2011				
Category	Average Number of Accounts	% of Total Accounts	Fiscal Year Water Revenues ⁽¹⁾	% of Total Revenues
Residential-Unmetered	8,685	9.3%	\$ 11,611,351	16.3%
Residential Metered	72,457	77.3%	37,636,859	52.7%
Commercial and Irrigation	8,564	9.1%	17,921,409	25.1%
Other (2)	4,078	4.3%	1,300,515	1.8%
Wholesale	2	—%	2,938,106	4.1%
Total	93,786	100.0%	\$ 71,408,240	100.0%
2010				
Category	Average Number of Accounts	% of Total Accounts	Fiscal Year Water Revenues ⁽¹⁾	% of Total Revenues
Residential -Unmetered	10,403	11.1%	\$ 13,115,143	18.4%
Residential Metered	70,556	75.6%	35,962,518	50.5%
Commercial and Irrigation	8,465	9.1%	17,872,178	25.1%
Other (2)	3,943	4.2%	1,134,786	1.6%
Wholesale	7	—%	3,136,081	4.4%
Total	93,374	100.0%	\$ 71,220,706	100.0%
2009				
Category	Average Number of Accounts	% of Total Accounts	Fiscal Year Water Revenues ⁽¹⁾	% of Total Revenues
Residential-Unmetered	12,590	13.5%	\$ 14,216,666	20.2%
Residential Metered	68,557	73.4%	34,646,185	49.3%
Commercial and Irrigation	8,397	9.0%	17,573,511	25.0%
Other (2)	3,808	4.1%	955,394	1.4%
Wholesale	7	—%	2,833,330	4.0%
Total	93,359	100.0%	\$ 70,225,086	100.0%

* Fiscal Year 2015 reflects the first year of the water utility consolidation as discussed in Note 1 of the Financial Statements.

⁽¹⁾ Water Revenues are revenues that are billed and estimated for the fiscal year periods. Estimated revenues are revenues for water deliveries just prior to fiscal year end that are unbilled until July of the next fiscal year.

⁽²⁾ Includes non metered private fire protection services located on the premises of commercial and some residential customers.

12-13-18 BOARD Agenda Item 8
Truckee Meadows Water Authority
Schedule No. 14 - Schedule of Insurance Coverage
June 30, 2018

Coverage	Carrier/Policy	Term	Limits/Deductible
Property/Boiler and Machinery Policy	America Home Assurance Company (AIG)	6/11/2017 to 6/11/2019	Blanket limit of \$463,043,811 per occurrence with sub-limits of \$50,000,000 for Earth Movement (excluding CA properties) and \$10,000,000 for flood (excluding Glendale plant). Equipment Breakdown \$100,000,000. Deductibles for flood and earth movement are \$100,000 per occurrence for each location; general policy deductible is \$25,000.
General Liability and Business Automobile Policy	Philadelphia Indemnity Insurance Company	6/11/2017 to 6/11/2018	First \$1,000,000 in liability limits. General Liability Aggregate limit of \$3,000,000 Inland Marine Physical Damage \$834,750. General liability deductible of \$25,000 per occurrence. Auto Physical Damage deductible of \$1,000.
Excess Umbrella Liability Policy	Philadelphia Indemnity Insurance Company	6/11/2017 to 6/11/2018	First Layer Excess Liability limit of \$10,000,000.
	Travelers Insurance Company	6/11/2017 to 6/11/2018	Second Layer Excess Liability Limit of \$10,000,000.
Workers' Compensation	Employer's Insurance Company of Nevada	6/11/2017 to 6/11/2018	Fully insured for statutory limits under Workers' Compensation with no deductible. Policy also provides \$1,000,000 limit for Employer's Liability.
Employee Health Insurance	By contract with the City of Reno's health insurance programs	6/11/2017 to 6/11/2018	Varies by plan selected.
Commercial Crime/ Government Crime	Fidelity & Deposit Company of Maryland	6/11/2017 to 6/11/2018	Employee Theft/Forgery or Alteration Computer Fraud/ Funds Transfer Fraud \$3,000,000 per loss. Employee Theft including expenses, Inside/Outside Premises Money and Securities, Robbery or Safe Burglary, Money Orders, Counterfeit Currency, Credit Card Forgery, Faithful Performance, Telephone Toll \$1,000,000.
	Zurich		Fraudulent Impersonation \$250,000.
Network Security/ Cyber Risk	Ace American Insurance Company	6/11/2017 to 6/11/2018	Network Information, Communications Media, Regulatory Defense, Crisis Management, Security Breach Remediation, Computer Program/Data Restoration, Computer Fraud, E-Commerce Extortion Business Interruption \$3,000,000. Crisis Management Expenses \$1,000,000.
Kidnap and Ransom	National Union Fire Insurance Company	6/11/2017 to 6/11/2019	Ransom, In-Transit Delivery, Expenses, Judgements, Settlements, and Defense \$3,000,000 Death or Dismemberment \$250,000/\$1,250,000 person/event. Disappearance/Threat \$100,000, Hostage Crisis \$500,000

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12-13-18 BOARD Agenda Item 8
Truckee Meadows Water Authority
Schedule No. 15 - Number of Employees by Identifiable Activity
Last Ten Fiscal Years

	Fiscal Year			
	2018	2017	2016	2015*
Administration/IT	28	25	28	22
Supply/Treatment Operations	40	40	32	30
Distribution Maintenance	65	65	63	62
Hydroelectric	7	7	6	6
Customer Service/Conservation	23	25	25	24
Water Planning/Resources	15	17	19	19
Engineering/Construction	28	25	24	23
Total Authorized Employees	<u>206</u>	<u>204</u>	<u>197</u>	<u>186</u>

* Fiscal Year 2015 reflects the first year of the water utility consolidation as discussed in Note 1 of the Financial Statements.

12-13-18 BOARD Agenda Item 8
Truckee Meadows Water Authority
Schedule No. 15 - Number of Employees by Identifiable Activity
Last Ten Fiscal Years

Fiscal Year					
2014	2013	2012	2011	2010	2009
20	18	20	22	22	22
31	26	27	28	28	28
48	45	44	42	45	45
6	7	8	7	5	5
20	26	33	28	41	41
13	15	12	13	14	14
14	15	11	14	15	15
<u>152</u>	<u>152</u>	<u>155</u>	<u>154</u>	<u>170</u>	<u>170</u>

12-13-18 BOARD Agenda Item 8
Truckee Meadows Water Authority
Schedule No. 16 - Current and Historical Water Rates
Last Ten Fiscal Years

Customer Charges by Meter Size	2018			2017			2016		
	TMWA	WC	STMGID	TMWA	WC	STMGID	TMWA	WC	STMGID
3/4"	19.67	18.49	10.07	19.1	17.95	9.77	18.54	17.43	9.49
1"	21.64	23.79	12.32	21.01	23.09	11.96	20.4	22.42	11.61
1 1/2"	24.61	34.02	17.47	23.9	33.03	16.96	23.2	32.07	16.47
2"	28.54	45.36	n/a	27.71	44.04	n/a	26.9	42.76	n/a
3"	32.46	73.04	n/a	31.52	70.92	n/a	30.6	68.85	n/a
4"	37.34	106.98	n/a	36.26	103.87	n/a	35.2	100.84	n/a
6"	43.28	195.05	n/a	42.02	189.37	n/a	40.8	183.85	n/a

Commodity Charge (all meter sizes)

TMWA Tier 1	1.82			1.77			1.72		
TMWA Tier 2	2.95			2.86			2.78		
TMWA Tier 3	3.45			3.35			3.25		
WC Tier 1		2.78			2.7			2.62	
WC Tier 2		3.47			3.37			3.27	
WC Tier 3		4.17			4.05			3.93	
WC Tier 4		5.57			5.41			5.25	
STMGID Tier 1			1.44			1.4			1.36
STMGID Tier 2			1.91			1.85			1.8
STMGID Tier 3			2.34			2.28			2.21
STMGID Tier 4			2.74			2.66			2.58
STMGID Tier 5			2.9			2.81			2.73

Above rates are for metered single family residential service.

Monthly Base Rates (Meter Size)

3/4"	n/a	n/a	47.65	n/a	n/a	46.26	100.63	89.82	44.91
1"	n/a	n/a	47.65	n/a	n/a	46.26	144.9	90.18	44.91
1 1/2"	n/a	n/a	47.65	n/a	n/a	46.26	262.6	92.12	44.91
2"	n/a	n/a	47.65	n/a	n/a	46.26	374.3	93.55	44.91
3"	n/a	n/a	47.65	n/a	n/a	46.26	469.9	94.96	44.91
4"	n/a	n/a	47.65	n/a	n/a	46.26	595.7	99.18	44.91
6"	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

Above rates are for unmetered single family residential service.

TMWA rates took effect on June 11, 2001, and were revised effective May 2009, May 2010, February 2012, February 2014, June 2016, May 2017, and May 2018

* Fiscal Year 2015 reflects the first year of the water utility consolidation as discussed in Note 1 of the Financial Statements.

12-13-18 BOARD Agenda Item 8
Truckee Meadows Water Authority
Schedule No. 16 - Current and Historical Water Rates
Last Ten Fiscal Years

			Fiscal Year					
2015*			2014	2013	2012	2011	2010	2009
TMWA	WC	STMGID						
18.54	17.43	9.49	18.54	17.12	17.12	15.7	15.7	15.7
20.4	22.42	11.61	20.40	18.80	18.80	17.30	17.30	17.30
23.2	32.07	16.47	23.20	21.40	21.40	19.60	19.60	19.60
26.9	42.76	n/a	26.90	24.80	24.80	22.80	22.80	22.80
30.6	68.85	n/a	30.60	28.20	28.20	25.90	25.90	25.90
35.2	100.84	n/a	35.20	32.50	32.50	29.80	29.80	29.80
40.8	183.85	n/a	40.80	37.70	37.70	34.50	34.50	34.50
1.72			1.72	1.72	1.72	1.72	1.72	1.63
2.78			2.78	2.78	2.78	2.78	2.78	2.64
3.25			3.25	3.25	3.25	3.25	3.25	3.05
	2.62							
	3.27							
	3.93							
	5.25							
		1.36						
		1.8						
		2.21						
		2.58						
		2.73						
100.63	89.82	44.91	100.63	94.1	94.1	86.3	86.3	84.2
144.9	90.18	44.91	144.9	135.5	135.5	124.3	124.3	121.2
262.6	92.12	44.91	262.6	245.6	245.6	225.2	225.2	219.8
374.3	93.55	44.91	374.3	350.1	350.1	321.00	321.00	313.2
469.9	94.96	44.91	469.9	439.4	439.4	403.00	403.00	393.2
595.7	99.18	44.91	595.7	557.1	557.1	510.00	510.00	498.5
n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

	Fiscal Year			
	2018	2017	2,016	2015*
Miles of water mains	1986	1961	1940	1915
Number of storage tanks	88	93	93	93
Number of Finished Water Storage	2	2	2	2
Number of pump stations	113	113	121	112
Number of wells	82	81	79	86
Treatment capacity (millions of gallons/day)				
Glendale Plant	34.5	34.5	34.5	37.5
Chalk Bluff	90	90	90	95
Longley Lane	3.6	3.6	3.6	—

* Fiscal Year 2015 reflects the first year of the water utility consolidation as discussed in Note 1 of the Financial Statements.

12-13-18 BOARD Agenda Item 8
Truckee Meadows Water Authority
Schedule No. 17 - Selected Operating and Capital Indicators
Last Ten Fiscal Years

Fiscal Year					
2014	2013	2012	2011	2010	2009
1341	1337	1352	1339	1332	1330
42	42	42	42	42	4
2	2	2	2	2	2
93	94	95	94	96	108
32	32	32	32	32	32
37.5	37.5	37.5	25	25	25
95	95	95	95	95	89

12-13-18 BOARD Agenda Item 8
Truckee Meadows Water Authority
Schedule No. 18 - Schedule of Changes in Debt
Last Ten Fiscal Years

	Final Maturity Date	Authorized	Balance June 30, 2018	Balance June 30, 2017	Balance June 30, 2016
2001 A Water Revenue (Tax Exempt) Bonds 3.70%-5.50%	7/1/2034	\$ 448,810,000	\$ —	\$ —	\$ —
2005 Water Revenue DWSRF (Tax Exempt) Bonds 3.21%	1/1/2025	4,669,565	2,095,861	2,358,926	2,613,744
2005 A Water Revenue (Tax Exempt) Bonds 4.25%-5.00%	7/1/2036	40,000,000	—	—	—
2006 Water Revenue (Tax Exempt) Refunding Bonds 3.50%-4.875%	7/1/2034	150,745,000	—	—	400,000
2007 Water Revenue (Tax Exempt) Refunding Bonds 4.00%-5.00%	7/1/2030	218,975,000	—	—	214,290,000
2009 A Water Revenue DWSRF ARRA (Tax Exempt) Bonds 0%	7/1/2029	2,401,120	1,422,190	1,545,859	1,669,527
2010 Water Revenue (Tax Exempt) Refunding Bonds 5.00%	7/1/2015	28,240,000	—	—	—
2010 A Water Revenue DWSRF (Tax Exempt) Bonds 3.25%	1/1/2030	4,381,614	3,331,595	3,555,353	3,772,013
2014 Water Revenue DWSRF (Tax Exempt) Bonds 2.82%	1/1/2025	9,109,437	6,364,231	7,176,120	7,965,667
2015-A Water Revenue (Tax Exempt) Refunding Bonds 2.00%-5.00%	7/1/2036	28,750,000	27,070,000	27,920,000	28,750,000
2015-B Water Revenue DWSRF (Tax Exempt) Bonds 2.62%	1/1/2035	15,000,000	8,589,045	8,971,562	8,239,034
2016 Water Revenue (Tax Exempt) Refunding Bonds 5.00%	1/1/2025	124,790,000	124,790,000	124,790,000	124,790,000
2017 Water Revenue (Tax Exempt) Refunding Bonds 4.50% -5.00%	1/1/2025	147,415,000	147,415,000	147,415,000	—
2018 Water Revenue (Tax Exempt) Refunding Bonds 5.00%	7/1/2039	38,835,000	38,835,000	—	—
Subtotal			359,912,922	323,732,820	392,489,985
Less unamortized net bond discount (premium)			(52,014,598)	(51,182,862)	(28,441,399)
Total debt before tax exempt commercial paper			411,927,520	374,915,682	420,931,384
Tax-Exempt Commercial Paper		\$ 148,600,000	30,000,000	83,400,000	87,800,000
Total Debt			\$ 441,927,520	\$ 458,315,682	\$ 508,731,384

12-13-18 BOARD Agenda Item 8
Truckee Meadows Water Authority
Schedule No. 18 - Schedule of Changes in Debt
Last Ten Fiscal Years

Balance June 30, 2015	Balance June 30, 2014	Balance June 30, 2013	Balance June 30, 2012	Balance June 30, 2011	Balance June 30, 2010	Balance June 30, 2009
\$ —	\$ —	\$ —	\$ —	\$ 8,810,000	\$ 28,590,000	\$ 66,035,000
2,860,578	3,099,675	3,331,277	3,555,620	3,772,931	3,983,431	4,187,333
890,000	34,795,000	35,620,000	36,415,000	37,180,000	37,920,000	38,635,000
148,415,000	148,785,000	149,140,000	149,485,000	149,815,000	150,135,000	150,445,000
214,800,000	215,285,000	215,745,000	216,185,000	216,605,000	217,005,000	217,385,000
1,793,197	1,916,866	2,040,534	2,164,202	2,282,661	2,309,945	—
9,435,000	19,855,000	28,240,000	28,240,000	28,240,000	28,240,000	—
3,981,798	4,184,928	4,381,614	4,381,614	3,921,904	201,110	—
8,733,487	—	—	—	—	—	—
28,750,000	—	—	—	—	—	—
—	—	—	—	—	—	—
—	—	—	—	—	—	—
—	—	—	—	—	—	—
—	—	—	—	—	—	—
419,659,060	427,921,468	438,498,425	440,426,436	450,627,496	468,384,486	476,687,333
(3,673,290)	(35,590)	(661,198)	(1,286,806)	(3,440,321)	(4,371,510)	(2,267,963)
423,332,350	427,957,058	439,159,623	441,713,242	454,067,817	472,755,996	478,955,296
95,000,000	68,000,000	68,000,000	79,400,000	79,400,000	68,000,000	68,000,000
\$ 518,332,350	\$ 495,957,058	\$ 507,159,623	\$ 521,113,242	\$ 533,467,817	\$ 540,755,996	\$ 546,955,296

	Fiscal Year			
	2018	2017	2016	2015*
Total Debt	\$ 359,912,922	\$ 407,132,820	\$ 480,289,985	\$ 514,659,060
Total Service Connections	120,746	118,348	116,653	114,529
Debt per Service Connection	<u>2,981</u>	<u>3,440</u>	<u>4,117</u>	<u>4,494</u>

Note: Service Connections include residential and commercial connections only. Irrigation, fire protection, and wholesale connections have been excluded.

* Fiscal Year 2015 reflects the first year of the water utility consolidation as discussed in Note 1 of the Financial Statements.

Fiscal Year					
2014	2013	2012	2011	2010	2009
\$ 495,921,468	\$ 506,498,425	\$ 519,826,436	\$ 530,027,496	\$ 536,384,486	\$ 544,687,333
89,070	88,268	87,464	87,013	86,781	86,948
5,568	5,738	5,943	6,091	6,181	6,265

Compliance Section

Truckee Meadows Water Authority

**Independent Auditor's Report on Internal Control over Financial Reporting and on Compliance
and Other Matters Based on an Audit of Financial Statements Performed in Accordance with
*Government Auditing Standards***

To the Board of Directors
Truckee Meadows Water Authority
Reno, Nevada

We have audited, in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of the Truckee Meadows Water Authority (TMWA), as of and for the years ended June 30, 2018 and 2017, and the related notes to the financial statements, which collectively comprise TMWA's basic financial statements, and have issued our report thereon dated November 30, 2018.

Internal Control over Financial Reporting

In planning and performing our audit of the financial statements, we considered TMWA's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinions on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of TMWA's internal control. Accordingly, we do not express an opinion on the effectiveness of TMWA's internal control.

A *deficiency in internal control* exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A *material weakness* is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control over financial reporting was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control over financial reporting that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether TMWA's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the entity's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

A handwritten signature in cursive script that reads "Eide Bailly LLP".

Reno, Nevada
November 30, 2018

Auditor's Comments

To the Board of Directors
Truckee Meadows Water Authority
Reno, Nevada

In connection with our audit of the financial statements of the Truckee Meadows Water Authority (TMWA) as of and for the year ended June 30, 2018, and the related notes to the financial statements, nothing came to our attention that caused us to believe that TMWA failed to comply with the specific requirements of Nevada Revised Statutes cited below. However, our audit was not directed primarily toward obtaining knowledge of such noncompliance. Accordingly, had we performed additional procedures, other matters may have come to our attention regarding TMWA's noncompliance with the requirements of Nevada Revised Statutes cited below, insofar as they relate to accounting matters.

Statute Compliance

The required disclosure on compliance with Nevada Revised Statutes and the Nevada Administrative Code is contained in Note 2 to the financial statements.

Progress on Prior Year Statute Compliance

TMWA conformed to all significant statutory constraints on its financial administration during the year ended June 30, 2017.

Prior Year Recommendations

There were no findings for the year ended June 30, 2017.

Current Year Recommendations

We noted no material weaknesses and reported no significant deficiencies in internal control for the current year.



Reno, Nevada
November 30, 2018



STAFF REPORT

TO: Chairman and Board Members
THRU: Mark Foree, General Manager
FROM: John Zimmerman, Manager, Water Resources
DATE: December 3, 2018
SUBJECT: Discussion and action on establishing a Legislative Subcommittee for the 2019 Legislative Session, appointment of Board members to Subcommittee and establishing the process to review legislative activities

Recommendation

Staff recommends the Board form a legislative subcommittee and establish a process for reviewing bills proposed during the 2019 legislative session.

Discussion

The 2019 legislative session will begin on February 4th (see attached calendar). The timing of TMWA Board meetings may not coincide with legislative activities that may affect TMWA's interests. To monitor the session, the Board since 2007 has formed a 3-member subcommittee consisting of the Chairman, Vice Chairman, and another Board member. Subcommittee meetings are open to the public and scheduled for every Friday of the session unless they are canceled due to lack of items to discuss or act on. Subcommittee members, staff, and TMWA lobbyists attend the meetings to discuss positions on various bills, which allow the subcommittee to direct staff and lobbyists if any action is needed.

Also, beginning February 2019, a standing item on legislative matters will become part of the Board's monthly agenda. At these meetings, staff and TMWA lobbyists will provide the Board with a table summarizing the status of Senate and Assembly bills, along with positions the subcommittee and Board have taken on each bill. TMWA lobbyists will attend the Board meetings to answer questions and provide insight into the legislative intent of particular bills. At times during the session, requests are made to have TMWA attend meetings with legislators or others. In those cases, TMWA staff and lobbyists will communicate with, and receive direction from, the Chairman (or Vice-Chairman if the Chairman is unavailable) regarding the request.

Staff and TMWA lobbyists believe the above-described process has worked well in the past. Subject to Board modification, staff recommends the same procedure and process be implemented for the 2019 session.

NOTE: In the past, the Western Regional Water Commission (WRWC) also formed a legislative subcommittee and held joint meetings with TMWA's subcommittee.



STATE OF NEVADA

2019 LEGISLATIVE SESSION

120-Day Calendar

Date (Day of Session)	Date (Day of Session)	Date (Day of Session)
Feb. 4 (1)	Mar. 16 (41)	Apr. 25 (81)
Feb. 5 (2)	Mar. 17 (42)	Apr. 26 (82)
Feb. 6 (3)	Mar. 18 (43) Legislators' Bill Introductions	Apr. 27 (83)
Feb. 7 (4)	Mar. 19 (44)	Apr. 28 (84)
Feb. 8 (5) <i>Subcommittees Start Meeting Jointly</i>	Mar. 20 (45)	Apr. 29 (85)
Feb. 9 (6)	Mar. 21 (46)	Apr. 30 (86)
Feb. 10 (7)	Mar. 22 (47)	May 1 (87) <i>Economic Forum Report Due</i>
Feb. 11 (8) Legislators' BDR Requests	Mar. 23 (48)	May 2 (88)
Feb. 12 (9)	Mar. 24 (49)	May 3 (89) <i>Start Resolving Budget Differences</i>
Feb. 13 (10)	Mar. 25 (50) Joint Standing Rule No. 14 and Other Remaining Bill Introductions	May 4 (90)
Feb. 14 (11)	Mar. 26 (51)	May 5 (91)
Feb. 15 (12)	Mar. 27 (52)	May 6 (92)
Feb. 16 (13)	Mar. 28 (53)	May 7 (93)
Feb. 17 (14)	Mar. 29 (54)	May 8 (94)
Feb. 18 (15) Joint Standing Rule No. 14 BDR Requests	Mar. 30 (55)	May 9 (95)
Feb. 19 (16)	Mar. 31 (56)	May 10 (96)
Feb. 20 (17)	Apr. 1 (57)	May 11 (97)
Feb. 21 (18)	Apr. 2 (58) <i>Start Closing Budgets</i>	May 12 (98)
Feb. 22 (19)	Apr. 3 (59)	May 13 (99)
Feb. 23 (20)	Apr. 4 (60)	May 14 (100)
Feb. 24 (21)	Apr. 5 (61)	May 15 (101)
Feb. 25 (22) Joint Standing Rule No. 14 BDR Details	Apr. 6 (62)	May 16 (102)
Feb. 26 (23)	Apr. 7 (63)	May 17 (103) Committee Passage (Second House)
Feb. 27 (24)	Apr. 8 (64)	May 18 (104)
Feb. 28 (25)	Apr. 9 (65)	May 19 (105)
Mar. 1 (26)	Apr. 10 (66)	May 20 (106)
Mar. 2 (27)	Apr. 11 (67)	May 21 (107)
Mar. 3 (28)	Apr. 12 (68) Committee Passage (First House)	May 22 (108)
Mar. 4 (29)	Apr. 13 (69)	May 23 (109) <i>Finish Budget Differences</i>
Mar. 5 (30)	Apr. 14 (70)	May 24 (110) Second House Passage
Mar. 6 (31)	Apr. 15 (71)	May 25 (111)
Mar. 7 (32)	Apr. 16 (72)	May 26 (112)
Mar. 8 (33)	Apr. 17 (73)	May 27 (113)
Mar. 9 (34)	Apr. 18 (74)	May 28 (114)
Mar. 10 (35)	Apr. 19 (75)	May 29 (115) <i>Budget Bills Introduced Exempt Bills from Committee</i>
Mar. 11 (36)	Apr. 20 (76)	May 30 (116)
Mar. 12 (37)	Apr. 21 (77)	May 31 (117)
Mar. 13 (38)	Apr. 22 (78)	June 1 (118)
Mar. 14 (39)	Apr. 23 (79) First House Passage	June 2 (119)
Mar. 15 (40)	Apr. 24 (80)	June 3 (120)



STAFF REPORT

TO: Chairman and Board Members
THRU: Mark Foree, General Manager
FROM: John Enloe, Natural Resources Director; John Zimmerman, Water Resources Manager
DATE: December 13, 2018
SUBJECT: **Update regarding recommendation to broaden the purpose of the meter retrofit fee, summary of public outreach regarding the same, and possible direction to staff**

Summary

In June the Board adopted staff and the Standing Advisory Committee's (SAC) recommendation to change the purpose of the meter retrofit fee to support projects that enhance water resource sustainability and drought resiliency. The Board directed staff to analyze whether the current fee amount (\$1,830 per acre-foot) should be changed and to present the proposed rule change to the SAC, Builders Association of Northern Nevada (BANN), and the public through a presentation at TMWA's offices before bringing a formal rule change back to the Board for review and possible adoption.

Staff has analyzed the purposes for which the fee would be used going forward and determined that the fee amount should be decreased to \$1,600 per acre-foot. Staff will present its analysis of the fee amount at the Board meeting. Staff presented the proposed rule change, including the decreased amount, in November to the SAC at its regularly-scheduled meeting, BANN at its builders council luncheon, and to the general public through a workshop at TMWA's offices.

Staff seeks Board input regarding the proposed fee change and direction regarding whether to proceed with a formal rule change to implement it. Based on prior Board direction and SAC input and to provide the Board with an expedient option, staff agendaized the required first reading of the proposed rule change to follow this agenda item. This provides the Board with the flexibility to receive public comments on the rule change and, if desired, hold the required second reading in January and be in a position to implement the rule change at that time.

Public Outreach and Feedback

At the SAC meeting, one member said the fee amount was too high and another said it was too low. The member who said he believed the fee was too low, however, still supported changing the purpose of the fee. At the BANN luncheon, there were 14 people present and staff fielded questions regarding whether the fee change was related to the Tahoe-Reno Industrial Center treated effluent agreement, would benefit sewer customers, and would pay for smart meters. One member requested, and the majority of attendees supported, TMWA making a public statement during the rule change process that growth is paying for growth. Staff accepted this request and said TMWA's policy is growth must pay for itself and that this policy is already included in our community engagement efforts. No one attended the public workshop at TMWA's offices despite staff's efforts to promote it through social media and notices published in the local newspapers and posted at local government offices.¹

Meter Retrofit Fee Background

The meter retrofit fee is required by TMWA Rule 7(H)(3) and was created to satisfy Section 29 of the May 23, 1989 Preliminary Settlement Agreement (PSA), which required TMWA to adopt a plan for financing and installing water meters. The purpose of installing meters was to allow the utility and customers to better-track water usage and promote efficient water use. Under the Rule, applicants for water service (except those relying on domestic well conversion credits issued by the Nevada State Engineer, imported water resources, or groundwater rights for their dedication) must pay \$1,830 per acre-foot of their estimated water demand. TMWA's legal counsel, Gordon DePaoli, has advised staff that TMWA has satisfied the metering requirement set forth in the PSA because nearly all services have been metered, however, there is no provision requiring the fee to automatically terminate when all services have been metered.

Of the 253 services that are not metered, TMWA staff engaged an outside engineering consultant to review the feasibility of retrofitting them as directed by the Board. Based on this study, staff estimates 82 could feasibly be retrofitted and that 50% of those services are likely to request to be metered in the next 10 years. The total cost to retrofit all of the feasible services would be approximately \$6M based on TMWA's preliminary engineering cost estimate. The fund balance as of November 30, 2018 was \$5.5M so there will be enough to meter most of the feasible services if they request to be retrofitted. Since 2016, there have been only three retrofits. Staff continues to analyze the use of existing funds for meter retrofits and other meter-related expenses and intends to provide a report to the Board at a future meeting.

Proposed New Use of Fee

Under the proposed new use, the fee could be used to support projects such as expanded conjunctive use, aquifer storage and recovery, demonstration and validation of exceptional

¹ Announcement posted on TMWA's website Oct. 29 through Nov. 8. Twitter, Facebook, and Google Plus mentions on Oct. 29 and Nov. 2. Written notices were also posted on the State of Nevada's public notice website; published in the Reno Gazette-Journal and Sparks Tribune; and posted at Reno City Hall, Sparks City Hall, Sparks Justice Court, Washoe County Clerk's Office, Washoe County Central Library, and Washoe County Administration Building.

quality reclaimed water uses, future water resource identification and acquisition, and other projects that enhance water resource sustainability and drought resiliency. Similar to metering, these projects promote efficient water use and will lead to increased drought resiliency and water resource sustainability. The following are projects in TMWA's Fiscal Year 2019 – 2023 Capital Improvement Plan (CIP), which are the type of projects that could be eligible for funding: Donner Lake Outlet Improvements (Phase 2), Bedell Flat Water Bank, Indirect Potable Reuse, NDEP Monitoring Wells, Wellhead TTHM mitigation and Spring Creek Well 7 Recharge Main. A substantial portion of these projects is presently funded by Customer Rates; however, it is appropriate to allocate a portion of these project costs to Development, as growth places an added burden and operational stress on the overall water system. Consistent with TMWA's practice for these types of projects, a 50/50 cost allocation between Customer Rates and Development has been used to calculate the \$1,600 per acre-foot fee. Staff would report to the Board annually regarding the fund balance and the status of projects that have received monies from the fund. Attached is a redlined version of TMWA's current Rule 7 that shows the proposed revisions necessary to change the Water Meter Retrofit Fee.

Recommendation

Staff recommends the Board approve the above-described changes to the meter retrofit fee and proceed with the required first reading in December and second reading in January.

Truckee Meadows Water Authority

RULE 7

REQUIREMENTS FOR WILL-SERVE COMMITMENT LETTERS

2. Fees for Issuance of Will-Serve Commitment letter. In addition to any other fees in this Rule, Applicants shall pay fees provided in Rate Schedule BSF to prepare the documents necessary to issue each Will-Serve Commitment letter.
3. Water ~~Resource SustainabilityMeter-Retrofit~~ Fund Fees. Applicants for New or Modified Service within the TMRA relying on any water right other than the conversion of domestic well, imported water sources or groundwater rights for a Will-Serve Commitment letter will pay to the Authority's water ~~resource sustainabilitymeter-retrofit~~ fund the sum of \$1,600830.00 per AF of Demand related to the new Service or Modified Service and to Deficit Demand prior to the issuance of the Will-Serve Commitment letter. Funds collected under this fee must be used for projects that improve the Authority's drought resiliency and water resource sustainability.
4. The Applicant is responsible for delivery of the Authority-issued Will-Serve Commitment letter and accompanying documentation to appropriate government entities.
5. Banking Water Rights. The Authority may, in its sole discretion, allow any Person to bank water rights with the Authority for future use by any Person. In the event an individual, any joint venture, partnership, corporation or other entity desires to dedicate water rights to the Authority for the Authority to hold or bank for the future use by the Applicant, or Applicant's designated successor, for a Will-Serve Commitment letter, the Applicant, or Applicant's designated successor, will pay applicable fees set forth in this Section and execute a banking agreement with the Authority. The Applicant, or Applicant's designated successor, shall be billed by the Authority for any fees such as Extension of Time associated with maintaining banked water rights in good standing with the Nevada Division of Water Resources.
6. Issuance of Will-Serve Commitment Letter After Dedication of Water Rights. After the Applicant has satisfied the requirements of Section F and paid the fees under Section H, and the Authority has accepted the Dedicated Water Resource, the Authority shall:
 - a. Prepare the necessary documentation to deed the Dedicated Water Resource to the Authority or Local Government;
 - b. Record such deed at the County Recorder; and
 - c. Upon execution of such deed and acceptance of the Dedicated Water Resource by the Authority, issue a Will-Serve Commitment letter to the Applicant for new Service or Modified Service at the location requested by Applicant.



STAFF REPORT

TO: Board of Directors
THRU: Mark Foree, General Manager
FROM: John Zimmerman, Water Resources Manager
John Enloe, Natural Resources Director
DATE: December 13, 2018
SUBJECT: **Rate Amendment, Introduction: Introduction and first reading of amendments to Rule 7 regarding modification of the purpose and amount of the Meter Retrofit Fee**

RECOMMENDATION

Staff recommends the Board refer to a second reading of the proposed amendment to Rule 7 as shown in Exhibit A. The rate amendment would change the fee purpose to support projects such as expanded conjunctive use, aquifer storage and recovery, demonstration and validation of exceptional quality reclaimed water uses, future water resource identification and acquisition, and other projects that enhance water resource sustainability and drought resiliency. The proposed amendment would also reduce the cost to applicants for new or expanded service from \$1,830 to \$1,600 per acre-foot (AF) of demand. The second reading of this proposal is tentatively scheduled for the Board's January 16, 2019 meeting.

DISCUSSION

At the June 2018 meeting, the Board adopted staff and the Standing Advisory Committee's (SAC) recommendation to change the purpose of the meter retrofit fee to support projects that enhance water resource sustainability and drought resiliency. The Board directed staff to analyze whether the current fee amount (\$1,830 per acre-foot) should be changed and to present the proposed rule change to the SAC, Builders Association of Northern Nevada (BANN), and the public through a presentation at TMWA's offices before bringing a formal rule change back to the Board for review and possible adoption.

Staff analyzed the current fee amount of \$1,830 per AF and determined the fee amount should be decreased to \$1,600 per AF, conducted an Open House on November 8, 2018 (zero attendees, despite multiple notifications), and presented to the SAC on November 6, 2018 and BANN at their luncheon (14 attendees) on November 14, 2018.

Truckee Meadows Water Authority

RULE 7

REQUIREMENTS FOR WILL-SERVE COMMITMENT LETTERS

2. Fees for Issuance of Will-Serve Commitment letter. In addition to any other fees in this Rule, Applicants shall pay fees provided in Rate Schedule BSF to prepare the documents necessary to issue each Will-Serve Commitment letter.
3. Water ~~Resource SustainabilityMeter-Retrofit~~ Fund Fees. Applicants for New or Modified Service within the TMRA relying on any water right other than the conversion of domestic well, imported water sources or groundwater rights for a Will-Serve Commitment letter will pay to the Authority's water ~~resource sustainabilitymeter-retrofit~~ fund the sum of \$1,600830.00 per AF of Demand related to the new Service or Modified Service and to Deficit Demand prior to the issuance of the Will-Serve Commitment letter. Funds collected under this fee must be used for projects that improve the Authority's drought resiliency and water resource sustainability.
4. The Applicant is responsible for delivery of the Authority-issued Will-Serve Commitment letter and accompanying documentation to appropriate government entities.
5. Banking Water Rights. The Authority may, in its sole discretion, allow any Person to bank water rights with the Authority for future use by any Person. In the event an individual, any joint venture, partnership, corporation or other entity desires to dedicate water rights to the Authority for the Authority to hold or bank for the future use by the Applicant, or Applicant's designated successor, for a Will-Serve Commitment letter, the Applicant, or Applicant's designated successor, will pay applicable fees set forth in this Section and execute a banking agreement with the Authority. The Applicant, or Applicant's designated successor, shall be billed by the Authority for any fees such as Extension of Time associated with maintaining banked water rights in good standing with the Nevada Division of Water Resources.
6. Issuance of Will-Serve Commitment Letter After Dedication of Water Rights. After the Applicant has satisfied the requirements of Section F and paid the fees under Section H, and the Authority has accepted the Dedicated Water Resource, the Authority shall:
 - a. Prepare the necessary documentation to deed the Dedicated Water Resource to the Authority or Local Government;
 - b. Record such deed at the County Recorder; and
 - c. Upon execution of such deed and acceptance of the Dedicated Water Resource by the Authority, issue a Will-Serve Commitment letter to the Applicant for new Service or Modified Service at the location requested by Applicant.



STAFF REPORT

TO: Chairman and Board Members
THRU: Mark Foree, General Manager
FROM: John Enloe, Natural Resources Director, John Zimmerman, Water Resources Manager
DATE: December 7, 2018
SUBJECT: Discussion and action, and possible direction to staff regarding the status of acquisition of the West Reno Water System and Due Diligence objections and cure activities, and possible authorization to General Manager to terminate or amend Acquisition Agreement and/or proceed with closing

SUMMARY

Staff is working on an amendment to the Acquisition Agreement with West Reno based on several significant changes since the October Board meeting. These changes were caused mainly by Reno Land Development Company, LLC's reversal of its prior verbal commitments to fix a majority of the water system deficiencies before closing. Shortly after the October Board meeting, Reno Land changed course and requested TMWA add the estimated cost of fixing those deficiencies (\$897,500) to the future well and tank improvement total cost (\$2.7M), which TMWA agreed to recover through connection fees applicable to the Meridian 120 North and South developments. Staff did not accept Reno Land's proposal because it is contrary to the Acquisition Agreement with West Reno and Reno Land's prior commitments. Staff, however, has been attempting to work with the parties to reach an agreement. Staff extended the due diligence deadline to December 14th to provide additional time to resolve the issues and to preserve TMWA's right to terminate the Agreement in its sole discretion and without cause. As of the date of this report, staff is working with West Reno on an amendment (attached) that would require it, pre-closing, to (1) complete certain improvements to the Boomtown hotel/casino waterlines, (2) line the stormwater detention basin next to well 10 to protect water quality, and (3) pay into escrow \$757,500, which is the amount needed to pay for the remainder of the system deficiencies identified by staff in due diligence.¹ West Reno indicated to staff that it would recoup a portion of the \$757,500 from Reno Land through its own connection fees. The form of the attached draft amendment has been approved by West Reno, but its representatives have told staff they will not sign the amendment unless they reach an agreement with Reno Land

¹ The total estimated cost of fixing the deficiencies is \$1,107,500, less \$210,000 for the hotel/casino improvements and \$140,000 for the detention basin lining. The \$757,500 and \$140,000 equal the amount Reno Land wanted to add to the connection fees and have TMWA complete post-closing.

on recovering the costs through secondary connection fees and Reno Land agreeing to complete the detention basin liner before closing.

The amendment would also extend the closing date to January 31, 2019 and the outside closing date to February 27, 2019. This is needed because the ancillary agreements TMWA has negotiated with St. John Properties and Reno Land have not been finalized and will need to be revised if West Reno agrees to the amendment. Also, more time is needed because staff has not received final comments from all parties on the closing documents, the parcel maps have not yet been approved, and West Reno and Reno Land have not started to line the detention basin. If Reno Land does not reach an agreement with West Reno and the amendment is not signed by the Board meeting, then staff recommends the Board authorize the General Manager to terminate the Acquisition Agreement effective immediately.

Additionally, West Reno has advised staff it is pursuing the necessary authorizations from the Nevada Public Utilities Commission (PUC) and Nevada Division of Environmental Protection (NDEP) to become a regulated public utility and community water system. These authorizations are needed because West Reno has committed to Bates Stringer-Reno to provide water service to its Meridian 120 North residential development. Bates Stringer-Reno has advised staff that the City of Reno will not issue more than 10 certificates of occupancy to Bates until West Reno obtains the above authorizations. To obtain an NDEP permit, West Reno needs a “local governing body” to agree to assume the responsibilities of operating the system if West Reno were to default on its obligations to operate the system for its customers. West Reno asked TMWA to agree to assume that obligation, however, TMWA does not meet the definition of a “local governing body” under NAC 445A.597, and therefore, staff did not consider it an option for Board review. As requested by West Reno, however, the amendment includes language to the effect that TMWA will be open to considering an agreement with the City of Reno to operate the West Reno system for the City if it agrees to assume the responsibilities of operating the system in the event of a default. The amendment is clear that any such agreement with the City will only occur on terms and conditions agreeable to the TMWA Board in its discretion.

Lastly, based on Board member questions about TMWA’s legal fees in this transaction and direction that existing customers should not pay any cost of it, staff included those fees (estimated to be approximately \$100,000 by closing) as part of the connection fee. West Reno objected to including TMWA’s legal fees because they were not included in the Acquisition Agreement, however, TMWA staff advised West Reno that TMWA has already agreed to release West Reno from nearly \$240,000 of up front modifications identified in due diligence by shifting those costs to future development and waiting for future development to occur before requiring other improvements to be completed. Further, staff and Michael Pagni took the laboring oar to draft nearly all of the closing documents, coordinate with all landowners (including Bates Stringer-Reno, Cabela’s, and Dermody), and facilitate communications between West Reno and several other entities such as Steamboat Ditch Company and the Nevada Department of Transportation on several authorizations that it was lacking. These issues, along with Reno Land’s reversal regarding completing any pre-closing requirements, have led to higher than anticipated transaction costs for TMWA.

UPDATED DUE DILIGENCE FINDINGS AND PRE-CLOSING REQUIREMENTS

The only new significant item is Washoe County Health District (WCHD) issued a water quality violation to West Reno for failing to have backflow prevention testing records and a written cross-connection control program. Under the amendment, West Reno will be required to correct the violation pre-closing and satisfy any reporting requirements to its customers so that the violation would not be on TMWA's record.

Below is an update on the items described in previous staff reports.

1. Tank Improvements

West Reno has notified staff that the deficiencies associated with the existing tank have been or will be completed prior to closing and staff will confirm with NDEP and WCHD.

2. Land and Access Road for Tanks

Staff is working with Reno Land to create a separate parcel for land around the tanks and an access easement to be granted to TMWA at closing. The land is currently owned by BT South and all water facility easements are created and governed by the existing CC&Rs. The parcel map is out for review by the local agencies and utilities.

3. TMWA must obtain written confirmation from the WCHD and NDEP that they will not require TMWA to extend the sanitary seal of a few of the wells from 50 ft. to 100 ft.

NDEP has provided a letter confirming that it approves TMWA's proposed well improvements, West Reno's wells can be "grandfathered" under state regulations, and it will not require TMWA to reconstruct the wells to make them comply with current well construction standards. WCHD confirmed in writing that it concurs with NDEP's letter.

4. WCHD and NDEP must confirm that West Reno is in full compliance with all of their requirements and any violations have been cured.

NDEP's letter outlines the specific deficiencies that must be addressed as a result of it and WCHD's sanitary survey inspection. TMWA is monitoring West Reno's responses to the deficiencies and will require final approval by NDEP and WCHD as a condition of closing.

5. West Reno must be in compliance with all water quality sampling and reporting requirements without any pending or issued violations.

Because TMWA would eventually connect the West Reno system to TMWA's system, staff tested the water from all five production wells to determine whether it would meet the drinking water standards that would apply in that scenario. The test results show that the water would meet current drinking water standards and did not exceed any maximum contaminant levels (MCLs).

Staff also monitored West Reno's NDEP-required water quality sampling and reporting and has confirmed that West Reno has complied with all sampling and reporting requirements and there are no current or reasonably foreseeable water quality violations.

6. *The stormwater detention basin next to well 10 must be lined to minimize the risk of groundwater quality degradation in the future.*

No construction has started to line the detention basin. Staff strongly recommends this be done prior to closing and have kept it as a pre-closing requirement. Accordingly, West Reno and/or Reno Land must complete the liner according to TMWA's requirements and, as required by NDEP in its response to item 3 above, the liner must also be reviewed and approved by WCHD.

7. *The land TMWA requires around well 10 must be parceled and leveled to allow reasonable access for operation, maintenance, and repair purposes.*

Staff is working with Bates-Stringer and Reno Land to parcel the property for well 10, deannex it from Bates-Stringer's residential subdivision CC&Rs, and grade and fence it to TMWA's satisfaction. Reno Land's engineering consultant has received comments from the City of Reno on the parcel map and is working to address them.

8. *DP Clark must agree to convey land to TMWA for a booster pump station.*

DP Clark has notified staff that they have approved the location of the future booster pump station and will work with staff to obtain approval from its lender to unencumber the property and deannex it from DP Clark's CC&Rs.

9. *West Reno must obtain all necessary approvals from Steamboat Ditch Company for all facilities (two waterlines, two tank drain lines, and a tank access road bridge crossing).*

West Reno and Reno Land have initiated the process to obtain the necessary Ditch Company approvals. Staff is working with the parties and the Ditch Company to ensure that any improvements required to obtain the necessary approvals are satisfactory to TMWA and do not increase the cost of operating or maintaining the water system.

10. *SJP, BCH, or West Reno must agree to complete pre-closing, or reimburse TMWA for the cost of completing post-closing, certain improvements related to existing water facilities within the Boomtown development.*

The proposed amendment would require West Reno to complete these improvements before closing. TMWA has been working with West Reno to make sure the design and construction meets TMWA's standards and does not increase the cost to operate and maintain the water system.

ACQUISITION AND ANCILLARY AGREEMENTS

Since the October Board meeting the draft ancillary agreements have not changed. The Board tentatively approved these agreements and authorized the General Manager to make changes that do not increase TMWA's obligations. Staff anticipates that these agreements will be revised based on the above-described issues and intends to present the final versions to the Board for review and approval.

TMWA FUTURE SURFACE WATER CONNECTION

Staff is still working to secure a signed agreement with the River Oak Homeowners Association and Riverbelle Properties, LLC to grant the necessary access easements to TMWA to connect the West Reno water system to TMWA's system. Reno Land also needs to grant TMWA an easement across its property and has agreed to do so. At this time, staff does not anticipate any issue with securing the necessary agreements. TMWA also needs access authorization from the Union Pacific Railroad Company, which process could take a year or more to obtain. Lastly, as stated above, TMWA needs property and an access easement from DP Clark for a future booster pump station. DP Clark has indicated it is willing to convey the property and grant an easement and staff is working with it to obtain the necessary agreements.

RECOMMENDATIONS

Staff seeks Board input regarding the amendment and authorization for the General Manager to sign it, if West Reno has signed it, or, if West Reno has not signed it, terminate the Agreement. If West Reno signs the amendment by December 13 and the Board directs staff to proceed with the transaction, then staff will work to satisfy all necessary closing requirements and seek Board approval of the final ancillary agreements and authorization to close at a future Board meeting.

**THIRD AMENDMENT TO
AGREEMENT FOR WATER SYSTEM ACQUISITION**

THIS THIRD AMENDMENT TO AGREEMENT FOR WATER SYSTEM ACQUISITION (this “Agreement”), is dated as of the date last executed by the Parties below (the “Effective Date”), and is entered into by and among WEST RENO WATER COMPANY, INC. a Maryland corporation (“West Reno”), and TRUCKEE MEADOWS WATER AUTHORITY, a joint powers authority created pursuant to NRS Chapter 277 by the Cities of Reno and Sparks, and Washoe County (“TMWA”). West Reno and TMWA may be referred to herein individually as a “Party” and collectively as the “Parties”.

RECITALS

WHEREAS, TMWA and West Reno entered into that certain Agreement for Water System Acquisition dated June 20, 2018, as amended by that certain First Amendment to Agreement for Water System Acquisition dated October 15, 2018 and that Second Amendment to Agreement for Water System Acquisition dated November 19, 2018 (the “Agreement”), in connection with the purchase and sale of certain assets in a retail water delivery system as defined in the Agreement.

WHEREAS, the BCH Agreement and all transactions contemplated thereunder were consummated and closed prior to the Effective Date.

WHEREAS, TMWA has conducted due diligence and has identified a number of issues with the condition of the Assets and water delivery system to which TMWA has objected, which issues TMWA requires be cured as a condition of proceeding with Closing.

WHEREAS, TMWA has estimated the cost of the facility improvements necessary to address these Due Diligence items exceeds \$2,782,500, only a portion of which costs TMWA is willing to collect through connection fees on future development as summarized in Exhibit “A” attached hereto, and that additional time will be required to address certain conditions of Closing.

WHEREAS, the parties desire to amend the Agreement to provide for the cure or mitigation of various issues discovered by TMWA during the Due Diligence Period, including allocation of cost responsibilities, to memorialize agreements between the parties on other items required to be resolved during the Due Diligence Period, to revise the closing conditions and closing deliveries and to extend the Closing Date on the terms and conditions as set forth herein.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties agree as follows:

1. Capitalized and Conflicting Terms; Continued Effect; Captions. Capitalized terms not otherwise defined in this Amendment shall have the meanings ascribed to them in the Agreement. To the extent the provisions of this Amendment conflict with any of the terms and conditions of the Agreement the provisions of this Amendment shall control. The parties acknowledge and agree that, except as specifically modified hereby, each of the terms and conditions of the Agreement shall remain in full force and effect and are enforceable in accordance with its respective terms.

2. Defined terms. Section 1 of the Agreement is hereby amended by adding the following defined terms:

1.50 “TMWA Post-Closing Improvements” shall mean the West Reno System Modifications, excluding the West Reno Pre-Closing Improvements and the permanent tank access road bridge replacement described in Schedule 5.8.6.

1.51 “West Reno Pre-Closing Improvements” shall mean that portion of the West Reno System Modifications described as items #1, 2, 6 through 12, 29 through 31, 34 and 35 in Schedule 5.8.6.

1.52 “West Reno System Modifications” shall mean the modifications to the Water Facilities, Private Water Facilities, and Private Fire Service Laterals described in Schedule 5.8.6.

1.53 “Treatment Technique Violation” means the treatment technique violation issued to West Reno by Washoe County Health District on or about October 30, 2018.

3. Due Diligence Objections/West Reno Distribution System Modifications. TMWA has identified and objected to a number of conditions with the West Reno facilities which do not comply with TMWA water system standards, more particularly described in Schedule 5.8.6 attached hereto. To address these due diligence objections, the Agreement is hereby amended by adding a new Section 5.8.6 and Schedule 5.8.6 as follows:

5.8.6 West Reno System Modifications. As a result of its Due Diligence inspections, TMWA is requiring performance of the West Reno System Modifications. The West Reno System Modifications shall be performed as follows:

(a) TMWA Post-Closing Improvements. TMWA shall be responsible for performing the TMWA Post Closing Improvements at TMWA’s cost. To the extent the actual cost incurred by TMWA to complete the West Reno System Modifications exceeds \$757,500, such amount shall be added to and included in the connection fees referenced in Section 5.17.

(b) West Reno Pre-Closing Improvements. No later than five (5) days prior to the Closing Date, West Reno shall, at its sole cost and expense, cure the Treatment Technique Violation issued by Washoe County Health District on or about October 30, 2018, publish and distribute the 2018 Water Quality Report (aka Consumer confidence report) to West Reno customers in accordance with EPA requirements (and to the extent required by law), provide TMWA with written notice from Washoe County Health District confirming that the Treatment Technique violation has been fully resolved, and complete and/or satisfy the West Reno Pre-Closing Improvements in accordance with TMWA construction standards. TMWA shall have the right to inspect and approve the completion of the West Reno Pre-Closing Improvements, which West Reno Pre-Closing Improvements must be completed, in service and approved by TMWA no later than five (5) days before the Closing Date. Failure of West Reno to complete the West Reno Pre-Closing Improvements shall constitute a default by West Reno and any such failure shall entitle TMWA to terminate this Agreement.

Notwithstanding the foregoing, it shall be the responsibility of any applicant for water service seeking new or modified service to property located south of Interstate 80 to complete the Tank Access road bridge replacement work described in Section 5.8.6, and TMWA shall have no obligation to provide water service to any property located south of Interstate 80 unless and until the Tank Access road bridge is replaced as

described in Section 5.8.6.

4. Closing Date and Outside Closing Date. Section 3.2 of the Agreement is hereby amended and restated in its entirety as follows:

3.2 Closing Date. Escrow shall close on or before the date (the "Closing Date") which is the later of: i) January 31, 2019; ii) fifteen (15) days after Final Governmental Approval of the BLA/Parcel Map(s), except as otherwise provided in Section 5.10; iii) fifteen (15) days after receipt of all necessary Lender Consents and Owner Consents; or iv) five (5) days after the completion of the West Reno Pre-Closing Improvements. In no event will the Closing occur later than February 27, 2019 (the "Outside Closing Date"). If Close of Escrow has not occurred by the Outside Closing Date, this Agreement shall automatically terminate and neither party shall have any rights or obligations hereunder (except such obligations that survive termination of the Agreement according to its terms). For purposes of this Agreement, the term "Close of Escrow" shall mean the time when Escrow Holder shall have recorded all of the instruments to be recorded with respect to the closing on the Assets.

5. Purchase Price. For and in consideration of TMWA performing the TMWA Post-Closing Improvements as set forth in this Amendment, the Purchase Price is hereby reduced and Section 2.2 of the Agreement is hereby amended and restated in its entirety as follows:

2.2 Purchase Price. The purchase price for the Assets ("Purchase Price") shall be Thirty Five Thousand Eight Hundred Thirty Five Dollars (\$35,835.00).

6. RLD Agreement. Section 5.17 of the Agreement is hereby amended and restated in its entirety as follows:

5.17 RLD Agreement. West Reno shall cooperate with TMWA in securing an agreement between TMWA, RLD and BT South, LLC ("RLD Agreement"), in such form to be agreed upon by TMWA in its sole discretion prior to the Closing Date, pursuant to which: i) RLD and BT South, LLC shall be obligated to convey to TMWA at the Closing all right, title and interest each may have in any Water Resources and/or Assets; ii) RLD and BT South LLC agree all water service to property owned by either of them shall be governed solely by TMWA Rules, unless otherwise agreed in writing by TMWA; iii) RLD and BT South LLC, if applicable, agree to terminate the CC&R's as set forth in Section 5.14; iv) BT South LLC agrees to enter the Annexation Agreements; v) RLD and/or BT South agree that it shall be the responsibility of any applicant for water service seeking new or modified service to property located south of Interstate 80 to complete the Tank Access road bridge replacement work described in Section 5.8.6, and TMWA shall have no obligation to provide water service to any property located south of Interstate 80 unless and until the Tank Access road bridge is replaced as described in Section 5.8.6; vi) RLD and/or BT South shall be required to pay TMWA at least \$2,668,335 in connection fees with respect to certain specified development within the WR Service Area; vii) a secondary connection fee payable to West Reno in connection with specified development within the WR Service Area, in such amount and on such terms agreeable to TMWA, West Reno and BT South; and viii) such other terms and conditions reasonably necessary in TMWA's discretion to effectuate the transaction contemplated by this Agreement.

7. West Reno PUC Application. A new section 2.4 is hereby added to the Agreement as follows:

2.4 West Reno Pending PUC and NDEP Applications. West Reno has filed and is pursuing an application for a certificate of public convenience ("PUC and NDEP Applications") with the Nevada

Public Utilities Commission (“PUC”) and an application with the Nevada Division of Environmental Protection (“NDEP”) seeking a permit to operate the West Reno water system as a community water system in the event the transactions contemplated by this Agreement are not consummated. West Reno shall be solely responsible for all costs related to the PUC and NDEP Applications. Notwithstanding the transactions contemplated in this Agreement, West Reno is requesting the City of Reno take appropriate action prior to the Closing to assume the responsibilities pursuant to NRS 445A.895(4) and NAC 445A.608 as the “local governing body” in support of the PUC and NDEP Applications so that the PUC and NDEP Applications may continue to be processed by West Reno. To provide reasonable assurance of its desire to consummate this transaction and facilitate TMWA’s acceptance of Due Diligence, within three (3) business days after the City of Reno agrees to act as the local governing body on the PUC and NDEP Applications, West Reno shall deposit into an escrow the sum of \$757,500 as an earnest money deposit (“Deposit”). The Deposit shall be returned to West Reno on the Closing or, if the Closing fails to occur for any reason, shall remain in Escrow and shall i) be paid to the City of Reno if the City is required to assume operations of the Water System under NAC 445A.895; or ii) paid to West Reno upon the date West Reno secures a certificate of public convenience from the PUC.

Upon execution of this Third Amendment TMWA will consider contracting with the City of Reno to operate the Water System on behalf of the City of Reno in the event that the City of Reno assumes responsibility pursuant to NRS 445A.895(4) and NAC 445A.608. TMWA’s operation of the Water System in event the City of Reno assumes control of the system pursuant to NRS Chapter 445A would be pursuant to a written agreement between TMWA and the City of Reno on terms acceptable to TMWA in the discretion of the TMWA Board.

8. Schedule Amendments. Schedules 1.46 and 1.48 of the Agreement are hereby amended and restated in their entirety as set forth in the revised schedules attached to this Amendment.

9. Conditions Precedent. Section 8 of the Agreement is hereby amended and restated in its entirety as follows:

8. CONDITIONS PRECEDENT. The following shall be conditions precedent to the Closing for the benefit of TMWA, all of which must be satisfied, or waived in writing by TMWA, as the case may be, prior to Closing:

8.1 No Breach or Default. As of the Closing Date and at all times prior thereto, there shall be no material breach or default by West Reno of any of its covenants, obligations or responsibilities under this Agreement.

8.2 Status of Representations and Warranties. As of the Closing Date, all of West Reno’s representations and warranties set forth in this Agreement shall be true and correct.

8.3 PUC Approval. To the extent required by applicable law, the Nevada PUC has approved the consummation of the purchase on the terms set forth in this Agreement or such other terms acceptable to TMWA in its sole and absolute discretion.

8.4 County Health Approval. To the extent required by applicable law, the Washoe County Health District has approved the consummation of the purchase on the terms set forth in this Agreement or such other terms acceptable to TMWA in its sole and absolute discretion.

8.5 Title Policy. Title Company is prepared to issue an ALTA standard policy of title insurance to TMWA for the Tank Site, Well 10 parcel (on the Bates-Stringer property), and BPS

Parcel (on the DP Clark Garson property).

8.6 BLA or Parcel Map(s). The City of Reno has approved the BLA or Parcel Map(s) with conditions reasonably agreeable to West Reno and TMWA and all appeal periods have expired for the Tank Site parcel (on BT South property), Well 10 parcel (on the Bates-Stringer property), and BPS Parcel (on the DP Clark Garson property).

8.7 Third-Party Approvals. All Owner Consents, Annexation Agreements, Water Facilities Easements, Additional Easements, Lender Consents, NDOT Consents, and System Improvement Funding to the extent necessary, fully executed by all necessary third parties (collectively, the “Third-Party Approvals”) shall have been secured and delivered to Escrow.

8.8 West Reno Pre-Closing Improvements. West Reno shall have completed the West Reno Pre-Closing Improvements.

8.9 RLD Agreement. TMWA shall have approved the terms and conditions of the RLD Agreement and all ancillary agreements related thereto, and RLD and BT South, LLC shall have delivered a duly executed copy of the RLD Agreement and any other funds and deliverables required thereunder to Escrow Holder, and the consummation of all transactions contemplated thereunder to close on the Closing Date are in a position to close.

8.10 SJP Agreement. TMWA shall have approved the terms and conditions of the SJP Agreement and all ancillary agreements related thereto, and SJP shall have delivered a duly executed copy of the SJP Agreement and any other funds and deliverables required thereunder to Escrow Holder, and the consummation of all transactions contemplated thereunder to close on the Closing Date are in a position to close.

8.11 Meridian North Connection Fees. West Reno has timely collected and deposited into Escrow all Meridian North Connection Fees due from and after the Effective Date through the Closing Date.

8.12 West Reno Deliverables. West Reno shall have executed and acknowledged (where applicable) and delivered to Escrow Holder the deliverables set forth in Section 9.1 and Schedule 9.1.

8.13 TMWA Deliverables. TMWA shall have executed and acknowledged (where applicable) and delivered to Escrow Holder the deliverables set forth in Section 10.1

8.14 Sanitary Survey. West Reno shall have completed the Groundwater Monitoring Plan Work and all work required under the sanitary survey and to the satisfaction of the applicable agency with jurisdictional review over such work and TMWA shall have received written verification from Washoe County Health District that the all such work has been completed.

8.15 Sanitary Seal Improvements. TMWA shall have received written verification from NDEP and the Washoe County Health District that sanitary seal improvements will not be required on any of the West Reno well facilities post-Closing.

8.16 Treatment Technique Violation. West Reno shall have completed all work required to cure the Treatment Technique Violation to the satisfaction of the applicable agency with jurisdictional review over such work and TMWA shall have received written verification from Washoe County Health District that the Treatment Technique Violation is resolved and any

required noticing of jurisdictional agencies and customers has been completed.

8.17 BPS Parcel. DP Clark Garson has agreed to convey a parcel for a booster pump station on the DP Clark Garson property.

8.18 Well 10 Parcel. Bates Stringer-Reno LLC has agreed to convey a parcel for Well 10 on the Bates Stringer property and has delivered a duly executed deed to such parcel to Escrow.

8.19 Steamboat Encroachments. West Reno shall have secured necessary encroachment licenses and approvals necessary from Steamboat Canal and Irrigation Company for the Water Facilities and access road to the Tank Site.

10. West Reno's Deliveries. Section 9.1 of the Agreement is hereby amended and replaced in their entirety as follows, and a new Schedule 9.1 attached hereto and incorporated herein by reference is added to the Agreement:

9.1 West Reno's Deliveries. On or before the Closing, West Reno shall deliver all of the items set forth in Schedule 9.1 to Escrow Holder.

Failure of West Reno to deliver any of the items set forth in Schedule 9.1 shall not constitute a default by West Reno and any such failure shall entitle to TMWA to either terminate this Agreement or waive the condition and Close Escrow.

11. TMWA's Deliveries. Section 9.2 of the Agreement is hereby amended and replaced in its entirety as follows:

9.2 TMWA's Deliveries. At the Closing, TMWA shall deliver all of the following to Escrow Holder:

- (a) The Purchase Price.
- (b) Two (2) original counterparts of the Contracts Assignment, fully executed by TMWA.
- (c) The Water Facilities Easements, duly executed by TMWA with notary acknowledgment.
- (d) The Annexation Agreements, duly executed by TMWA with notary acknowledgment.
- (e) Such other funds, documents, and instruments required under this Agreement or reasonably requested by West Reno to consummate the purchase and sale of the Assets contemplated under this Agreement.

12. Binding Effect. This Amendment shall be binding upon and inure to the benefit of Buyer and Seller and their respective permitted successors and assigns.

13. Authorization. The undersigned, by their signatures, represent and warrant that they are

authorized agents of their respective entities and are authorized to execute this Amendment.

14. Governing Law. This Amendment shall be governed by the law of the State of Nevada regardless of any conflicts of laws or rules that would require the application of the laws of another jurisdiction.

15. Counterparts and E-Mail Signatures. This Agreement may be executed in counterparts, each of which will be considered an original and all of which together will constitute one and the same agreement. Facsimile or e-mailed transmission of any signed original document, and retransmission of any signed facsimile or e-mailed transmission, will be the same as delivery of an original. At the request of any party, the parties will confirm facsimile or e-mailed transmitted signatures by signing an original document.

[Signature Page Follows]

[Signature Page to Third Amendment to Acquisition Agreement]

IN WITNESS WHEREOF, the parties have executed this Amendment as of the date first written above.

TMWA” TRUCKEE MEADOWS WATER AUTHORITY By: _____ Its: _____ Dated: _____	“WEST RENO” WEST RENO WATER COMPANY, INC., a Maryland corporation By: _____ Its: _____ Dated: _____
--	---

Exhibit "A"
West Reno Acquisition Cost Summary
[To be attached]

Schedule 1.3
Annexation Parties

OWNER	PARCEL
SJP Reno Property LLC	APN 038-870-19, 038-870-20, 038-870-25, 038-430-53 and 038-430-54
Bates Stringer-Reno LLC	All lands identified in Subdivision Tract Map 5205, 5227 and _____ [Map No. TBD during Due Diligence], commonly referred to as Meridian 120 North Village No. 1, 2 and 3.
BT South, LLC	APN 038-090-61, 038-120-12, 038-120-13, 038-120-03, 038-120-10 and APN 038-132-25

**Schedule 1.46
Water Resources**

Dedicated Water Resources and Resource Commitments¹

Current Water Rights Owner of Record	Appurtenant Service Property	Dedicated Resource: Permit/Certificate No.	Will Serve Commitment (AF)
West Reno Water Co.	APN 038-430-02, 03, 04, 24 and 51 (Boomtown Hotel/Casino, Maintenance Yard)	44595 & 44596	95
West Reno Water Co.	APN 038-870-13 (Chevron)	44595 & 44596	12
West Reno Water Co.	APN 038-430-52 (RV Park)	44595 & 44596	30
West Reno Water Co.	APN 038-881-08 and 038-870-12 (Cabela's)	44595 & 44596	5.00
Subtotal			142.00
West Reno Water Co.	APN 038-870-29 (bldg. 4)	44595 & 44596	2.68
West Reno Water Co.	APN 038-870-30 (bldg. 1)	44595 & 44596	2.93
West Reno Water Co.	APN 038-870-31 (bldg. 3)	44595 & 44596	2.84
West Reno Water Co.	APN 038-870-32 (bldg. 2)	44595 & 44596	5.45
Subtotal			13.90
West Reno Water Co.	Meridian North Village 1 Including Landscaping	44595 & 44596	53.24
West Reno Water Co.	Meridian North Village 2 Including Landscaping	44595 & 44596	34.12
Subtotal			87.36
TOTAL			243.26

¹ To be conveyed to TMWA at Closing.

Schedule 1.48
Existing West Reno Customers and West Reno Service Properties*

Customer	Property Owner	Service Property
Reno KOA at Boomtown Journey	SJP Reno Property LLC	038-430-52
Chevron Verdi	SJP Reno Property LLC	038-870-13
Boomtown maintenance yard	SJP Reno Property LLC	038-430-51
Boomtown Casino Hotel	SJP Reno Property LLC	038-430-02, 03, 04 and 24
DP Clark Garson Road LLC	DP Clark Garson Road LLC	038-870-29, 30, 31, and 32
Cabelas	Cabelas Wholesale Inc.	038-881-08, 038-870-12
Bates Stringer-Reno LLC	Bates Stringer-Reno LLC	(Model homes)
Robin Moos	Robin Moos	236-101-12
Michael Dixon and Sharon Dixon	Michael Dixon and Sharon Dixon	236-101-03
Bradley Austin and Emery Pierce	Bradley Austin and Emery Pierce	236-102-11
Masae Toller	Masae Toller	236-102-12

*to be updated at Closing

Schedule 5.8.6
West Reno System Modifications

[To be attached]

Schedule 9.1
West Reno's Deliveries

On or before the Closing, West Reno shall deliver all of the following to Escrow Holder. All documents shall be in a form reasonably acceptable to TMWA:

(f) A Termination of Declaration of Covenants, Restrictions and Easements fully executed by West Reno, BT South, RLD, SJP, DP Clark Garson Road 1, LLC, DP Clark Garson Road 2, LLC, and Bates Stringer-Reno, LLC, with notary acknowledgment.

(g) West Reno Documents. The following documents fully executed by West Reno, with notary acknowledgment where applicable:

- i) A Grant, Bargain and Sale Deed and Bill of Sale with respect to the Assets owned by West Reno.
- ii) A Water Rights Deed with respect to all Water Resources owned by West Reno.
- iii) One or more Bill(s) of Sale and General Assignment conveying the Private Water Facilities and Private Fire Facilities to the owner of the property on which they are located.
- iv) An Assignment of Water Facilities Easements conveying all Water Facilities easements held by West Reno.
- v) Two (2) original counterparts of an Assignment of Assumed Contracts, fully executed by West Reno, in the form of Exhibit 9.1(d) attached hereto (the "Contracts Assignment").

(h) SJP Documents. The following documents fully executed by SJP Reno Property, LLC, with notary acknowledgment where applicable:

- i) The SJP Ancillary Agreement.
- ii) A Water Rights Deed with respect to all Water Resources owned by SJP required to be conveyed to TMWA.
- iii) A Bill of Sale and General Assignment assigning any interest of SJP in the Assets.
- iv) A Grant of Water Facilities Easements conveying easements for Water Facilities across SJP property.
- v) A Grant of Easement for Water Wells, Access Road and Drainage Facilities (Well 9 and Well 12).
- vi) An Assignment of Water Facilities Easements conveying all Water Facilities easements held by SJP.
- vii) The SJP Retail Service Area Annexation Agreement.
- viii) A Termination of Relocatable Tank Easement with respect to the easement referenced in Document No. 4590427.

(i) RLD Documents. The following documents fully executed by Reno Land Development Company, LLC, with notary acknowledgment where applicable:

- i) The RLD/BT Ancillary Agreement.
- ii) A Bill of Sale and General Assignment assigning any interest of RLD in the Assets.
- iii) A Grant of Water Facilities Easement conveying easements to Water Facilities across RLD property.
- iv) A Termination of Water Line Easement with respect to the easement under Document No. 4590425.
- v) A Quitclaim Deed with respect to rights reserved under Document No. 4584663.

- vi) A Release of Memorandum of Post Closing Obligations with respect to Document No. 4584673.
- (j) BT South Documents. The following documents fully executed by BT South, LLC, with notary acknowledgment where applicable:
 - i) The RLD/BT Ancillary Agreement.
 - ii) The BT South Retail Service Area Annexation Agreement
 - iii) A Grant Bargain and Sale Deed for the tank site parcel.
 - iv) A Bill of Sale and General Assignment assigning any interest of BT South in the Assets.
 - v) A Grant of Water Facilities Easement conveying easements for access and Water Facilities across BT South property.
 - vi) Parcel Map creating Tank Site (if not recorded prior to Closing).
- (k) Bates-Stringer Documents. The following documents fully executed by Bates-Stringer Reno, LLC, with notary acknowledgment where applicable:
 - i) A Grant Bargain and Sale Deed for the Well 10 Parcel.
 - ii) A Grant of Water Facilities Easement conveying easements for access and Water Facilities across Bates Stringer property.
 - iii) A Grant of Temporary Water Facilities Easement.
 - iv) The Bates Stringer Retail Water Service Area Annexation Agreement.
 - v) A Declaration of Deannexation from Declaration of Covenants, Conditions and Restrictions releasing the Well 10 parcel.
 - vi) A Release of Memorandum of Post Closing Obligations with respect to Document No. 4584673.
 - vii) Parcel Map creating Well 10 parcel (if not recorded prior to Closing).
- (l) DP Clark Garson Road Documents. The following documents fully executed by DP Clark Garson Road, LLC, with notary acknowledgment where applicable:
 - i) A Subordination and Notice of Deannexation of Declaration of Covenants, Conditions and Restrictions releasing the water facilities easements and BPS parcel.
- (m) DP Clark Garson Road 1 Documents. The following documents fully executed by DP Clark Garson Road 1, LLC, with notary acknowledgment where applicable:
 - i) A Grant of Water Facilities Easement conveying easements for access and Water Facilities across DP Clark property.
- (n) DP Clark Garson Road 2 Documents. The following documents fully executed by DP Clark Garson Road 2, LLC, with notary acknowledgment where applicable:
 - i) A Grant Bargain and Sale Deed for the BPS Parcel.
 - ii) A Grant of Water Facilities Easement conveying easements for access and Water Facilities across DP Clark property.
 - iii) Parcel Map creating BPS parcel (if not recorded prior to Closing)
- (o) Cabela's Documents. The following documents fully executed by Cabela's, with notary acknowledgment where applicable:
 - i) Grant of Easement for Water Facilities, Underground Electric and Communication Facilities across Cabela's property.
 - ii) A subordination of Declaration of Covenants, Conditions and Restrictions with respect to the water facilities easements.
- (p) PNK Documents. The following documents fully executed by PNK (Reno), LLC, with notary acknowledgment where applicable:
 - i) A Subordination of Option Agreement with notary acknowledgement.
 - ii) A Termination of Easement with respect to the easement in Document No. 3410826.

(q) Lender Consents. The following documents fully executed by the appropriate lender, with notary acknowledgment:

- i) A substitution of trustee and deed of partial reconveyance, fully executed by Umqua Bank with notary acknowledgment, with respect to the SJP water rights being conveyed to BT South and TMWA.
- ii) A Subordination fully executed by Umqua Bank with notary acknowledgment, with respect to SJP water facilities easements.
- iii) A substitution of trustee and deed of partial reconveyance, fully executed by Manufacturers and Traders with notary acknowledgment, with respect to SJP water rights.
- iv) A Subordination fully executed by Manufacturers and Traders with notary acknowledgment, with respect to SJP water facilities easements.
- v) A subordination and partial release agreement with respect to the equity participation agreement, fully executed by Arcus Secured Loan Fund, with notary acknowledgment.
- vi) A substitution of trustee and deed of partial reconveyance, fully executed by Mountain West with notary acknowledgment, with respect to BT South water rights and the tank site.
- vii) A Subordination fully executed by Mountain West with notary acknowledgment, with respect to BT South water facilities easements.
- viii) A substitution of trustee and deed of partial reconveyance, fully executed by BOFK, NA with notary acknowledgment, with respect to DP Clark BPS Parcel and water rights.
- ix) A Subordination fully executed by BOKF, NA with notary acknowledgment, with respect to DP Clark water facilities easements.

(r) NDOT Documents.

- i) NDOT Consents, fully executed by NDOT with notary acknowledgment, where applicable, with respect to the assignment of NDOT permits.
- ii) New Occupancy permit for Water Facilities in the Exit 4 right of way, duly executed by NDOT.

(n) A License Agreement duly executed by Steamboat Canal and Irrigation Company with respect to water facilities and access road encroachments.

(o) NV Energy Exclusive Easement Consent consenting to TMWA non-exclusive use of NV Energy easement areas.

(p) The Customer Information.

(q) All Meridian North Connection Fees collected after the Effective Date.

(r) Such other funds, documents, and instruments required under this Agreement or reasonably requested by TMWA to consummate the purchase and sale of the Assets contemplated under this Agreement.

Annexation Agreement Forms
[To be attached]

West Reno System Overall Improvements Cost Summary
11/21/2018

Facility Description	Total Estimated Cost	Financing Mechanims			Timing		Comments
		West Reno: Required Pre- Closing Improvements	Purchase Price Offset	Post Closing Connection Fee	Pre-Closing	Post-Closing	
Well 7 Improvements	\$ 610,000			\$ 610,000		x	Pump to Waste, Piping, Pumps/Motors, Chlorine Room Improvements, Electrical / SCADA
Well 8 Improvements	\$ 75,000			\$ 75,000		x	Minimal Improvements to keep wells as emergency backup sources
Well 9 Improvements	\$ 75,000			\$ 75,000		x	Minimal Improvements to keep wells as emergency backup sources
Well 10 Improvements	\$ 290,000			\$ 290,000		x	Pump to Waste, Piping, Pumps/Motors, Chlorine Room Improvements, Electrical / SCADA
Well 12 Improvements	\$ 490,000			\$ 490,000		x	Pump to Waste (reduced \$280k to \$140k), Piping, Pumps/Motors, Chlorine Room Improvements, Electrical / SCADA
Tank / Site Improvements	\$ 135,000			\$ 135,000		x	Post Close tank improvements. Hatches, manways, pressure sensing line, paving
Well 10 Improvements	\$ 150,000	\$ 140,000	\$ 10,000		x		Grading, Detention Basin Liner, Fencing
Tank Site Improvements	\$ 96,000		\$ 96,000		x	x	Grading, rip rap, fencing, base, yard hydrant etc
Tank Improvements	\$ 11,500		\$ 11,500		x	x	Gasket, overflow outlets, screens, air gap, etc.
Hillside Erosion Mitigation	\$ 100,000		\$ 100,000		x	x	Revegetation, erosion control matting
Steamboat Crossing Existing	\$ 15,000		\$ 15,000		x	x	Edge supports, k rail
Tank Access Road Bridge						x	New bridge needs to be designed and constructed by applicant at applicant's cost to TMWA standards prior to any water service being provided south of 180
Tank Access Road Rebuild	\$ 450,000		\$ 450,000		x	x	5000' x 18' type 2 base @ \$5 / sf
Distribution Abandonments	\$ 5,000	\$ 5,000			x		2" service to fire house, cut and cap 16" main at Well 5
Boomtown Distribution Improvements	\$ 200,000	\$ 200,000			x		Boomtown facilities meter / backflow requirements
Well 5, 7 and 12	\$ 80,000	\$ 5,000	\$ 75,000		x	x	Well 5 monitoring well, cap main, Well 7/12 fencing
Subtotal - Facility Improvements	\$ 2,782,500	\$ 350,000	\$ 757,500	\$ 1,675,000			
TMWA Legal Fees	\$ 100,000			\$ 100,000			
River Casing Purchase	\$ 100,000			\$ 100,000			
West Reno Assets Book Value	\$ 700,000			\$ 700,000			
West Reno PUCN Costs Reimbursements	\$ 93,335			\$ 93,335			
TOTAL ESTIMATED CONSOLIDATION COSTS	\$ 3,775,835	\$ 350,000	\$ 757,500	\$ 2,668,335			

Deferred Improvements:

1. Well rehabilitations and future abandonment of wells 8&9 upon TMWA system connection.
2. Original tank recoating - do work under annual tank rehab project - schedule depends on priorities

Financing:

1. Cost of West Reno work may be paid by West Reno through combination of cash payment and purchase price reduction
2. Tank Access Road Bridge to be completed at expense of applicant for service in connection with water service agreement

Schedule 5.8.6

Item #	Description			Required action	TMWA Estimated Cost
Wells					
1	Well 10/ Detention Basin Lining			Prepare lining design for TMWA, WCHD and City review/approval, upate permit and construct per plan	\$ 120,000
2	Well 10 Grading Design - Based on new parcel			Prepare design for TMWA and City review, upate permit and construct per plan	\$ 20,000
3	Well 10 fencing			Fence wells with 6' pvc coated chain link fence with 3 strand barbwire top.	\$ 10,000
4	Wells 7, and 12 fencing			Fence wells with 6' pvc coated chain link fence with 3 strand barbwire top.	\$ 50,000
5	Well 5 conversion to monitoring well			Physical conversion to monitoring well per State specs	\$ 25,000
Boomtown/SJP property water facility improvements					
6	Fire / Domestic combined service backflow.			Add backflow downstream of Master Meter from item below	\$ 60,000
7	Hotel/Casino Master Meter			Add master meter, abandon warehouse service and reconnect warehouse to master meter for Hotel/Casino	\$ 30,000
8	New meter at RV Park + backflow			Replace meter and add backflow	\$ 60,000
9	Car Wash Service			Disconnect Car Wash / Irrigation service from 10" main just downstream of fire hydrant, add valve at ROW, connect service to 2" at Mini Mart. Move meter for 2" line and add backflow.	\$ 45,000
10	Disconnect 2" line and abandon 6" stub at RV Park			Disconnect 2" line coming from test port. Abandon 6" stub to northern parcel.	\$ 5,000
Distribution					
11	2" service connection for fire house.			Retire connection at the main.	\$ 5,000
12	Cut and cap 16" main at Well 5.			Cut and cap 16" main at Well 5.	\$ 5,000
Tanks, Tanks Site, Tanks Access		Old	New		
13	1c. Non-compliance of roof hatch gasket.	X	X	Replace/repair to applicable standard	\$ 1,000
14	1d. Tank drain/overflow outlet at Steamboat Ditch requires protection with flapper or duckbill.	X	X	Replace/repair to applicable standard and secure Steamboat approval	\$ 3,000
15	1e. Perimeter fence.	X	X	Perimeter Fence to be installed to match new parcel boundary and TMWA Standards	\$ 40,000
16	1f. Oil sheen on the water surface	X		Remove oil sheen to applicable standard	
17	1g. Slime on rungs of inside ladder.	X		Clean ladder to applicable standard	
18	1h. Some screens need to be replaced with stainless steel.	X		Replace screens to applicable standard	\$ 500
19	1i. VERY difficult to unlock the tank due to orientation of the lock cover.		X	Lock cover to be modified and paint touched up.	\$ 2,000
20	1j. Proper air gap minimum 2X overflow pipe diameter.		X	Airgap to be modified to meet standard	\$ 4,000
21	2a. Protect cut slopes with riprap to prevent erosion and sediment deposition around the tank.		X	Rip Rap slope stalabalization to be installed	\$ 20,000
22	2b. Copy of geotechnical report.		X	Provide Copy of Geotech Report	
23	2c. Installation of a small yard hydrant to facilitate maintenance activities.	X	X	A single yard hydrant to be installed.	\$ 5,000
24	2h. Trash, rubble, debris, and weeds are scattered throughout, including growing inside the grade band of the old tank.	X	X	Tank site to be cleaned up and weeds to be removed to applicable standard	\$ 1,000
25	2i. Old cable-operated level float seems to be inoperable.	X		Fix Level Float and verify it operates correctly	\$ 1,000
26	Existing Tank Access Road needs to be brought up to TMWA standards			Design and construct access road to TMWA standards	\$ 450,000

Schedule 5.8.6

Item #	Description	Required action	TMWA Estimated Cost
27	Existing Tank Access Road steamboat ditch crossing needs to be replaced.	Construct temporary repairs with K-rails, rail supports and abutments acceptable to TMWA prior to Closing; A permanent bridge shall be designed and constructed by water service applicant to TMWA Standards prior to any water service provided South of I-80.	\$ 15,000
28	Grading and access around Tank site needs to be revised to meet TMWA standards	Grading to be completed per TMWA approved plan. In areas of future paving, the site shall be brought to finish grade with agg base in place of permanent asphalt. Total section 9".	\$ 30,000
Steamboat Ditch			
29	Encroachment Permits for 2 waterline crossings.	Secure encroachment permits from Steamboat Canal and Irrigation Co.	
30	Encroachment Permits for 2 tank drain/overflow discharges	Secure encroachment permits from Steamboat Canal and Irrigation Co.	
31	Encroachment Permit for access road / bridge crossing.	Secure encroachment permits from Steamboat Canal and Irrigation Co.	
32	Tank main hillside erosion shall be remediated to meet TMWA's requirements and documentation for Steamboat's acceptance of such. Including Maintenance bond and agreement on future storm drain connection.	Construct per plans. If completed preclose, provide maintenance bond in favor of TMWA for hillside erosion work in amount of \$50,000.	\$ 100,000
33	Existing wells to be improved after purchase	Secure letter from WCHD and NDEP to verify future improvements to the existing wells won't require the sanitary seal and other items be brought up to today's standards	
34	Confirmation all Sanitary Survey deficiencies have been cured.	Secure letter from WCHD and NDEP to confirm all existing deficiencies from March 2018 and September 2018 Sanitary Survey Letters have been cured.	
35	Cure Treatment Technique Violation and publish and distribute 2018 Water Quality Report	Secure letter from WCHD and NDEP confirming October 30, 2018 treatment technique violation has been cured and consumer confidence report published and distributed	
Old Tank and New Tank Work			
1	Perimeter road around tanks must be graded and finished with 3" AC on 6" base.	Final AC paving.	\$ 20,000
2	Vents that prevent external pressures from causing the tank to buckle.	Fail safe vents to be installed to replace existing.	\$ 20,000
3	Pressure transducer vault for level sensing.	Add 2" line from bottom of tank to external below grade vault. Provide conduit to RTU panel.	\$ 35,000
4	Inward-swing manways.	Replace outward swing with inward swing.	\$ 30,000
5	Two roof hatches with with a safety cable and non-slip grit along the walking path between the two.	Install second roof hatch with safety cable and non-slip grit along path.	\$ 20,000
6	Grades on valve vault and valve collars are too high – they are above the elevation of the ringwall foundation, will be above perimeter road elevations, and cannot be driven over.	Vault and Valve collars to be adjusted to final paving grade after paving is completed.	\$ 10,000

1242500



STAFF REPORT

TO: Board of Directors
FROM: Mark Foree, General Manager
DATE: December 3, 2018
SUBJECT: Discussion and action, and possible direction to staff regarding the reappointment of John Enloe to represent TMWA on the Carson-Truckee Water Conservancy District Board

RECOMMENDATION

It is recommended that the TMWA Board reappoint John Enloe to the Carson-Truckee Water Conservancy District Board to serve a four-year term, commencing January 1, 2019 to represent TMWA.

BACKGROUND

The Carson-Truckee Water Conservancy District (the District) was formed in 1958 under the Nevada State Statute, 541, and is a political subdivision of the State of Nevada. The District maintains the 14,000 cfs channel capacity of the Truckee River from the California-Nevada State line downstream through Reno to the Glendale Bridge channel improvements under the Martis Creek Lake O&M Agreement. Under this Agreement, the District along with USACE grant encroachment permits to assure no encroachments are made to the river channel that would interfere with the minimum conveyance capacity. The District also has a program funding river restoration and a weed abatement program to assist in eliminating noxious weeds along the waterways within the District, which includes all of Carson City, Churchill and Washoe Counties, and parts of Douglas, Lyon, and Storey Counties.

In accordance with the District's by-laws, TMWA is one of the ten representatives and one of four subcontracting agency members that sit on the District Board, upon appointment by the Governor's office.



December 3, 2018

Office of the Governor
Attn: Boards and Commissions Manager
State Capitol Building
101 N. Carson Street
Carson City, NV 89701

RE: Request for reappointment of John Enloe as the TMWA representative on the Carson Truckee Water Conservancy District Board

To whom it may concern,

This letter serves as an official request to have John Enloe be reappointed as the TMWA representative on the Carson Truckee Water Conservancy District Board, effective as of January 1, 2019.

Mr. Enloe has served as TMWA's representative on the Conservancy District Board since January 1, 2015. Mr. Enloe was hired as TMWA's Operational Strategies Manager in June of 2014 and became the Director of Natural Resources and Planning in August 2016. Mr. Enloe has over 35 years of water planning, permitting, design and operations experience in both the public and private sector. The great majority of his experience relates to regional water matters affecting the Lake Tahoe and Truckee River water system, including experience as Manager of Water Planning and Engineering for TMWA's predecessor, Sierra Pacific Power Company.

If there are any questions regarding TMWA's request for reappointment, please feel free to call me at 775-834-8009.

Sincerely,

Mark Foree, P.E.
General Manager



STAFF REPORT

TO: Chairman and Board Members
FROM: Sonia Folsom, SAC Liaison
DATE: December 3, 2018
SUBJECT: Discussion and action, and possible approval or direction to staff regarding Reno-Sparks Chamber appointment of Ann Silver as primary representative to the Standing Advisory Committee to fill the vacancy in the Reno-Sparks Chamber appointee position, for term ending December 31, 2019

Recommendation

Staff recommends the Board approve the Reno-Sparks Chamber appointment of Ann Silver as primary representative to the Standing Advisory Committee to fill the vacancy in the Reno-Sparks Chamber appointee position, for term ending December 31, 2019.

Background

In August, 2005, a Subcommittee of the TMWA Board appointed the original, eight SAC members along with six alternate members. Subsequently, additional members and alternates were appointed by the Builders' Association of Northern Nevada, the Reno-Sparks Chamber of Commerce. In September 2016, the TMWA Board decided to remove the two appointments made by the Northern Nevada Water Planning Commission and the Office of Consumer Advocate and replaced those with two at-large positions.

Discussion

The primary representative position became vacant earlier this year when the Reno-Sparks Chamber appointee terminated their membership. At their Wednesday, November 14, 2018 the Reno-Sparks Chamber Board of Directors unanimously approved the appointment of Ann Silver, Reno-Sparks Chamber of Commerce CEO, to fulfill the remainder of the term ending December 31, 2019.



STAFF REPORT

TO: Chairman and Board Members
FROM: Sonia Folsom, SAC Liaison
DATE: December 3, 2018
SUBJECT: Discussion and action, and possible approval or direction to staff regarding appointments to the Standing Advisory Committee to fill vacancies in existing positions whose terms expire December 31, 2018, such appointments to be made for new terms from January 1, 2019 to December 31, 2020 from the following list of candidates: (1) Neil McGuire, primary representative, irrigation customer; (2) Mike Schulewitch, primary representative, multi-family customer; (3) Donald Kowitz, primary representative, commercial customer; (4) Bruce Gescheider, alternate representative, commercial customer; (5) Robert Chambers, primary representative, senior citizen customer; (6) Karl Katt, alternate representative, senior citizen customer; (7) Ken McNeil, primary representative, at-large 1 customer; (8) Ken Becker, alternate representative, at-large 1 customer; (9) Jordan Hastings, primary representative, at-large 2 customer; (10) Carol Litster, primary representative, residential 1 customer; (11) Dale Sanderson, alternate representative, residential 1 customer; (12) Harry Culbert, primary representative, residential 2 customer; (13) Fred Arndt, alternate representative, residential 2 customer; (14) Jerry Wager, primary representative, residential 3 customer; and (15) Scot Munns, alternate representative, residential 3 customer

Recommendation

Staff recommends that current Standing Advisory Committee (SAC) members and alternates (if any) be reappointed for an additional two year term beginning January 1, 2019. *(Please refer to the attached membership chart.)*

Background

In August, 2005, a Subcommittee of the TMWA Board appointed the original, eight SAC members along with six alternate members. Subsequently, additional members and alternates were appointed by the Builders' Association of Northern Nevada, the Reno-Sparks Chamber of Commerce. In September 2016, the TMWA Board decided to remove the two appointments made by the Northern Nevada Water Planning Commission and the Office of Consumer Advocate and replace those with two at-large positions. Fifteen of the twenty-three members of the SAC have terms which expire on December 31, 2017. *(Please see the attached SAC History and Governing Rules)*

Discussion

The attached chart reflects the proposed SAC members and their alternates (if any). SAC members and their alternates confirmed their willingness to be reappointed.



TMWA Standing Advisory Committee History

Bullet Points for SAC history

- 2004: The Board formed a Rate Making Review Committee (RMRC) for the purpose of reviewing and providing customer input on the proposed second and third phases of the current rate case that was going before the Board in 2005. At the time this Committee was formed, the Board did not foresee a permanent role for it.
- The initial RMRC recommended that the Board form a committee that serves in an advisory capacity on a permanent basis. Staff supported the recommendation for a standing committee.
- January 2005: Staff first approached the Board to recommend formation of the Standing Advisory Committee (SAC).
- March 2005: the Board established a SAC consisting of eleven (11) members: one (1) each of the following customer types – commercial; irrigation; multi-family; senior citizen; wholesale; and three (3) residential users all appointed by the TMWA (Truckee Meadows Water Authority) Board. The Builders Association of Northern Nevada, Reno-Sparks Chamber of Commerce and the Regional Water Planning Commission to appoint one (1) member each. Duties of the SAC include budget and rate increase review and recommendations and other matters the Board may assign.
- July 2005: The Board appointed a subcommittee to select applicants.
- September 2005: The Board appointed the first SAC members.
- August 2007: The State of Nevada Consumer Advocates Office appointed a member to the SAC.
- The SAC reviewed rate proposals in 2009, 2010 and 2012.
- December 31, 2014: Successful consummation of the mergers of South Truckee Meadows General Improvement District and Washoe County Water Utility into TMWA.
- September 2016: The Board eliminated the Northern Nevada Water Planning Commission and the State of Nevada Consumer Advocates Office appointments and created two At-Large positions.

**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.
2. **Compliance with NRS Chapter 241:** Meetings shall be conducted in compliance with NRS Chapter 241, the Nevada “Open Meeting Law.”
3. **Quorum:** A quorum shall consist of a simple majority of the Members. Members may participate telephonically in meetings, but telephonic participation shall not be considered in establishing a quorum.
4. **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. **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. **Officers:** There shall be a Chair and a Vice Chair, elected by the Members. The Chair will conduct the meetings. The Vice Chair 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 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.
7. **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. 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. Amendment of Rules:** Any amendments to these Rules shall require an affirmative vote of the majority of the members.

As amended, February 3, 2015

TMWA Standing Advisory Committee
Term Appointments
2019 Membership List

Customer Class	Primary Representative	Member Since	Term Ends	Alternate Representative	Member Since	Term Ends
Wholesale (Sun Valley)	Fred Schmidt	2005	12/31/2019	N/A		
Irrigation	Neil McGuire	2005	12/31/2020	Vacant		
Multi-family Residential	Mike Shulewitch	2013	12/31/2020	Jonnie Pullman	2012	12/31/2019
Commercial	Donald Kowitz	2017	12/31/2020	Bruce Gescheider	2009	12/31/2020
Senior Citizen	Robert Chambers	2005	12/31/2020	Karl Katt	2013	12/31/2020
At-Large 1	Ken McNeil	2013	12/31/2020	Ken Becker	2017	12/31/2020
At-Large 2	Jordan Hastings	2017	12/31/2020	Vacant		
Residential:						
Representative 1	Carol Litster	2014	12/31/2020	Dale Sanderson	2017	12/31/2020
Representative 2	Harry Culbert	2006	12/31/2020	Fred Arndt	2017	12/31/2020
Representative 3	Jerry Wager	2014	12/31/2020	Scot Munns	2017	12/31/2020
Appointments:						
BANN	Colin Hayes	2010	12/31/2019	Jim Smith	2010	12/31/2019
Reno-Sparks Chamber	Bill Hughes	2016	12/31/2019	Chamber to appoint		12/31/2019



STAFF REPORT

TO: Chairman and Board Members
FROM: Mark Foree, General Manager
DATE: December 3, 2018
SUBJECT: Discussion and action on scheduling regular board meeting dates and times for the Calendar Year 2019

Recommendation

Staff requests Board input on the schedule proposed for the TMWA Board of Directors meetings as well as confirmation of meeting times, including approval of the date for the Fall Strategic Planning Workshop.

Discussion

The regular schedule for TMWA Board meetings has traditionally been for the third Wednesday of the month at the Sparks Council Chambers beginning at 10 a.m. In checking the current Cities and County calendars, this continues to present the best option in terms of avoiding conflicts with the other agency meetings.

From time to time the public has voiced concerns over the meeting times and mid-day schedule for public comment to be taken. In the past the Board has successfully addressed this concern on a one-off basis by moving meetings such as rate hearings to the evening. In addition, Board meetings have been cancelled in instances where there was not sufficient or timely business to be conducted. Staff has concluded that cancelling a scheduled meeting is preferable to scheduling meetings monthly around busy schedules; so this approach has also worked well.

However, staff would still like to confirm the following dates and times with the Board and assess if there is interest in changing either prior to moving forward and finalizing a schedule of meetings for 2019. Based on your input, Staff will then issue the agreed-upon schedule.

2019 Board Meeting Dates – Proposed

Wednesday January 16	10 a.m.
Wednesday February 20	10 a.m.
Wednesday March 20	10 a.m.
Wednesday April 17	10 a.m.
Thursday, May 23	10 a.m. NOTE: NRS-MANDATED BUDGET HEARING DATE

2019 Board Meeting Dates – Proposed (continued)

Wednesday June 19	10 a.m.
Wednesday July 17	10 a.m.
Wednesday August 21	10 a.m.
Wednesday September 18	10 a.m.
Wednesday October 16	10 a.m. STRATEGIC PLANNING WORKSHOP (1355 Capital Blvd)
Wednesday November 20	10 a.m. (Propose to cancel due to conflict with City of Reno Council meeting)
Thursday, December 12	10 a.m. (Propose new day)

Due to the nature of the October 16 Strategic Planning Workshop, please allow for extra time, approximately 4-hours, to complete a thorough review of relevant agenda items.



STAFF REPORT

TO: Board of Directors
FROM: Mark Foree, General Manager
DATE: December 3, 2018
SUBJECT: **General Manager's Report**

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

Also, included in your agenda packet are press clippings from October 11, 2018 through December 5, 2018.



STAFF REPORT

TO: Board of Directors
THRU: Mark Foree, General Manager
FROM: Scott Estes, Director of Engineering
BY: Bill Hauck, Senior Hydrologist
DATE: December 3, 2018
SUBJECT: December 2018 Operations Report

Summary

- Customer demands are at wintertime lows
- Lake Tahoe is 63% of maximum storage capacity
- Combined upstream reservoir storage is still in great shape at 66% of capacity
- The snowpack building season is off to great start
- The overall water supply status as of December 01 is very good
- Hydro revenue for November 2018 was an estimated \$85,450

(A) Water Supply

- **River Flows** - Truckee River flows at the CA/NV state line are below normal for this time of year and were approximately 300 cubic feet per second (CFS) due to other TROA parties exercising their right to Credit Store water. The median flow for December 3rd based on 109 years of record is 390 CFS.
- **Reservoir Storage** - The elevation of Lake Tahoe is currently 6226.86 feet. Tahoe and some of the other reservoirs on the system got a nice little bump in storage with the wet weather experienced last week. Tahoe is now 2.24 feet below its legal maximum storage elevation of 6229.10 feet but is still almost 2/3rd full. Overall, Truckee River reservoir system storage is in very good shape at 66% (2/3rds) of maximum capacity. Storage values for each reservoir as of 12/3 are as follows:

Reservoir	Current Storage (Acre-Feet)	% of Capacity (Percent)
Tahoe	469,700	63%
Boca	6,756	17%
Donner	3,073	32%
Independence	14,634	84%
Prosser	7,144	24%
Stampede	199,245	88%

Besides the 17,707 acre-feet of storage in Donner and Independence reservoirs, TMWA has 18,529 acre-feet of water stored between Tahoe, Boca and Stampede reservoirs under the terms of TROA. TMWA's combined upstream reservoir storage is approximately 36,236 acre-feet as of this morning.

- **Snowpack** - Both the Lake Tahoe and Truckee River basins are off to a solid start as far as snowpack is concerned. We finished off the month of November with a good mix of rain and snow over Thanksgiving weekend and then a series of storms laid down the first real layer of snow the last week of November. This morning snowpack in the Truckee River Basin was 136% of normal and 183% of normal in the Lake Tahoe Basin. Although still extremely early in the snowpack building season we are off to a very impressive start.

(B) Water Production

Demand - Customer demand is at wintertime lows. Consumption averaged 36 million gallons per day (MGD) last week. Surface water from the Chalk Bluff water treatment plant provided 81% and groundwater the other 19% of the supply required to meet demand. Customer demands should remain quite constant over the next several months.

(C) Hydro Production

Generation - Average Truckee River flow at Farad (CA/NV state line) for the month of November averaged 350 cubic feet per second (CFS). River flows are generally lower at this time of year and is why maintenance and rehab projects are typically scheduled for this time frame. TMWA's Fleish plant was off-line the entire month for scheduled maintenance. The Verdi plant was taken down for scheduled maintenance on November 12th. The Washoe plant was the only plant on-line for the entire month of November. Statistics for the month are as follows:

Hydro Plant	Days On-Line	Generation (Megawatt hours)	Revenue (Dollars)	Revenue (Dollars/Day)
Fleish	0	0	\$ 0	\$ 0
Verdi	12	454	\$ 32,606	\$ 1,087
Washoe	30	728	\$ 52,846	\$ 1,762
Totals	42	1,182	\$ 85,452	\$ 2,849



STAFF REPORT

TO: Chairman and Board Members
THRU: Mark Foree, General Manager
FROM: John Zimmerman, Manager, Water Resources
DATE: 3 December 2018
SUBJECT: **Report Water Resources and Annexation Activity**

RULE 7

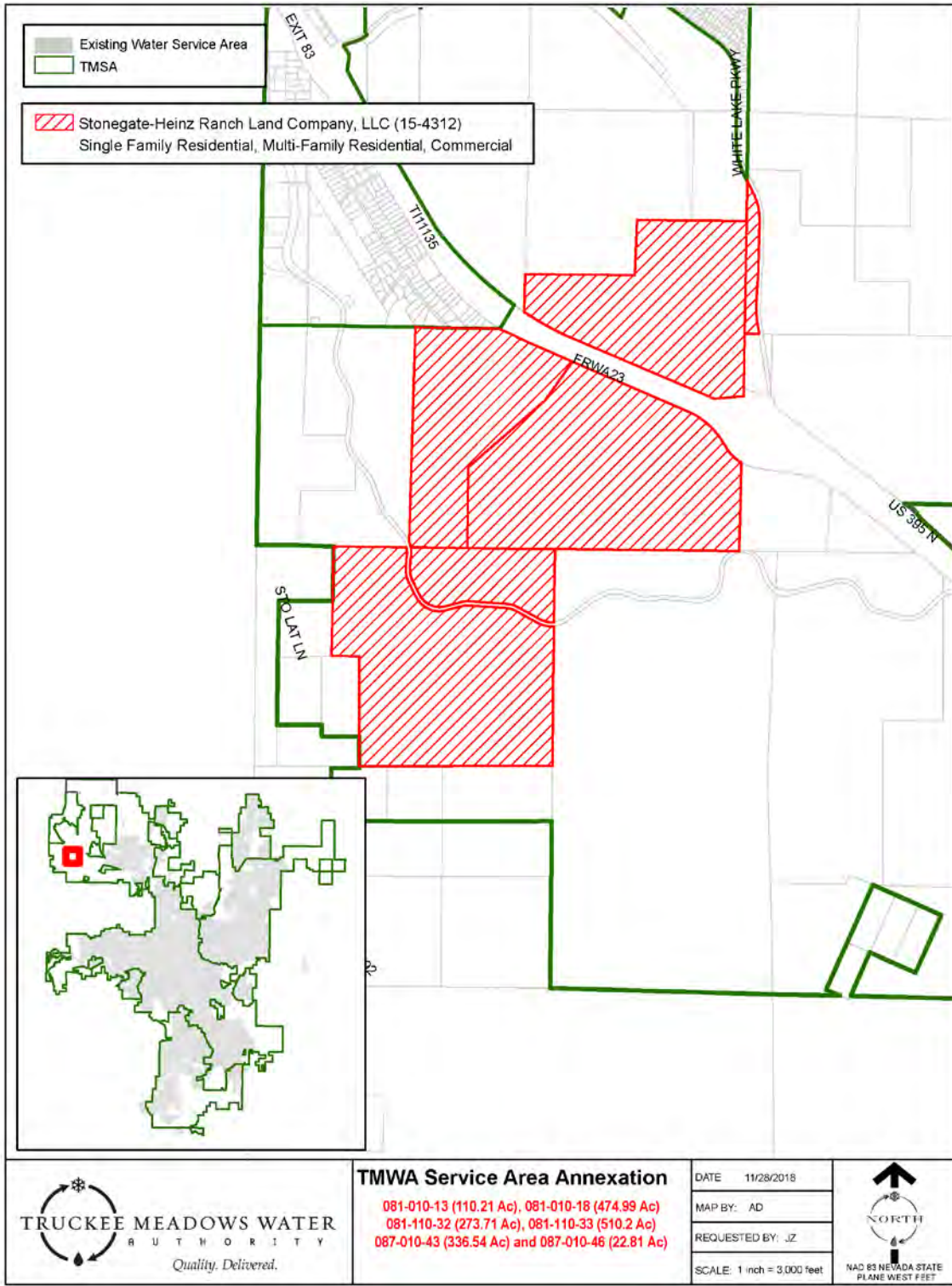
Rule 7 water resource purchases and will-serve commitment sales against purchased water resources through this reporting period:

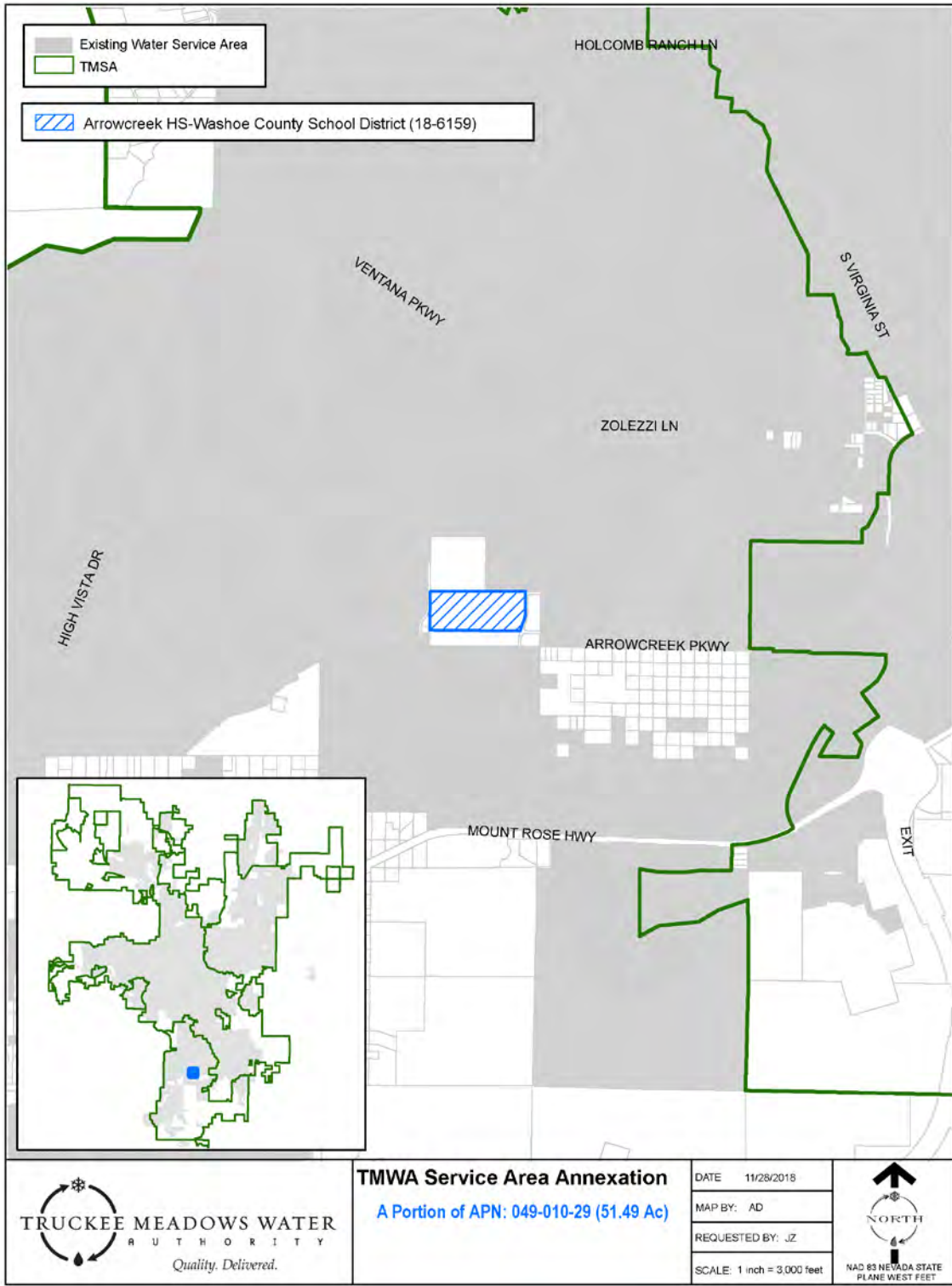
Beginning Balance	4,666.31 AF
Purchases of water rights	0.00 AF
Refunds	0.48 AF
Sales	– 50.79 AF
Adjustments	97.99 AF
Ending Balance	4,713.99 AF

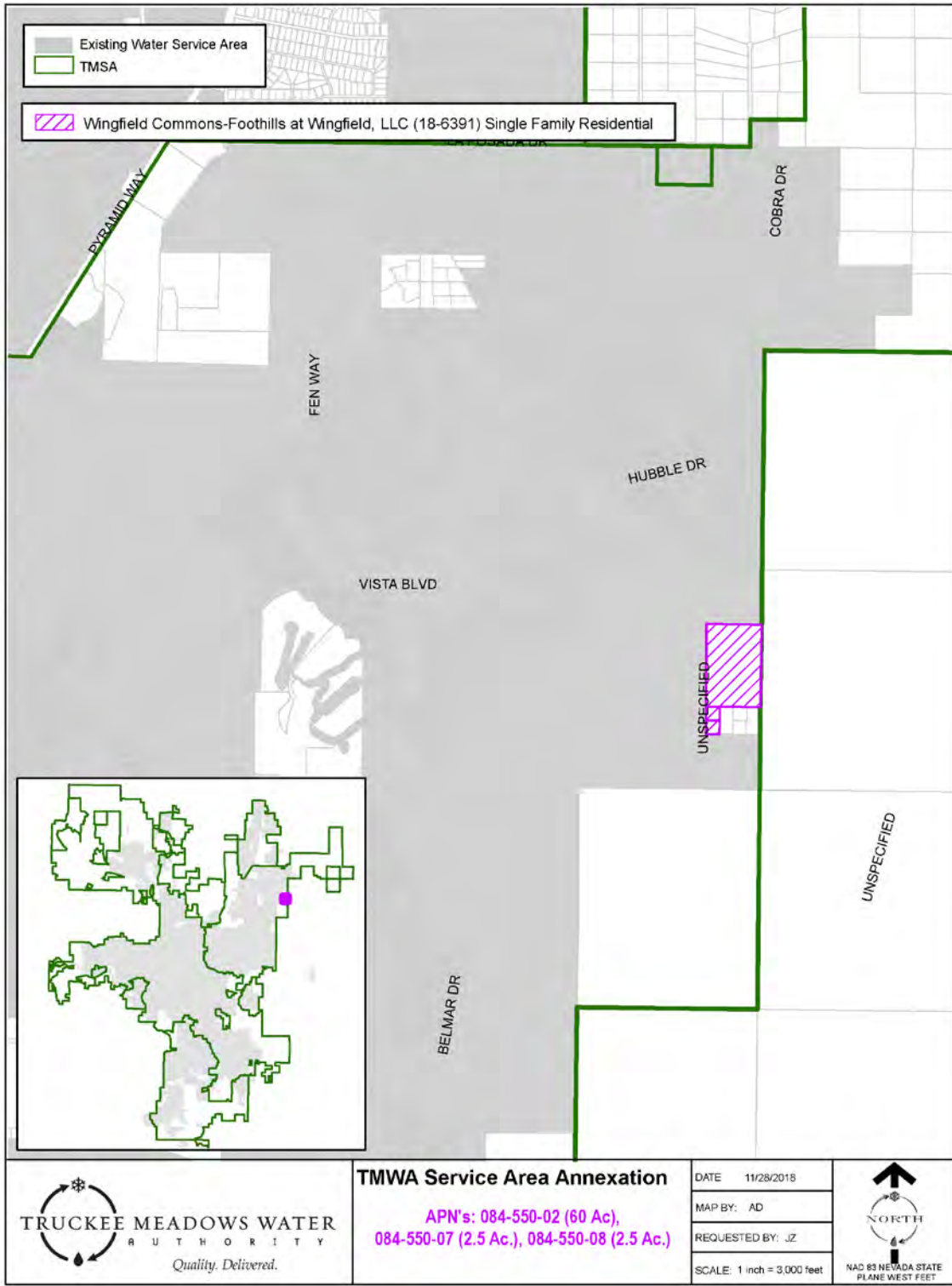
Price per acre foot at report date: \$7,600

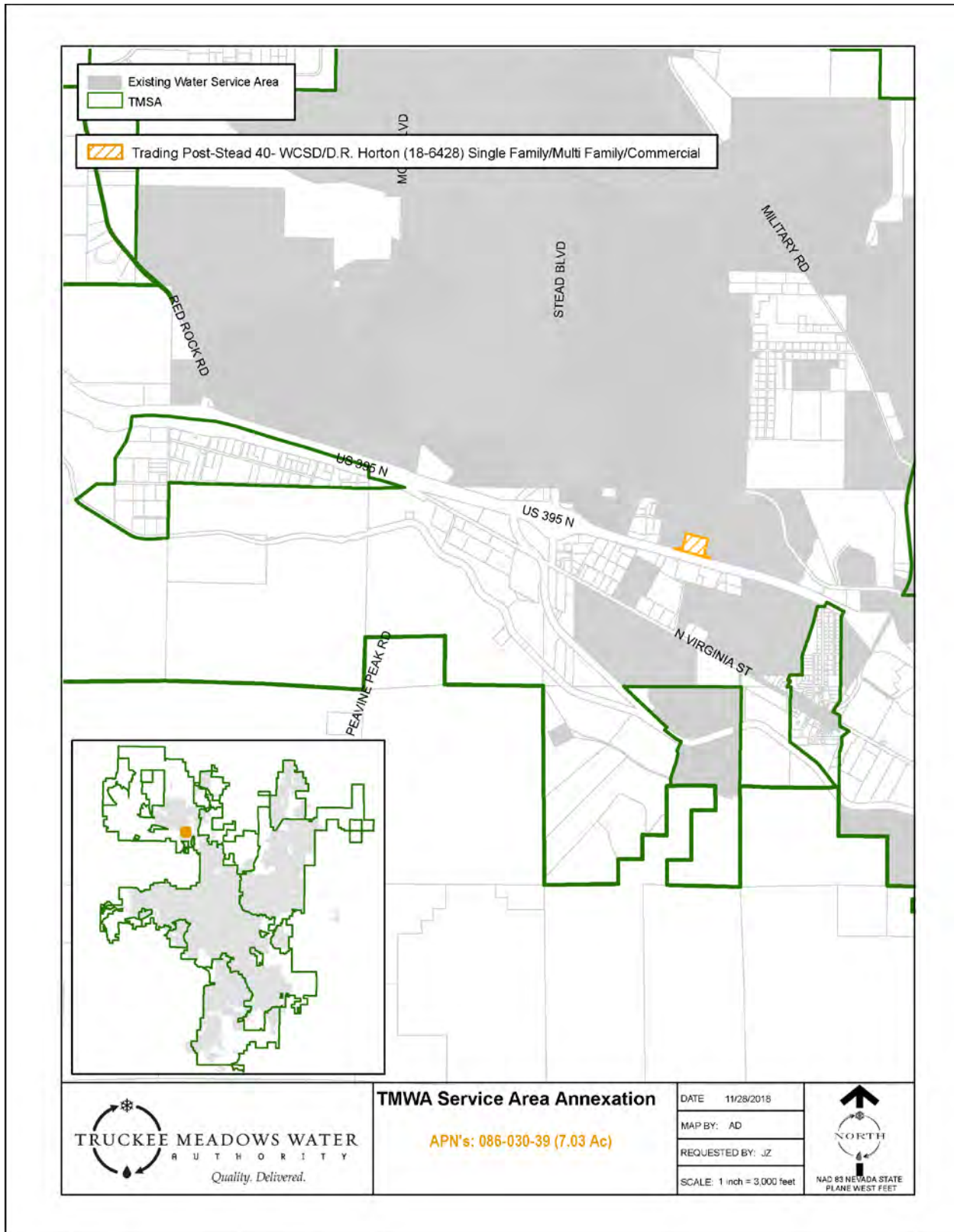
WATER SERVICE AREA ANNEXATIONS

There have been several annexations since the date of the last report (See attached maps).











STAFF REPORT

TO: Board of Directors
THRU: Mark Foree, General Manager
FROM: Marci Westlake, Manager Customer Service
DATE: December 6, 2018
SUBJECT: **October/November Customer Service Report**

The following is a summary of Customer Service activity for October/November 2018.

Ombudsman

- Customer called and requested that all their bills be consolidated, we called him back and took care of his request.
- Customer called and requested information regarding a rate increase for next year, gave her the information of holding off on next year's rate increase.
- Customer called and requested the deposit be waived due to death of wife, we waived the deposit.

Communications

Customer outreach in October/November included:

- Lauren Kunin/Chuck Swegles had a Winterization workshop at TMWA and 15 people attended.
- Kara Steeland had a Watershed, Water Quality and Conservation presentation and 120 students attended at Van Gorder Elementary School.
- Sonia Folsom attended the Rise Academy Career Fair and 80 students attended.
- Ty Miller, Joey Fink, Kara Steeland, Lauren Roaldson, Robert Charpentier and Sonia Folsom attended the Hug High Career Fair and 1200 students attended.
- Lauren Kunin/ Chuck Swegles had a Winterization workshop at TMWA and 20 people attended.
- Lauren Kunin/ Chuck Swegles had a Winterization workshop at TMWA and 38 people attended.
- Lauren Kunin/ Chuck Swegles had a Winterization workshop at TMWA and 17 people attended.
- Lauren Kunin/ Chuck Swegles had a Winterization workshop at TMWA and 22 people attended.

- Sonia Folsom and Jess Kohler attended the Spanish Springs Career Fair and 1200 people attended.
- Sonia Folsom, Kara Steeland, Dana McKinney and Jeremy Hightower attended the Spanish Springs Career Fair and 1200 people attended.
- Chuck Swegles, Lauren Kunin and Sonia Folsom attended the WCSD Career Expo at the Convention center and 2500 people attended.
- Laine Christman, Lauren Kunin, Katherine Perkins Kara Steeland and Sonia Folsom attended the WCSD Career Expo at the Convention center and 2500 people attended.
- Danny Rotter attended the APWA for 2020-40WRP and 25 people attended.
- John Enloe, Shawn Stoddard and Sonia Folsom attended the Student World Water Forum for Water Resources and Sustainability and 40 people were present.

Conservation (January 1 – November 30)

- 6,047 Water Watcher Contacts
- 2,167 Water Usage Reviews

Customer Calls – October/November

- 18,610 phone calls handled
- Average handling time – 4 minutes, 36 seconds per call
- Average speed of answer – 18 seconds per call

Billing – October/November

- 254,080 bills issued
- 5(<.1%) corrected bills
- 18,113 customers (14.0%) have signed up for paperless billing to date.

Service Orders –October/November (% is rounded)

- 15,362 service orders taken
- 7,324 (48%) move-ins / move-outs
- 2,234 (15%) cut-out-for-non-payment and cut-in after receiving payments, including deposits and checks for tamper
- 1,045 (7%) zero consumption meter checks
- 1,148 (7%) re-read meters
- 1,811 (12%) new meter sets and meter/register/ERT exchanges and equipment checks
- 901 (6%) problems / emergencies, including cut-out for customer repairs, dirty water, no water, leaks, pressure complaints, safety issues, installing water meter blankets, etc.
- 364 (2%) high-bill complaints / audit and water usage review requests
- 535 (3%) various other service orders

Remittance – October/November

- 62,675 mailed-in payments
- 55,601 electronic payments
- 66,342 payments via RapidPay (EFT)
- 36,569 one-time bank account payments
- 14,290 credit card payments
- 1,809 store payments
- 4,505 payments via drop box or at front desk

Collections –October/November

- 28,751 accounts received a late charge
- Mailed 18,193 10-day delinquent notices, 7.1% of accounts
- Mailed 5,323 48-hour delinquent notices, 2.0% of accounts
- 940 accounts eligible for disconnect
- 831 accounts were disconnected (including accounts that had been disconnected-for-non-payment that presented NSF checks for their reconnection)
- 0.14% write-off to revenue

Meter Statistics – Fiscal Year to November 30, 2018

- 0 Meter retrofits completed
- 407 Meter exchanges completed
- 696 New business meter sets completed
- 125,700 Meters currently installed



TMWA Board Meeting

Thursday, December 13, 2018

Press Clippings

October 11, 2018 – December 5, 2018



Winter Wonderland, Downtown Reno

Grand Sierra Resort and Keep Truckee Meadows Beautiful cleanup Truckee River

by Issmar Ventura
Tuesday, October 30th 2018



Grand Sierra Resort and Keep Truckee Meadows Beautiful cleanup Truckee River

AA

RENO, Nev. — The Grand Sierra Resort and Casino teamed up with Keep Truckee Truckee Meadows beautiful to clean up the Truckee River.

The cleanup took place on Tuesday, October 30 from 11 a.m. to 1 p.m.

Keep Truckee Meadows Beautiful's main goal is to preserve the Truckee River.

The organization hosts constant cleanup as part of the effort to maintain the cleanliness of the river.

To learn more about Keep Truckee Meadows Beautiful click [here](#).

Study Showed Some Chicago Homes With Smart Water Meters Had Higher Lead Levels: Officials

According to the study, 51 of 296 homes tested showed lead levels above the EPA action level after meters were installed

Published Nov 1, 2018 at 4:13 PM | Updated at 6:22 PM CDT on Nov 1, 2018

A number of Chicago homes with smart water meters have tested positive for higher levels of lead, according to a recent sampling by the Chicago Department of Water Management, officials revealed Thursday.

The surprise announcement was made as part of a press conference touting plans to commission a study on replacing the city's lead service lines - the pipes that connect water mains to single-family and two-flat homes across the city.

Buried in the announcement was news that an ongoing study examining the possible impact of water meter installation indicated the meters could raise lead levels in some homes.

"A portion of a relatively small sample of homes that have water meters installed reported increases in lead levels," said Chicago Department of Water Management Commissioner Randy Conner.

According to the study, 51 of 296 homes tested showed lead levels above the EPA action level after meters were installed.

City spokesman Adam Collins said the city "immediately notified" the 51 homes and sent "a team of experts" to look at possible causes and offer up a solution.

"We have initiated this meter study proactively to look at this problem – to define the problem so we can do something thoughtfully and appropriately," said Jury Morita, commissioner with the Chicago Department of Public Health.

According to officials, more study is needed "to analyze the relationship between water meter installation and lead levels, as the increase may not be related to the meter."

Still, out of what the city said was an "abundance of caution," residents getting a meter going forward will be given a free water filter set and those who have had a meter installed will have the option to request a water filter set. Any household previously tested that had higher lead levels will also receive a free water filter set.

Experts also recommend running water continuously for at least five minutes after not using water for six hours or more.

But for some Chicago aldermen, many of whom learned of the problem during the Thursday morning news conference, it is too little too late.

“If you know of a problem and the city has known of this problem since June and you fail to act, you are being very irresponsible,” said 29th Ward Ald.

Chris Taliaferro.

Environmental groups have also called on the city to be more transparent.

“I was very concerned about the information that I learned this morning,” said Jen Wallig with the Illinois Environmental Council. “I hope we can start working together going forward for a better solution to this problem that is affecting so many of our children.”

The city also announced Thursday that it is commissioning a report to determine “the feasibility and framework of what would be a multi-billion dollar program to potentially replace lead service lines” in the city, said to be “one of the only remaining sources of lead.”

“The safety of Chicago’s water is our top priority,” Conner said in a statement.

“Not only will this report ensure that Chicago remains a leader in water quality efforts, the report will help Chicagoans continue to have a high degree of confidence in their water.”

But replacing the lead pipes that feed many Chicago homes could prove to be an expensive proposition.

“The potential there for tens of thousands of homes is going to cost a couple of billion dollars at least,” 32nd Ward Ald. Scott Waguespack said.

TMWA offers free workshops to prepare for cold winter weather

by News 4 & Fox 11 Digital Team
Wednesday, October 10th 2018



AA

Experts recommend several tips to keep your pipes working through freezing temperatures (Sinclair Broadcast Group)

RENO, Nev. (News 4 & Fox 11) — Temperatures are starting to fall, which makes it a good time to start winterizing your irrigation system.

Truckee Meadows Water Authority (TMWA) is offering winterization workshops to help you prepare your home for the freezing temperatures every Tuesday of this month.

TMWA's staff will be giving tips on how to turn off your sprinkler system and protect water pipes from breaking this winter.

The workshops are free and will take place on Tuesday, October 16; Tuesday, October 23; and Tuesday, October 30

The workshops will be held at 1355 Capital Blvd. in Reno and will begin at 5:30 p.m.

Attendees will also learn how to avoid the expense and inconvenience of frozen water pipes.

To RSVP, please e-mail rsvp@tmwa.com or call (775) 834-8290. You can so get more information on how to winterize your home at tmwa.com

Think twice about WC-1 flood project tax

| Nappe

Tina Nappe

Published 3:30 p.m. PT Oct. 10, 2018 | Updated 3:32 p.m. PT Oct. 10, 2018

An early 3D rendering of the Nevada Department of Transportation's proposed Spaghetti Bowl Xpress interstate exchange project in Reno. Jason Hidalgo, NDOT/Civil FX



(Photo: Provided to the RGJ)
CONNECTTWEETLINKEDINCOMMENTEMAILMORE

The Reno Sparks Chamber of Commerce [has endorsed WC-1](#), a measure adding a tax on all Washoe County properties to address flooding along the Truckee River. Taxes will be higher on those properties within the flood zone, but every property owner will pay something.

For 50 years I have voted for ballot measures addressing needs in education, parks, flooding, safety, the train trench, etc. All these measures not only acknowledged growth but needs for maintenance and improvements. WC-1, unfortunately, has a number of shortcomings, requiring a second look at our flood needs and recreational opportunities.

WC-1 applies only to the Truckee River and not to the tributaries which feed it. Building in the flood plain near tributaries such as Steamboat Creek, which pours into the Truckee River, apparently relies on persuasion rather than regulation. As a result, developers can build on tributary flood plains and pass the problem to the Truckee River, resulting in more flooding, thereby lengthening the time and cost of the tax beyond current estimates.

As for flooding elsewhere in the county — for instance, Swan Lake — there are no funds at all. With a warming climate we may experience more tributary flooding as we receive more rain than snow.

Another view: [Dozens of reasons to oppose WC-1 tax increase: Church](#)

Opposing view: [Vote yes on WC-1 to protect community from flooding: Kazmierski](#)

Have your say: [How to submit an opinion column or letter to the editor](#)

The Truckee River may be the most valuable recreation location in the Truckee Meadows. Given the expected growth of Washoe County and tendency to grow “up” in multifamily housing, there will be more use of and demand upon existing parks and trails. Our open space has an economic development factor in promoting family-friendly living and hosting events. The Truckee River corridor open space needs to be expanded. However, if WC-1 passes, we taxpayers will be encouraging more development along the Truckee River; opportunities for acquiring land may be limited.

Finally, to what extent does passage of this imperfect tax forestall another more critical tax to address flood, recreation or other needs?

The hardworking advisory committee which recommended WC-1 is not at fault. The legislation under which they worked AB 375 was narrow in scope, leaving me, at least, with a “no” vote.

Tina Nappe is a local conservationist.

Do you back WC-1, the tax to fund Truckee River flood mitigation projects?

☐ Yes ☐ No

Vote [View ResultsPollDaddy.com](#)

5 of 84

TNF's Truckee & Sierraville Ranger Districts to begin fall prescribed fire operations as conditions permit

By
Tahoe National Forest

-
October 9, 2018, 02:26:55 PM

Tahoe National Forest, Calif. October 9, 2018 – The Truckee and Sierraville Ranger Districts on the Tahoe National Forest will conduct prescribed fires this fall/winter to reduce build-up of hazardous fuels and to continue restoring forest **ecosystems**. **This year's fire season is again a good reminder of the importance** of prescribed fire, especially in our fire prone environment.

Fall and winter bring precipitation and cooler temperatures which are ideal for prescribed fire operations. Planned projects include low-to-moderate intensity understory burns of vegetation on the forest floor and burning piles of stacked woody material.

The goals of these projects are to reduce the severity and intensity of future wildfires. These project areas provide a safer environment for firefighters to engage a wildfire and provide added protection for communities in the wildland urban interface (WUI). Another goal is to re-establish natural ecosystems using fire. Reintroducing fire through prescribed fire helps to promote a diverse and more resilient forest, as well as improve habitat and forage for wildlife. The Forest Service is also working to reduce fuels by thinning dense stands of trees and brush using mechanical thinning, mastication, and hand removal of vegetation throughout the Tahoe National Forest.

All prescribed fire projects are conducted in accordance with a specific, approved prescribed fire burn plan. Burn plans describe the specific conditions under which prescribed fires will be conducted to safely meet objectives. These include weather, fuel moisture, number of personnel, and opportunities to minimize smoke impacts. This information is used to decide if, when and where to burn. "We do our best to give as much advance notice as possible before burning, however, some operations may be conducted on short notice when the "the burn window" opens, meaning conditions become conducive to implement a burn," stated Robert Hilfer, Acting Truckee Ranger District Fuels Specialist.

The Truckee Ranger District is planning to implement around 500 acres of understory burning and 280 acres of pile burning this season. All prescribed fires will be north of Truckee, and west of Hwy. 89 North. These projects are all located in the Saghen Hills from Prosser Hill to Sagehen Summit.

The Sierraville Ranger District plans to implement around 500 acres of understory burns and 500 acres of pile burning across the district. Underburn projects are available in the areas of Little Truckee Summit along Hwy. 89 North and Sierra County Road 451 (Cottonwood Road), northeast of Independence Lake area along the Forest Service 07-10 Road, and near the Lewis Mill Guard Station along Sierra County Road 860 (Smithneck Road).

Pile burning projects are planned near the communities of Sierraville, Calpine, and Loyalton Pines, as well as in the general Little Truckee Summit/ Independence Lake area, and various other areas throughout the District.

Smoke from prescribed fire operations is normal and may continue for several days after ignition. Smoke settles in low lying areas at night and into the morning and usually lifts out during normal daytime warming. Fire crews conduct small test fires before lighting a larger area to verify how effectively fuels will be consumed to ensure the burn and smoke management objectives can be met. All prescribed fires are monitored closely for burning and smoke dispersal conditions and, if necessary, action is taken to mitigate concerns as they arise. Fire personnel will continue to closely patrol the prescribed fire **based on weather, fuels, and smoke considerations**. Forest Service fuels management personnel work closely with the California Air Resources Board and the local air quality management districts to minimize smoke impacts to communities.

"We are sensitive to the impact smoke has on people, especially those with respiratory conditions and allergies and we make every effort to conduct prescribed fire operations during weather patterns that carry smoke away from communities," said Hilfer. "This summer's wildfires are a reminder of the importance of fuels reduction and that smoke produced during a prescribed fire is much less intense and of shorter duration than that of a wildfire. Fire is a natural part of the Sierra ecosystem. Our prescribed fire program introduces fire into the landscape and re-creates ecological benefits that are essential to our efforts in restoring a more natural and resilient ecosystem and to minimize the severity of wildfires. A moderate amount of smoke now could prevent a lot of smoke later, as well as reduce risks to the public, firefighters, and natural resources."

For more information, or to receive prescribed fire notifications via e-mail, call or email the following contacts: Truckee Ranger District- Robert Hilfer, Acting District Fuels Specialist, at (530) 587-3558 #251 or rhilfer@fs.fed.us; Sierraville Ranger District- Ruby Burks, District Fuels Specialist, at (530) 994-3401 #6621 or rubyburks@fs.fed.us.

For more information on prescribed fire on the Tahoe National Forest, visit www.fs.usda.gov/tahoe or to participate in the conversation at twitter.com/Tahoe_NF and www.facebook.com/TahoeNF.

If you would like to learn more about prescribed fire vs. wildfire, please visit www.smokeybear.com/prescribed-fires.asp.

Southwest states release Colorado River drought plan; SNWA board to vote in November

By



[Daniel Rothberg](#)

October 12th, 2018 - 2:15am

After more than three years of negotiations, Southwest water managers this week released the first public draft of their short-term plan to manage the Colorado River as overuse and drought continue to strain a water supply that supports 40 million people from Wyoming to Nevada.

The complex plan is meant to defer more severe shortage conditions on the river as negotiators in the seven-state Colorado River Basin work out an even more complex long-term framework for a century-old system challenged by higher temperatures and changes in precipitation.

Infighting and a wet start to 2017 had put the plans on hold, but discussions resumed again this year with abysmal snowpack across the basin and forecasts of [a shortage as early as 2020](#) led federal water managers at the Bureau of Reclamation [to call for a plan by the end of the year](#).

Water managers said releasing the draft “[Drought Contingency Plan](#)” on Wednesday was a milestone, particularly after [a spring of public sparring](#) between different factions on the river.

The Southern Nevada Water Authority’s board will consider the plan and vote on it next month.

The plan asks Colorado River water users to make cuts to their supply in an effort to store more water in reservoirs like Lake Mead, the country’s largest storage pool and a symbol of drought across the West. The reservoir, impounded behind the Hoover Dam outside of Las Vegas, is lined by an eerie bathtub ring that shows where the water line used to be, about 140 feet higher.

“I think it shows that we are on track to try to get [a drought plan] done by the end of the year,” said John Entsminger, the general manager of the Southern Nevada Water Authority. “The [drought plan] is an incredibly important set of documents. It demonstrates that the seven states are still capable of coming together and managing this river in the case of changing conditions.”

No easy way to conserve

During a prolonged drought, the plan requires water users to double down on voluntary cuts as a way to keep more water in Lake Mead and Lake Powell, the system’s second-largest reservoir upstream of Lake Mead. If the reservoirs dry up, the seven states risk running afoul of multiple laws that govern the river — the incentive driving everyone to come up with a proactive plan.

If Lake Mead drops another 55 feet, the federal government could throw out the playbook and force even deeper cuts. Most water users want to avoid the uncertainty that comes with that.

“We need to be proactive,” said Jeffrey Kightlinger, the general manager of the Metropolitan, a wholesale water seller for Southern California cities. “We feel it is better to control our own fate.”

If Lake Powell drops even lower, Glen Canyon Dam will produce less hydropower, the revenue of which supports operations and endangered species compliance. More importantly, low levels at Lake Powell put the Upper Basin (Colorado, New Mexico, Utah and Wyoming) in a precarious long-term position. The river's upper division is required to send a certain amount of water from Powell to Lake Mead every year to fulfill their obligations under the 1922 Colorado River Compact. If they don't, downstream users in the Lower Basin (Arizona, California, Nevada) can force the Upper Basin to curtail water use. [This tool is referred to as a "Compact Call."](#)

Without steps like the drought plan, "the system is going to crash," said Andy Mueller, who runs the Colorado River District, which focuses on protecting river water in Western Colorado.

"What that means up here is we think it's possible we will get a call," he said.

But as Mueller also concedes, the devil is in the details. Asking users to conserve more water — and in turn, use less — is a challenging, expensive, and often unpopular proposition. Now that a public draft of the plan is out in public, water districts across the basin must review the plans and sign off on them. Even though Nevada is ready to sign off on the plan and has been ready for more than a year, other water users still have concerns about the conservation measures.

In Arizona, where the cuts would be steepest, state officials are still working on an intra-state agreement that would be palatable for its state legislature, which must approve the plan. To get there, Arizona officials are looking to find ways to mitigate cuts that would disproportionately fall on [low-priority agricultural users](#) in Pinal County outside of Phoenix. Paul Orme, a lawyer for the farming community, said that Arizona officials presented a mitigation plan on Wednesday, but it faded corners from other water users — cities and tribes — that would have to sacrifice their water.

"I can't really answer your question: Where do we go from there?" said Orme.

But he added that Pinal County farmers have significant leverage in the state's legislature.

"There are folks in the Arizona legislature who are very much interested in seeing Pinal County agriculture survive," Orme said.

California is also working toward an intra-state agreement between the Metropolitan Water District and agricultural users over how the cuts would work. Kightlinger said there had been some back-and-forth over what percentage Metropolitan and each agricultural district would conserve to boost Lake Mead's elevation, but the parties are close to a tentative agreement.

"There's a high likelihood we are going to complete this," he said.

There are still key details to work out in Colorado too. Although Mueller agrees with the concept of sending more water to Lake Powell, he said conservation should not fall disproportionately on the backs of farms, ranches and orchards in Western Colorado. Mueller said he wants to see a commitment from cities that they contribute an equal amount to boost reservoir levels at Powell.

"[Conservation] water should come equally from both," he said.

The arid state's counterintuitive role

Although Las Vegas gets 90 percent of its water supply from the Colorado River, Entsminger said the utility will be able to easily absorb the cuts, which kick in once the lake dips below a certain elevation. The region, Entsminger argues, has a more secure supply than other water users because it can access water through a pumping system, even if the lake falls so low that no water can be delivered out of the Hoover Dam to Arizona or California.

In drought negotiations, that puts Nevada in a unique situation. Even though it is the most arid state in the country's most arid region, it has less to lose than others. In a recent podcast with The Nevada Independent, Entsminger likened the state's position to that of Switzerland.

In these negotiations, Entsminger said Nevada helped bridge a divide between the Upper Basin and the Lower Basin. The agreement Nevada helped hammer out is a key part of the drought plan. It allows states like Colorado to “bank” conserved water in Lake Powell without sending it to Lake Mead under the reservoir’s current operating rules; it avoids the weird situation in which the benefit of the Upper Basin’s conserved water is enjoyed by the Lower Basin.

That was at the crux of a disagreement earlier this year, when the Upper Basin states released a letter to the Central Arizona Project, which controls Arizona’s Colorado River canal, of placing water orders to manipulate in such a way that they could take more water from Lake Powell.

“We saw that the water that was being saved was pulled down the river by convenient timing of orders from the Central Arizona Project,” Mueller said. “We weren’t very happy with that.”

The recent deal, Entsminger said, could go a long way in improving the historically tense relationship between an Upper Basin that has the right to use more water than it does and a Lower Basin that [operates with a “structural deficit,”](#) using more water than it takes each year.

“It’s very big from an Upper Basin, Lower Basin relationship perspective that we are going to set aside some of the dogma of the river,” Entsminger said during an interview this week.

James Eklund, Colorado’s chief negotiator in the drought talks, said Entsminger played a helpful role in bringing all of the various interests together to hammer out a deal.

“He’s been a calm voice in the discussions,” he said.

But creating a “bank” in the Upper Basin comes with its own legal and funding challenges. Who pays to incentivize conservation? Who gets title to the conserved water? How do you account for it? And how do you shepherd it to Lake Powell without other users diverting it along the way?

“Our position has been cautious optimism,” said Kightlinger, who represents Southern California users. “We’ve given them [a go-ahead] on the construct but we really want to see the details.”

On second thought, it’s not “drought plan”

How complicated is all of this?

The drought plan is so complex and involves so many side agreements that it has come to mean something different to different groups. Almost everyone agrees that it is a short-term fix to a long-term problem — climate change and overuse mean there is less water to go around.

Water managers are not even sure what to call it.

It’s about drought, yes. But some take issue with that word because it suggests that the system will recover from the conditions that have drawn down Lake Mead to its lowest elevation since it was fully filled. Eklund said that a more suitable name could be the “Climate Contingency Plan.”

“It gets away from the notion that we are going to get bailed out by the weather,” he said.

Eric Kuhn, a former general manager of the Colorado River District who is working on a book about the history of Colorado River hydrology, agreed that using the term “drought” is flawed.

He asked: “Is this a Drought Contingency Plan or is this thing what we need to do for the rest of our lives? I personally think it’s kind of a joke to call it a Drought Contingency Plan.”

In many ways, the drought plan is a first step. For conservation groups, it is a way to create the reliability needed to tackle other important issues, like habitat and the general health of the river.

“Reliability of the Colorado River water supply is important both to people and to nature,” said Jennifer Pitt, who works on river issues for the Audubon Society. “We are very encouraged to see the progress that is being made toward adopting this [plan] and we know that is not the end of the story. That’s the beginning of the story. There’s more work to do.”

For others, it's a prelude to future negotiations. Once the conservation plan is finalized, the conversation will shift to long-term planning. Right now, water managers are operating under a set of guidelines completed in 2007. Those expire in 2026 but negotiations for new guidelines begin in 2020. The plans will likely go through an extensive environmental review. The purpose of the drought plan, Entsminger and others said, is to ensure water users can get to 2026 without severe shortages.

“The question is what if this drought continues,” Entsminger said. “What if climate change makes the hydrology worse than anything we’ve seen or modeled? Then what does the next iteration of Colorado River management look like?”

Keep Truckee Meadows Beautiful holds annual Cleanup Day in Reno

by Issmar Ventura
Saturday, October 13th 2018

Keep Truckee Meadows Beautiful holds annual Cleanup Day in Reno

RENO, Nev. — Keep Truckee Meadows Beautiful held its annual Truckee River Cleanup Day on Saturday, October 13.

Volunteers were there from 9 a.m. to noon for the massive cleanup and beautification effort throughout the Truckee River watershed.

According to KTMB, last year, over 750 volunteers removed more than 24,000 pounds of trash and 38,000 pounds of invasive weeds during the Truckee River Cleanup Day.

Cleanup activities such as trash pick-up, invasive weed removal, storm drain stenciling, graffiti removal and park other beautification projects were completed on the day.



*Keep Truckee Meadows Beautiful
holds annual Cleanup Day in Reno*

KTMB has included tributaries and streams to the Truckee River, stopping litter and blight in its tracks, as part of their effort to reduce waste.

The organization collaborated with other agencies such as the Nevada Land Trust to make the cleanup possible. Nevada Land Trust leads the One Truckee River Initiative which brings together stakeholders from various sectors of the community to identify issues along the Truckee River.

Together, they to come up with proactive solutions to make -and keep- the Truckee River healthy, clean, and safe.

More information on the One Truckee River Initiative can be found [here](#).

The Reno Fire Department also helped in cleaning up the Truckee River.
[Twitter Ads info and privacy](#)

2018 Cleanup Statistics:

- 776 volunteers showed up to help with the cleaning
- Volunteers worked at 22 sites spread along the river and throughout the watershed
- 24,450 pounds of trash and 108,810 pounds of invasive weeds and green waste were removed
- 324 storm drains were stenciled, hundreds of storm drain educational door hangers distributed
- 42 plants and two pounds of seeds were planted
- 67 tires were removed from the sites

To learn more about Keep Truckee Meadows Beautiful and their annual Cleanup Day click [here](#).

Water & Land

Coyote Springs, Moapa water district, tribe raise concerns about draft water order

By



[Daniel Rothberg](#)

October 15th, 2018 - 2:00am

Aiming to protect long-held water rights and an endangered fish, state regulators released a draft order at the end of September to prevent over-pumping in six connected aquifers from the Apex Industrial Park to Coyote Springs. In that stretch of desert, water users have more rights to groundwater than can be pumped sustainably. But the problem is how to tackle the issue without infringing on other rights, and few are pleased with one of [the state's proposed fixes](#).

The CEO of Coyote Springs Investment, a developer continuing a [decades-long effort](#) to build a far-flung master-planned community 60 miles outside Las Vegas, called it “nothing more than a perfectly timed good old fashioned modern-day water grab.” A lawyer for the Moapa Band of Paiutes [called it](#) “unnecessary, premature, and likely to have unintended consequences.” The Moapa Valley Water District’s lawyer [said the language](#) was “ambiguous and overbroad.”

The proposed regulation caps groundwater pumping and halts new subdivisions that depend on the aquifers unless developers can prove they can import or secure water to offset the impacts of pumping. Too much groundwater pumping can dry up springs and underground aquifers.

The state engineer’s draft order

In Nevada, where rivers are scarce, many businesses and towns pump water from underground aquifers. To do so requires a water right from the state engineer, Nevada’s top water regulator.

The hydrologic system of groundwater basins that includes Coyote Springs.



But there's a catch. Since the 1900s, Nevada regulators have issued about four times as many rights as they believe can be pumped from the area's aquifers ([this type of over-appropriation is not rare](#)). If everyone uses their water right, they could dry up the already dry area.

"It is believed that only a very small portion of the existing rights within the [system] may be pumped without adversely impacting the senior rights on the Muddy River or the habitat of the Moapa dace," Jason King, the current state engineer, [wrote in the draft regulation](#).

As a result, the draft order limits pumping to 9,318 acre-feet, a unit that describes the amount of water that can fill an acre to a depth of one foot. That is the average pumpage over the past three years, a small fraction of the roughly 40,000 acre-feet that water users have a right to pump.

The order's goal is to protect users with high-priority water rights. Western water law revolves around the principle of "first in time, first in right" — whoever has the oldest claim to water, gets priority to it in times of scarcity or during a conflict with other users. It is also intended to protect the Moapa dace, [an endangered species](#) that persists in groundwater-fed springs and the Muddy River, a small tributary of the Colorado River. Too much pumping could lower water levels in both.

In addition, the draft order would place an indefinite halt on the approval of subdivision maps unless a developer can identify an additional source of water, arguing that developing land with a water right that could be curtailed in the future should be "examined with great caution."

Coyote Springs wants to build homes

That's an issue for many water users, but a notable one for Coyote Springs, which [operates a golf course in Moapa](#). Coyote Springs Investment has [long wanted to build homes around it](#), thousands of residences on undeveloped desert an hour commute from downtown Las Vegas.

"Our visceral reaction to this situation is that this is nothing more than a perfectly timed good old fashioned modern-day water grab now that our project is at a point to start building homes," Emilia Cargill, the CEO of Coyote Springs Investment, wrote in an email.

Over the last two years, Coyote Springs began to lay the foundation for future development. It submitted water infrastructure plans to the Las Vegas Valley Water District, its purveyor through a General Improvement District. But the district had some concerns. Past orders from the state engineer — and subsequent aquifer testing — had suggested there might not be enough water for Coyote Springs to build without harming higher-priority users or the endangered Moapa dace.

After urging Coyote Springs to find alternate water sources, the water district appealed to the state engineer, asking if he would, at that point, approve their subdivision maps. In May, he told them no.

Coyote Springs took the state engineer to court. That case was settled in August after the state engineer agreed to rescind the May letter and Coyote Springs agreed to participate in good-faith efforts to manage the groundwater basins. Coyote Springs has since sued the water district.

Starting in July, water users in the Moapa area, including Coyote Springs, began participating in a workshop about how to address the issue of excess rights in the basin. The draft order came out of that process. In a letter submitted this month, a lawyer for Coyote Springs slammed the draft order process, saying that there was not enough time to review the proposal. For months, Coyote Springs has argued that there is not enough scientific data to justify the cap on pumping.

"The draft order prematurely and primarily harms one water right user," the lawyer wrote.

But the state engineer has argued in public workshops that there is enough evidence to support the order. Pump tests have shown that there is a “direct interrelationship” between pumping and declines in water levels. For instance, a two-year pumping test that was completed in 2012 led to “unprecedented declines in groundwater levels and flows” in two springs, the state engineer wrote in the draft order. Those springs, he argued, are reflective of the Muddy River’s health.

Concerns from other water users

Several water users with low-priority, or junior rights, are also seeking changes to the draft.

In public comments, an attorney for the Moapa Band of Paiutes [acknowledged the difficulty of the situation](#) and applauded the state engineer for attempting to tackle it. But the lawyer said the proposal could conflict with existing efforts to protect the Moapa dace and make its junior rights more vulnerable, forcing the tribe to initiate a long adjudication process to protect its rights.

“It appears highly unlikely that all permitted groundwater can be pumped without damage to senior rights and the Moapa dace,” [the tribe’s lawyer wrote](#). “The tribe understands the state engineer’s interest in slowing groundwater development in the region. “Nonetheless, in the tribe’s view, entry of the draft order is necessary, premature and likely to have unintended consequences.”

Others believe that the current draft leaves too many uncertainties about whether junior rights could be developed if higher-priority water users aren’t using their full allotments. [The Moapa Valley Water District is concerned](#) its junior rights, which it is currently using, could be impaired in the name of protecting senior rights, even as senior rights holders are not pumping their allocations.

As a general principle of Western water law, known as “use it or lose it,” water rights must be put to use or the owner of the water right could risk losing it. Gregory Morrison, the district’s lawyer, argued the draft is unclear about whether the district can reliably continue pumping water.

“It needs to be addressed when a final order comes out,” Morrison said in an interview.

A longer-term plan?

The draft is just that — a draft. And there are other long-term solutions on the table. According to notes from a public workshop on Sept. 19, the state engineer’s office said “the draft order was really intended to be an order that would run in parallel with the working group’s efforts to develop an alternate long-term solution, such as a conjunctive management plan.”

[A conjunctive management plan](#) is a resource tool to manage surface water and groundwater together. Traditionally, the state has looked at streams and aquifers as separate resources. But the state engineer’s office has increasingly acknowledged that a better approach is to view them as interconnected. They are often pursued through a local process and can be tailored to the specific needs of a particular water system. In an interview with [The Nevada Independent](#) earlier this year, King, the state engineer, said he would like to see more local management plans.

“I am a big proponent of groundwater management plans that are developed by the individual water rights holders in those basins in conjunction with our office,” he said.

If an order is issued, it is possible that it would be issued temporarily, as a stopgap while water users craft a more comprehensive management plan for the six aquifers in question.

The state engineer [will discuss the draft order and other solutions in Overton on Oct. 24](#).

Hackers attack NC water utility; authorities investigating the 'sophisticated ransomware attack'

- Associated Press



JACKSONVILLE — Federal and state officials are working with a **North Carolina** water utility after hackers attacked some of its computer **systems**.

The head of the Onslow Water and Sewer Authority said in a news **release Monday** that its internal computer system, including servers and **personal computers**, were subjected to what was characterized as "a **sophisticated ransomware attack**."

CEO Jeffrey Hudson said while customer information wasn't **compromised in the attack**, many other databases have to be recreated. **He added that the FBI, the Department of Homeland Security and the state of North Carolina have been called in.**

Hudson said the utility began experiencing virus attacks from a malware **system on Oct. 4**. He said it was believed the virus was brought under **control, but security specialists were called when the problem persisted.**

Last December, Mecklenburg County computer systems were hacked and **local leaders** refused to pay a hacker \$23,000 to unlock data on county **servers frozen by malicious** software. The computers handled a collection of **property taxes, building permits and** processing jail inmates. **Technology workers made digital repairs with backed-up data.**

In March, the city of Atlanta's computer network was the victim of a **ransomware cyberattack**. **A city spokeswoman said the attack was discovered by the city's information security team, which noticed "something that looked peculiar" on the server and began investigating.**

Also in March, a ransomware attack hit Baltimore's 911 dispatch system, **prompting a roughly 17-hour shutdown of automated emergency dispatching**. The Colorado Department of Transportation suffered two attacks a month earlier.

Water & Land

[Companies pull out of funding package for wastewater pipeline to TRIC, but they say the project will continue](#)



[Daniel Rothberg](#)

October 16th, 2018 - 2:15am

After several companies decided not to pursue a funding package for infrastructure to send reclaimed wastewater to the Tahoe Reno Industrial Center (TRIC), the Storey County Commission tabled its approval of financing for the project at a recent meeting in October.

For months, companies at TRIC, such as Tesla and Switch, have sought to build a 13-mile pipeline to connect the park with the region's main wastewater treatment center in Sparks. Doing so would allow [companies to supplement their water use](#) with a recycled supply.

Last month, an interim legislative board [approved a funding package](#) in which the state would issue \$35 million in bonds to help complete the pipeline if the companies paid them back through a Special Assessment District, a designation that tethers an infrastructure tax to their property.

But in the past two weeks, the funding structure for the deal collapsed.

A lawyer for the industrial park's General Improvement District, which will own and operate the pipeline, confirmed that a couple of companies withdrew their support for using a special assessment as a financing tool. Robert Sader, the lawyer, said in an email that "there was a lot of concern by all that the [special assessment district] approach had some serious downside."

"This was not the fault of the county or the state," he added.

One company, Sader confirmed, pulled out of the pipeline project altogether.

Several companies had already indicated a willingness to prepay their assessment to avoid a lien. Once one company dropped out of the special assessment district and the financing package had to be restructured, the remaining companies decided there was no longer a need for the special assessment district, which staggered payments over 25 years, because they were already going to pay their assessment up front.

Sader said TRIC intends to complete the project even if an assessment district is not put in place. At this time, Sader said that the pipeline will no longer be funded through bonding.

"The consequence is that the pipeline will still be built by the master developer, Tahoe-Reno Industrial Center, LLC, and each [water user] will still pay its share of costs, but construction will not be funded by a bond to be paid back over time by assessments," he said.

Over the past year, the Reno and Sparks city councils signed off on tentative versions of the pipeline plan. But when the issue of financing the pipeline came before Storey County on Oct. 2, the county moved to postpone a vote on the project, [according to minutes of the meeting](#).

Late last week, one of the six participants withdrew from the financing structure,” Storey County Manager Pat Whitten said, according to the minutes. “This significantly changes the proposal on many levels and there are now a multitude of questions needing to be answered.”

After the companies changed course on the funding, Storey County also decided to postpone a vote on a tax increment area, which would contribute some public funding to the project. That [aspect of the proposal](#) had been criticized by legislators at a finance committee in September.

According to the minutes, the Storey County Commission Chairman Marshall McBride moved to take the TRIC pipeline off of the agenda and table a vote until there was a revised plan. Lance Gilman, a TRIC developer and a county commissioner, recused himself from the proceedings.

Sader said that most of the companies still support the concept of sending reclaimed water from the region’s wastewater treatment plant, the Truckee Meadows Water Reclamation Facility, to the industrial center. The main difference, Sader said, is that some of the companies no longer support using a special assessment district, which would put a lien on their properties. Because of non-disclosure agreements, Sader could not say which companies pulled their support.

Although financing for the pipeline project has met turbulence over the last year, the pipeline project itself has been cast as a win-win. Regional growth, due in part to the presence of big employers like Tesla, is already straining municipal infrastructure. Reno, Sparks and Washoe County are looking at capacity problems in their sewer systems as more development comes online. There is a limit to how much water the treatment plant can discharge into the Truckee River, one of the country’s most regulated waterways, without creating issues with its chemistry.

By leasing their treated wastewater to TRIC, the municipalities would be able to alleviate some of their infrastructure capacity issues in the short-term. At the same time, the companies would be able to make use of recycled water, a solution that squares with their environmental goals. For the industrial park, it would ensure there was an adequate water supply as it grows.

“It’s really an innovative and progressive way to do water management,” Paul Anderson, the executive director of the Governor’s Office of Economic Development, [said in an interview](#) last month.

The state-backed bonds were only meant to cover the initial build-out of the project, a 13-mile pipeline from the wastewater treatment facility to the park. Landowners at TRIC are expected to pay an additional \$80 to \$100 million in on-site infrastructure to move and store the wastewater.

But elements of the plan have been criticized.

At an Interim Finance Committee meeting, some lawmakers raised concerns about how sending 4,000 acre-feet of water to TRIC would affect flows on the Truckee River (an acre-foot is the amount of water that can fill one acre to a depth of one foot). The lost flows from the plant will be offset by 1,500 acre-feet of water rights owned by TRIC and another 2,500 acre-feet of water rights owned by NDOT.

Although the finance committee voted unanimously to authorize state bonds for the project, the Reno-Gazette Journal reported that at least one lawmaker questioned why the state [was contributing water rights](#).

“In a state where water is everything ... I have never heard of water just being given away.” Assemblywoman Teresa Benitez Thompson said, according to the paper. “We are essentially giving this water. We will not be getting any compensation for this water.”

Update: This story was updated at 9:22 a.m. on Oct. 16, 2018 to add more information about why the companies decided not to pursue the special assessment district.

Science says fluoride in water is good for kids. So why are these towns banning it?

In the past five years, 74 cities have voted to remove fluoride from their drinking water, despite thousands of studies showing it prevents cavities.

by Elizabeth Chuck / Oct. 17, 2018 / 1:29 AM PDT / Updated 5:37 AM PDT



"Anti-fluoridationists" claim, without scientific evidence, that fluoride lowers IQ and causes everything from Alzheimer's to cancer. Benedetto Cristofani / for NBC News

It has been [hailed](#) by the Centers for Disease Control and Prevention as one of the top public health achievements of the 20th century. Numerous studies have proven its [safety](#) and [efficacy](#). But fluoride — the naturally occurring compound that prevents cavities and tooth decay — is still sparking heated debates, seven decades after it was first added to America's water supply.

"Anti-fluoridationists" — a [small](#) but vocal minority — are disputing long-established science to say that fluoride added to tap water lowers IQ and causes everything from acne to anemia to Alzheimer's.

These anti-fluoride believers are active online but also at the polls: In the past five years, 74 cities have voted to remove fluoride from their drinking water, according to the American Dental Association. This year, there have been 13 votes around the country on fluoridation, and at least three more cities have fluoride referendums on the ballot in November: proposed bans in Brooksville, Florida, and Houston, Missouri, and a vote on bringing fluoridated water back in Springfield, Ohio.

The frets over fluoride are reminiscent of the unfounded fear that vaccines cause autism: disproved by science, yet steadfast nonetheless. The persistence of fluoride conspiracy theories — which emerged in the 1950s with claims that fluoridation was a communist plot to dumb down Americans — is alarming public health officials, including the American Dental Association and the [American Academy of Pediatrics](#), who say fluoride is a safe, inexpensive way to boost children's oral health.

Dr. Johnny Johnson, a retired pediatric dentist who is president of the nonprofit [American Fluoridation Society](#), calls the anti-fluoride efforts “cult-like.”

“You cannot tailor public health to the whims of a small group of people,” he said. “If you are doing that, you are harming a large group of people.”

The anti-fluoridationists, though, say that it’s the fluoride supporters who are harming the public’s health. Some [argue](#) that the government uses fluoride as a form of mind control; others believe it's designed to boost the sugar lobby by enabling people to eat more sweets without getting cavities; and still others believe that health officials are afraid to reverse course on fluoride after promoting it for decades.

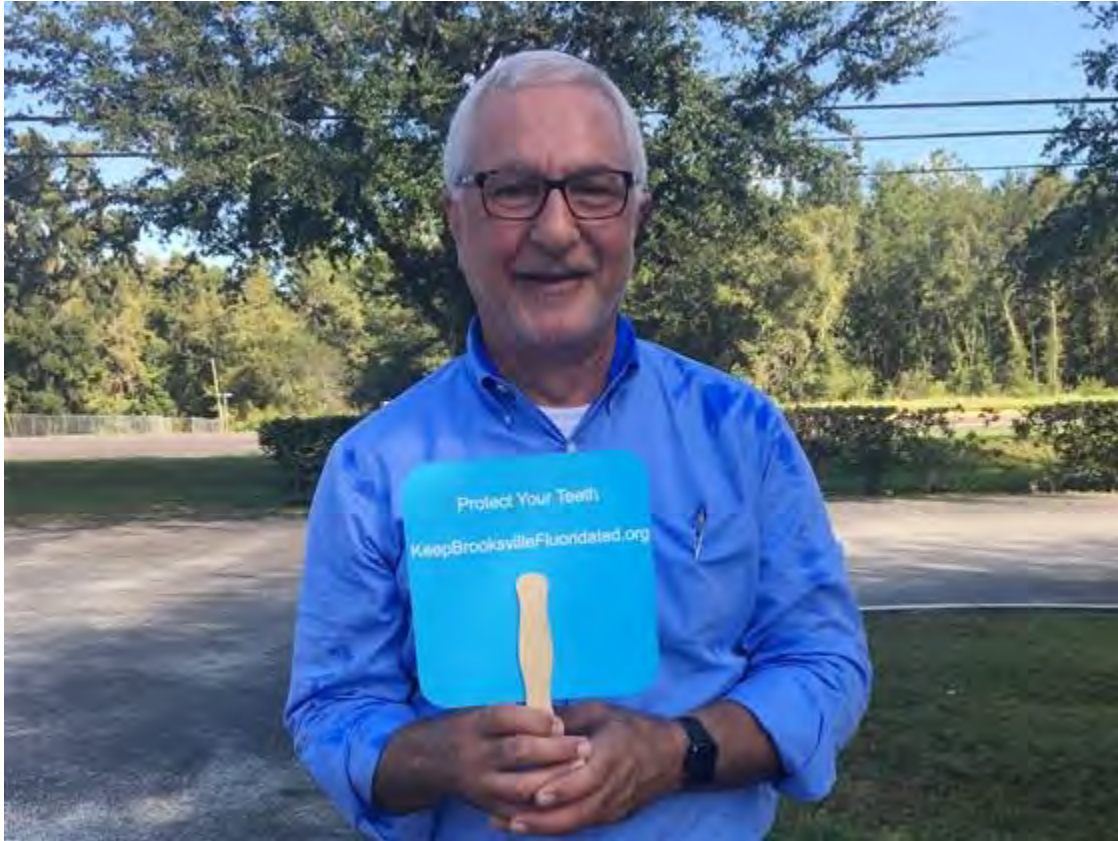


Paul Beeber, president of the New York State Coalition Opposed to Fluoridation, speaks at a 2012 press conference in New York City. Bryan Smith / Zuma Press file

They spread the word on Facebook groups, like that of the [New York State Coalition Opposed to Fluoridation](#), which blames fluoride for problems including thyroid damage and was [slammed](#) in 2012 for falsely claiming that the federal government “recommends avoiding fluoridated water when making infant formula.” ([The CDC says it’s fine](#) to use fluoridated tap water for formula, though the agency notes it may cause mild spotting on babies’ teeth, so parents can use low-fluoride bottled water some of the time instead.) Reddit users [claim](#) fluoride kills gut bacteria. And on Twitter, fluoride is regularly [called](#) a [cancer-causing](#) neurotoxin.

The anti-fluoride movement has also made headway offline. In June, the Texas Republican Party opposed water fluoridation in its [2018 platform](#). In New Jersey, where more than 80 percent of residents do not have fluoridated water, the town of East Brunswick [stopped fluoridating](#) three

years ago after Mayor David Stahl called it "mass medication of the public," a familiar refrain on anti-fluoridation forums. In Brooksville, Florida, a city of 8,000 about an hour north of Tampa, Mayor Betty Erhard has said for years that fluoride is a toxin and a waste of taxpayer money. Next month, at her urging, Brooksville will vote on removing it.



Dr.

Johnny Johnson, president of the American Fluoridation Society, campaigns to keep fluoride in the water in Brooksville, Florida. Courtesy of Dr. Johnny Johnson

"I believe that people should consent to what's in their water," Erhard said. Some townspeople agree.

"Fluoride is a dangerous cancer-causing agent. I don't even like taking a shower in it," one wrote on Erhard's Facebook page.

CONTROVERSY FROM THE VERY START

The first place in America to receive fluoridated water was Grand Rapids, Michigan, in 1945, when residents there became guinea pigs for the theory that boosting existing natural fluoride levels in water would decrease tooth decay, particularly in children. The experiment, by the United States Public Health Service, was done without residents' consent — still a point of contention among anti-fluoridationists.

The experiment was so successful that 11 years into what was supposed to be a 15-year study, researchers announced the rate of cavities among Grand Rapids' 30,000 schoolchildren had [dropped](#) by 60 percent. But not everyone was pleased.

"I was called a murderer and a communist," Dr. Winston Prothro, director of public health in Grand Rapids during the early days of fluoridation, [told The Washington Post in 1988](#). "I must have had letters from every city in America, and plenty from other countries, too. It fell on me to defend the physical and moral health of our entire city."

Since then, the conspiracy theories have evolved from fears of a communist plot to other worries about purported dangers of fluoride — an abundant element that occurs naturally in water, even when it's not added by the government.

"Now, you have this weird backlash where people think that anything that is a chemical is bad, even though everything is a chemical," said University of Miami associate professor Joseph Uscinski, co-author of the book "American Conspiracy Theories." "There are groups of people who think that if something isn't natural, it is somehow impure or bad, and it grosses them out."

To experts, objecting to fluoride is nonsensical. The compound, consumed in water or applied topically through toothpaste or mouthwash, prevents cavities by replacing weakened structures in the teeth, said Dr. Kerry Maguire, associate clinical investigator of [Forsyth](#), an independent research institute specializing in oral health.

It's true that too much fluoride can be dangerous — one complication is skeletal fluorosis, which causes stiffening and pain of the joints and bones or abdominal pain, nausea and vomiting — but those effects only occur with prolonged exposure to a far higher level of fluoride than is found in public water systems in the U.S., [experts say](#). In this country, the only common side effect of fluoridation is fluorosis of the teeth — minor staining that is often only visible to a dentist.

THE ANTI-FLUORIDE MOVEMENT

Today, nearly 75 percent of the U.S. [receives fluoridated water](#) from community water systems.

That's a number that Paul Connett, a chemistry professor emeritus at St. Lawrence University in Canton, New York, hopes to get down to zero.

"There's umpteen ways that fluoride can cause damage," said Connett, executive director of the nonprofit [Fluoride Action Network](#), which aims to end fluoridation worldwide.

Connett was initially skeptical of concerns about fluoride when his wife asked him two decades ago about its health effects.

"The prevailing attitude is that people who are opposed to fluoride are crazy, so I didn't want to be stigmatized in that way," Connett said.

WC-1: Ballot question asks Washoe voters to raise property tax for Truckee flood control

[Benjamin Spillman](#), [Reno Gazette Journal](#) Published 12:07 p.m. PT Oct. 18, 2018 | Updated 1:27 p.m. PT Oct. 18, 2018 See the Truckee River levels in Reno on Thursday, April 5, 2018 before the next storm hits the region.

Jason Bean, RGJ



Buy Photo

(Photo: Jason Bean/RGJ)

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Voters in Washoe County will have a chance to authorize a project that backers say would prevent devastating Truckee River flooding.

But they're going to have to pay for it.

[WC-1](#) asks voters to increase property taxes by an estimated \$8.68 per \$100,000 of assessed value, which adds up to about \$30 per year on an average home.

The payoff for the tax increase, backers say, is that it would dramatically decrease the risk of flooding on the Truckee River, a long time problem for the region. Critics say the measure is incomplete because it's limited to just the main stem of the river.

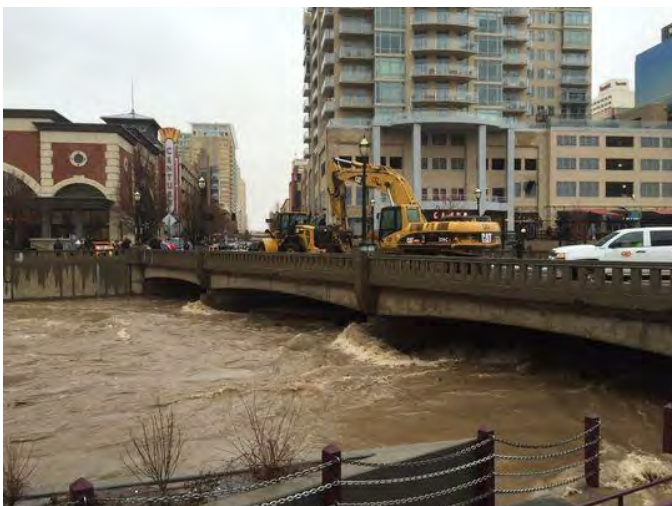
The property tax increase would generate about \$89 million to go toward a package of projects along the Truckee River aimed at preventing catastrophic damage the region experienced in 1997 and 1955.

RGJ Investigates: [Reno knew Lemmon Valley would flood, but it allowed development anyway](#)

From the archives: [Northern Nevada's next superstorm: Rare, but possible](#)

What would the money pay for?

Some of the projects include replacing bridges in downtown Reno at Sierra, Center and Lake streets. Another project would increase flow rates at Vista Narrows, a notorious chokepoint in eastern Sparks, by excavating terraces along the banks.



Buy Photo

Floodwaters rise beneath the Sierra Street Bridge in downtown Reno. (Photo: Jason Bean/RGJ)

The money would also serve as local funding required to access \$182 million in additional money from the federal government.

In addition to the local property tax and federal funding, the planned flood control project will receive money from a 1/8 cent sales tax established in 1998 and a fee on properties within areas along the river where flooding would be prevented.

“Once this project is complete it will take the properties out of the 100-year flood,” said Bob LaRiviere, chairman of the Truckee River Flood Control Project Needs Committee.

Legislation in 2017 created the committee to identify funding mechanisms to reduce flooding hazards along the Truckee River.

The 16-member group identified the property tax on county residents and an additional fee on properties within the flood zone as the best choices to pair with federal funds and the existing sales tax.

The money would go toward about 30 projects on three segments of river, downtown Reno, the Truckee Meadows and Lower Truckee.

The projects are what remain of the Flood Project Plan, a 41-project list aimed at bolstering the river to withstand a 100-year flood.

Areas that would directly benefit include downtown Reno and much of southeast Reno, including the Reno-Tahoe International Airport and industrial development south of the Truckee River in Sparks.

In addition to the property tax, properties in the direct benefit area would pay an additional fee of \$3 to \$8 per 1,000 developed square feet.

Backers say if the project prevents just one repeat of the 1997 flood it would save the community \$2.5 billion.

Buy Photo

Standing water is seen on the flood plain surrounding the Reno/Sparks Southeast Connector just south of the Sparks Industrial Complex and the Truckee River on Jan. 9, 2017. (Photo: JASON BEAN/RGJ, RENO GAZETTE-JOURNAL-USA TODAY NETWORK)



Critics say the project won't protect all flood-prone areas of the community

Although WC-1 promises to alleviate future flooding concerns along the Truckee River, critics have pointed out shortcomings in the measure.

Among them is that it doesn't cover all of the areas in the community that are subject to catastrophic flooding.

The measure wouldn't generate money to reduce the flooding risk on drainage ditches flowing to the Truckee River. Nor would it produce money to prevent flooding in places such as Lemmon Valley, where the wet winter of 2016-17 [filled a dry lake bed higher than historic levels and flooded dozens of homes](#).

“The people who put the legislation together did not do a holistic job,” said Tina Nappe, a local conservationist who wrote a column criticizing WC-1. “They didn't consider the tributaries and they didn't look at flooding as an issue.”

Supporters of WC-1 say if the measure is approved it would prompt further action to evaluate flood protection for those areas, but they admit those projects would require another funding source.

Thirteen months after a record winter flooded Swan Lake in Lemmon Valley, homes remain surrounded by water. Jason Bean and Anjeanette Damon/RGJ

American Fork smart watering company working towards water conservation

- Karissa Neely Daily Herald

Promotional image showing the Skydrop smart watering system.

Courtesy Skydrop



One American Fork company is working towards a smart solution to conserving how Utahns water their gardens and landscapes.

Utah is the second driest state in the nation, and has been even more so this year. Gov. Gary Herbert announced a state of emergency Monday due to the extreme drought, with calls for water conservation. Places like Saratoga Springs are addressing this through irrigation water metering, and other cities, like Lehi, are looking at similar systems.

Some local leaders feel Utahns need to change how they view water within the state, but drive through a neighborhood during the spring, summer or fall, and one can find homes where sprinklers are going full force while it's pouring rain.

Skydrop is a smart sprinkler tech company that tackles this problem, utilizing water conservation right at the individual sprinkler. It enables users to water their lawns, gardens and shrubs on a responsive schedule according to when the plants actually need the water.

As Brandon Kennedy, Skydrop CEO, explained, the Skydrop system takes into account historical, current and future weather data in its watering schedule for a home system. It interfaces with state weather data system every hour, so watering changes are made in real time.

The smart watering system, which can be integrated with several different smart home platforms, monitors zones a resident sets up around their home, what type of plants are planted where, the soil make-up, whether the plant is in shade or sun or on a slope, and the type of sprinkler head used for watering. Combining all this data with hourly weather information, algorithms within the software set watering times accordingly.

Residents still have control over their watering as well. If a homeowner recently reseeded a section of their lawn, they can adjust the system's settings for this from their smartphone. Kennedy explained that even in this type of situation, the Skydrop system will still monitor for rainfall and adjust watering times as needed.

Skydrop started in 2013 after Clark Endrizzi, Bret Cloward and Matt Romney put their engineering skills to work to solve a problem Endrizzi saw. He is a gardening enthusiast concerned about water conservation, and wanted a way to control his irrigation system. The team investigated solutions around the idea of controlling for evapotranspiration – or the loss of water from soil and plants into the air.

"We found there is a very accurate way to calculate actual water loss to evapotranspiration," Romney said.

The three refined and built the Skydrop platform around this concept, and started their business in 2014. They now ship systems all over the United States, Canada, Australia, Spain and Europe. Locally, the company sees a lot of users in California, Nevada, New Mexico and Texas.

Kennedy said they are also working in Utah with local municipalities. Because the majority of municipal water usage is for outdoor uses, more and more cities are implementing these types of systems to better control water usage among their constituents, Kennedy explained.

"It's a product cities are looking at because they want to curb waste," Kennedy said.

Karissa Neely reports on Business and North County events, and can be reached at 801-344-2537 or kneely@heraldextra.com. Follow her on Twitter: @DHKarissaNeely



November 21, 2018
Industry News Insights



Smart Water Metering Market –Growth, Future Prospects and Competitive Analysis, 2016-2024

BY HIREN SAM ON NOVEMBER 20, 2018

A leading market research firm, **Zion Market Research** added industry report on “**Smart Water Metering Market: Global Industry Analysis, Size, Share, Growth, Trends, and Forecasts 2016–2024**” consisting of **110+ pages with TOC (Table of Contents) including list of tables & figures** during the forecast period and [Smart Water Metering Market](#) report offers a comprehensive research updates and information related to market growth, demand, opportunities in the global Smart Water Metering Market.

The global Smart Water Metering Market report offers an extensive analysis of the realistic data collected from the global Smart Water Metering Market. It demonstrates major drifts and key drivers playing an important role in the growth of the global Smart Water Metering Market during the foretold time. The report focuses on the analysis of the key features such as drivers, new development opportunities, and restraints influencing the expansion of the Smart Water Metering Market for the forecasted period.

The report covers a detailed analysis of the development of the Smart Water Metering Market for the upcoming time. It reviews the global Smart Water Metering Market in terms of size [KMT] and revenue [USD Million] across different topographical regions. The global Smart Water Metering Market is segmented based on the various product categories, delivery channels, and applications.

Major Market Players Included in This Report:

A complete value chain of the global Smart Water Metering Market is emphasized in the global Smart Water Metering Market report along with the review of the downstream and upstream components influencing the global Smart Water Metering Market. It analyzes the expansion of every segment of the Smart Water Metering Market. The data presented in the research report is collected from various industry organizations to estimate the development of each segment of the global Smart Water Metering Market in the coming period.

Request For Free Sample Report of Smart Water Metering Market @
www.zionmarketresearch.com/sample/smart-water-metering-market

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The global Smart Water Metering Market research report presents market dynamics and inclinations influencing the growth of the global Smart Water Metering Market. It uses SWOT analysis to review the competitive players of the Smart Water Metering Market. Furthermore, the report also includes a synopsis of the various business strategies of the key players of the Smart Water Metering Market.

The report focuses on the latest market trends and major growth opportunities assisting in the expansion of the global Smart Water Metering Market. On the basis of topography, the global Smart Water Metering Market is classified into Europe, North America, Latin America, Middle East & Africa, and the Asia Pacific.

Inquire More about Report @ www.zionmarketresearch.com/inquiry/smart-water-metering-market

The Smart Water Metering Market report provides company market size, share analysis in order to give a broader overview of the key players in the market. Additionally, the report also includes key strategic developments of the market including acquisitions & mergers, new product launch, agreements, partnerships, collaborations & joint ventures, research & development, product and regional expansion of major participants involved in the market on the global and regional basis.

Smart valves: Water needs its iPhone moment

25 October 2018 | Jon Daniels, Water Networks Specialist at Oxford Flow



Water companies are actively looking for ways to be smarter.



The need for digitalisation is pressing and the technology is becoming mature enough to meet that need.

It's not easy being a water utility. Customers expect flawless service yet are also often the first to alert utilities to problems. Leaks continue to plague companies with both operational and reputational problems. Maintenance and diagnosis usually entail costly excavation works.

Water companies are actively looking for ways to be smarter. To know about (and fix) problems before the customer sees the effect, to better predict and more accurately map leakages to reduce losses and hone maintenance issues. To go from reactive to proactive.

But when up against increasing demands and often ageing infrastructure, that's easier said than done. It's unlikely we'll get there with piecemeal improvements either – the industry needs radical modernisation that shakes up the fundamentals of how things work, much as the iPhone did to the mobile phone market in 2007. And, as it turns out, valves are a good place to start.

Tough times for the industry

A 'smart' approach has long been on the industry's wish list, but it becomes increasingly important day by day.

Just look at the outrage in the UK when hosepipe bans were suggested in response to a recent heatwave – outrageous, in the eyes of many, when weighed against the 3 billion litres of treated water lost through leakages every single day of 2017 in England and Wales. For the utilities, faced with the task of operating with and upgrading often Victorian era infrastructure, it's very much a rock-and-a-hard-place situation.

And the UK is a relatively wet country. For utilities in drier climes such as the Middle East, there are other challenges. A 2017 report stated that the nations in the Gulf consume an average of roughly 816,000 litres of water per person per year – 65% more than the world average. As a result, utilities such as the Dubai Electricity and Water Authority continue to invest heavily in smarter, upgraded systems.

As populations grow around the world, placing ever greater demands on water infrastructure, and climate change increases incidences of extreme weather such as drought, smarter approaches to water will become even more pressing.

A watershed moment needed

Of course, there has been advances and improvement in the water sector over the years. But it has been an incremental kind, tweaking engineering designs and adding a patchwork of digital assets, such as pressure sensors here and there.

This incremental approach is crucial – as was the progression through Nokia 3210, 3310, 3410 – but now it's time for the iPhone moment – something that makes a much more radical, lasting and digital change.

What does 'smart' mean now

Now though, we are at inflection point where the need for digitalisation is pressing and the technology is becoming mature enough to meet that need.

A smart system must be proactive, not reactive. That means predicting, identifying and (preferably) fixing problems before they affect customers – or if that's not possible, communicating ahead of time that there will be disruption.

This applies not just to leaks but also to water quality. At the moment, water quality is typically tested by taking samples from the tap and packing it off to a lab. There is no visibility within the distribution infrastructure.

So, imagine a system where problems are identifiable and fixable before they reach the customer. Where problems could be spotted and located to a fine level of granularity – making maintenance and repairs easier, cheaper and more efficient. Where, furthermore, utilities can optimise their systems against multiple parameters across the breadth of their network.

That would represent an iPhone moment, fundamentally altering the relationship utilities have with their infrastructure.

Pressure reducing valves

One crucial technology for realising this vision is the next generation of pressure reducing valves (PRVs). PRVs have been around for over a century, only recently undergoing significant modernisation from an engineering standpoint. Now, however, they are undergoing a second, digital transformation.

Modern PRVs are equipped with sensors, collecting information on metrics such as pressure and even water quality. Crucially – thanks to modern, more affordable battery, communication and energy harvesting technologies – these can now feed this information back to the control room for analysis and action. For example, if leaks are detected, the valve can be controlled remotely to reduce pressure and therefore losses. PRVs will be the “smart valves” at the centre of an intelligently optimised and controlled network, used to deliver fine pressure control in any way needed.

The smartest systems will then use technologies such as analytics and machine learning to constantly analyse that incoming stream of data to optimise maintenance schedules and asset replacement and even predict problems before they occur.

In a flash, utilities that implement such a system would find themselves managing lit networks, rather than dark ones; enjoying visibility and control that they never had before.

Future-proofing

Water infrastructure upgrades are expensive and time-consuming – creating truly smart networks is not a trivial matter. However, this would represent an iPhone moment in another respect: once the radical shift is made, the market can return to incremental innovation. The first iPhone may have been a revolution, but the subsequent models have been evolving ever since.

Once a data-rich, sensor-soaked network is in the ground, utilities will be able to more easily implement incremental upgrades over time. Connectivity means that software and firmware can potentially be upgraded without excavation and the control room can invest in ever more advanced analytics.

A lot has been written about topics such as the industrial internet of things (IIoT). Undoubtedly, we stand to gain a great deal as societies from smart factories, grids and cities. But a smarter approach to water is an equally important step. With modern valve, sensor, communication, battery and energy harvesting technologies, forward-thinking utilities are poised to take it. By doing so we stand to cut leakages, improve water quality and utilities can enjoy their iPhone moment.

Prescribed burn takes place at Independence Lake Preserve

By Chris Buckley |

Posted: Wed 5:21 PM, Nov 01, 2017 |

Updated: Fri 9:19 AM, Nov 03, 2017



[View Map](#)

TRUCKEE, Calif - (KOLO) Crews are working a prescribed burn November 1, 2017 at the Independence Lake Preserve, north of Truckee, a space owned by the [Nature Conservancy](#). The burn was designed to improve the ecosystem and preserve the water supply



The Nature Conservancy bought the property around Independence Lake in 2010. Now it's a preserve that's open to the public all year.

"We see a lot of people who never even knew about this place coming up," said Chris Fichtel, Director of the Independence Lake Project. "During the summer season we provide kayaks and motorboats for people to use up here."

They've been thinning the forest for years as part of a forest management plan. The next step is to reintroduce fire to this landscape.

"This is the Sierra Nevada landscape and it evolved over thousands of years," said Edward Smith, Forest Ecologist for the Nature Conservancy. "The fires that occurred in the past happened every ten to fifteen years and with that type of frequency you end up with low-severity, low-intensity fires.

So they kind of skunk around, burn up needles and small branches, and we're trying to duplicate that kind of fire with the drip torches."

The idea is to reduce the amount of debris and ladder fuels.

"Most of the large trees are fire-adapted; they have thick bark and they will not be affected by the fire," Smith said.

Seven species of native fish are in Independence Lake and this burn is designed to protect this ecosystem and protect the water supply.

"This is part of the headwaters of the Little Truckee River," Smith said. "By putting fire back on the ground safely we're reducing the chances of a high-severity catastrophic fire that would damage the landscape."

Crews dug scratch lines to help keep the fire on Conservancy property and will monitor it constantly over the next few days. If all goes as planned, visitors will see results come spring.

"Next spring we'll see a lot of wildflowers and grasses coming up," Smith said. "You'll see areas where there were no understory plants and the fire will actually stimulate those seeds to sprout and grow into mature plants.

The burn is expected to wind down as winds pick up Thursday afternoon.

Truckee River Trail restoration completed

Hannah Jones
hjones@sierrasun.com
November 3, 2018



Hannah Jones/
The Tahoe City Public Utility District and Placer County officials celebrated the reopening of the Truckee River Trail after a summer-long reconstruction project.

The Tahoe City Public Utility District and Placer County officials celebrated the reopening of Truckee River Trail after a summer-long reconstruction project.

"Trails are beloved by our community, both our visitors and our residents and it's so critically important to our community," said Cindy Gufstason, chief executive officer of the North Lake Tahoe Resort Association. "It's iconic, the Truckee River Trail."

The Truckee River Trail has been in use since 1981 and is the most-utilized trail in North Lake Tahoe region with over 250,000 users accessing the trail each year according to the Tahoe City PUD. Gufstason said that when the trail was originally constructed it was not built in the best place to withstand cracking and water runoff.

"We put multiple Band-Aids for decades on the trail, constantly budgeting every year for crack repairs and replacements," she said. "No matter what we did, it never seemed to last quite long enough."

“Trails are beloved by our community, both our visitors and our residents, and its so critically important to our community ... It’s iconic, the Truckee River Trail.”

— Cindy Gufstason, North Lake Tahoe Resort Association CEO

RECOMMENDED STORIES FOR YOU



[Truckee River Trail restoration completed](#)

The project aimed at repairing damage from erosion between 64-Acres Park and the entrance to Squaw Valley, adding another 20 to 25 years of expected lifespan to the trail.

Over the last few years the Placer County Board of Supervisors has approved portions of the funds needed, totaling \$1.6 million in Transient Occupancy Taxes while the Tahoe City PUD contributed \$383,000.

Last week, an additional 2.2-mile of paved trail opened extending from the existing trail in Tahoe City from Dollar Drive along State Route 28 to Fulton Crescent Drive. The new edition of the 10-foot wide trail expanded the lakeside trail system to connect the neighborhoods of Cedar Flats and Highlands into Tahoe City and further to the West Shore and Squaw Valley.

This portion of the trail was the first addition the county had made to the trail since 2012. Before the addition a trail existed from Dollar Point through Tahoe City, south 10 miles to Sugar Pine Point State Park and from Tahoe City to Squaw Valley Resort. The trail picks back up in Truckee at the Legacy Bike Trail and stops near the Truckee Airport.

Hannah Jones is a reporter for the Sierra Sun. She can be reached at hjones@sierrasun.com or 530-550-2652.

YOU ARE AT: [Home](#) » [NEWS](#) » [City Hall](#) » Residents in standoff with city over water meter



[CITY HALL](#)

Some residents of St. Albert who have opted out of getting their smart water meters installed are having their water cut off by the City. Resident Jerry and Jeanne Manegre show a letter they received that outlines a termination of their water service.

Photo credit: CHRIS COLBOURNE/St. Albert Gazette

Residents in standoff with city over water meter

Former alderman one of several residents to have water shut off for refusing new smart meter

BY JENNIFER HENDERSON NOV 2, 2018

Two St. Albert residents are taking the city to court after city workers shut off their water because they refused to let contractors install a smart water meter in their home.

Jerry Manegre, a former city alderman, and his wife Jeanne had their water services cut off around noon Wednesday.

"I'm concerned not only for Jeanne and I, but for other members of our family who live in St. Albert and who have been receiving the same notices as we have," said Manegre, who received a letter from the city Oct. 3 warning the upgrade of city meters is mandatory and refusal could result in disruption to water service and a fine of up to \$1,000.

On Thursday, Manegre submitted an application for judicial review to the Court of Queens Bench, which will be heard Nov. 8 at 10 a.m. Until then, the Manegres will be without water in their home and will need to rely on their family in the community.

They expect the next week to be challenging in terms of practising proper hygiene without a water supply, and hope the Nov. 8 review will result in a permanent injunction from the court to prevent the water meter from ever being installed in their home, as well as an order to restore their water service.

The smart water meters are part of a \$6.4-million, city-wide meter replacement program. The meters use a radiofrequency (RF) transmitter to send data, which has been a source of controversy for some homeowners since their roll-out began last December. Although Health Canada's exposure code for RF energy deems the amount coming from the meter to be well within safe parameters, some residents worry about the potential health impacts from RF waves, as well as potential privacy concerns since the meters track water usage throughout the day and can show a pattern of when people are at home.

Shortly after the roll-out began, the city started exploring a paid opt-out program for residents living RF-free lifestyles or who simply do not want the presence of an RF transmitter, which attaches to the outside of their homes. The meter itself goes inside the home.

Council ultimately decided against providing an opt-out option.

Kevin Cole, director of utilities for the city, said nine homes have had their water service halted in the last month, with six residents being cut off around two weeks ago. All but one customer during that period had their water turned back on within 24 hours.

The second round of cut-offs came on Halloween, when three homes, including the Manegres, had their water halted. Cole said of the three, one home has had service restored, they have been in contact with another and the third home they have been unable to reach.

Overall, he said, residents will have been contacted a minimum of eight times – at least five times by Neptune Technology Group, which is handling the replacement program, and at least three times by the city to warn them they need to install the meters – before service is stopped.

Cole said the city has to stop service to residents who refuse the meter because council voted against an opt-out program and the utility department will no longer be able to use the old meters to take a reading. He noted every resident needs to get a smart meter in their home because the city will not be running two systems to test the meters at the same time.

In April, Coun. Sheena Hughes brought forward a motion to create an opt-out system for the smart water meters, but the motion failed in a 3-3 tie with Coun. Ray Watkins absent from the vote.

At that meeting, Hughes said she expected a “significant backlash” from residents if council decided not to proceed with the opt-out program, and Coun. Wes Brodhead said he felt residents have “the right to make up their own minds about what is healthy and what is not.”

Mayor Cathy Heron, Coun. Jacquie Hansen and Coun. Natalie Joly voted against the first reading, arguing one water meter program would be more efficient than two.

“I really don’t think we need to be running two programs, when one program is going to be very effective,” said Hansen said in April.

“I think as a society, we’re moving toward smart technology, and this is our opportunity to get on board.”

Joly said in April that going forward with the opt-out program would set a precedent for the future.

Heron pointed to the installation of smart water meters in other communities, noting that for a “smart city,” St. Albert has been slow to implement smart meters.

PICO Holdings, Inc. Announces Results for the Third Quarter of 2018

November 06, 2018 06:05 ET | Source: PICO Holdings Inc.

CARSON CITY, Nev., Nov. 06, 2018 (GLOBE NEWSWIRE) -- PICO Holdings, Inc.

PICO Holdings, Inc. (NASDAQ:**PICO**) reported results for the third quarter ended September 30, 2018. Our reported shareholders' equity was \$184.5 million (\$8.60 per share) at September 30, 2018, compared to \$207.2 million (\$8.95 per share) at December 31, 2017.

PICO's Chief Executive Officer, Dorothy Timian - Palmer, commented:

"We continued to monetize assets in the third quarter with small transactions in Nevada, Arizona and Colorado. We expect to record the sale of approximately 70 acre - feet of our water credits held by our subsidiary, Fish Springs Ranch, LLC ("FSR") in the North Valleys region of Reno, Nevada for approximately \$2.5 million in the fourth quarter of 2018 or the first quarter of 2019 when Truckee Meadows Water Authority, the utility serving the Reno metropolitan region, issues the "will - serve permits" to the developer who is purchasing our water credits. FSR received 50% of the \$2.5 million at the beginning of the governmental approval process, and will receive the remaining amount at issuance of the building permit. Subsequent to September 30, 2018 we sold an additional 3.61 acre - feet of FSR credits for Industrial/Commercial developments, with pricing remaining at \$35,000 per acre - foot. The Truckee Meadows Water Authority ("TMWA") has advised us that residential and industrial/commercial development plans requiring an additional 48.62 acre - feet of FSR credits have been submitted to TMWA for final map, and the review process is underway. We believe we will continue to see more FSR credits sold for development in 2019 as more developments move through the local governmental review, approval, and permitting processes.

"Due to historic and ongoing drought conditions in the Colorado River Basin, and the probability of Colorado River reservoirs - particularly Lake Powell and Lake Mead - decline to critical elevations, our Arizona Long Term Storage Credits continue to be highly strategic and valuable.

"Included in our third quarter results was a total non - cash charge of approximately \$2.3 million to write - off the entire carrying value of one of our remaining legacy investments, Spigit, Inc.

"We also continue to return capital to our shareholders. During the nine months ended September 30, 2018 we repurchased 1,715,678 of our common shares via open market purchases at a total cost of \$19.9 million - for an average price of approximately \$11.57 per share.

"The transition of the finance and treasury functions from our La Jolla, California office to our headquarters in Carson City, Nevada is proceeding and we expect to close the La Jolla office before the end of the year. We expect the total transition costs to be approximately \$1.6 million. We also expect, once the transition is complete and together with the management restructuring announced earlier this year, to reduce our operating costs by approximately \$650,000 per annum. We continue to seek ways to reduce our operating costs for 2019 and beyond."

Net Operating Loss Carry forwards

At December 31, 2017, we had approximately \$185.5 million of (pre-tax) federal net operating loss carryforwards, or NOLs, that could be utilized in certain circumstances to offset PICO's taxable income and reduce its federal income tax liability. Additional information with respect to these NOLs is contained in our Annual Report on Form 10-K for the year ended December 31, 2017 that we filed with the Securities and Exchange Commission.

About PICO Holdings, Inc.

As of September 30, 2018, our major investment was Vidler Water Company, Inc., a water resource and water storage business with assets and operations primarily in the Southwestern U.S.

Currently, we believe the highest potential return to shareholders is from a return of capital to shareholders. As we monetize assets, rather than reinvest the proceeds, we intend to return the capital derived therefrom, less any working capital requirements, back to shareholders through a stock repurchase program or by other means such as special dividends taking into effect liquidity requirements, debt covenants and any other contractual and legal restrictions that may exist at the time.

OTHER INFORMATION

At September 30, 2018, we had a market capitalization of \$269.3 million, and 21,460,653 shares outstanding.

Our 2019 Annual Meeting of Stockholders will be held in Omaha, Nebraska on Friday, May 4th at the Durham Museum. We have found in the past, due to our meeting schedule, that many of our attendees leave for Omaha for the Berkshire Hathaway annual stockholders meeting immediately following our Annual Stockholders Meeting. Our 2019 Annual Meeting of Stockholders will begin at 9:00 am CDT and we will provide a continental breakfast beginning at 8:00 am CDT.

We remind all of our stockholders that you can submit a question regarding our operations, to info@picoholdings.com, and, if appropriate, we will post on our website responses to these questions.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

Statements in this press release that are not historical, including statements regarding our business objectives, our ability to monetize our water resources, and the timing thereof, the timing of our transition to Carson City and the costs related thereto, the savings expected from our transition to Carson City and management restructuring, our ability to preserve and utilize NOLs to offset taxable income and reduce our federal income liability, and our ability to monetize assets and return capital to shareholders through stock repurchases or through other means, are forward-looking statements based on current expectations and assumptions that are subject to risks and uncertainties.

In addition, a number of other factors may cause results to differ materially from our expectations, such as: any slow down or downturn in the housing recovery or in the real estate markets in which Vidler operates; fluctuations in the prices of water and water rights; physical, governmental and legal restrictions on water and water rights; a downturn in some sectors of the stock market; general economic conditions; prolonged weakness in the

overall U.S. and global economies; the performance of the businesses; the continued service and availability of key management personnel; and potential capital requirements and financing alternatives.

For further information regarding risks and uncertainties associated with our business, please refer to the “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and “Risk Factors” sections of our SEC filings, including our Annual Report on Form 10-K and our Quarterly Reports on Form 10-Q, copies of which may be obtained by contacting us at (775) 885-5000 x200 or at <http://investors.picoholdings.com>.

We undertake no obligation to (and we expressly disclaim any obligation to) update our forward-looking statements, whether as a result of new information, subsequent events, or otherwise, in order to reflect any event or circumstance which may arise after the date of this press release, except as may otherwise be required by law. Readers are urged not to place undue reliance on these forward-looking statements, which speak only as of the date of this press release.

This news release was distributed by GlobeNewswire, www.globenewswire.com.

Max Webb
Executive Chairman
(775) 885-5000 x 200

Rejected: County voters oppose tax to fund Truckee River flood control projects

[Benjamin Spillman](#), [Reno Gazette Journal](#) Published 11:33 p.m. PT Nov. 6, 2018

Nearly 24 hours of rain left the Truckee River nearly full Friday, May 25, 2018 in downtown Reno. James Ku, RGJ



Buy Photo

(Photo: Jason Bean/RGJ)
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Voters in Washoe County appeared to reject WC-1, the countywide measure to fund flood control projects along the Truckee River.

With 58 percent of votes counted, the measure was losing 32 percent to 68 percent.

The measure asked voters to increase property taxes by an estimated \$8.68 per \$100,000 of assessed value, which adds up to about \$30 per year on an average home.

The payoff for the tax increase, backers said, would be a dramatic decrease in the risk of flooding on the Truckee River, a longtime problem for the region. Critics said the measure was incomplete because it was limited to just the main stem of the river.

Bob LaRiviere, chairman of the Truckee River Flood Control Project Needs Committee, said he was disappointed with the results.

"We will figure out the next step to move forward and we will figure out how to get this done," said LaRiviere, who said the committee could try to resurrect the measure the future.

The property tax increase would have generated about \$89 million to go toward a package of projects along the Truckee River aimed at preventing the catastrophic damage the region experienced in 1997 and 1955.

Some of the projects include replacing bridges in downtown Reno at Sierra, Center and Lake streets. Another project would increase flow rates at Vista Narrows, a notorious chokepoint in eastern Sparks, by excavating terraces along the banks.

The money would also serve as local funding required to access \$182 million in additional money from the federal government.

In addition to the local property tax and federal funding, the planned flood control project will receive money from a 1/8 cent sales tax established in 1998 and a fee on properties within areas along the river where flooding would be prevented.

Legislation in 2017 created the committee to identify funding mechanisms to reduce flooding hazards along the Truckee River.

The 16-member group identified the property tax on county residents and an additional fee on properties within the flood zone as the best choices to pair with federal funds and the existing sales tax.

The money would have helped fund about 30 projects on three segments of river, downtown Reno, the Truckee Meadows and Lower Truckee.

The projects are what remain of the Flood Project Plan, a 41-project list aimed at bolstering the river to withstand a 100-year flood.

Areas that would directly benefit include downtown Reno and much of southeast Reno, including the Reno-Tahoe International Airport and industrial development south of the Truckee River in Sparks.

In addition to the property tax, properties in the direct benefit area would pay an additional fee of \$3 to \$8 per 1,000 developed square feet.

Backers said if the project prevents just one repeat of the 1997 flood it would save the community \$2.5 billion.

Although WC-1 promised to alleviate future flooding concerns along the Truckee River, critics pointed out shortcomings in the measure.

Among them was that it wouldn't cover all of the areas in the community that are subject to catastrophic flooding.

The measure wouldn't generate money to reduce the flooding risk on drainage ditches flowing to the Truckee River. Nor would it produce money to prevent flooding in places such as Lemmon Valley, where the wet winter of 2016-17 filled a dry lake bed higher than historic levels and flooded dozens of homes.

If smart cities center around data collection, why is water left out?

Despite many cities experiencing droughts, data on water availability, storage and use is surprisingly sparse — even in tech-forward states like California.

[Jason Plautz@Jason_Plautz](mailto:Jason.Plautz@Jason_Plautz)

PUBLISHED

Nov. 8, 2018

As western U.S. cities boom with new residents and businesses, how can they keep from coming up dry?

In October, Utah was put under a drought emergency as states like [Colorado](#), [New Mexico](#), [Nevada](#) and [California](#) continue to see large parts of their population under drought conditions, which has forced cities into tough conversations about how to stretch already-limited resources to meet growing demands — and how technology and smart analytics can help.

Tools that give more [up-to-date readings on water use](#) at the household or business level have helped revolutionize the interaction between customers and utilities, but now cities are trying to work to integrate more advanced data into their decision-making.

The Denver Regional Council of Governments (DRCOG), for example, is embarking on a project to overhaul land use software — which already gives guidance on transportation needs — to include water demand as a way to inject conservation into growth discussions.

"In our metro vision, we talk about conservation of water as a resource, but there really hasn't been a lot done to encourage that in land use planning, or vice versa," said Flo Raitano, director of partnership development and innovation for DRCOG. "We already use all sorts of land use data to inform our transportation discussions, so it shouldn't be that much of a stretch to use the same model and inform water discussions."

It seems straightforward. If existing software can spit out projections on how congested nearby streets are or how a highway can handle commuters from a growing subdivision, couldn't the same projections show water needs as new businesses or apartment complexes crop up? It's a faster version of modeling that cities and utilities already do.

"Software can respond to changes as needed, instead of planning out development with a lot of uncertainty," explained Andre Dozier, chief technology officer at [Razix Solutions](#) in Fort Collins, CO. His company has partnered with several utilities and localities in Colorado on sophisticated water planning software, which can model down to the parcel level. By using historical data of what certain buildings consume, and accounting for conservation upgrades like low flow toilets, the software can spit out a real-time prediction of water needs.

"We use your data to help you plan," Dozier explained. "It's more trustworthy than a model."

Data demands

Despite the potential for data analysis, the process of collecting data is what's holding some cities back. "On the surface, you'd think it'd be easy to collect water data," said Raitano. "In reality, not so much."

Data on water availability, storage and especially use is surprisingly sparse, even in a drought-ridden and tech-forward state like California.

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"This may be surprising that in the land of Google, we have such an inability to account for our most fundamental environmental and economic resource, but that's how it is," said Michael Kiparsky, director of the [Wheeler Water Institute](#) at the University of California, Berkeley School of Law. "The fundamental issue is we just don't know how much water we have, how much water we use and how much water is available for things like environmental purposes."

In 2016, [Gov. Jerry Brown signed a bill](#) to make water data publicly available and operable among the multiple state and local agencies that collect it. It's been a slow process to figure out how to actually make that data usable, where to house it and in what format to present it, but Kiparsky said it's an essential step to helping agencies work together, and figure out what new technology can be helpful.

"This may be surprising that in the land of Google, we have such an inability to account for our most fundamental environmental and economic resource, but that's how it is."

Michael Kiparsky *Director, Wheeler Water Institute*

"Let's say a city is going to create structured billing to incentivize conservation. That needs data," he said. "There are very interesting examples of using behavioral economics to nudge people towards greater conservation, it's a fairly cost-effective strategy. Doing that is impossible without fine data."

That's especially true for homeowners, as evidenced by a pilot program being run in Texas. In partnership with the nonprofit Pecan Street and local universities, utilities have helped install a technology suite called Blu, which retrofits meters to give users immediate feedback on their water use.

"By the time they see and actually pay their bill, most homeowners are about a month and a half removed from water use," said Grant Fisher, chief information officer of Pecan Street. "The first step of conservation is data, so you need to show people their water use."

Blu can signal to homeowners how best to conserve water by pointing out long showers, inefficient sprinklers or a leak that otherwise might not be detected before an end-of-the-month water bill looks too high. It can also give cities like Austin real-time data that can better inform a comprehensive water strategy. As cities look to update aging infrastructure or weigh whether to build costly storage and treatment facilities, real-time data can help them understand where needs are, and where less costly interventions could help.

"More data can enable insights into a lot of the intersections between water and energy, or land use or development," Fisher said. "We've always known they've existed, but we've been unable to quantifiably tie them to water use."

Making water the priority

More data can also make it easier for cities to prioritize water conservation throughout the government. Technology like smart water meters or large-scale water recycling efforts can mean huge gains for conservation, but full adoption requires making water conservation a priority across the government.

That's where some see Santa Fe, NM as a model. In 2018, the city reported using 90 gallons per capita per day (GCPD), compared to 168 GCPD in 1995; the population has increased by some 50,000 people in that same time.

Christine Chavez, who leads the city's water conservation office, said those gains result from an "emergency mentality" the city adopted during a lengthy drought in the mid-1990s, but never shed. Chavez's office has staff working across multiple agencies, like helping landscapers adopt drought-resistant native plants or going to schools to educate students. "It seems like there's not a department we're not in contact with," Chavez said.

To help mirror that effort, the Colorado Water Conservation Board is working on a guidance document that would help local governments and utilities bridge the gap between water efficiency plans — used by more than 80 water providers serving three-quarters of the state's population — and land use planning efforts, like demand forecasting and zoning.

The document, still in draft stage, offers tips on strategies some localities have already taken, like creating model landscape plans for new developers that incorporate more efficient irrigation, or incentivizing builders to use smart sprinklers that interact with weather predictions to only run at the most efficient times.

With climate change accelerating the potential for drought, western cities know that water conservation has to be top of mind in any sustainability strategy. But DRCOG's Raitano said the discussions are happening at the right time. Although the Denver region is playing catchup with transportation infrastructure, which has been strained under the state's growth, she said the water discussions are "at a good point."

"It may seem like we're behind, but we're not," Raitano said. "We're not looking at absolute disaster, which is always where you want to be."

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Career Expo targets local middle school students

By [Denise Wong](#) |

Posted: Thu 8:54 PM, Nov 08, 2018 |

Updated: Fri 9:18 AM, Nov 09, 2018



RENO, Nev. (KOLO) -- They are only in middle school, but thousands of local eighth grade students started thinking about potential careers because of seeds planted Thursday.



The Washoe County School District held its annual Career Expo November 8, 2018. It took place at the Reno-Sparks Convention Center. More than 5,000 students were invited to attend and meet with representatives from businesses and industries to learn more about the high-demand jobs and educational opportunities in our area. Tesla, the Federal Bureau of Investigation, [Truckee Meadows Water Authority](#), Microsoft and Renown were just some of the agencies and companies that had representatives on hand.

"We run the gamut from agriculture to welding, engineering and IT," said Dr. Dana Ryan, Director of Career and Technical Education for the Washoe County School District. "We are hopeful they take what they're learning today, go back to their classrooms and say, 'If I want to do that, what do I have to do today to get myself ready for that when I graduate from high school?'"

"There are so many middle school students who aren't sure what they're going to do yet, so seeing all the different things that you could do, it just helps a lot to show you the different paths," said Larissa Rorick, a Depoali Middle School student.

There were also hands-on workshops and presentations that the students could take part in. This was the fourth year of the event.

Photo shows car's icy plunge into Truckee River

Updated: 9:33 AM PST Nov 22, 2018

KCRA Staff



SOURCE: CHP Truckee
TRUCKEE, Calif. (KCRA) —

A car plunged into the Truckee River early Thursday morning on Highway 89.

A driver lost control of his car and crashed into the river about 7:30 a.m., CHP Truckee said. The man inside the car was not injured.

Advertisement

CHP Truckee shared a photo of the crash on Facebook and wrote, "This is a good reminder of what can happen really quickly when driving in snowy conditions. This (happened) this morning on SR-89. Make sure and slow down, take it easy on the gas and brake pedal."

Oorah! Marines were training along Truckee and near West Reno neighborhoods Tuesday night

[Yvonne Beasley](#), **Reno Gazette Journal** Published 9:15 a.m. PT Nov. 14, 2018

Here are the results of Nevada's key races and ballot measures from the 2018 midterm elections. [Wochit](#)



(Photo: Boeing)

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On Tuesday night, military exercises caused a little ruckus over part of Reno.

Two V-22 Ospreys and a helicopter flew over west-central Reno from around 8 to 11 p.m. Tuesday night.

"Obviously, that was quite noisy, so we can understand how that can be disruptive," said Officer Travis Warren of the Reno police, which acted in a support role to answer public questions and help with traffic issues.

It was a routine training exercise by Marines and sailors from the 11th Marine Expeditionary Unit from Camp Pendleton, Calif. [Reno police posted the details on Facebook](#) just before the exercises began. The last-minute warning was a tactical decision.

"They do have things they want to keep secret. There's obviously a concern, a need to keep information safe," Warren said.

"We did field some questions from individuals in the community," Warren said. "When you have aircraft flying over your house, it's going to raise questions."

More: [What's that big tower near South Reno's fire station? We did some digging](#)

More: [Photos from the Veterans Day parade in Reno](#)

"Just heard a big bang and two Ospreys touched down south of 4th..." wrote Steve Ashorn on the Reno police Facebook page. "... I thought the Russians were invading."

"... glad to know all is okay ... it was exciting and keep up the great training .. thank you for all you do," Karol Kelley posted.

Reno has the right conditions for certain military training, Warren said. The altitude, weather and mountains are different from the unit's Southern California home.

"They go everywhere in the world, so getting different experiences is highly valuable for them," Warren said.

The V-22 Osprey can take off vertically, like a helicopter, but has the speed and range of a fixed-wing aircraft, [according to Boeing](#).

[You can read all the comments at the RPD Facebook post here.](#)



[app-facebook](#)

Reno Police Department

14 hours ago

ADVISORY: Tonight, Nov 13th, Marines and Sailors assigned to the 11th Marine Expeditionary Unit (MEU) from Camp Pendleton, CA are in Reno conducting pre-deployment training.

This is a routine training exercise and has been conducted in our area in the past. Our community members will likely see an increase in military vehicles, personnel and aircraft as they conduct urban training in west Reno.

Commuters travelling in the area of W. 4th St and S. McCarran Blvd between 8:00 pm – 10:00 pm will likely see delays due to the exercise. The Reno Police Department would like to encourage drivers to select alternate routes in order to minimize the impact to their schedules.

[Southern Nevada Water Authority board OKs Colorado River drought plan as Arizona, Colorado focus on resolving internal issues](#)

By [Daniel Rothberg](#)

November 15th, 2018 - 2:13pm

The Southern Nevada Water Authority board approved a seven-state Colorado River drought plan Thursday morning, making Nevada the first state to sign off on the proposal to prevent drastic shortages across the Southwest as the river is strained by drought and overuse.

The vote was 6-0. Gov.-elect Steve Sisolak, Clark County Commission chairman and a board member, was absent because he had to leave for another meeting.

[The board's vote](#) allows the water authority's general manager, John Entsminger, to execute the Drought Contingency Plan, a result of years of negotiations between the seven states with rights to use Colorado River water. The plan's goal is to stabilize Lake Mead, the dwindling reservoir outside of Las Vegas that stores water in Arizona, California and Nevada. Under the proposal, the states would temporarily cut their water use to leave more water in the reservoir.

For instance, at low lake elevations, Nevada would leave up to 10 percent of its total right to Colorado River water, or about 30,000 acre-feet (the amount of water that can fill one acre of land up to one foot). In past interviews, Entsminger has said that Nevada could sustain those cuts. Because of conservation efforts, Las Vegas, [he said](#), already leaves water in the lake.

"We are absolutely prepared because our community has conserved so much water in the last 18 to 20 years," Entsminger told [The Nevada Independent](#) in August.

With the board's authority, Entsminger now has the authority to sign the drought plan when it is approved by the other states. Other states, including California and Colorado, are still resolving in-state issues before their state negotiators can sign on the plan. But all eyes are on Arizona, where there remains an ongoing debate over how the cuts should be implemented.

Water users in Arizona would be required to take significant reductions to their Colorado River supply under the plan. For months, Arizona has worked internally to negotiate its own drought plan. Those talks have hit a roadblock with the [cancellation of several public meetings and the inability to agree on a mitigation plan](#) for farmers who would lose water under the plan.

Three hundred miles from Las Vegas in Phoenix on Thursday, another water board introduced [yet another proposal](#) for drought planning in Arizona. The board of the Central Arizona Project,

which controls a canal that delivers Colorado River water from Lake Havasu to Tucson offered [an interim plan](#) that would change how much water was taken out. On Thursday in Denver, the Colorado Water Conservation Board was also meeting to address issues over how the state of Colorado's plan would affect farmers and ranchers.

The Climate Apocalypse Is Now, and It's Happening to You



DAVID PAUL MORRIS/BLOOMBERG

What people say they know about [climate change](#) is a roller coaster of human ignorance—wait, everyone knows *that* but no one knows *that*? It's striking to learn (according to Yale's [climate survey program](#)) that 74 percent of women and 70 percent of men believe climate change will harm future generations of humans, but just 48 and 42 percent, respectively, think it's harming them personally.

It is, of course, in lots of ways. Yet fewer than half of Americans think climate change is a right-here, right-now problem. So it's critical that a new report on the impact of climate change is about the present as much as the future. The topline results: 157 million more people experienced a heat wave in 2016 than in 2000—12.3 million Americans. That heat and the injuries that can come from it cost the world 153 billion hours of labor—1.1 billion in the US. The geographic range of the mosquitoes that carry dengue fever, Zika, malaria, and chikungunya is spreading. So is the range of the bacterium that causes cholera. Global crop yield is going down.

LEARN MORE



The WIRED Guide to [Climate Change](#)

You're like, [old news](#)! But you might be thinking of last week's apocalyptic climate-is-broken report. That was [volume 2](#) of the fourth National Climate Assessment. *Today's* red alert is the [2018 *Lancet* Countdown](#), a British medical journal's annual accounting of how climate change affects public health.

Some confusion here would be understandable. What both reports have in common (along with the Intergovernmental Panel on Climate Change's [October report](#) on a 1.5-degree planetary temperature [increase](#)) is immediacy. These reports are designed to show climate change happening now, today—and to actually spur people to do something about it. How? Show them how climate change affects them personally, and describe those effects in ways that transcend their politics. Global warming is causing “present-day changes,” the *Lancet* report says. On a telephone briefing for reporters, Renee Salas, an emergency medicine physician at Massachusetts General Hospital and the lead author of the report's US iteration,¹ described seeing more patients with asthma attacks and heat stress. “Viewing climate change as a public health emergency is literally second nature,” Salas said.

Still, these reports tackle immediacy with different strategies. The *Lancet* Countdown focuses on health. For NCA4, the approach was a [little more subtle](#). Its hundreds of authors started by considering their audience. The 1990 Global Change Research Act says these quadrennial reports are specifically for the president and congress. Climate change affects the American southwest very differently than the northeast, so breaking regional effects into chapters makes that data more useful for people in congress, who can see specific effects on their districts. (NCA isn't the only research that does this; you can drill down as far as [county-by-county](#) economic effects, if you're into it.)

Breaking out climate impacts by region and by sector gives the report a potentially wider impact. “The idea is that risks are most salient if they apply to you,” says Robert Lempert, a principal researcher at RAND and an author of the report. “We very much intended it to speak to, call them decision-makers, on many levels—not just the federal government.” Lempert says they were thinking of water management agencies, land managers: the people who write the guidances.

Over the 20 years of the NCA's life, science has gotten better. So has the thinking about how to tell people about that science in ways they can understand it. Talking about tens of thousands of deaths and tens of billions of dollars can help with that. "Over the last 20 years of doing this, we've gotten better at thinking about the economic costs," says John Furlow, a development and aid expert at Columbia University's International Research Institute for Climate and Society and an author of NCA4. "And we have more examples."

Pretty much everyone (even [oil companies](#), but [not the president](#)) now understands that burning fossil fuels sends gases into the atmosphere and increases global temperatures. In recent years, climate science has gotten better at [attribution](#), at figuring out more precisely [how much](#) of a hurricane, wildfire, or drought was caused by that warming and those gases. "We can see impacts on things that people care about, and that's leading us to shorter timescales and more concrete examples," Furlow says. "The science enables us to attribute some things more or less to climate than just to ongoing trends, and to parse the way those things interact."

The *Lancet* report attempts much the same kind of grounding in individual experience. Carbon dioxide counts in parts-per-million and error margins on global circulation models aren't the most intuitive ways to talk about the end of the world. Abstract numbers and distant-future scenarios don't cut it. "Today's babies, by adulthood, will live on a planet without an Arctic. Prevalence of heatstroke and extreme weather will have redefined global labour and production beyond recognition," as an editorial accompanying the report puts it. "Multiple cities will be uninhabitable and migration patterns will be far beyond those levels already creating pressure worldwide." Cats and dogs living together; mass hysteria. Your planet's on fire, kids.

But how all this immediacy and personalization will actually work might depend on how immediate the issue is, and who the person is. "Most of the mitigation decisions are taken at the federal and state level. Or in principle they are; [maybe not](#) at the moment at the federal level," says Robert Kopp, director of the Institute of Earth, Ocean, and Atmospheric Scientists at Rutgers University and another author of the National Climate Assessment. "But the adaptation decisions are taken at all levels, perhaps more at the local level than anywhere else."

The *Lancet* report is full of straightforward policy recommendations, like "cut carbon emissions, dummies." By law, the NCA can't do that. "We were perhaps a little more conscientious about that this time, because we didn't want there to be anything in there that would cause the administration to try to kill the report," Furlow says. "Given the administration's history on climate—calling it a hoax and everything—I think there was concern we might have trouble getting it out the way it was written." (That doesn't seem to have been the case; all the authors I've talked to say that the executive branch didn't interfere with its contents.)

But the NCA *can* (and does) tailor its analyses to the people who might best put them into effect. Lempert's chapter on adaptation, for example, leverages the basic assumptions of a civil engineer. "In some sense the structure of the chapter is to try and get them to do things," he says. Past climate no longer predicts the present or the future—that idea is what scientists call stationarity, and it's [pretty much dead](#). The planet's past performance is no longer a predictor of future results. So if engineers have been making infrastructure assumptions (sea wall height, 100-year flood levels, days of the year above a certain temperature), well, they should probably

not do that. How they feel about climate change as a political issue doesn't matter. "Even in the red parts of Florida, people will vote for bond issues to raise the water treatment plants, and let's not talk about why," Lempert says.

Engineers won't be these reports' only users. Consider lawyers. The NCA is, after all, a government report acknowledging the damage caused by climate change. So it might be evidence in [lawsuits](#) against climate emitters. "We used the last assessment for that purpose and this is even stronger," says Steve Berman, managing partner at Hagens Berman Sobol Shapiro, a firm involved in a few of those lawsuits. "It also takes away a lot of the oil industry argument that this science is still nascent, and that no one is really certain there will be all of these impacts."

Those lawsuits happened because cities, states, and environmental groups didn't feel like they were getting results from the executive or legislative branches. So far, the executive seems to be [disregarding NCA4](#). But in January the Democrats take over the House of Representatives, and some of them have been agitating for climate action. "This is a powerful piece of artillery for any legislator who is interested in advocating for action," says Michael Burger, executive director of the Sabin Center for Climate Change Law at Columbia Law School. The report might also make it harder for the Trump Administration to weaken EPA rules on carbon dioxide. The EPA under President Obama determined that carbon dioxide was a harmful pollutant that should be regulated under the Clean Air Act, and the NCA reaffirms that conclusion.

None of those things necessarily change any minds. They might not move the needles on the Yale climate survey. But maybe they don't have to. As the New Yorker writer Osita Nwanevu [argued](#) recently on Twitter, denialism isn't a commonly held position. The real problem is an absence of climate policy. Ideally, the constructions of the IPCC reports, the National Climate Assessment, and the *Lancet* Countdown won't just make a policy more obvious, but help clear a path to a policy going into effect. The clock's ticking.

¹ **UPDATE 11/29/18 10:05 AM** Corrected Salas' title and role

NEWS

Water Master Says Lakes and Reservoirs are Doing Okay

Thanks to back-to-back wet winters, Lake Tahoe is still more than 3.5 feet above its natural rim but good snowpack is needed to keep it going next year.

Tuesday, November 20th 2018, 5:03 PM PST by Paul Nelson

Updated:

Tuesday, November 20th 2018, 5:06 PM PST

Play Video

The winter of 2016-17 brought nearly double the precipitation of an average year, filling the Sierra's lakes and reservoirs after four years of drought. It was a welcome site that was followed up with a snowpack that was about average the following winter. Those winters allowed Lake Tahoe to fill up in the summer of 2017 and 2018. Still, the lake is about two feet lower than it was in July.

"We're doing okay on storage but it's been extremely dry," Chad Blanchard, U.S. District Court Water Master said. "October was well-below average and November we've had nothing yet but it doesn't take too much to catch up, this early in the year, so we're not that worried."

The water level is lower than it was last year at this time because the lake peaked earlier in the year, allowing a longer period of time for evaporation. Lake Tahoe is still 3.7 feet above its natural rim though, with winter just around the corner.

"December, January, and February are our three biggest months," Blanchard said. "So if we don't get anything in those months, then we really start getting behind and it's hard to catch up."

November is the fourth wettest month, and can kick-start the winter months with snow or rain. Snow is what stores most of our water until spring but rain can make the most of the snow in the early months of winter.

"I don't mind seeing rain up really high, this early in the year, because it soaks the soil in," Blanchard said. "Then you get snow on top of it and the soil is a little moist when the snow melts in the spring."

Blanchard says the weather models show a change in weather patterns in the next couple of weeks. He says that could change but he is hoping the Sierra gets some precipitation from some potential storms.

Thanks to the two previous winters, the lake's levels and our water supply can handle a below-average winter.

"An average year would be okay," Blanchard said. "We would get through next year just fine. In a worst-case scenario, it's extremely dry, we would have enough carry-over in Tahoe, pretty much to get us through next year. The year after that could be problematic."

Blanchard says the situation is the same for some of our reservoirs, upstream along the Truckee River.

"We have good carry-over in Stampede," Blanchard said. "Stampede's about up to flood control and Prosser is a little bit below but it wouldn't take much to get Prosser up to flood control."

If northern Nevada has flooding issues this winter, Blanchard says there is space left to reduce the risk of flooding between Lake Tahoe and Reno.

"We have a lot of room in Boca and a lot of room in Tahoe that we can capture some runoff if it happens to come from a rain event," Blanchard said.

As for how much precipitation this winter will bring, only time will tell.

Countywide FAFSA Completion Initiative Is Adopted Statewide In California
119,533 views Nov 16, 2018, 12:06am

California's Deadliest Fires Could Have Been Mitigated By Prevention



Chuck DeVore Contributor

Opinions expressed by Forbes Contributors are their own.

Policy Texas Public Policy Foundation VP and former California legislator



Fire burning above park at night during California Woolsey fireGetty

At least 63 people have been killed with 631 reported missing in the California fires as thousands of firefighters, including 200 sent from Texas as well as other states, battle to contain the blazes. More than 7,000 structures have been destroyed, including up to 90 percent of the homes in Paradise, population 26,682, in Northern California's Butte County. More than a quarter of a million people have been evacuated in both the north of the state by the Camp Fire and by other fires in Southern California, Hill and Woolsey.

Sparks from damaged or malfunctioning power lines operated by PG&E, a state-regulated electric utility, may have been to blame for the Camp Fire's ignition amidst rugged federally-managed lands to the east of Paradise.

As California's fire season burst back into the headlines, President Trump generated controversy with a weekend tweet emphasizing the role of forest management in these fires:

There is no reason for these massive, deadly and costly forest fires in California except that forest management is so poor. Billions of dollars are given each year, with so many lives lost, all because of gross mismanagement of the forests. Remedy now, or no more Fed payments!"

But here is why it matters.

In my two decades of service with the California Army National Guard, we used to darkly joke that California's four seasons were flood, fire, earthquake and riot. California's rainy season will follow soon after these fires, triggering deadly mudslides on the steep hills now being denuded of vegetation. Mudslides, moving fast and with little warning, have historically caused greater loss of life than fire.

Politics takes no timeout amidst the flame and smoke, and human policy bears part of the blame for this years' tragic toll of life and loss of property.

When deadly fires were burning last August, Mike Marcucci, the assistant chief of CAL FIRE, California's main firefighting agency, noted in an [interview](#) with the CBS affiliate in San Francisco that, "It's a daunting task that we're working with some of our cooperators (*i.e. federal and local authorities*) to make sure we can get some of those trees out of the way to not add to some of the fuel." CAL FIRE experts expanded on the problem by blaming decades of policy that discouraged controlled burns to reduce the fuel load in the now-burning forests in the north and hillsides in the south, creating tinderbox conditions.

Some of the needed prescribed burns in Southern California's coastal chaparral and grasslands have been deterred by environmental lawsuits and air quality concerns.

The federal government controls 46 percent of California's land, much of it managed by the U.S. Forest Service. In the three decades before 1990, [foresters harvested 10-12 billion board](#) feet of timber from national forests every year. By 2013, restrictive environmental policies cut that to 2.5 billion. While the harvest declined, so too did tree thinning and the clearing of brush and diseased trees. The Trump administration is reversing that trend with the [biggest harvest of trees on federal land in 20 years](#), selling 3.4 billion board feet on some 3 million acres—still just a third of the typical pre-1990 harvest.

Harvesting trees on public land is controversial but helps pay for needed brush clearing. Many environmental groups vigorously oppose both. But fighting the larger, hotter fires that result without active forest management is even more costly and threatens lives.

In California, tighter environmental controls, higher prices for timber harvesting permits and competition from overseas and pine forests in American Southeast led to a collapse of the state's timber industry. Employment in the industry in 2017 was half of what it was in the 1990s.

During this summer's fires, outgoing California Governor Jerry Brown blamed the record-breaking fires on climate change. In a press conference he warned that the level of climate change-induced forest fires predicted in 20 to 30 years were "now occurring in real time."

While the [frequency of fire has declined](#), the area burnt and the cost to fight wildfires have increased. Understanding why this is the case is the critical component in crafting a public policy solution to address the issue of deadly forest fires.

Many urban liberals are calling for higher taxes on rural Californians to pay for firefighting. Rather than higher taxes, one solution to the constant forest management funding shortage in California would be to look to the state's multibillion-dollar cap-and-trade program designed to address global greenhouse gas emissions. California's out of control wildfires may have [emitted](#) up to 50 million metric tons of carbon dioxide this year alone, about [one-eighth of the entire state's annual emissions](#), largely [wiping out two decades](#) of the state's hard fought greenhouse gas reductions for 2018. Plus, unlike a natural gas-powered electric plant or a modern car, the fires cause terrible air quality.

California's cap-and-trade program is now taxing some \$1.5 billion a year from the state's economy. The lion's share of that revenue has gone towards California's High-Speed Rail project. Until the fires this summer, none of the money had been allocated for forest management or controlled burns to reduce the fuel load until a modest \$170 million was announced in August after the last round of big fires.

Rather than continue to fund a government rail project that that was promised as needing no tax money to build and operate, California's elected officials should consider prioritizing a consistent stream of cap-and-trade revenue to more actively manage the state's millions of acres of forestland and coastal chaparral. Prevention saves lives.

Chuck DeVore is Vice President of National Initiatives at the Texas Public Policy Foundation. He was a California Assemblyman and is a Lt. Colonel in the U.S. Army Retired Reserve.

Water & Land

Climate report warns of precipitation changes, Colorado River risks and increasingly intense wildfires

By



[Daniel Rothberg](#)

November 27th, 2018 - 2:05am

Aridity is the defining characteristic of the American West, and scientists reported Friday that the region is becoming even more arid due to human-caused climate change, putting states like Nevada at greater risk of water shortages, extreme wildfire, habitat loss and heat waves.

The National Climate Assessment, [a 1,656-page report](#) prepared by 13 federal agencies on Friday, painted a stark future in which prolonged droughts could create water insecurity in basins across the Southwest should policymakers not act to mitigate future climate change and adapt to changes already underway. In addition to causing disruption to everyday life, climate change in the Southwest is expected to affect industries like agriculture and ranching.

Nevada, the most mountainous state in the contiguous U.S. and the seventh largest state by area, straddles several ecosystems that would likely be harmed by hotter temperatures and changes to precipitation. Many of these early effects are already apparent, the report noted.

In the past two years alone, northeastern Nevada saw the state's largest single fire while Southern Nevada saw an increase in heat-related deaths amid record-breaking summer temperatures.

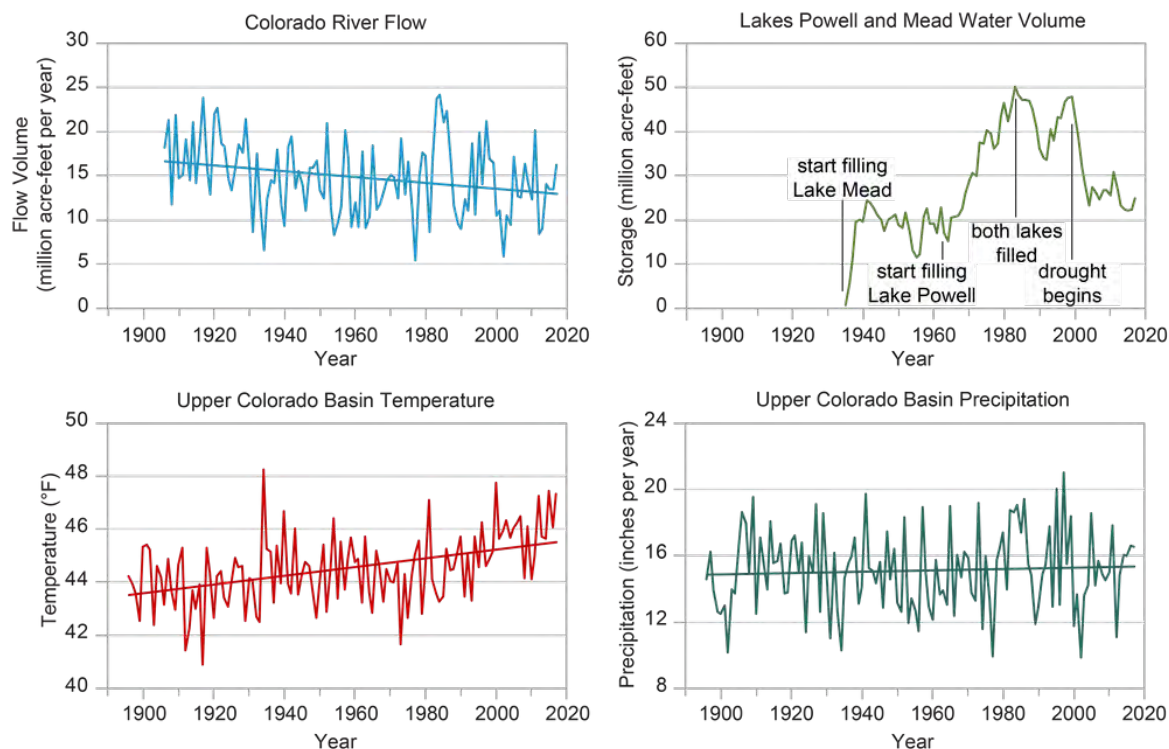


The bathtub ring at Lake Mead (Daniel Rothberg/The Nevada Independent)

“These are alarm bells that are going off right now,” said David Breshears, a University of Arizona ecologist and a report co-author, pointing to extreme wildfires and water shortages across the region.

The report cited dropping water levels at Lake Mead, the reservoir created by the Hoover Dam about 30 miles from Las Vegas, as a prime example of how climate change has affected regional water supplies. Lake Mead, the largest reservoir on the Colorado River system, stores water for millions of Americans and hundreds of farms downstream in Southern Nevada, California and Arizona.

Since the nearly two-decade drought began in 2000, the snowpack-fed reservoir has lost about 60 percent of its water because of overuse and arid conditions worsened by climate change. [A paper released earlier this year](#) showed that Colorado River streamflow has decreased by about 15 percent over the past 100 years with half of those decreases attributed to higher temperatures.



Declines in Colorado River flow and key reservoirs during the nearly two decade drought (National Climate Assessment).

The seven states that fall within the Colorado River Basin, including Nevada, have been working on a short-term drought plan to voluntarily decrease water consumption in an effort to stabilize the reservoir. But the negotiations [hit turbulence earlier this month](#) with competing interests in Arizona arguing over how to move forward with a plan many hoped would be done this year.

Climate change's effect on water supply is not only limited to Southern Nevada, home to most of the state's population. It is a statewide issue.

Precipitation changes are expected to affect the Sierra Nevada, where snowpack melts into the Truckee River which runs through Reno, and the mountain ranges that supply the Humboldt River which snakes through Northeastern Nevada. Both water sources are key to the regional economy.

Warmer storms do not translate into less snow every year. In some places in Nevada, it might mean more extreme weather, intense swings between wet and dry years. But scientists who study the West have observed consistent changes to how snow has fallen, and more importantly, [what those changes mean for how much water melts into rivers and can be stored for human use](#).

“Increased temperatures, especially the earlier occurrence of spring warmth, have significantly altered the water cycle in the southwest region,” the climate assessment noted. “These changes, attributed mainly to climate change, exacerbate hydrological drought.”



Flooding along the Truckee River in January 2017 (David Calvert/The Nevada Independent).

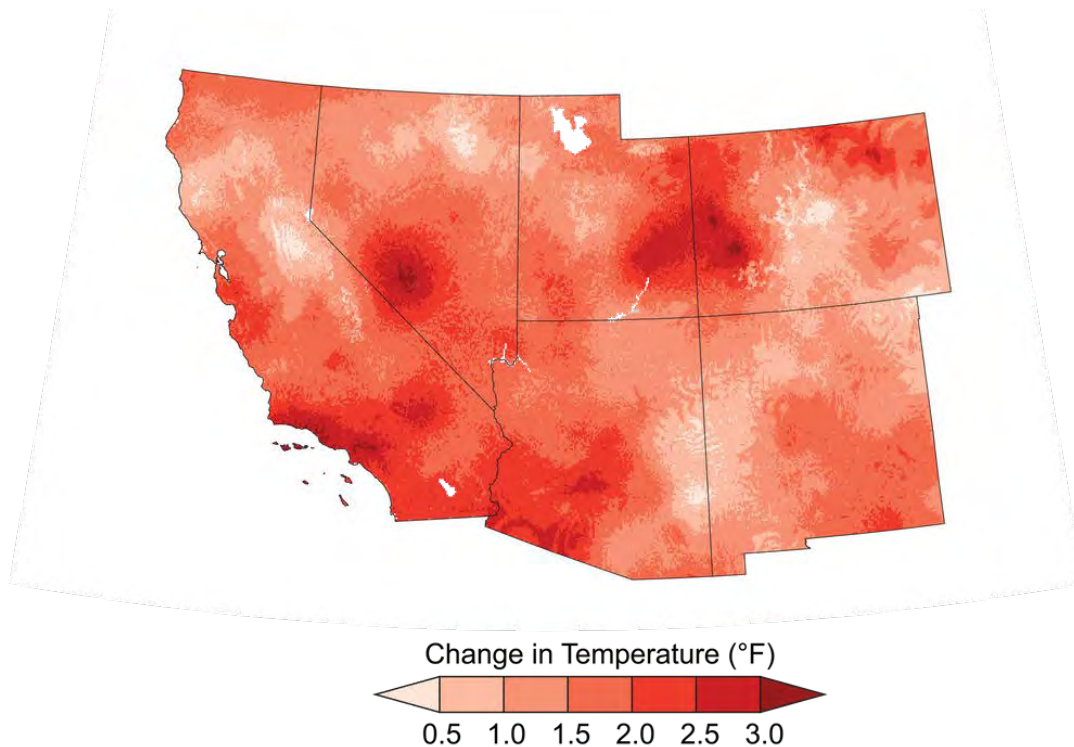
Some scientists avoid calling this a “new normal.” Several have noted that climate change is a continual process, and symptoms apparent today are expected to worsen, according to scientific models.

Each National Climate Assessment forecasts the future effects of climate change based on models that look at a spectrum of greenhouse gas emission scenarios. Gregg Garfin, an associate professor who studies climate at the University of Arizona and is an author of the report’s section on the Southwest, said the Earth is most closely tracking the high emission scenario.

Climate models project that average annual temperatures across the Southwest will increase by about 8.6 degrees fahrenheit by 2100. That will be in addition to temperature increases that have already occurred over the last several decades. For three consecutive years, Las Vegas has seen record high summer temperatures, [The Nevada Independent reported](#) in September.

Garfin said climate change, in many parts of the West, is becoming a chronic issue.

“What we are seeing happen over the years is this kind of transition from climate-related nuisances to climate-related problems,” Garfin said in an interview on Monday.



\This map shows the difference between average temperatures in the Southwest from 1986-2016 and average temperatures between 1901-1960 (National Climate Assessment).

Not only could climate change create more megadroughts, it could also increase the occurrence of staggering heat waves, raising mortality risk and creating more air pollution, the report said. Some of these issues are already playing out. This summer, the Southern Nevada Health District reported a doubling of heat-related deaths in 2017 compared to the year prior.

Garfin stressed that no one climate-related problem can be viewed individually. He said there is a nexus between climate changes' effects on water, heat, public health and extreme wildfire.

Changes in the water cycle don't affect only the water supply. They can also contribute to more intense wildfires. A drier climate has left forests and other landscapes more susceptible to wildfire. The report found that between 1984 and 2015, the area scorched by fire was twice what it would have been without climate change during that period. More than one million acres have burned this year in Nevada because of wildfire, more than half in one fire — [the largest single fire in state history](#).

Although it's difficult to trace climate change to a singular event, drier conditions in the range, in addition to forest management practices, have contributed to more extreme wildfire behavior.



Crews battle the Martin Fire, one of the largest in the state's history. At times, the fire had a 25-mile front that moved 11 miles per hour. (Sebastian Christianson / Sawtooth Interagency Hotshot Crew)

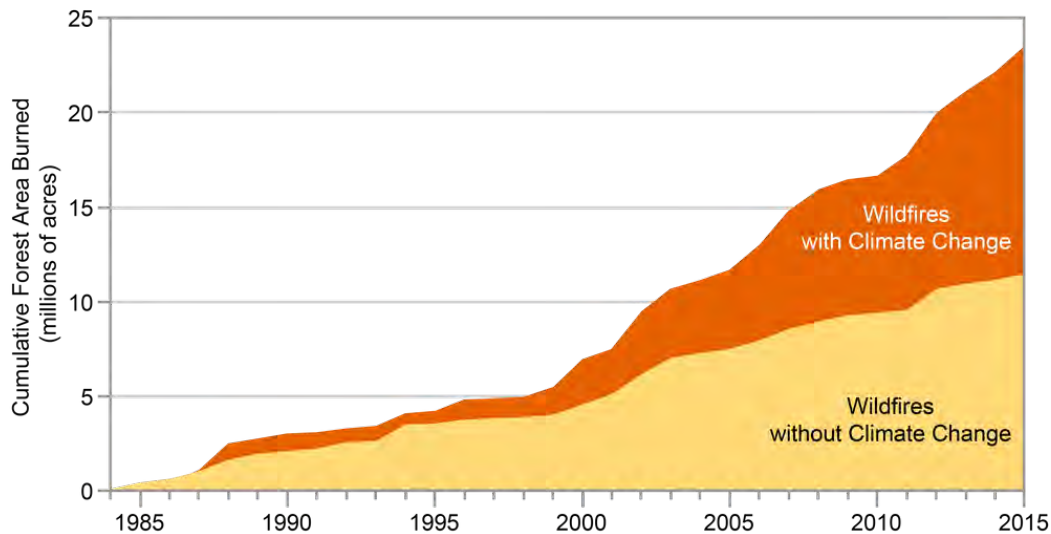
In recent years, wildfire in the Great Basin, the wider region most of Nevada occupies, has threatened ranches, burned grazing land and threatened wildlife habitat for the sage grouse and mule deer. The report noted that it has also made it easier for invasive species, like cheatgrass, to thrive.

The report also found that the impacts of climate change can be worse for indigenous communities in the West whose reservations were often placed in the driest locations and remain restrained to set boundaries. As ecosystems adapt because of climate change, culturally-significant species found on reservations may no longer be able to survive there.

The report specifically mentions the threat of climate change to the Pyramid Lake Paiute tribe outside of Reno. If runoff in the Truckee River decreases flows into Pyramid Lake, the result could be a decrease in habitat for the cui-ui fish, a culturally-important resource for the tribe.

Beth Rose Middleton, a University of California, Davis researcher focusing on Native American studies, said that human-caused climate change will only amplify the way that modern society has manipulated nature by building massive dams and diverting water to faraway urban areas.

"If you add into the mix climatic change, you have ever-increasing impacts," she said.



The report found that between 1984 and 2015, the area scorched by fire was twice what it would have been without climate change (National Climate Assessment).

Despite the National Climate Assessment's calculation that the impacts of climate change could curb the country's gross-domestic product by 10 percent by the end of the century, President [Donald Trump on Monday said "I don't believe"](#) the predictions around the economic impacts.

[Scientists slammed the president](#), noting that science is not a thing you can "believe" in like religion. [The study issued by his own administration](#), they said, is based on verifiable evidence.

Brad Udall, a co-author of the assessment and a researcher at Colorado State University, stressed the importance of addressing the issue of aridification and not getting distracted.

"I would love it if we could get off the debate over whether or not this is happening or if scientists are making money off of this or all these stupid things that really prevent us from getting to the heart of that matter, which is what are we going to do to adapt and what are we going to do about greenhouse gas emissions," Udall said in an interview Monday afternoon.

He said that the West is seeing climate change unfold first hand, especially along the Colorado River, which provides water to about 40 million people in the Southwest and is key to the economy. As a result, he said he thinks it's likely that state governments in the West could take the lead in helping solve the issue. But Udall conceded that solving the problem is difficult.

The report noted multiple ways Western states are tackling the issue, from collaborative water management to mandating that utilities source a certain percentage of energy from renewables.

But the struggle to come to an agreement on even a short-term plan for drawing less water from the Colorado River illustrates some of the potential issues the Southwest could likely face as climate change worsens. In Arizona, a key sticking point for nearly a year has been over how to offset water [losses for farmers who would lose some of their supply under a draft drought plan](#).

As the report noted, agriculture in the Southwest used about 75 percent of the total available water in 2010 (the statistic excludes Colorado where there is non-irrigated wheat farming). As cities grow, there is likely to be increasing competition between rural and urban interests for that share of water.

Despite the obstacles and many challenges that exist in mitigating climate change, scientists still stressed the importance of addressing climate mitigation and adaptation rather than backing away from it.

“I think the bottom line of this report is the climate is changing, we’re driving and it’s going to get worse as temperatures warm, but there’s [still a] potential to address it,” Breshears said.

PWSA to introduce digital alerts for customers' water use



ADAM SMELTZ
Pittsburgh Post-Gazette
asmeltz@post-gazette.com

NOV 25, 2018

2:41 PM

High-tech water billing rolled out to a bumpy start — to put it charitably — when the Pittsburgh Water and Sewer Authority began installing new meter equipment.

Customers soon complained of wildly inaccurate bills. PWSA brought in extra workers as it tackled issues with software, electronic data systems and meters themselves. The authority even faced [a lawsuit over the billing problems](#).

About four years later, PWSA pledges that those woes are in the past. By mid-December, its advanced meter-interface units — now a few years old — should start triggering near-immediate water usage alerts for customers who want that data, authority officials said last week.

The utility doesn't plan to charge extra for the service, which the interface units were designed to provide all along. Alerts will be available by text message or email, said Julie Quigley, administration director at the authority. A sign-up link should appear at www.pgh2o.com when an official introduction kicks off, likely within a few weeks.



Adam Smeltz

PWSA looks to build on system improvements over the next 12 years

“It’s so good that it’s silly to pass up,” Ms. Quigley said. “I’d just like to get the word out that this will help you reduce your household costs — and it’s completely free.”

Participating customers will receive the automated alerts when their usage eclipses thresholds that they set online in advance, according to PWSA. The system will hinge on hourly updates from the interface units, which rely on wireless technology to relay readings from customers’ water meters. A radio frequency carries the data to receivers affixed to water towers.

Ms. Quigley understands the initial implementation of the interface units wasn’t phased in correctly, although she didn’t work for PWSA at the time, she said. The authority is “extremely confident in the data that we’re gathering from these” devices, she said, after it bolstered billing, metering and related functions.

“Julie has come in and stabilized our whole customer-service and billing operation,” PWSA spokesman Will Pickering said.

The authority announced Ms. Quigley’s hiring in October 2017.

Mr. Pickering’s is among some 150 customer accounts that have piloted the usage alerts since Nov. 1. As of early last week, Ms. Quigley said she had not received any complaints from the pilot effort.

Once the service becomes more widespread, she said, it should help many customers to monitor for household plumbing leaks or other unexpected increases in water use. Pittsburgh City Council [urged the authority](#) in 2016 to consider such an offering.

PWSA said around 98 percent of customers have the equipment that registers hourly water readings. The general idea, often known as “smart metering,” has gathered momentum across the utility industry in the past several years.

Duquesne Light started swapping older electric meters for newer, digital models in 2015, part of a metering infrastructure upgrade required of the power company under state legislation.

Still, the scope of smart metering among water utilities in Pennsylvania wasn’t immediately clear late last week, as a variety of utility-related offices and agencies closed for the Thanksgiving holiday.

Pennsylvania American Water Co., the largest investor-owned water utility in the state, doesn’t have a timeline for introducing such technology, spokeswoman Heather DuBose said via email. Pennsylvania American’s service area in the Pittsburgh region includes much of south Pittsburgh and the South Hills.

American Water, the parent company, is piloting “advanced meter infrastructure projects around the country,” Ms. DuBose said. Those efforts will let customers observe “their water usage data on a real-time basis through a web portal and set up alerts to be notified immediately if there’s an issue or if they exceed a specific amount of usage.”

“We will notify our customers and the local media when we have plans to test or offer the technology locally,” she added.

Adam Smeltz: 412-263-2625, asmeltz@post-gazette.com, [@asmeltz](#).

RELATED

North Las Vegas OKs smart water meters for residents

- [Cassandra Mlynarek](#)
- Updated 13 hrs ago | Posted on Nov 26, 2018
[Link to video](#)

NORTH LAS VEGAS – North Las Vegas residents will have a chance to be smarter about their water usage.

On November 5, the city approved a \$19.5 million project to replace 90,000 household water meters with smart water meters.

"You'll be able to identify as much as a toilet leak by looking online at your account," said North Las Vegas Utilities Director Randy DeVaul.

DeVaul says the city decided to make a switch after a 2004 automated system required battery replacement every 10 years.

"We were in a position where we were replacing up to 6 to 8 thousand of those batteries per year," said DeVaul.

The cost to replace the batteries would have cost \$1 million. Instead, the city opted to replace old water meters with smart water meters. The meters will last 20 years and provide homeowners with usage data at their fingertips and allow homeowners to spot leaks faster.

"Alarms will be set and they will be set to send text messages or emails to customers that want them that will enable them to say hey you're using more water than you normally use, you should check for a leak," said DeVaul.

The new system will also help the city reduce the amount of water that goes unbilled. DeVaul said eight percent of the water in North Las Vegas is not accounted for due to leaks or faulty meters.

Installation of the new meters will begin in early 2019 but city officials predict it could take as long as two years to replace every meter in the city.

"It's going to help us reduce our unaccounted for water, help us engage our customers in the importance of water conservation and being able to manage their own usage," said DeVaul.

News | November 27, 2018

WRF Releases Report About Wildfire Impacts On Drinking Water

The Water Research Foundation (WRF) has released a new report, [Wildfire Impacts on Drinking Water Treatment Process Performance: Development of Evaluation Protocols and Management Practices](#)(4590). The frequency and intensity of wildfires, especially in the western United States, has increased in recent decades. Drinking water utilities may face issues with water quantity and availability, source water quality, and the ability to effectively treat and provide high-quality water that the public requires.

The overarching objective of the project was to expand the knowledge base regarding the effects of wildfire on drinking water quality, treatment, plant performance, and operations. The project had three main tasks: evaluate the effects of a wildfire on a particular treatment operation; simulate post-fire runoff using conventional processes; and evaluate the best treatment practices to deal with wildfire-impacted source waters.

"The findings of this report are timely as they can help utilities protect their water supply after wildfire events and continue to provide customers with a reliable, safe water supply," said Rob Renner, CEO of WRF.

The report looked to better understand the effects of wildfires on source water quality and treatability, while also considering the effects on treatment plant operations and costs. The research team developed recommendations and a framework for utilities to assess the impacts of wildfire on water quality and treatment. The recommendations were made around the design and operation of treatment systems for utilities threatened by wildfire including areas like flocculation, sedimentation, filtration, disinfection, and advanced treatment. The findings of this study help fill a knowledge gap in understanding post-wildfire drinking water effects, vulnerabilities utilities face, and ways to improve process performance and wildfire preparedness.

This research project was co-funded by Denver Water, City of Westminster (CO), San Francisco Public Utilities Commission, New York City Department of Environmental Protection, and Truckee Meadows Water Authority. The research team for the project included Fernando Rosario-Ortiz and Amanda Hohner with the University of Colorado at Boulder and

About WRF

The Water Research Foundation is a 501c3 organization officially formed in January 2018 after the merger of the Water Environment & Reuse Foundation and Water Research Foundation. The merged Foundation is the leading water research organization, funding research, pilot projects, and technology demonstrations that maximize the value of all water, including wastewater, stormwater, drinking water, and recycled water. For more information, visit www.werf.org or www.waterrf.org.

Haltom City Agrees to Test Water Meters After Community Uproar

The city says residents were undercharged on their water bills for years

By [Samantha Chatman](#)

Published Nov 28, 2018 at 4:39 PM | Updated at 5:16 PM CST on Nov 28, 2018

Dozens of residents in Haltom City have expressed anger with city leaders and their new smart water meters.

"We might as well just move out of Haltom City because we're not going to be able to afford to live in Haltom City," Mary Hunter said.

Homeowners are trying to figure out why their water bills are so high.

"There's one day that I looked up that it shows 25 gallons of water every single hour," Melanie Montgomery said. "How is that possible?"

Montgomery said it all started when the city installed smart water meters, and got rid of the old ones.

According to one of her bills, she used 3 1/2 times more water this year compared to last year. But she's not buying it.

"The last four years, we've used the same amount of water every year," she said.

Back in August, assistant city manager Rex Phelps told us residents had been undercharged on their water usage for decades.

He said the old meters were simply inaccurate.

"You had a good situation for a long time because you simply weren't paying all your water usage. And now, you are," Phelps said. "We do empathize with them, but we do know that the new meters are accurate."

Today, Haltom City told NBC 5 officials are taking a closer look at the smart meters that many of its residents deem inaccurate.

The city has hired a third-party utility firm to audit and test its water meters and its billing platform.

Forty smart meters will be shipped to a nationally certified lab in New Jersey for testing.

If results from those tests are not satisfactory, the city said it will test an additional 373 meters.

"I think the city has responded because it has been on NBC 5," Montgomery said.

She's glad that her meter is one of the 40 that is on its way for testing.

Now, Montgomery said she hoped the results would shed light on what she believes is a major problem for residents in Haltom City.

"They're called smart meters, but they're not that smart," she said.

The city said meters selected for testing will be replaced with a brand new meter.

City officials will continue to meet with residents one-on-one to help them understand the water bills and regain their trust.

If you need help from NBC 5 Responds, [click here](#).

Daybreak: Massive Reno housing development turned down by council

[Anjeanette Damon](#), Reno Gazette Journal

Published 9:02 p.m. PT Nov. 28, 2018

Thirteen months after a record winter flooded Swan Lake in Lemmon Valley, homes remain surrounded by water. Jason Bean and Anjeanette Damon/RGJ [Link to video](#)



(Photo: Provided by John S. Phillips)
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Staying true to the city's newly crafted master plan, the Reno City Council on Wednesday voted to deny a massive housing development planned for the community's last natural floodplain.

The developers of the proposed 4,700-unit Daybreak project on the former Butler Ranch in southeast Reno, argued they had engineered solutions to all of the technical challenges presented by the site: flood storage, mercury-contaminated soils, high ground water levels and traffic issues.

They also argued that this in-fill development wouldn't tax infrastructure the way far-flung developments do and argued the region is in severe need of the housing units.

But in a 6-1 vote, the council decided to heed the city's master plan, which highly discourages development in the flood plain.

"I have great respect for engineers and particularly the ones working on this project. Here's the policy question. Because we can move the water, channelize the creek, build in the flood plain, should we?" said Councilwoman Naomi Duerr. "Is it good public policy... or do we leave some areas to be a natural sponge."

Councilman Oscar Delgado, who represents the ward where the project would be built, was astounded the council would continue to consider a project given the increasing severity of area flooding with climate change and the lack of certainty over changing stream flow models and flood levels.

"I can't see why we're even hearing this," he said. "It's beyond me that we're not prepared and the project isn't preparing for the uncertainties and unintended consequences for the communities around them."

Councilwoman Bonnie Weber was the only council member to vote in favor of the project.

"In my mind this, is a no brainer. We need the housing," she said. "The future here is something we need to be looking at."

Public comment on the project was split. Residents in the area opposed the project, worried it would exacerbate flooding issues, traffic problems and fire protection scarcity. Builders, developers and trade unions spoke in favor of the development, pointing to the a housing crisis rooted in a lack of housing supply.

Councilman David Bobzien said the area likely will be developed in the future.

"We need the housing mix, but it needs to be done in recognition that this is a very sensitive area," he said.

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Water & Land

Las Vegas water planners hedge bets, prepare for worst case scenario: the day the Colorado River stops at the Hoover Dam

By [Daniel Rothberg](#)



December 2nd, 2018 - 2:15am

A construction crew is lowered into the Southern Nevada Water Authority's low-level-pumping station access shaft near Lake Mead on Tuesday, Nov. 27, 2018. (Jeff Scheid/The Nevada Independent)

Las Vegas water planners hedge bets, prepare for worst case scenario: the day the Colorado River stops at the Hoover Dam

On a quiet Wednesday morning below Hoover Dam, a tame Colorado River flows between high canyon walls to Arizona, California and Mexico. Exactly how much water snakes through this part of the river is determined by carefully-planned releases from the country's largest reservoir, Lake Mead, which flows through the dam for downriver farmers, cities and tribes.

It is hard to fathom, but there is a possible future in which this section of the river — the source of water for millions of Americans from farmers in the Imperial Valley to residents of Phoenix — could dry to a trickle.

That doomsday scenario, if it happens, is still far away. But without cutbacks to water use across the Southwest, it could one day play itself out, especially under drier hydrologic conditions driven by climate change. And it's scary enough for Las Vegas, which gets 90 percent of its municipal water from the Colorado River, that the city has been spending big money to hedge its bets.



A boater travels at Las Vegas Bay in Lake Mead on Tuesday, Nov. 27, 2018. (Jeff Scheid/The Nevada Independent)



“You have a lot of people in Vegas who are very good at making bets,” said Jonathan Overpeck, a dean at the University of Michigan’s environmental school and a Colorado River researcher. “[The Southern Nevada Water Authority] is making a bet that it should spend \$1.3 billion so that it can get [it’s full allocation], even at dead pool. So I would say that it is a possibility, then.”

Since a nearly two-decade drought began in 2000, the elevation of the snowpack-fed reservoir has fallen about 140 feet. If it falls another roughly 180 feet, the amount of water in the reservoir will be lower than the outlet at Hoover Dam. At “dead pool,” the point at which it would be physically impossible to release water from the dam to the river, no water would make it past Lake Mead, halting the flows of a key Southwest water supply far from its delta.

That water users would let the system crash to dead pool is unlikely. To let the once wild river stop at the dam’s edge would be a political and ecological disaster.

“My gut feeling is we never get there. A whole lot of institutional systems would have to fail to get the lake that low,” said John Fleck, a professor at the University of New Mexico who wrote a book about the Colorado River. “At that point when we get the lake that low, we have huge problems across the West. I am confident that we never get to the point where the lake gets that low, because I am confident that the water management community will never let that happen.”

But the improbable scenario is still one Las Vegas is working to secure itself against.

On Tuesday, thousands of yards upstream and about 300 feet below the reservoir’s surface, water authority contractors continued working underground on a pumping station that would protect the city from dead pool if Lake Mead ever dropped to that point. Experts who study Colorado River politics have said that the infrastructure project has changed Las Vegas from one of the least secure cities on the river to one of the most secure cities. When it is completed in 2020, Las Vegas would be the only water user in the lower Colorado River basin that could get water under dead pool conditions.

“This project is drought driven,” Erika Moonin, a project manager for the water authority, told reporters Tuesday before a tour of the pumping station. “It will allow us to have continued access to our community water supply even if the lake levels get to very extreme low levels.”

The pumping station will connect to the water authority’s so-called third intake, a straw that allows for access to water deep in the reservoir. Together both projects are expected to cost about \$1.35 billion and will give the water authority the ability to pump water below dead pool. But the worst-case scenario is not the only reason the water authority wanted the intake.



Workmen stand in the access shaft over 500 feet below the Southern Nevada Water Authority low-level-pumping station near Lake Mead on Tuesday, Nov. 27, 2018. (Jeff Scheid/The Nevada Independent)



An elevator is lowered into the access shaft over 500 feet below the Southern Nevada Water Authority's low-level-pumping station near Lake Mead on Tuesday, Nov. 27, 2018. (Jeff Scheid/The Nevada Independent)

There are other advantages.

Chief among them is that the water authority's current pumping infrastructure — at 1,000 feet above sea level — will become inoperable even before the reservoir hits dead pool, which will occur at 895 feet above sea level. The reservoir's surface currently sits at about 1,078 feet. The station will also allow the agency to access colder, higher-quality water in the reservoir, which is easier to treat.

Before the third intake was completed, Las Vegas was at risk of having nearly its entire water supply cut off if the reservoir fell below 1,000 feet. That meant no water to a metropolitan area of more than 2 million. Now with the completion of the pumping station, Las Vegas will have a security that no other Lake Mead water user has: the ability to take out water at dead pool.

“Our delivery mechanism is guaranteed under all hydrologic conditions,” John Entsminger, the water authority’s general manager, [said in an interview with *The Nevada Independent* in August](#). “That’s not true for anyone downstream of us. From a physical water security standpoint, Las Vegas is better off than any other metropolitan area that takes water from the Colorado River.”

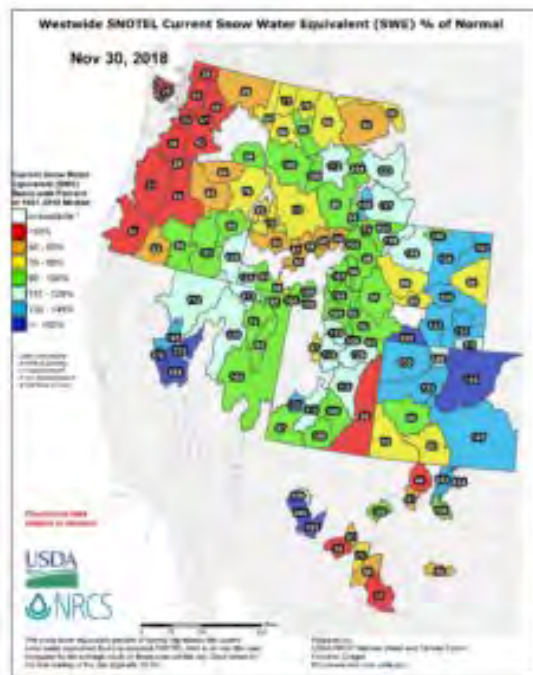
Fleck and other Colorado River experts are confident that water users will avoid letting the lake fall to dead pool. It would mean no to little water for farmers with senior rights in California. It would further degrade the ecology for a huge portion of one of the West’s most storied rivers. And it would cut off a cheap hydroelectric power resource that benefits most of the Southwest.

Dead pool, if reached, would not necessarily be a static state. It is possible the reservoir could dip below dead pool but recover amid improved snowpack or even more quickly if water users took extreme cuts to their supplies. Still, being in dead pool would cause a serious disruption to the river system.

“The goal has to be reducing the use of water,” Fleck said.

For several years, the seven states in the Colorado River basin have been negotiating a plan to voluntarily conserve water to stabilize the system amid drought and overuse. Arizona, California and Nevada, the states that rely on Lake Mead, have been working on a “Drought Contingency Plan” to leave more water in the reservoir. The goal is to prevent the reservoir from falling below 1,025 feet above sea level, at which point the federal government could require severe cuts.

This map, an aggregation of snowpack data, shows average to above average snowpack in much of the Colorado River Basin. (U.S. Department of Agriculture)



After one of the driest winters on record last year, the Colorado River Basin has seen improved hydrology in the early months of the season. According [to a recent forecast](#) from federal water managers, the U.S. government could call a shortage declaration for Lake Mead as soon as 2020. The water authority, which is already using less water than it is entitled to, [has said it can weather those shortages](#) because of conservation measures including paying residents to remove grass.

In making the case for the drought plan, the threat of dead pool has crept back into the lexicon as the absolute boundary to avoid. In May, the head of the Bureau of Reclamation, the federal agency charged with managing western water, used the term in a sobering presentation to California farmers. Reclamation Commissioner Brenda Burman told leaders of the Imperial Irrigation District, a power player with protected rights to Colorado River water, that their senior rights could be frustrated by dead pool, the worst-case scenario in hydrological modeling.

“You can look forward and say you are the most protected on the system, but as we can see from the future possible hydrology, being the most protected on the system doesn’t necessarily protect your water supply,” [Burman said](#). “There are ways to buy down this risk, to invest, to create insurance policies if you will, that make this scenario much less likely to happen.”

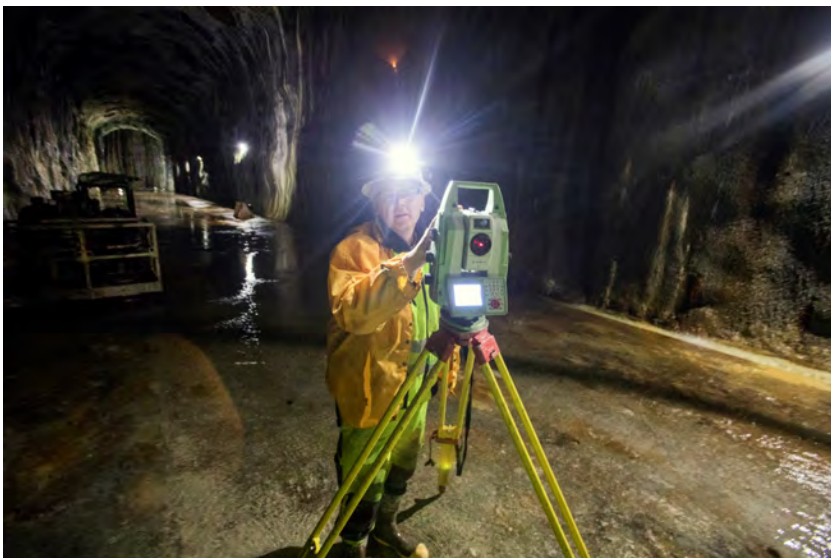
Despite [Nevada signing off on the drought plan](#), negotiations in Arizona and California hit roadblocks earlier this year. But negotiators in both states appeared to make progress on Thursday when a Southern California judge [denied a legal request](#) to stop the Imperial Irrigation District from signing off on the plan and Arizona officials unveiled [a potential compromise plan](#).

Layered on top of these conservation efforts is a looming threat: climate change.

[A paper this year](#) showed that streamflow in the Colorado River has fallen 15 percent over the last century, with half of those decreases attributed to higher temperatures, the most apparent signature of human-caused climate change. If streamflow through Colorado, Utah and Wyoming continues to decrease, it would mean less water for an already-overtaxed river system.

Climate change was one of the reasons the water authority felt it necessary to prepare for the worst, said water authority spokesman Bronson Mack. The pumping station is still more than a year away from completion. Yet construction crews, working for the past three years, are nearly ready to remove a massive steel bulkhead and flood a forebay with water from the reservoir.

“About 275 feet of water is being held back by that bulkhead,” said Jordan Hoover, the project manager for the water authority’s general contractor, Barnard Construction.



A workman surveys a manmade cavern over 500 feet below the Southern Nevada Water Authority’s low-level-pumping station near Lake Mead on Tuesday, Nov. 27, 2018. (Jeff Scheid-Nevada Independent)



An aerial view of the Southern Nevada Water Authority low-level pumping station under construction at Lake Mead on Tuesday, Nov. 27, 2018. (Jeff Scheid-Nevada Independent)

On Tuesday, about 300 feet below Lake Mead's current elevation, pumps cleared groundwater that was seeping into the cavern. The hot water, in an area with high thermal activity, has scored the sides of the cave with calcium and iron deposits as it has dripped down the cave's 40-foot walls.

In the coming weeks, construction crews plan to remove those pumps, allowing groundwater to fill the area at a rate of roughly 500 gallons per minute. Then, using a submarine, the contractor will remove a bulkhead holding back water from the reservoir, a key milestone. But the site will still not be operable for many months until pumps are installed and a substation is built.



Colorado River water released from the Hoover Dam flows downstream on Wednesday, Nov. 28. (Daniel Rothberg/The Nevada Independent)

South of Lake Mead, water still flows out of Hoover Dam and downstream. If the worst-case scenario played itself out and water one day stopped snaking past the dam, river-dependent cities and Southwest agriculture would not be the only collateral damage. Dead pool would cripple the environment to the south, adding the absolute insult to injury for many environmentalists who already decry dams as unnatural obtrusions.

"You can almost see the Colorado River and Lake Mead as a microcosm for the way that we have treated the environment, particularly in the Western United States, by corralling and controlling resources to achieve an ideal," said Patrick Donnelly, the Nevada state director for the Center for Biological Diversity. "[Lake Mead is] an emblem to control the West."

Correction (12/2/18 at 2:40 p.m.): This story has been corrected to reflect that the water authority's current pumping infrastructure will become inoperable even before the reservoir hits "dead pool", which will occur at 895 feet **above** sea level (not 895 feet below sea level, as the original story stated). We regret the error.

Disclosure: John Entsminger has donated \$40.00 and Patrick Donnelly has donated \$305.00 to The Nevada Independent.

You can see a full list of donors on [our donor page](#).

Lake Mead water project meets milestone

Henry Brean Las Vegas Review-Journal

LAS VEGAS – After a three-year battle to keep their underground job site from flooding, a construction crew at Lake Mead is ready to let the water win. Sometime in the next few days, workers plan to shut off pumps keeping the water out and allow it to fill a cavern they have carefully excavated from the rock more than 500 feet beneath the shore.

The move will mark the latest milestone for the Southern Nevada Water Authority's low-lake-level pumping station, a \$650 million safety net for a region of 2.2 million residents and more than 40 million tourists that draws 90 percent of its drinking water from the Colorado River reservoir behind Hoover Dam.

The pumping station, on track for completion in early 2020, will let Las Vegas keep drawing water even if the drought-stricken lake shrinks another 200 feet to "dead pool," the point at which Hoover Dam can no longer release water downstream. "This project is drought-driven," Erika Moonin, project manager for the Las Vegas-based authority, told the Las Vegas Review-Journal during a recent final media tour of the underground pump station forebay.

Water dripped from the ceiling and spouted from the walls as a small group of reporters and project officials viewed a subterranean waterfall tumbling down from one of the two vertical shafts providing access to the construction zone. The mix of lake water and groundwater, some of it thermally heated to a comfortable bath temperature, is flooding in from cracks in the surrounding rock.

The forebay is longer than a football field, about the width of three freeway lanes and four stories high, with 34 openings in the ceiling. Each leads 500 feet to the lake surface.

"I get cell service under shaft 19," Robin Rockey, the authority's liaison to the project, said with a laugh.

Temporary pumps have been removing about 525 gallons of water a minute from the work area. Once those pumps are off, the space should flood within three or four days.

Then a remotely controlled underwater drone will be sent in to unscrew bolts from a massive bulkhead separating the pumping station from the rest of the authority's new plumbing at Lake Mead: a 3-mile, \$817 million "straw" that was finished in 2015 and reaches to the bottom of the reservoir.

“There aren’t very many projects like this in the world,” said Jordan Hoover, project manager for Montana-based Barnard Construction Co., general contractor for the pump station.

The completed facility will be able to draw up to 900 million gallons of water a day from the deepest part of Lake Mead using 32 specially designed submersible pumps that can produce up to 5,200 horsepower.

“In combination of depth and flow, they are the largest in the world,” Moonin said. The pumps are manufactured in Spain and shipped to the Port of Long Beach, California, where they are loaded onto trucks for delivery to Southern Nevada. It takes four to five truckloads to deliver a single pump. The entire trip from factory to job site takes about a month, Hoover said.

Sixteen pumps have been delivered so far. Moonin said the first should be installed sometime in February. The construction crew of about 125 people is also hard at work on an electrical and maintenance building, a dedicated, 65-megawatt electrical substation and a pair of 12-foot-diameter pipes connecting the pumping station to the community’s two water treatment plants.



Members of the media and workers tour the Southern Nevada Water Authority’s low-lake-level pumping station at Lake Mead National Recreation Area near Las Vegas on Tuesday. RICHARD BRIAN/LAS VEGAS REVIEW-JOURNAL VIA AP

City of San Diego could install 250,000 smart water meters

Posted: 1:06 PM, Dec 03, 2018

Updated: 5:52 PM, Dec 03, 2018

By: [Jonathan Horn](#)



SAN DIEGO (KGTV) - Every home in the city of San Diego could soon have a smart water meter, eliminating the human error that led to thousands of erroneous water bills reaching homes.

On Monday, the San Diego City Council authorized up to \$25 million to buy more than 250,000 smart water meters from company Itron Inc.

The move comes after an audit earlier this year found nearly 3,000 erroneous water bills reached households, some spiking upwards of \$1,000. The audit largely blamed human error from water-meter readers, who are charged with reading hundreds per day.

RELATED: [Inside San Diego: Audit shows City sent thousands of faulty water bills](#)

The controversy came to a head when the city discovered one of its meter readers misread 300 meters in Rancho Bernardo, Rancho Peñasquitos, Mira Mesa and Carmel Valley. That reader was terminated.

Wimberly vote create a water-smart, One Water primary school.

- **Wimberley ISD votes to create One Water school**
- **First of its kind in the state**
- **School will have rainwater collection, wastewater treatment**

The district is making history by building the [first One Water school in Texas](#). A One Water school promotes managing all the water as a single resource that is sustainable and reusable.

"This is huge for us. This is the first time that I would ever even conceive that it would happen," Superintendent Dwain York said. "This is an awesome concept. It works great in the Hill Country and especially in the community of Wimberley."

The campus will include rainwater collection as well as wastewater treatment, and will be focused on conserving natural resources through stormwater management.

"We think this is really the right direction of all development in the Hill Country to really integrate this approach that really honors water at every part of the water cycle," David Baker with Wimberley Valley Watershed Association said.

[The design](#) will protect environmentally sensitive areas like Jacob's Well, Blue Hole, and the Trinity Aquifer, and will reduce groundwater usage by 90 percent of what a traditional primary school would use. The district hopes it will be a catalyst for other districts to go green as well.

"This campus will be visited quite frequently over the next five to 10 years," York said. "I think especially here in Central Texas, with all the water issues that we've got, the fast growth, all of those issues, I think there's going to be several people that are going to be interested in just going somewhere where it actually works."

"In that Field of Dreams vain, 'if you build it they will come,'" Ashley Waymouth with Wimberley Valley Watershed Association said. "If you show that it is possible and that it saves money and it's cheaper or costs the same as convention method but it guarantees a more resilient future, it's kind of a no-brainer."

The unnamed primary school will be built at Ranch Road 12 and Winters Mill Parkway and will be open for Fall 2020.