



TRUCKEE MEADOWS WATER AUTHORITY Board of Directors

AGENDA

Wednesday, December 16, 2020 at 10:00 a.m.
Virtual meeting only.

MEMBERS OF THE PUBLIC MAY ATTEND VIA THE WEB LINK, OR
TELEPHONICALLY BY CALLING THE NUMBER, LISTED BELOW.
NO PHYSICAL LOCATION IS BEING PROVIDED FOR THIS MEETING

(be sure to keep your phones or microphones on mute, and do not place the call on hold)

Please click the link below to join the webinar:

<https://tmwa.zoom.us/j/91492698201?pwd=ZTd5eWp2Q1I5ejBTR241UE5YLzFidz09>

Password: 347310

Or call:

Phone: (888) 788-0099

Webinar ID: 914 9269 8201

Board Members

Chair Vaughn Hartung

Member Neoma Jardon

Member Jenny Brekhus

Member Paul Anderson

Vice Chair Kristopher Dahir

Member Jeanne Herman

Member Naomi Duerr

NOTES:

1. This meeting is being conducted pursuant to the Governor's Declaration of Emergency Directive 006 ("Directive 006 [http://gov.nv.gov/News/Emergency_Orders/2020/2020-03-22 - COVID-19 Declaration of Emergency Directive 006/](http://gov.nv.gov/News/Emergency_Orders/2020/2020-03-22_-_COVID-19_Declaration_of_Emergency_Directive_006/) and will be held by teleconference only.
2. The announcement of this meeting has been electronically posted in compliance with NRS 241.020(3) and Directive 006 at <http://www.tmwa.com>, and NRS 232.2175 at <https://notice.nv.gov/>.
3. Pursuant to Directive 006, the requirement contained in NRS 241.020(3)(c) that physical locations be available for the public to receive supporting material for public meetings has been suspended. Staff reports and supporting material for the meeting are available 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. Pursuant to Directive 006, public comment, whether on action items or general public comment, may be provided without being physically present at the meeting by submitting written comments online on TMWA's Public Comment Form (tmwa.com/PublicComment) or by email sent to boardclerk@tmwa.com prior to the Board opening the public comment period during the meeting. In addition, public comments may be provided by leaving a voicemail at (775)834-0255 prior to 4:00 p.m. the day before the scheduled meeting. Voicemail messages received will be noted during the meeting and summarized for entry into the record. Public comment is limited to three minutes and is allowed during the public comment periods. The Board may elect to receive public comment only during the two public comment periods rather than each action item. Due to constraints of TMWA's videoconference system, public comment must be provided by voicemail, email or online comment as indicated above.
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..

¹The 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.

1. Roll call*
2. Pledge of allegiance*
3. Public comment — limited to no more than three minutes per speaker*
4. Possible Board comments or acknowledgements*
5. Approval of the agenda (**For Possible Action**)
6. Approval of the minutes of the October 21, 2020 meeting of the TMWA Board of Directors (**For Possible Action**)
7. Water supply update — Bill Hauck*
8. Discussion and action on adoption of Resolution No. 289: A resolution approving transfer of ownership of 0.16 acres of surplus land near TMWA Double Diamond Well No. 2 to neighboring property owner for no consideration — Heather Edmunson (**For Possible Action**)
9. Discussion and action confirming General Manager’s Appointment of four Trustees to the §115 Post-Retirement Medical Plan & Trust for a two-year term from January 1, 2021 through December 31, 2022 — Jessica Atkinson (**For Possible Action**)
10. Discussion and action confirming General Manager’s Appointment of four Trustees to the §501-c-9 Post-Retirement Medical Plan & Trust for a two-year term from January 1, 2021 through December 31, 2022 — Jessica Atkinson (**For Possible Action**)
11. Discussion and action on adoption of Resolution No. 290: A resolution to approve the Comprehensive Annual Financial Report for Fiscal Year ended June 30, 2020 — Matt Bowman (**For Possible Action**)
12. Presentation of Financial Performance for First Quarter Fiscal Year 2021 — Matt Bowman*
13. Discussion and action, and possible direction to staff regarding appointments to the Standing Advisory Committee to fill vacancies in existing positions whose terms expire December 31, 2020, such appointments to be made for new terms from January 1, 2021 to December 31, 2022 from the following list of candidates: (1) Neil McGuire, primary representative, irrigation customer; (2) Karl Katt, alternate representative, irrigation customer; (3) Donald Kowitz, primary representative, commercial customer; (4) Robert Chambers, primary representative, senior customer; (5) Ken McNeil, primary representative, at-large 1 customer; (6) Ken Becker, alternate representative, at-large 1 customer; (7) Jordan Hastings, primary representative, at-large 2 customers; (8) Carol Litster, primary representative, representative 1 customer; (9) Dale Sanderson, alternate representative, representative 2 customers; (10) Harry Culbert, primary representative, representative 2 customer; (11) Fred Arndt, alternate representative, representative 2 customers; and (12) Jerry Wager, primary representative, representative 3 customer — Sonia Folsom (**For Possible Action**)

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14. Presentation of Truckee River Fund Activities for Calendar Year 2020 — Sonia Folsom and John Enloe*
15. Discussion and action on scheduling regular board meeting dates and times for the Calendar Year 2021 — Sonia Folsom (**For Possible Action**)
16. General Manager's Report*
17. Public comment — limited to no more than three minutes per speaker*
18. Board comments and requests for future agenda items*
19. Adjournment (**For Possible Action**)

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TRUCKEE MEADOWS WATER AUTHORITY
DRAFT MINUTES OF THE OCTOBER 21, 2020
MEETING OF THE BOARD OF DIRECTORS

The Board of Directors met on Wednesday, October 21, 2020, via Zoom Virtual Meeting, Reno, Nevada. Chair Hartung called the meeting to order at 10:39 a.m.

1. ROLL CALL

Members Present: Jenny Brekhus, Kristopher Dahir, Naomi Duerr, Neoma Jardon, Vaughn Hartung, and Jeanne Herman.

Members Absent: Paul Anderson

A quorum was present by telephonic appearance.

2. PLEDGE OF ALLEGIANCE

The pledge of allegiance was led by Leo Drozdoff, TMWA Lobbyist.

3. PUBLIC COMMENT

Tami Ruf, Juniper Hills resident, spoke against the closure of the access gate on the south side of Hunter Creek Reservoir, which has been welded shut in response to the public complaints of residents in the area due to the unauthorized fishing and increase in foot, and horse, traffic. Ms. Ruf requested the Board reconsider reopening the south gate.

Michele Hulbert, on behalf of Dr. O’Gara, said that he owns his property directly adjacent to Hunter Creek Reservoir where the majority of the public have blocked his property by parking in the Cul de Sac, cut through yards to the trails and pond and been awakened in the middle of the night due to the noise by late night gatherings.

4. POSSIBLE BOARD COMMENTS OR ACKNOWLEDGEMENTS*

There were no board comments.

5. APPROVAL OF THE AGENDA

Upon motion by Member Dahir second by Member Herman, which motion duly carried by unanimous consent of the members present, the Board approved the agenda.

6. APPROVAL OF THE MINUTES OF THE SEPTEMBER 16, 2020 MEETING

Upon motion by Member Jardon, second by Member Herman, which motion duly carried by unanimous consent of the members present, the Board approved the September 16, 2020 minutes.

7. RECOGNITION OF PYRAMID LAKE PAIUTE TRIBE MEMBER NORMAN HARRY

Mark Foree, TMWA General Manager, said that even though he didn't know Mr. Harry personally, he has heard many good things about him regarding his role in the successful negotiations of the Truckee River Operating Agreement (TROA).

Member Duerr paid tribute to Chairman Harry of the Pyramid Lake Paiute Tribe (PLPT) whom she had known for over 25 years and expressed her condolences to his family and the PLPT for their loss. In addition, Mr. Harry was part of establishing the tribal water quality standards for the Truckee River, and a huge supporter of the arts where he served on Artown's Board and opened the proceedings with a drumming song.

Member Brekhus said she got to know Mr. Harry in the last few years and was impressed with his way of thinking, and communicating, about water, and passing on the importance of it to everyone around him; she expressed her condolences to his family.

Mr. Drozdoff said he worked with Mr. Harry for about 20 years on the TROA negotiations as well as when PLPT created their own water quality standards for the Truckee River, ensuring it would work for the community as well. While he worked at Nevada Department of Environmental Protection (NDEP), they developed water quality standards that established a baseline for discharge to the river. Mr. Harry was a pleasure to work with and he will be missed.

8. INFORMATIONAL REPORT REGARDING HUNTER CREEK RESERVOIR PROPERTY PUBLIC ACCESS AND UNAUTHORIZED USES

John Zimmerman, TMWA Water Resources Manager, showed the Board the map of the Hunter Creek Reservoir facilities and the three ponds surrounding the property. TMWA, at the time Sierra Pacific, obtained a special use permit from Washoe County to maintain the landscape in perpetuity for aesthetics, but it was never intended to be used as a public park. Mr. Zimmerman informed the Board staff started to receive complaints last year about excessive traffic which increased this year. In order to continue complying with the special use permit, which requires the area be maintained as an open space landscape, and protect TMWA ratepayers (not more money or staff time than necessary to maintain the property), and to keep the public on the paved path, staff put up signs informing the public that: 1) this area is not a park; 2) fishing is not permitted; 3) access is allowed from sunrise to sunset; and 4) closed the gate the most southern pond. Additionally, the pond was on a fishing application as a designated fishing spot, which contributed to the increase in foot traffic, and has since been taken off the site.

Member Brekhus asked which year the special use permit was obtained and if it has been amended. Mr. Zimmerman replied it was obtained in 1995, the files do not indicate it has been amended, and he can provide a copy to the Board.

At this time, the Board discussed closure of the south gate limiting access to the residents to north and west side of the property (a number of homeowners have expressed the desire to reopen the south gate for ease of access) and accessibility is important; since the location was removed from the fishing app and signs have been put up, the issue may have already been resolved; staff to continue communicating with all residents to address all concerns; and TMWA cannot control parking on public streets.

Public Comment

Ms. Ruf informed the Board that her community does not have an HOA which gives them a disadvantage since there is no public body that can be contacted. She said that it is a great inconvenience that the south gate has been locked because the several residents that use it now have to walk a long distance to access the paths. She said that the number of horses along the path is much lower than what is reported, and urged staff to communicate with Juniper Hills homeowners much like they communicate with Juniper Ridge HOA so everyone is informed and can have input in how to address issues.

Ms. Hulbert, Juniper Ridge HOA Board Member, said she has personally picked up trash left behind after the late night parties, as well as horse droppings, and called the authorities when it got really bad. The signs TMWA put up have helped tremendously with minimizing these issues they've experienced the past year. She stressed that the intent was not to limit access points by closing and locking gates.

End of Public Comment

Member Jardon noted that it seems the issue has been resolved to a degree with the signs and the property being removed from the fishing app. Perhaps the gate can be unlocked and reevaluated in a few months.

Chair Hartung agreed and encouraged staff to work with the HOA and homeowners in Juniper Ridge.

Mr. Zimmerman thanked the Board, and the public for their input, and he will continue working with both Juniper Ridge HOA and Juniper Hills homeowners to solve the remaining issues.

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

Sophie Cardinal, TMWA Principal Accountant, presented the required communication to the Board regarding the FY2020 Comprehensive Annual Financial Report (CAFR) and informed the Board the final CAFR will be presented at their December meeting.

Upon motion by Member Brekhus second by Member Dahir, which motion duly carried by unanimous consent of the members present, the Board accepted and acknowledged receipt of the communication from Eide Bailly in regards to TMWA's annual financial audit.

10. DISCUSSION AND ACTION, AND POSSIBLE DIRECTION TO AUTHORIZE GENERAL MANAGER TO FINALIZE AND EXECUTE AN INTERLOCAL AGREEMENT WITH CITY OF RENO FOR COST SHARING OF THE BASIS OF DESIGN REPORT FOR RENO STEAD WATER RECLAMATION FACILITY (RSWRF) AMERICAN FLAT AQUIFER STORAGE AND RECOVERY PROJECT

John Enloe, TMWA Director of Natural Resources, stated the Board authorized TMWA and City of Reno (“Reno”) to work together towards advancing the American Flat aquifer storage and recovery project at their respective September meetings. Mr. Enloe informed the Board that both TMWA and Reno staff have been working together on this project for the last four months and they are now at a critical point to move forward with the next phase of the project. Staff is requesting the Board authorize the General Manager to finalize and execute the Interlocal Agreement (ILA) with the City of Reno (which is subject to Reno City Council approval) regarding cost sharing of the Basis of Design Report for the American Flat Aquifer Storage and Recovery Project. The work is necessary to clearly define the responsibilities and cost sharing arrangements to ensure equitability between Reno and TMWA customers.

Member Brekhus asked if there was a request for proposals (RFP) and shared her concerns regarding sole sourced agreements and the feasibility and cost of the project overall. Mr. Enloe replied they hired AECOM directly because the project manager, Vijay Sundaram, who has been involved in the A+ project for the past 10 years, switched companies. He addressed Member Brekhus’ concerns indicating that this planning study is being done to identify what the facility would cost and where it will be located. This is work we have been waiting to do, and the scope of work outline before you today will provide the information of how much it will cost to both build and operate, and how much the costs will be allocated between the different participants.

At this time, Board Members expressed the need to take a regional approach and consider the best options to continue moving forward, and the need to understand what is achievable and affordable. When the study is complete, the concept can be evaluated, including the location of the facility, capacity to treat water to A+ level, and the cost to build and operate (to be shared between TMWA and Reno). Mr. Enloe added staff has had success at American Flat where they have been able to recharge about 500 gallons per minute over four months.

Member Jardon said she’s looking forward to the study results to understand critical next steps. Chair Hartung agreed.

Member Brekhus appreciated Mr. Enloe’s clarification and could support staff recommendation had it been brought to Reno first. She’ll bring her concerns to the Reno Council meeting.

Member Duerr appreciated Member Brekhus’ comments, but noted it is difficult to understand which entity should making decisions ahead of others, but TMWA has been leading this project and suggested a joint meeting or workshop to have further discussions.

Vice Chair Dahir remarked the process is not personal and everyone’s comments are being heard and considered, but this is time sensitive and they need to make sure they come together as a region to address current, and potential, issues.

Upon motion by Member Dahir, second by Member Hartung, which motion duly carried five to one with Member Brekhus dissenting, the Board approved authorize General Manager to finalize and execute an Interlocal Agreement with City of Reno for cost sharing of the Basis of Design Report for Reno Stead Water Reclamation Facility (RSWRF) American Flat Aquifer Storage and Recovery Project.

11. DISCUSSION AND ACTION, AND POSSIBLE DIRECTION TO STAFF REGARDING APPROVAL OF THE TMWA 2020-2040 WATER RESOURCE PLAN

Kara Steeland, TMWA Hydrologist, presented the updated draft 2020-2040 Water Resource Plan with edits added per the discussion at the September Board meeting. Ms. Steeland stated the Communications team is working on a strategy to inform the public of the completion of the plan, including an infographic to be included in the November bill insert. Finally, portions of the Water Resource Plan will be included in the Western Regional Water Commission's (WRWC) Comprehensive Regional Water Management Plan.

At this time the Board announced satisfaction with the final product, which is very user friendly, and congratulated Ms. Steeland on the great work accomplished over the last two years in drafting the plan; as well as proactively analyzing possible impacts of future climate change.

Upon motion by Member Brekhus, second by Member Duerr, which motion duly carried by five to zero of the members voting, the Board approved the TMWA 2020-2040 Water Resource Plan. (Member Herman, who participated telephonically, did not indicate a vote on the item)

12 PRESENTATION OF TMWA'S FISCAL YEAR 2020 CUSTOMER SATISFACTION STUDY CONDUCTED BY INFOSEARCH INTERNATIONAL

Andy Gebhardt, TMWA Director of Operations & Water Quality, presented the results of the FY2020 Customer Satisfaction Study. Mr. Gebhardt noted that data from Q4 2020 happened during the pandemic and there were variations in the results, but overall, it was a phenomenal year ending at 92% customer satisfaction with record highs in nine of ten performance measures.

The Board expressed appreciation to staff for their responsiveness and dedication to customers, and their hard work. As well as maintaining high levels of communication especially during these times.

13. PRESENTATION OF AND DISCUSSION, AND POSSIBLE DIRECTION TO STAFF REGARDING PRELIMINARY FUNDING PLAN FOR FISCAL YEARS 2021 THROUGH 2025

Michele Sullivan, TMWA Chief Financial Officer, presented the 5-year funding plan, which is not a budget because it is more conservative, and is used to ensure our operating revenues cover the costs to serve our customers and decide if a rate increase(s) is necessary. In 2016, the 5-year funding plan was approved, and approved rate increases over a five year period to close the funding gap between recurring revenues and cost of servicing the customers. The first two increase of 3% were implemented in May 2017 and 2018; the remaining three increases of 2.5% were to be presented to the SAC and Board for reconsideration prior to implementation. The final three rate increases were deferred to 2020 through 2022. In January, the Board approved the May 2020 implementation of the first 2.5% rate increase. This was revisited in April due to the COVID-19 pandemic to postpone for reconsideration in August. At its August meeting, the Board approved deferring the three remaining increases until May 2021, May 2022 and May 2023; two years after it was supposed to go into effect. Finally, annual principal payments of \$11 million annually resumed in 2020, and should be covered by recurring revenue, which is mainly water sales.

Member Brekhus inquired about the bond covenant and if it is better to be above or lower as debt increases or decreases. Ms. Sullivan replied TMWA's financial policy is 1.5x and it cannot fall below the bond covenant of 1.25x Senior lien debt service will be consistent for the next 20 years and the plan confirms that going forward we can meet this goal.

Chair Hartung thanked Ms. Sullivan and staff on keeping us on track during this past year which has not been an easy year.

Vice Chair Dahir stated it is not easy to do these types of projections and Ms. Sullivan has done a great job in creating the funding plan, which has been used to make great decisions; a result, we had to push out the rate increase which was not something we expected. Finally, we are in this together as a community and we continue to be very conscious of trying to make the best decisions for everyone.

Upon motion by Member Dahir, second by Member Brekhus, which motion duly carried by unanimous consent of the members present, the Board approved funding plan for Fiscal Years 2021 through 2025.

14. PRESENTATION OF TMWA GOALS AND OBJECTIVES RESULTS FOR FISCAL YEAR 2020

Sonia Folsom, TMWA Executive Assistant, presented the staff report. TMWA Directors and Managers reported on the FY 2020 Objectives and Results, the majority of which met or exceeded their targets.

15. DISCUSSION AND ACTION, AND POSSIBLE DIRECTION TO STAFF ON THE PROPOSED TMWA GOALS AND OBJECTIVES FOR FISCAL YEAR 2021

Sonia Folsom and TMWA Directors and Managers presented the proposed goals and objectives for FY 2021.

Member Brekhus requested staff consider four goals: adding a risk manager, a plan for water service expansion serve the town of Verdi, TMWA's use of CARES Act funds for customers having difficulty paying their water bills, and an aquifer and storage recovery (ASR) and effluent reuse white paper.

Member Duerr suggested staff consider, now that climate change has been included in the WRP, to track metrics on climate issues locally against the baseline in the region, in terms of water management, and have it available when preparing for the next WRP.

Vice Chair Dahir requested a goal in reference to all the work TMWA is doing, even though it is not our charge, along the river corridor with regards to the homeless issue and water quality.

Upon motion by Member Duerr, second by Member Brekhus, which motion duly carried by unanimous consent of the members present, the Board approved the proposed TMWA Goals and Objectives for Fiscal Year 2021 with proposed amendments.

16. DISCUSSION AND ACTION, AND POSSIBLE DIRECTION TO STAFF REGARDING CANCELING THE NOVEMBER BOARD MEETING AND RE-SCHEDULING THE DECEMBER BOARD MEETING TO DECEMBER 10, 2020 OR SUCH OTHER DATE APPROVED BY THE BOARD

The Board approved cancelling the November meeting, but Member Duerr announced that the Reno Police Department is holding their graduation ceremony on December 10th at 9am, claiming that might be a problem if it will be held in person. The Board directed staff to confirm the December meeting date.

Upon motion by Member Dahir, second by Member Brekhus, which motion duly carried by unanimous consent of the members present, the Board approved canceling the November Board meeting and re-scheduling the December Board meeting to December 10, 2020 or keeping the original meeting date of December 16, 2020.

17. GENERAL MANAGER'S REPORT

Mr. Foree reported to the Board of an accident on Tahoe-Pyramid Trail on TMWA property resulting in the unfortunate death of a Reno resident, and expressed his sincerest condolences to the family.

18. PUBLIC COMMENT

There was no public comment.

19. BOARD COMMENTS AND REQUESTS FOR FUTURE AGENDA ITEMS

There were no Board comments.

20. ADJOURNMENT

With no further discussion, Chair Hartung adjourned the meeting at 2:16 p.m.

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

Sonia Folsom, Board Clerk.

DRAFT



Northern Nevada Water Supply Outlook

TMWA Board of Directors Meeting

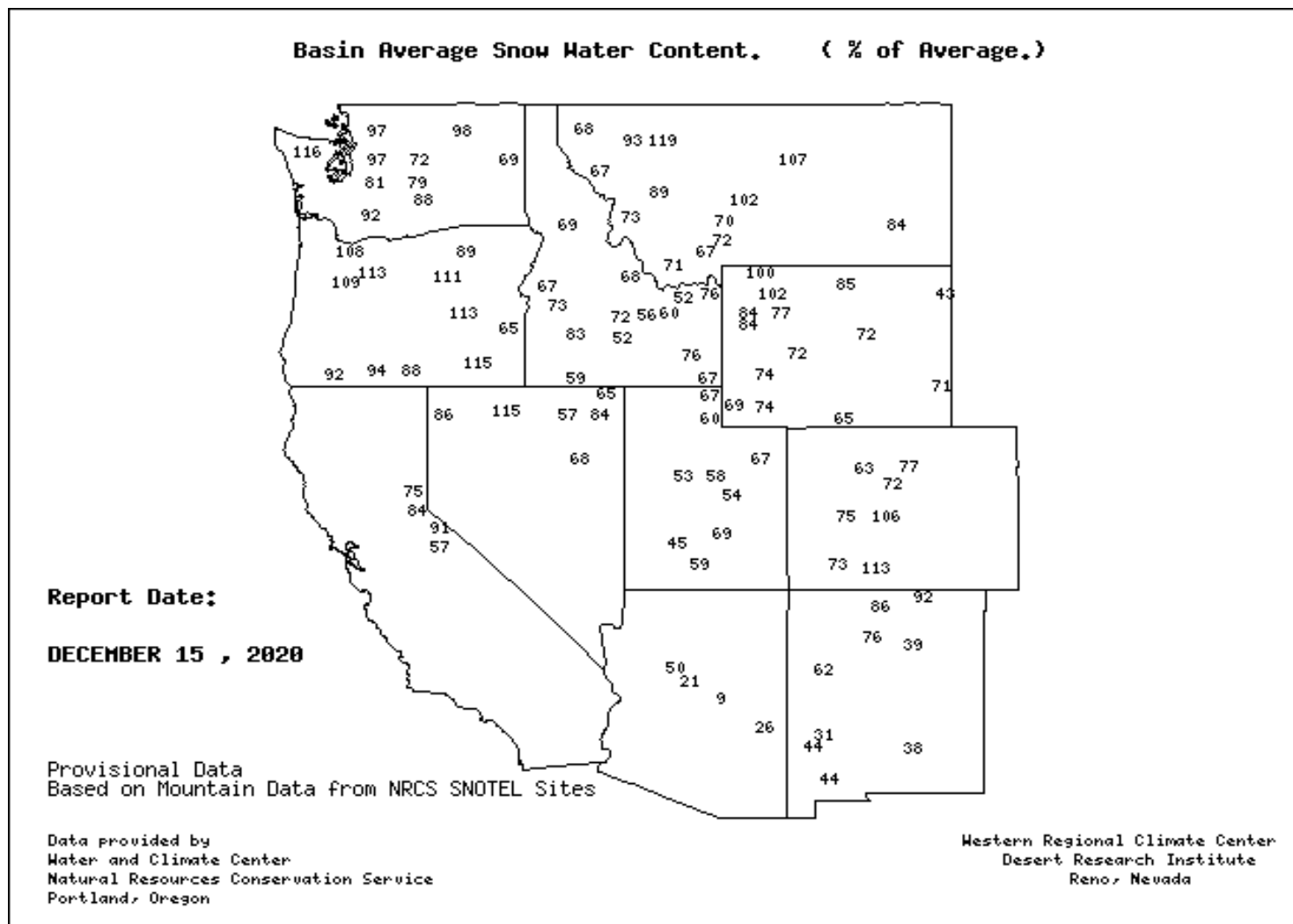
Bill Hauck, Water Supply Administrator

December 16, 2020

W WEST NW
B I-80 AT KINGVALE

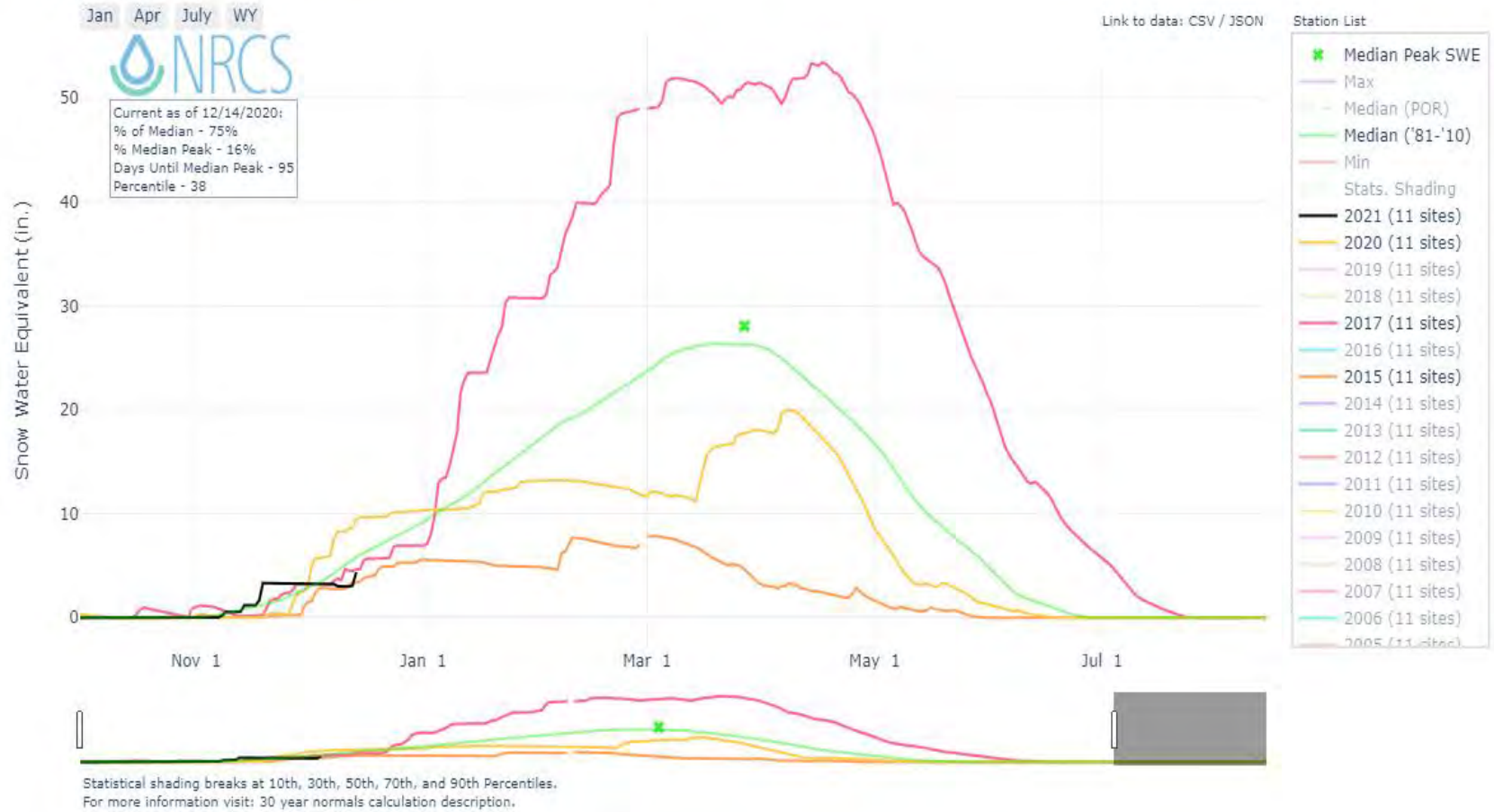


NRCS SNOTEL Data (12/15/2020)



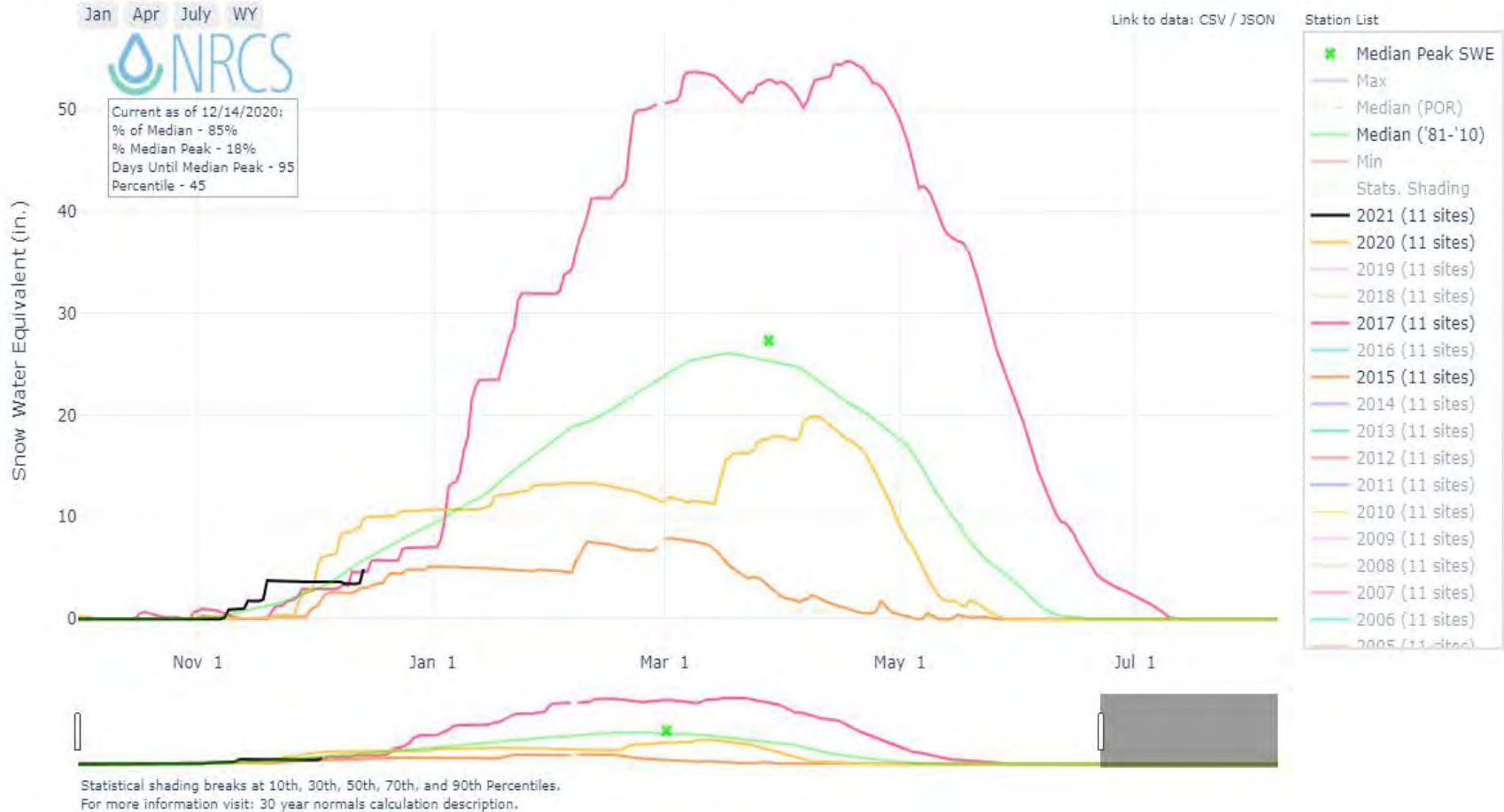
Truckee River Basin Snowpack (12/14/2020)

SNOW WATER EQUIVALENT IN TRUCKEE

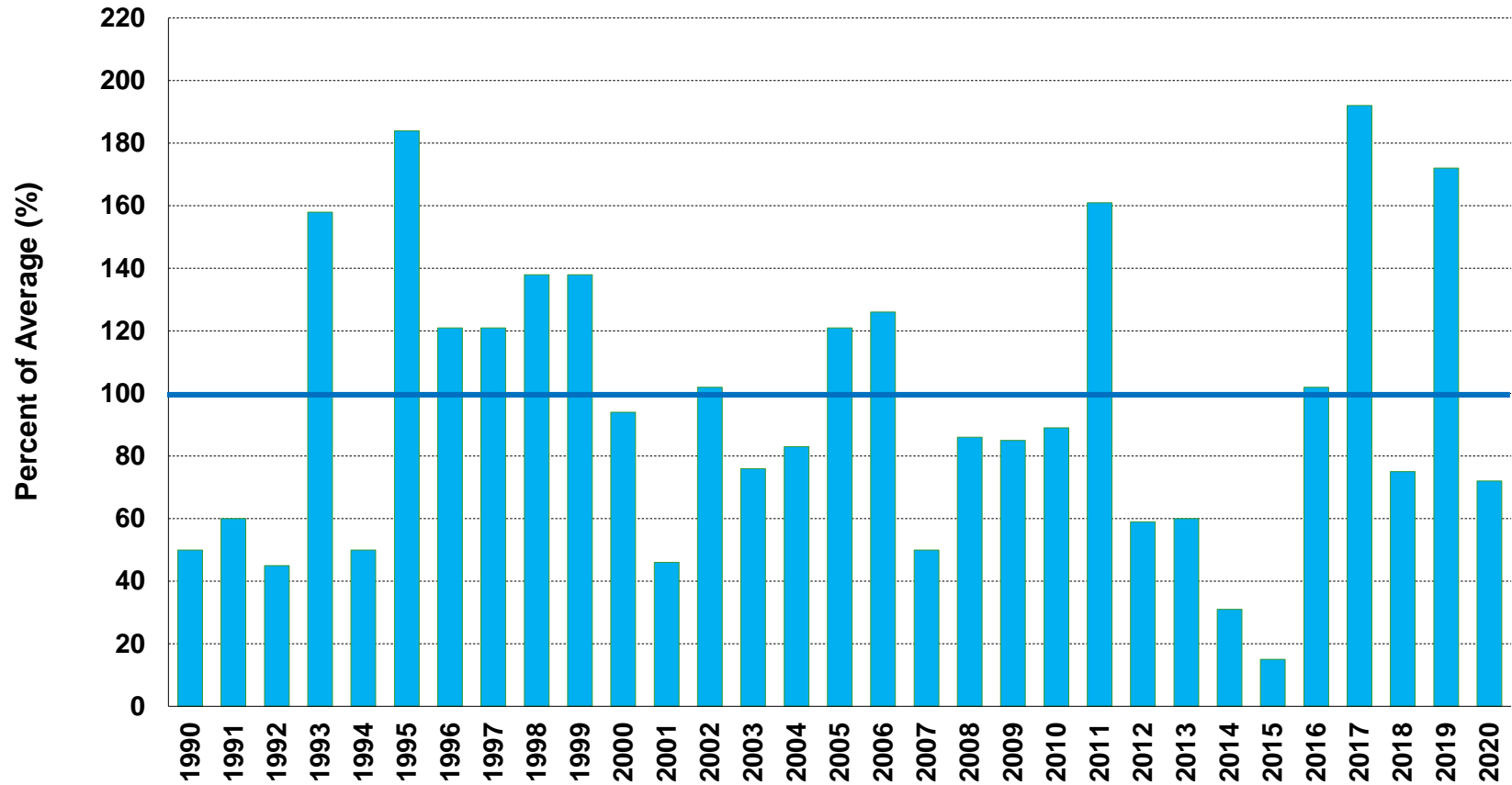


Lake Tahoe Basin Snowpack (12/14/2020)

SNOW WATER EQUIVALENT IN LAKE TAHOE



April 1 Truckee River Basin Snowpack (last 30 years)

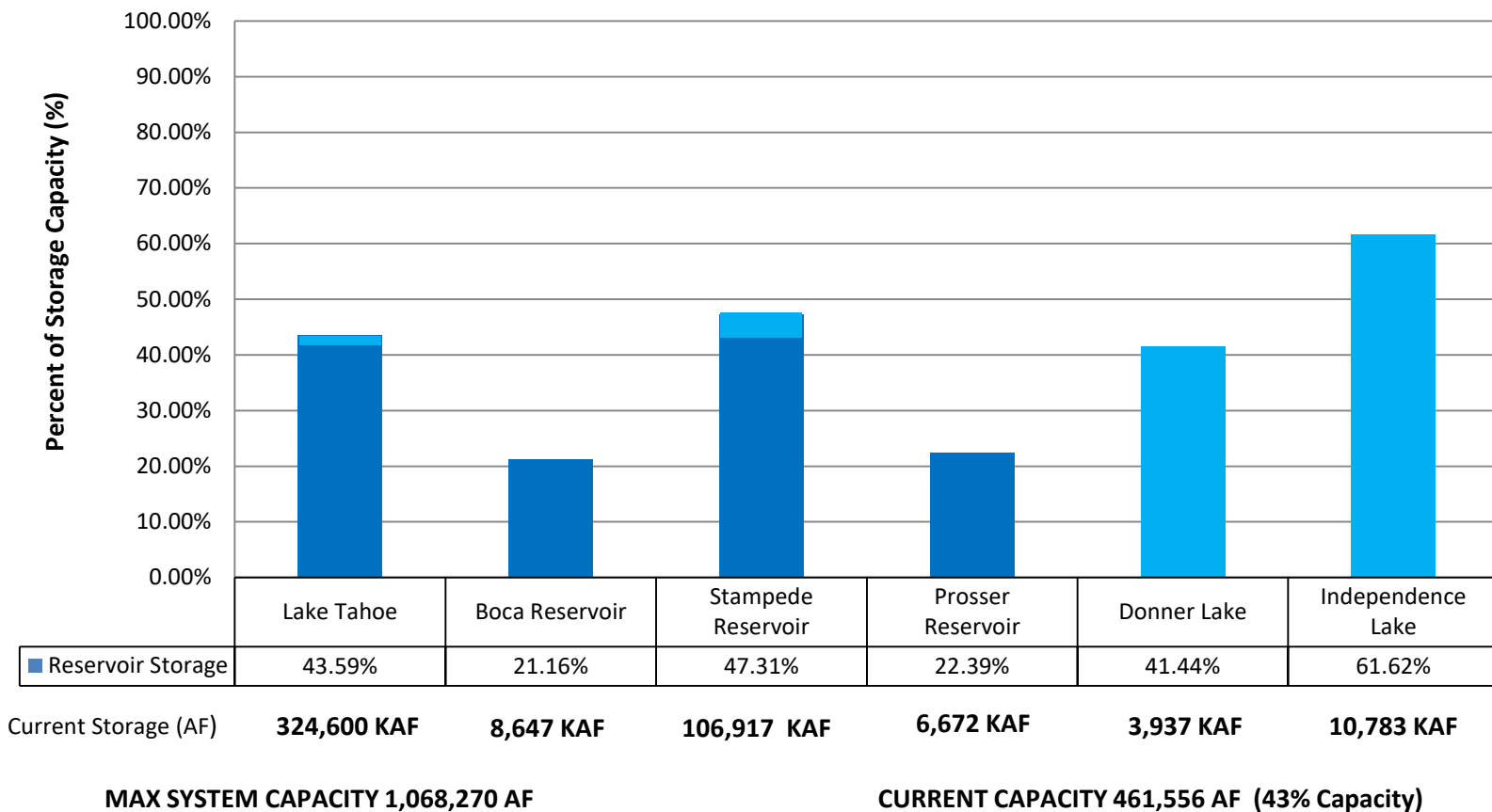




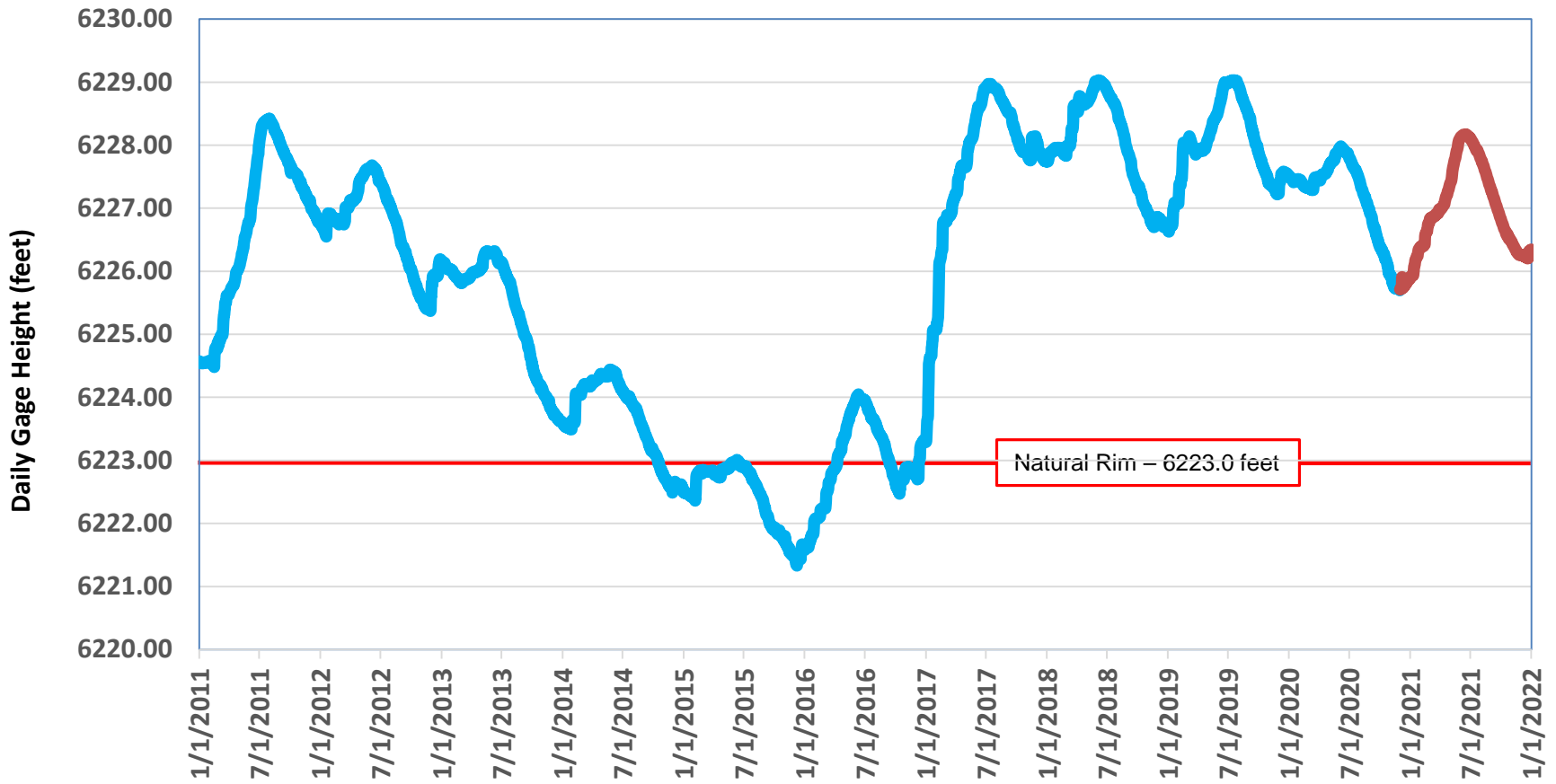
Truckee River System



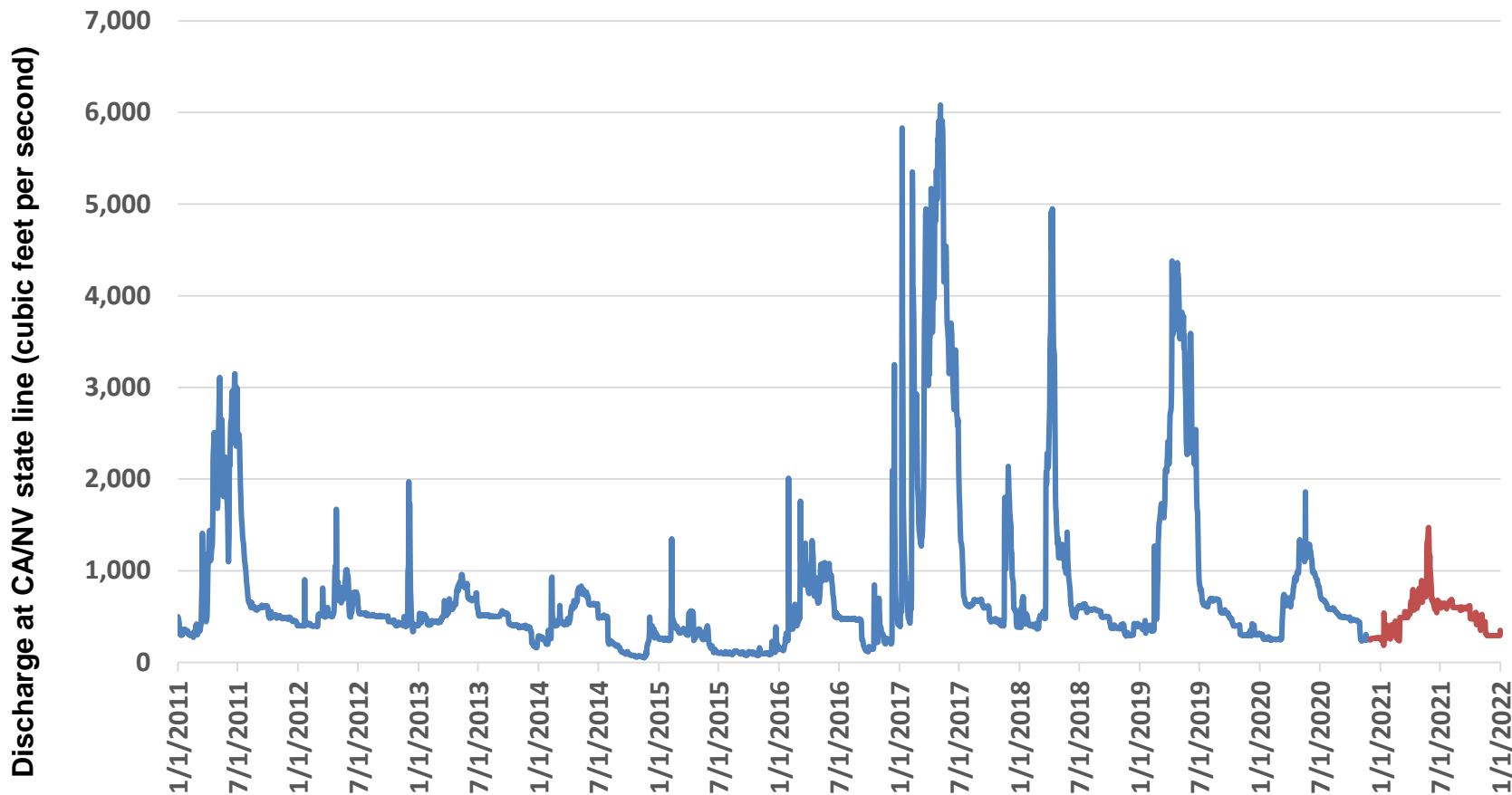
Truckee River System Storage (12/15/2020)



Actual and Projected Lake Tahoe Elevation through 2021



Actual and Projected Truckee River Flow through 2021





Thank you!

Questions?

Bill Hauck, Water Supply Administrator

Email: bhauck@tmwa.com

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



STAFF REPORT

TO: Chairman and Board Members
THRU: Mark Foree, General Manager
FROM: Heather Edmunson, Land Agent II
DATE: December 9, 2020
SUBJECT: Discussion and action on adoption of Resolution No. 289: A resolution approving transfer of ownership of 0.16 acres of surplus land near TMWA Double Diamond Well No. 2 to neighboring property owner for no consideration

SUMMARY

TMWA is accepting a donation of land next to its Double Diamond Well No. 2 property because a portion of the land is useful to TMWA’s operations. The parcel is not developable because of its size and location and, after accepting the entire parcel as a donation, it is in the best interest of TMWA to transfer a portion of it to an adjacent landowner. Staff recommends the Board adopt Resolution No. 289 that the transfer of a portion of the donated land to an adjacent property owner for no consideration is in TMWA’s best interest.

DISCUSSION

There is not a written easement for Double Diamond Well No. 2 so TMWA’s right of access is prescriptive. While TMWA does not foresee any legitimate legal challenges to its prescriptive access right, the land being offered as a donation would solidify TMWA’s access to the well and provide more space for well rehabilitation, maintenance, and re-drilling. The whole property is not necessary for TMWA’s operations because the southerly portion is used as the main paved entrance into the business offices from Prototype Drive. Accordingly, TMWA seeks to transfer a portion of the donated property to an adjacent landowner for no consideration.

The land being offered as a gift by the Jones family (10,089 ft²) is located adjacent and south of TMWA’s Double Diamond Well No. 2 property. The parcel has no known development potential and is only a tax burden to the Jones family. The southerly 0.16 acres (7,086 ft²) is currently used as the main paved entrance into the business offices from Prototype Drive. The adjacent and surrounding property owner to the south, Streamline Properties LLC, is willing to take ownership of the 7,086 ft². Streamline Properties agreed to accept the land transfer with the understanding that TMWA will pay for and facilitate the subdivision and merging process of the parcels. This would leave 3,805 ft² remaining in TMWA’s ownership. If the Board adopts a resolution that the transfer is in the best interest of TMWA, then no appraisal

or bidding process is required because the land is too small to establish an economically viable use by any other party and is to an adjacent landowner.

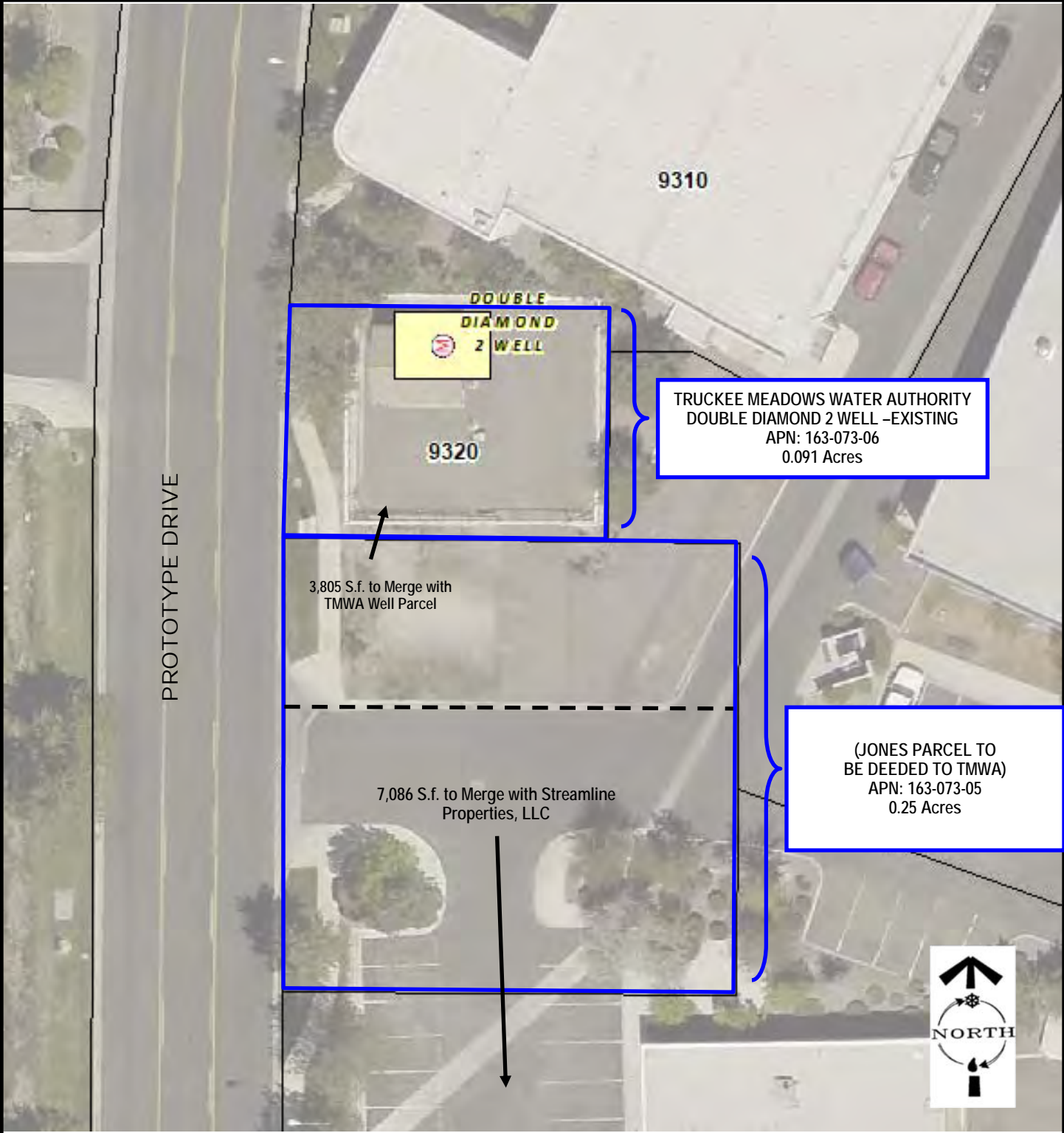
RECOMMENDATION

Staff recommends the Board determine that the transfer is in the best interest of TMWA and adopt Resolution No. 289.

Attachments:

Exhibit Maps
GM Certification
Resolution #289

EXHIBIT A



**EXHIBIT A:
DOUBLE DIAMOND 2 WELL
PROPERTY ACCESS MERGER
AND RESUBDIVISION
APN: 163-073-05**

EXHIBIT B



**EXHIBIT B: DOUBLE DIAMOND 2 WELL STREET VIEW
PROPERTY ACCESS MERGER AND RESUBDIVISION
APN: 163-073-05**



STAFF REPORT

TO: Chairman and Board Members
FROM: Mark Foree, General Manager
DATE: December 16, 2020
SUBJECT: **Certification Pursuant to Surplus Property Disposal Policy –
 A 7,086 sf Portion of the Jones Property – APN: 163-073-05**

The General Manager hereby certifies to the Board of the Truckee Meadows Water Authority that the real property commonly referred to as a 7,086 sf portion of the Jones Property, which is more-particularly described in the attached Exhibit A, is not useful or necessary for the efficient operation of the water system and may be considered surplus property for purposes of the TMWA disposal policy. The subject property is to be transferred to the adjacent property owner and is too small to establish an economically viable use by any other party. This certification is made for the purpose of facilitating a transfer of the subject property in accordance with the foregoing policy.

Dated: December 16, 2020

By: Mark Foree
 Mark Foree, General Manager

EXHIBIT A

The southerly 7,086 sf portion of the following described property:

All that certain real property situate in the County of Washoe, State of Nevada, being a portion of the Northeast quarter (NE ¼) of the Section 8, Township 18 North, Range 20 East, M.D.B.&M., more particularly described as follows:

Commencing at the Southwest corner of Parcel F-1, as shown on that record of survey for South Meadows Properties, Ltd., recorded on March 4, 1997, as Record of Survey Map 3196, Document No. 2077008, Official Records of Washoe County, Nevada; said point being on the East line of Prototype Drive; thence South 89°23'34" East, 104.36 feet; thence South 00°36'26" West, 104.36 feet; thence North 89°23'34" West, 104.36 feet to a point on the said East line of Prototype Drive; thence along said East line, North 00°36'26" East, 104.36 feet to the point of beginning.

[The above metes and bounds description appeared previously in that certain document recorded October 19, 2009, as Instrument No. 3812979, of Official Records, Washoe County, Nevada]

APN: 163-073-05

TRUCKEE MEADOWS WATER AUTHORITY

RESOLUTION NO. 289

A RESOLUTION THAT THE TRANSFER OF APPROXIMATELY 7,086 SF OF REAL PROPERTY LOCATED IN RENO, NEVADA IS IN TMWA'S BEST INTEREST

WHEREAS, Authority is being gifted 10,891 ft² of real property located in Reno, Nevada, and which is more-particularly described on the attached Exhibit A (Property). Authority has determined the 7,086 ft² of the Property is not useful or necessary for the efficient operation of the water system and may be considered surplus property for purposes of the TMWA disposal policy. Authority has deemed the transfer of 7,086 ft² of the Property to an adjacent property owner is in the best interest of Authority because the Property is too small to establish an economically viable use by another party.

WHEREAS, pursuant to the Authority's surplus property disposal policy, the General Manager or its designee is authorized to sell, transfer and convey real property that is not otherwise necessary for the operation of the Water System if it is in the best interest of the Authority.

WHEREAS, the General Manager has certified in writing to the Board that the 7,086 ft² portion of the Property is too small to establish an economically viable use by another party and is not necessary for the efficient operation of the Authority's water system.

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

1. The 7,086 ft² of the Property is not useful or necessary for the efficient operation of the water system and may be considered surplus property for purposes of the TMWA disposal policy.
2. The transfer of 7,086 ft² of the Property to an adjacent property owner for no consideration is in the best interest of Authority and is appropriate and justified;
3. The transfer of the 7,086 ft² of the Property for no consideration is hereby approved.

Upon motion of _____, seconded by _____, the foregoing Resolution was passed and adopted this 16th day of December, 2020, by the following vote of the Board:

Ayes: _____

Nays: _____

Abstain: _____ Absent: _____

Approved this 16th day of December, 2020

Chairman

Truckee Meadows Water Authority
Resolution No. 289 (continued)

EXHIBIT A

The southerly 7,086 sf portion of the following described property:

All that certain real property situate in the County of Washoe, State of Nevada, being a portion of the Northeast quarter (NE ¼) of the Section 8, Township 18 North, Range 20 East, M.D.B.&M., more particularly described as follows:

Commencing at the Southwest corner of Parcel F-1, as shown on that record of survey for South Meadows Properties, Ltd., recorded on March 4, 1997, as Record of Survey Map 3196, Document No. 2077008, Official Records of Washoe County, Nevada; said point being on the East line of Prototype Drive; thence South 89°23'34" East, 104.36 feet; thence South 00°36'26" West, 104.36 feet; thence North 89°23'34" West, 104.36 feet to a point on the said East line of Prototype Drive; thence along said East line, North 00°36'26" East, 104.36 feet to the point of beginning.

[The above metes and bounds description appeared previously in that certain document recorded October 19, 2009, as Instrument No. 3812979, of Official Records, Washoe County, Nevada]

APN: 163-073-05



STAFF REPORT

TO: TMWA Board of Directors
THRU: Mark Foree, General Manager
FROM: Jessica Atkinson, Human Resources Manager
DATE: November 17, 2020
SUBJECT: **Discussion and action confirming General Manager’s Appointment of four Trustees to the §115 Post-Retirement Medical Plan & Trust for a two-year term from January 1, 2021 through December 31, 2022**

Recommendation

Staff recommends that the Board of Directors confirm the reappointments of Chief Financial Officer, Michele Sullivan; Senior Financial Analyst, Sandra Tozi; Trust Beneficiary (Tier II), Charles Atkinson; and confirm the appointment of Trust Beneficiary (Tier I), Randy VanHoozer as trustees to the TMWA Post-Retirement Medical Plan Trust (§115 Trust).

Summary

- Current trustee appointments will expire on December 31, 2020
- Seeking Board confirmation of trustee appointments for new two-year term

Discussion

The §115 Trust document approved by the Board of Directors requires the General Manager to select and appoint at least (3) three but no more than (5) five Trustees who must include:

1. At least one member who has a combination of education and experience of at least 5 (five) years in finance or economics;
2. A public officer or employee of TMWA who manages its fiscal affairs; and
3. A beneficiary of the Trust.

The current Trustee’s terms will expire on December 31, 2020. Appointments have been made consistent with the Trust provisions pending final confirmation by the Board.



STAFF REPORT

TO: Board of Directors
THRU: Mark Foree, General Manager
FROM: Jessica Atkinson, Human Resources Manager
DATE: November 17, 2020
SUBJECT: **Discussion and action confirming General Manager's Appointment of four Trustees to the §501-c-9 Post-Retirement Medical Plan & Trust for a two-year term from January 1, 2021 through December 31, 2022**

Recommendation

Staff recommends that the Board of Directors confirm the reappointments of Michele Sullivan and Juan Esparza to represent TMWA Management, Professional, Administrative and Technical (MPAT) employees and James Weingart and Steve Enos to represent IBEW Local Union #1245 bargaining unit employees as trustees to the TMWA Post-Retirement Medical Plan Trust (§501-c-9 Trust).

Summary

- Current trustee appointments expired on December 31, 2020
- Seeking Board confirmation of trustee appointments for new two-year term

Discussion

The §501-c-9 Trust document approved by the Board of Directors requires the Employer to appoint four individuals to serve as Trustees (two from the MPAT classification and two from IBEW). The two Trustees who are appointed from TMWA management are to be appointed by the Employer at the direction of the General Manager and the two Trustees who are appointed from IBEW are to be appointed by the Employer at the direction of IBEW Local 1245.

The current Trustee's terms will expire on December 31, 2020. Appointments have been made consistent with the Trust provisions pending final confirmation by the Board.



To: TMWA Board of Directors
Thru: Mark Foree, General Manager
From: Matt Bowman, Financial Controller
Date: November 23, 2020
Subject: **Presentation on the Comprehensive Annual Financial Report for Fiscal Year ended June 30, 2020**

Recommendation

TMWA staff will present the Comprehensive Annual Financial Report (CAFR) to the Board for the fiscal year ended June 30, 2020 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, TMWA is required to conclude an audit before November 30, 2020, 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, 2020, 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) for June 30, 2020 and June 30, 2019, related Statements of Revenues, Expenses and Changes in Net Position (Income Statement), and the Statements 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, 2020. 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 2019.

TMWA experienced a solid financial year with a change in net position of \$51.6 million. Net cash flow reflected an increase of \$7.9 million. Cash balance at the end of the year was \$205.8 million. Preliminary results were presented to the Board in August, reflecting a change in net position of \$34.1 million. A handful of adjustments were made after that, most notably including \$20.1 million of developer infrastructure contributions.

TMWA ended the year with a senior lien debt service coverage ratio of 1.82x compared to 2.90x for FY 2019.

Fiscal Year 2020 Actual to Budget comparison

Operating revenue was \$1.6 million lower than budget primarily due to lower hydroelectric and other operating sales revenues. Water sales finished the year less than 1% under budget due to higher water consumption in the 4th quarter. Through the first three quarters, water sales were down 3% from budget due to mild summer/fall temperatures during the first half of the year, which led to lower water use. Hot and dry temperatures during the 4th quarter led to higher water usage, most notably reflected in residential water sales which were up approximately 15% during the quarter. This increase was offset slightly by a decrease in commercial water sales which were down approximately 25% during the 4th quarter due to COVID-19 related business closures. Although commercial water sales were down, these sales only account for approximately 12% of TMWA's overall water sales revenue, so the overall impact was minimal. Hydroelectric sales were lower due to lower river flows early in the year followed by the shutdown of the Washoe hydro plant due to a flume failure in April 2020. Other operating sales were lower due to lower than budgeted business service inspection fees.

Operating expenses for the year were \$5.6 million less than budget. Salaries and wages and employee benefits were both underbudget by \$1.7 million and \$0.8 million, respectively. These were lower primarily due to position vacancies during the year. There were six open positions at the end of the fiscal year. Additionally, TMWA had more labor-intensive capital projects ongoing during the year which drove more labor costs (both salaries/wages and benefits) to capital. Service and supplies expenses were \$3.3 million under budget, which was due to capitalizing rather than expensing a project and delaying another a project until FY2021. Also contributing to lower services and supplies costs were lower chemical and power costs during the year. Power consumption was lower due to continued energy optimization of TMWA's treatment plants, pump stations and well operations. Chemical costs were lower due to less turbidity events in the Truckee River during the year, which required less chemicals to treat the raw water. Lastly, all essential maintenance was performed, and there were no major unplanned expenses incurred during the year.

Net nonoperating revenue and expenses was \$3.3 million favorable to budget. This is primarily due to higher investment income. Investment earnings, which reflects interest and amortization of investment premiums and discounts, was higher than budget due to higher cash balances invested during the period and slightly higher invested rates. Net increase in fair value of investments is due to investments in securities at higher rates than current market rates. Market rates have dropped drastically in the second half of the fiscal year with the 10-year Treasury yield starting at 1.88% in January then ending June 30 at 0.66%.

Capital contributions were \$5.3 million above budget. This variance is mostly attributable to non-cash developer contributed assets which were \$4.4 million higher than budget. The remaining \$0.9 million variance was due to higher developer cash contributions related to proceeds for the water resource sustainability program, facility charges, and contributions from other governments, offset by lower grant revenue and will-serve sales.

Total capital spending was approximately \$43.9 million for FY 2020, which was approximately \$14.6 million less than the \$58.5 million planned in the final capital budget. The underspend is due to various projects having been deferred to future years.

Total cash and investments as of June 30, 2020 was \$205.8 million or \$23.4 million more than budget. Net cash provided by operating activities was \$5.3 million higher than budget due to lower personnel costs and services and supplies expenses. Net cash used by capital and related financing activities was more favorable than budget by \$13.2 million. This is primarily due to \$14.6 million less in capital spending as discussed above, offset by \$2.5 million more in commercial paper note redemptions.

Fiscal Year 2020 Actual to Prior Year Comparison

Operating revenue ended the year \$1.0 million higher in FY 2020 compared to the prior year. This was driven by higher water sales and hydroelectric sales revenues offset by lower other operating sales. Water sales were slightly higher than last year due to several factors. First, active retail water services grew about 2% in FY 2020. This was offset by slightly less water use. Although the Washoe hydro plant was down for more than two months during FY 2020, hydroelectric revenue was still higher than the prior year due to the Fleish plant being offline in FY 2019 for the replacement of the tailrace. Other operating sales are lower due to lower inspection fee revenue and lower late fee revenue since TMWA did not charge late fees during the pandemic.

Operating expenses were \$1.6 million higher in FY 2020 compared to the previous year. Salaries and wages were slightly higher due to budgeted step and cost of living increases that occurred at the start of the fiscal year. Employee benefits saw the same trend, as expected. Offsetting those increases was a decrease in services and supplies costs resulting primarily from costs incurred in FY 2019 for dredging the outlet channel at Donner Lake and lower chemical and power costs in FY 2020. Lower chemical costs were due to better water quality as discussed above. Lower power costs were the result of efficiency gains in water delivery throughout the service territory. Offsetting these decreases were other various increases including an increase in insurance costs resulting from renewed policies and higher insurance rates.

Net nonoperating revenue and expenses was higher than prior year by \$117 thousand. This is mostly due to higher unrealized investment income. As discussed above, investment rates have dropped leading to unrealized gains in investments held at higher rates. Interest expense is also lower as expected due to lower variable interest on outstanding commercial paper and also lower principal balances on fixed rate debt due to scheduled principal payments.

Capital contributions were \$2.0 million higher in FY 2020 compared to the prior year. Increased contributions totaling \$3.4 million were recognized from developer infrastructure contributions, area fees, facilities fees, contributions from other governments and an insurance

settlement. The developer fee increases were due to continued high volume of projects and increased area fees which were implemented in October 2019. Offsetting these increases were decreases of \$1.4 million from decreased grant revenue, water resource sustainability (2020/2019) / water meter retrofit (2019) proceeds, and will-serve sales. The decrease in grant revenue is due to the timing of pending FEMA awards, and the decrease in resource sustainability/water meter retrofit and will-serve sales are due to a slightly lower volume of water resources sold/dedicated during fiscal year 2020 than the prior year.

Total cash and investments were \$7.9 million higher at June 30, 2020 compared to June 30, 2019. Unrestricted cash decreased \$4.4 million due primarily to an increase in restricted cash for current bond debt service related to the upcoming principal payment of \$10.5 million on TMWA's 2017 refunding bonds due in fiscal year 2021. See Note 6 to the financial statements for additional information TMWA's outstanding debt. This decrease was offset by overall net positive cash flows from TMWA's operations.

TRUCKEE MEADOWS WATER AUTHORITY
(TMWA)

RESOLUTION NO. 290

A RESOLUTION APPROVING THE FINANCIAL STATEMENTS OF THE TRUCKEE MEADOWS WATER AUTHORITY FOR FISCAL YEAR ENDED JUNE 30, 2020

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, 2020.

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, 2020, 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 16, 2020, by the following vote of the Board:

Ayes: _____

Nays: _____

Abstain: _____ Absent: _____

Approved this 16th day of December, 2020

Vaughn Hartung, Chairman



November 25, 2020

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, 2020 and 2019, and have issued our report thereon dated November 25, 2020. 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 September 15, 2020, 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 TMWA'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 TMWA'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. There have been no initial selection of accounting policies and no changes in significant accounting policies or their application during fiscal year 2020. 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. 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. There were no uncorrect or corrected misstatements identified as a result of ur audit procedures.

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 the 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 25, 2020.

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 TMWA, 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.

This report is intended solely for the information and use of the 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, 2020 and 2019

**PREPARED BY: Michele Sullivan, CPA
Chief Financial Officer**

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November 25, 2020

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, 2020. The purpose of the report is to provide the Board of Directors (Board), 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 audit TMWA's financial statements on an annual basis. Eide Bailly LLP, a firm of licensed certified public accountants, has audited TMWA's basic financial statements as of and for the fiscal years ended June 30, 2020 and 2019. 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.

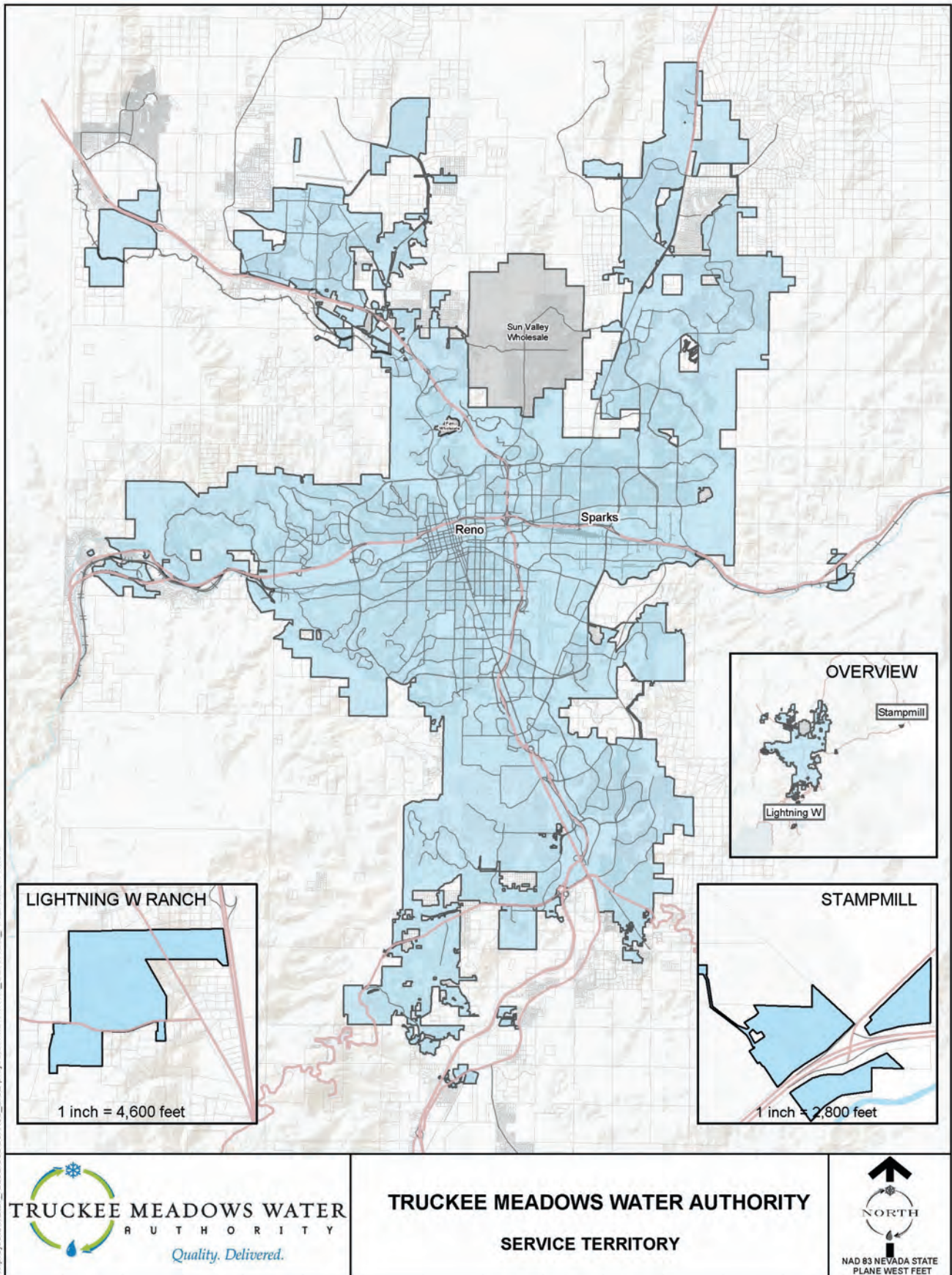
REPORTING ENTITY

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, 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.

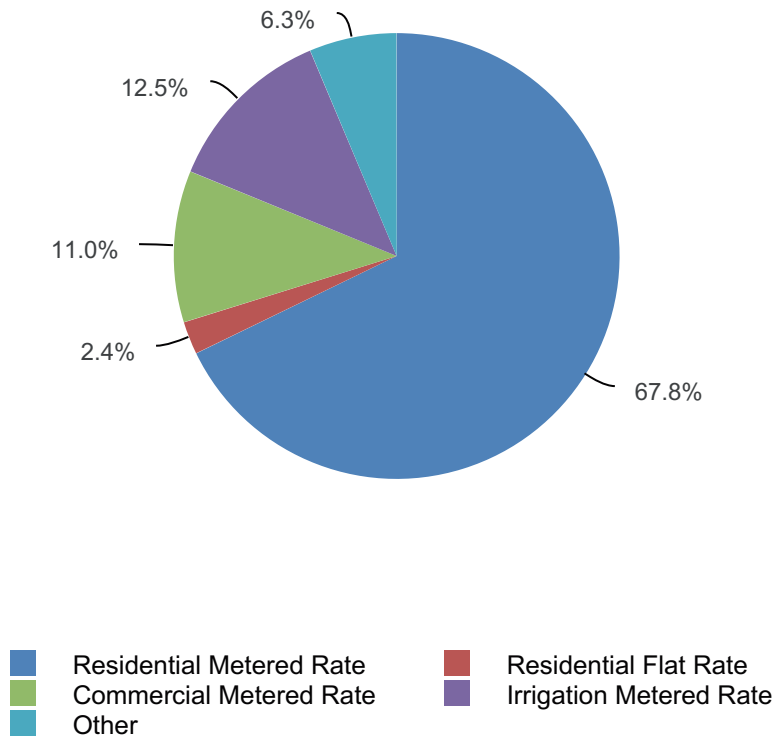
TMWA has over 125,000 service connections and one wholesale customer. TMWA operates within the Truckee Meadows service area. TMWA has only one wholesale customer, the Sun Valley General Improvement District (SVGID) located north of the Reno-Sparks main metropolitan area. SVGID is wholly dependent upon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

The map on the following page reflects the TMWA service territory.



The following graph depicts the proportion of operating revenues by class for fiscal year 2020:

TMWA Operating Revenues \$108.1 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. These represent problematic services with multiple customers on a single service line.

The Board adopted a goal in August 2003 of maintaining 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 1.82x and with certain developer fees and charges was approximately 2.44x as of June 30, 2020.

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 nearly 40% percent.

On March 12, 2020, the Governor of the State of Nevada declared a state of emergency related to the COVID-19 pandemic. Following this initial declaration, from March 15th through March 20th, the Governor issued several Emergency Directives which required the closure of all public schools and non-essential business in the state until further notice to help mitigate the ongoing outbreak of the COVID-19 virus. In the weeks following the shutdown, as the spread of the virus slowed, non-essential businesses were permitted to re-open under certain guidelines including reduced capacity. The re-opening culminated with casinos permitted to resume modified operations on June 4th. The shutdown caused by the pandemic lead to layoffs and increased unemployment in Washoe County and across the state. Although the shutdown was lifted in June, continued restrictions on business operations aimed at limiting the spread of the virus have led to continued unemployment. As of the date of issuance of this CAFR, the pandemic is ongoing and future impacts to TMWA are unknown; however, future implications from the pandemic are not expected to be material to TMWA's financial statements.

Despite the economic hardships resulting from the pandemic, taxable sales in Washoe County continued to grow in fiscal year 2020 with an increase of 13.2 % from the prior year. Prior to fiscal year 2020, Washoe County experienced taxable sales increases of 3.5% and 6.8% in fiscal years 2019 and 2018, respectively. Prior to the COVID-19 pandemic and related shut-downs, unemployment rates had decreased significantly since the recession, from highs in 2011 of over 13% to an unemployment rate of 3.2% in February 2020 (before the economic shutdown).

TMWA's service area also continues to expand. The Board 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 5,000 service connections. The developer will pay for all water line extensions and infrastructure needed to complete the project. In fiscal year 2019, TMWA completed the acquisition of West Reno Water Company's water system. This expanded TMWA's service area to the west where development is planned for over 3,500 service connections. Developer contributions and federal grants will pay for this expansion.

To ensure appropriate and responsible water resource availability for current and future water demands, TMWA prepares and frequently updates a detailed Water Resources Plan (WRP). In October 2020, the TMWA Board approved the most recent iteration of the WRP for the years 2020-2040. The WRP was previously updated in fiscal year 2016 and covered years 2016-2035. The WRP addresses current water resources, future water resources and water rights availability, defined drought standards and most recently, impacts of climate change. These analyses performed in the most recent WRP 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.

To complement this water resource planning effort, a comprehensive Water Facility Plan (WFP) for the years 2015-2035 was developed and adopted by the TMWA Board in October, 2019. For the first time, this WFP included detailed planning for the water systems formerly operated by Washoe County that were merged into TMWA on January 1, 2015. The original WFP was adopted by the TMWA Board in December 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 needed in the Capital Improvement Plan to serve growth based upon population and water demand forecasts in the WRP.

Since inception, TMWA has made and will continue to make strategic water rights acquisitions to ensure sufficient inventory of water rights are available to issue will-serve commitments for the foreseeable future. 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 a total of approximately 35,000 acre feet stored in these TMWA owned and federally operated reservoirs. Additionally, in August 2020, the TMWA Board approved a Memorandum of Understanding (MOU) between TMWA, Carson City and Storey County regarding TMWA having access to surplus water resources from the State of Nevada's Marlette Lake Water System. If this MOU results in a definitive agreement it would provide further water storage and resource availability for TMWA.

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 thereby 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. Higher than average precipitation in Western Nevada during the winter of 2018/2019 allowed for TMWA's reservoirs to fill to near maximum capacity, which essentially guarantees normal river flows and water supply 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.

Advanced Purified Water Program

TMWA is confident in its ability to meet the community's potable water needs for decades to come. Regardless, staff and leadership are dedicated to preparing for potential needs that are currently beyond the horizon. In this spirit, TMWA is participating in a multi-organizational effort to study the feasibility of producing Category A+ Advanced Purified Water (APW). This research collaboration is known as OneWater Nevada and includes TMWA; City of Reno; City of Sparks; Washoe County; the University of Nevada, Reno; Truckee Meadows Water Reclamation Facility; the Western Regional Water Commission, and the Northern Nevada Planning Commission.

The OneWater Nevada Study is evaluating the feasibility of using treated effluent from regional water reclamation facilities and applying a combination of advanced water treatment steps with natural groundwater purification processes to allow for aquifer storage and recovery of the APW. The treatment approach is regulated to rigorous state and federal drinking water standards and may potentially create a future supplemental water supply for potable or other high-quality uses.

TMWA has contributed to the operation and funding of OneWater Nevada since the effort began in 2016. This participation includes the construction and operation of a small-scale pilot treatment facility at the Reno Stead Water Reclamation Facility (RSWRF), hydrogeological studies at Bedell Flat and American Flat, management of groundwater recharge and recovery facilities, and overall technical and operational support. TMWA and City of Reno staff both have received Board direction to move forward with developing a Basis of Design Report for the RSWRF American Flat APW Aquifer Storage and Recovery Project. This initial effort is the first step in the demonstration project planning and design process and will further inform Reno and TMWA decision-makers of the overall project feasibility.

Water Resource Sustainability Program

In fiscal year 2019, the TMWA Board established the Water Resource Sustainability Program. This program provides funding for projects benefiting TMWA's water resources. Such projects would include expanded conjunctive use, aquifer storage and recovery, demonstration and validation of exceptional quality reclaimed water uses and any other project that enhances water resource sustainability and drought resiliency. This program is funded by a fee charged to new development of \$1,600 for every acre-foot of new surface water demand, replacing a prior fee (of \$1,830 per acre-foot of demand) formerly used to fund the Water Meter Retrofit Program.

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 natural 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 90 million gallons per day (MGD) Chalk Bluff Water Treatment Plant and the 34.5 MGD Glendale Water Treatment Plant. In order to further diversify the water supply, TMWA is in the process of constructing a 4 MGD surface water treatment plant in the Southern service area. 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 57 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 since requalified for this award on an annual basis.

TMWA spends approximately \$1 million annually monitoring water quality by analyzing nearly 15,000 samples covering approximately 20,000 constituents at over 270 locations throughout the TMWA water system to insure compliance with all current drinking water standards 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, 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). Second, TMWA 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. Next, TMWA also requires no irrigation on Mondays to allow its system to recharge. Finally, 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 were retrofitted with a meter. Customers without meters pay a flat, monthly water rate: thus, they 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. Due to the success of this program, TMWA estimates less than 275 water services do not have a meter installed. In fiscal year 2019, the Water Meter Retrofit Program was replaced by the Water Resource Sustainability Program.

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. Internal controls are also used 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 years. 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 \$108.1 million were \$1.6 million or 1.5% below the final budget for fiscal year ended June 30, 2020. Charges for water sales were \$102.5 million or 0.2% lower than budget. TMWA's water sales can fluctuate from budget based on weather conditions, especially during the spring and fall. During fiscal year 2020, water sales were lower than budget through the first three quarters due to a mild, cooler summer and fall. However, during the fourth quarter, weather conditions were warmer and dry which led to more water use by customers. Ultimately, fourth quarter water sales made up the deficit from the first three quarters and total water sales ended the year close to budget.

Total operating expenses of \$94.1 million were approximately \$5.6 million under the budget of \$99.8 million. Operating expenses before depreciation were \$5.8 million under budget or approximately 8.8% lower. Salaries and wages and employee benefits were both under budget by \$1.7 million and \$0.8 million or 7.5% and 6.5%, respectively. These were lower primarily due to position vacancies during the year. There were six open positions at the end of the fiscal year. Additionally, TMWA had more labor intensive capital projects ongoing during the year which drove more labor costs (both salaries/wages and benefits) to capital. Service and supplies expenses were \$3.3 million under budget, a variance of 10.7%. This was due to several factors, including two large project related expenses included in the budget. One of these projects was completed during the year but all costs were capitalized in accordance with appropriate accounting standards. The other project's expenses were delayed until fiscal year 2021. Also contributing to lower services and supplies costs were lower chemical and power costs during the year. Power consumption was lower due to continued optimization of TMWA's pump stations and well operations. Chemical costs were lower due to less turbidity events in the Truckee River during the year, which required less chemicals to treat the raw water. Lastly, all essential maintenance was performed, and there were no major unplanned expenses incurred during the year.

Total net nonoperating revenues and expenses were \$3.3 million favorable to budget. This variance was primarily due to higher investment earnings. TMWA maintained higher invested principal during the year due to lower capital spending and lower operating expenses. This gain was offset by losses on disposals of fixed assets.

Capital contributions of \$44.2 million were \$5.3 million above budget. This variance is mostly attributable to non-cash developer contributed assets which were \$4.4 million higher than budget. The remaining \$0.9 million variance was due to higher developer cash contributions related to proceeds for the water resource sustainability program, facility charges and contributions from other governments, offset by lower grant revenue and will-serve sales.

Total capital spending was approximately \$43.9 million for fiscal year 2020, which was approximately \$14.6 million less than the \$58.5 million planned in the final capital budget. The underspend is due to various projects having been deferred to future years.

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, 2020, TMWA has approximately \$148.7 million of unrestricted cash and investments to fund future operations and capital projects.

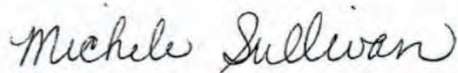
TMWA complied with bond covenants during fiscal year 2020 with respect to funding cash reserves. TMWA's renewal and replacement reserve is fully funded at \$10 million. The operations and maintenance reserve fund, which TMWA is required to maintain at a balance equal to one-sixth of TMWA's revised final operating budget, contained \$11.1 million as of June 30, 2020. As of June 30, 2020, TMWA retained a \$10.3 million water rate stabilization reserve of which \$0.5 million is restricted and \$9.8 million is included as a reservation of unrestricted net position.

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, TMWA customers, and the development community for their commitment to the long-term operational and financial stewardship of TMWA.



Mark Foree, P.E.
General Manager



Michele Sullivan, CPA
Chief Financial Officer

**Truckee Meadows Water Authority
List of Principal Officials
June 30, 2020**

TMWA Board of Directors

Vaughn Hartung, Washoe County Commissioner, Chairman of the Board

Kristopher Dahir, City of Sparks Council Member, Vice Chairman

Paul Anderson, City of Sparks Council Member

Jeanne Herman, 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

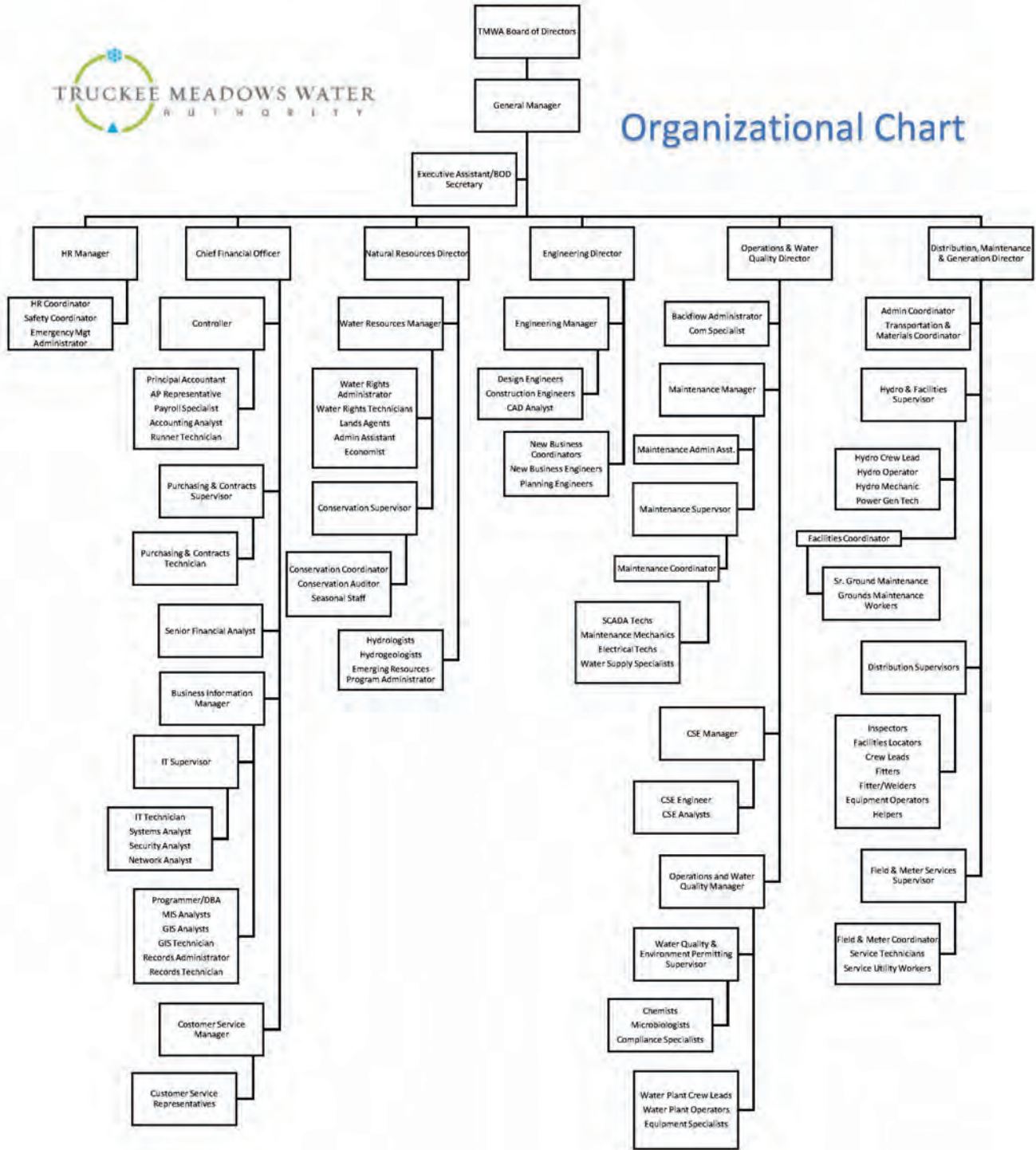
Andy Gebhardt, Director of Operations and Water Quality

Pat Nielson, Director of Distribution, Maintenance, and Generation

Michele Sullivan, CPA, Chief Financial Officer



Organizational Chart





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, 2020 and 2019, 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.

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, 2020 and 2019, and the respective changes in its financial position and its cash flows for the years then ended in accordance with accounting principles generally accepted in the United States of America.

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 28, the schedules of changes in net OPEB liability and related ratios on pages 65 through 66, the schedules of contributions - OPEB on pages 67 through 68, the schedules of TMWA's share of net pension liability on page 69, and the schedules of TMWA contributions – Pension on page 70 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 25, 2020, 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.

The image shows a handwritten signature in black ink that reads "Eide Sully LLP". The signature is written in a cursive, professional style.

Reno, Nevada
November 25, 2020

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, 2020, June 30, 2019, and June 30, 2018. 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, 2020</u>	<u>June 30, 2019</u>	<u>June 30, 2018</u>
Unrestricted Current Assets	\$ 168.7	\$ 171.1	\$ 164.1
Restricted Current Assets	27.7	15.7	13.3
Long-Term Restricted and Other Assets	29.8	29.5	32.9
Net Other Postemployment Benefits Asset	2.3	—	0.2
Capital Assets, net	1,007.7	980.7	952.7
Total Assets	<u>1,236.2</u>	<u>1,197.0</u>	<u>1,163.2</u>
Deferred Outflow of Resources	<u>14.9</u>	<u>14.1</u>	<u>14.5</u>
Total Assets & Deferred Outflow of Resources	<u>1,251.1</u>	<u>1,211.1</u>	<u>1,177.7</u>
Total Current Liabilities	47.9	47.1	56.9
Long Term Debt Outstanding	383.3	401.7	409.2
Net Pension Liability	40.6	37.7	37.3
Net Other Postemployment Benefits Liability	0.7	1.9	0.8
Long Term Compensated Absences	2.2	2.0	2.1
Total Liabilities	<u>474.7</u>	<u>490.4</u>	<u>506.3</u>
Deferred Inflow of Resources	<u>6.7</u>	<u>2.5</u>	<u>3.4</u>
Net Investment in Capital Assets	617.5	573.2	533.1
Restricted	41.7	29.2	30.1
Unrestricted	<u>110.5</u>	<u>115.7</u>	<u>104.9</u>
Total Net Position	<u>\$ 769.7</u>	<u>\$ 718.1</u>	<u>\$ 668.1</u>

Financial Position

Fiscal Year 2020 Summary

In the fiscal year ended June 30, 2020, total net position increased by approximately \$51.6 million, the result of operating income and capital contributions offset by nonoperating expenses.

Unrestricted current assets decreased by \$2.4 million from June 30, 2019. Unrestricted cash decreased \$4.4 million due primarily to an increase in restricted cash for current bond debt service related to the upcoming principal payment of \$10.5 million on TMWA's 2017 refunding bonds due in fiscal year 2021. See Note 6 to the financial statements for additional information TMWA's outstanding debt. This decrease was offset by overall net positive cash flows from all of TMWA's operations. See the Statement of Cash Flows for additional information.

In fiscal year 2020, TMWA booked a long-term asset related to its other post-employment benefit (OPEB) plans. This was the result of an actuarial analysis. Additional information on TMWA's OPEB plans can be found in Note 11 to the financial statements.

Most of TMWA's net position is in capital assets. Capital assets, net of accumulated depreciation increased by \$27.0 million in fiscal year 2020 as increases in capital assets from capital expenditures and contributions were greater than depreciation expense. Assets built by developers and contributed to TMWA were \$20.1 million. These assets are built to TMWA's standards and specifications. TMWA continued construction of a new treatment plant during fiscal year 2020. The Mt. Rose Water Treatment Plant is expected to be operational in fiscal year 2021. TMWA spent \$12.5 million on the project in fiscal year 2020 and \$23.5 million total through June 30, 2020. Depreciation expense was \$33.3 million.

Total current liabilities increased by \$0.8 million. The primary increase was due to an increase in the current portion of long-term debt for the first principal payment on the 2017 refunding bonds of \$10.5 million due July 1, 2020. Offsetting this increase were decreases due to the pay down of commercial paper of \$7.5 million and a \$2.3 million decrease in short term contracts and retention payable due to timing differences in the accounts payable cycle year over year.

Long term debt decreased \$18.4 million, mainly due to the reclass to current portion of debt discussed above. Additionally, long term debt decreased due to amortization of bond premiums of \$4.9 million and principal payments on debt of \$2.8 million.

Fiscal Year 2019 Summary

In the fiscal year ended June 30, 2019, total net position increased by \$50.0 million, the result of operating income, net nonoperating income and capital contributions.

Unrestricted current assets increased by \$7.0 million from June 30, 2018. Unrestricted cash increased \$5.4 million due to increases in investment income, higher operating revenues, and continued growth in the service area which increases cash contributions from developers. Total cash and investment balances, both restricted and unrestricted increased by \$4.4 million in fiscal year 2019.

During fiscal year 2019, TMWA booked additional liabilities of \$1.4 million related to retirement benefits. These accruals are based on an actuarial analysis. Detailed information about TMWA's postretirement benefits can be found in Notes 10 and 11 to the financial statements.

Most of TMWA's net position is in capital assets. Capital assets, net of accumulated depreciation increased by \$28.0 million in fiscal year 2019 as increases in capital assets from capital expenditures and contributions were greater than depreciation expense. Assets built by developers and contributed to TMWA were \$19.1 million. These assets are built to TMWA's standards and specifications. TMWA began construction in fiscal year 2019 on a new treatment plant and spent \$9.1 million on construction. Construction on this project should be complete in fall of 2020. Depreciation expense was \$32.8 million.

Current liabilities payable from unrestricted current assets decreased by \$9.8 million mainly due to decreases in commercial paper. TMWA paid off \$6.5 million of its commercial paper. Other current liabilities, including vendor accounts payable and due to other governments were \$4.8 million lower than prior year due to timing of payments. Offsetting these decreases was an increase of \$0.7 million in contacts and retention payable and an increase of \$0.7 million in interest payable at year end.

Long term debt decreased \$7.5 million, mainly due to amortization of bond premiums of \$4.7 million, and principal payments on debt of \$2.7 million.

TMWA's Changes in Net Position
(in millions)

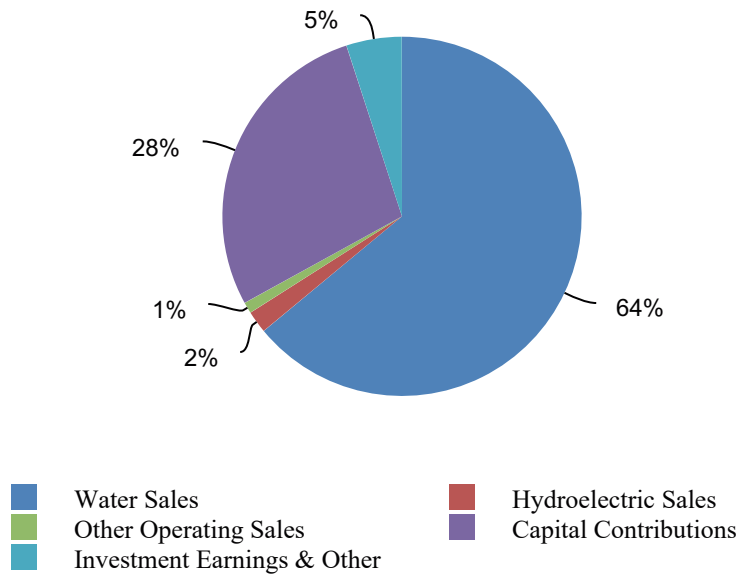
	<u>June 30, 2020</u>	<u>June 30, 2019</u>	<u>June 30, 2018</u>
Operating Revenues	\$ 108.1	\$ 107.1	\$ 101.8
Operating Expenses	94.1	92.5	90.3
Operating Income	<u>14.0</u>	<u>14.6</u>	<u>11.5</u>
Nonoperating Revenues (Expenses) net	<u>(6.6)</u>	<u>(6.7)</u>	<u>(11.2)</u>
Income before Capital Contributions	7.4	7.9	0.3
Capital Contributions	44.2	42.2	37.4
Change in Net Position	<u>51.6</u>	<u>50.1</u>	<u>37.7</u>
Net Position - Beginning of Year	<u>718.1</u>	<u>668.0</u>	<u>630.3</u>
Net Position - End of Year	<u>\$ 769.7</u>	<u>\$ 718.1</u>	<u>\$ 668.0</u>

TMWA's Revenues
(In millions)

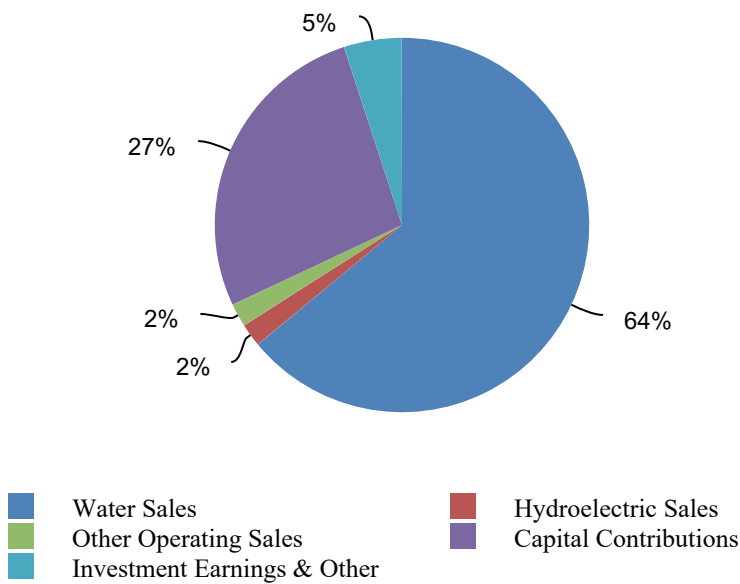
	<u>June 30, 2020</u>	<u>June 30, 2019</u>	<u>June 30, 2018</u>
Revenues			
Operating Revenues			
Water Sales	\$ 102.5	\$ 101.8	\$ 95.5
Hydroelectric Sales	3.3	2.6	3.8
Other Operating Sales	2.3	2.7	2.5
	<u>108.1</u>	<u>107.1</u>	<u>101.8</u>
Nonoperating Revenues			
Investment Earnings	4.1	4.4	2.3
Other	3.4	2.8	0.1
	<u>7.5</u>	<u>7.2</u>	<u>2.4</u>
Capital Contributions	44.2	42.2	37.4
Total Revenues	<u>\$ 159.8</u>	<u>\$ 156.5</u>	<u>\$ 141.6</u>

The table above and the graphs that follow represent the makeup of TMWA's total revenues for fiscal years ended June 30, 2020, 2019 and 2018:

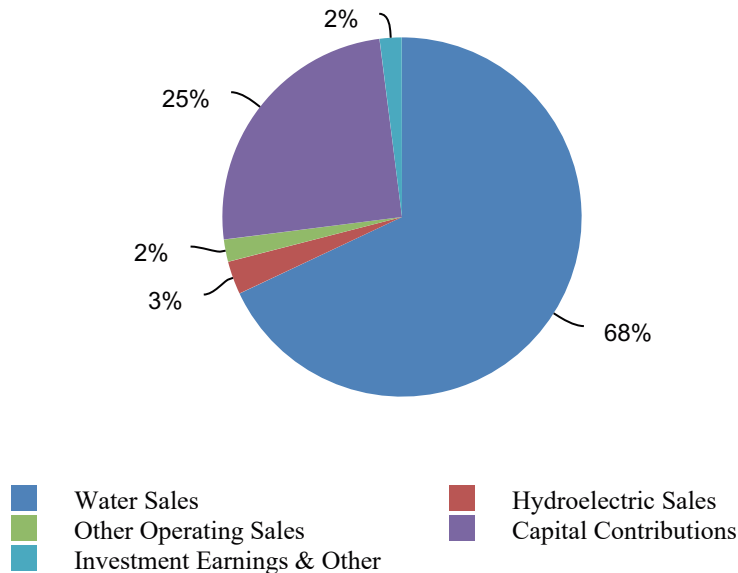
Total Revenues for the Year Ended June 30, 2020



Total Revenues for the Year Ended June 30, 2019



Total Revenues for the Year Ended June 30, 2018



Results of Operations-Revenues

Fiscal Year 2020 Summary

For fiscal year 2020, total operating revenues increased \$1.0 million from fiscal year 2019. Water Sales were \$102.5 million, \$0.7 million or 0.7% greater than in fiscal year 2019. Water sales were higher year over year due to growth in the service area of approximately 2% offset by slightly lower water usage per capita. Hydroelectric Sales were \$0.7 million or 26.9% higher than fiscal year 2019, due to downtime for repairs at the hydroelectric plants in fiscal year 2019. Other operating revenue was \$0.4 million or 14.8% lower than the prior year due to inspection fees and late fee revenue. Inspection fees were lower due primarily to timing, as these fees can fluctuate with larger or smaller developer projects. Late fee revenue was lower due to TMWA stopping late fee assessments during the fourth quarter as a result of the COVID-19 pandemic. The assessment of late fees was continued in fiscal year 2021.

Investment earnings were \$4.1 million in fiscal year 2020, \$0.3 million lower than fiscal year 2019 due to lower invested rates during the year. Other nonoperating revenues increased \$0.6 million due to higher unrealized investment income.

For fiscal year 2020, capital contributions increased by \$2.0 million. Increased contributions totaling \$3.4 million were recognized from developer infrastructure contributions, area fees, facilities fees, contributions from other governments and an insurance settlement. The developer fee increases were due to continued high volume of projects and increased area fees which were implemented in October 2019. Offsetting these increases were decreases of \$1.4 million from decreased grant revenue, water resource sustainability (2020/2019) / water meter retrofit (2019)

proceeds, and will-serve sales. The decrease in grant revenue is due to the timing of pending FEMA awards and the decrease in resource sustainability/water meter retrofit and will-serve sales are due to a slightly lower volume of water resources sold/dedicated during fiscal year 2020 than the prior year.

Fiscal Year 2019 Summary

For fiscal year 2019, total operating revenues increased \$5.3 million from fiscal year 2018. Water Sales were \$101.8 million, \$6.3 million or 6.6% greater than in fiscal year 2018. Water Sales were higher mainly due to a 3% rate increase implemented in the first billing cycle of May 2018. Growth in the service area and higher usage per customer account for the additional increase. Hydroelectric Sales were \$1.20 million or 31.6% less than fiscal year 2018, due to downtime for repairs at the hydroelectric plants.

Investment earnings were \$4.4 million in fiscal year 2019, \$2.1 million higher than fiscal year 2018. This is mainly due to investments made at higher yields and higher cash balances. Other nonoperating revenues increased \$2.7 million from an increase in fair value of investments of \$2.8 million. In 2018, there was a gain on disposal of assets of \$0.1 million.

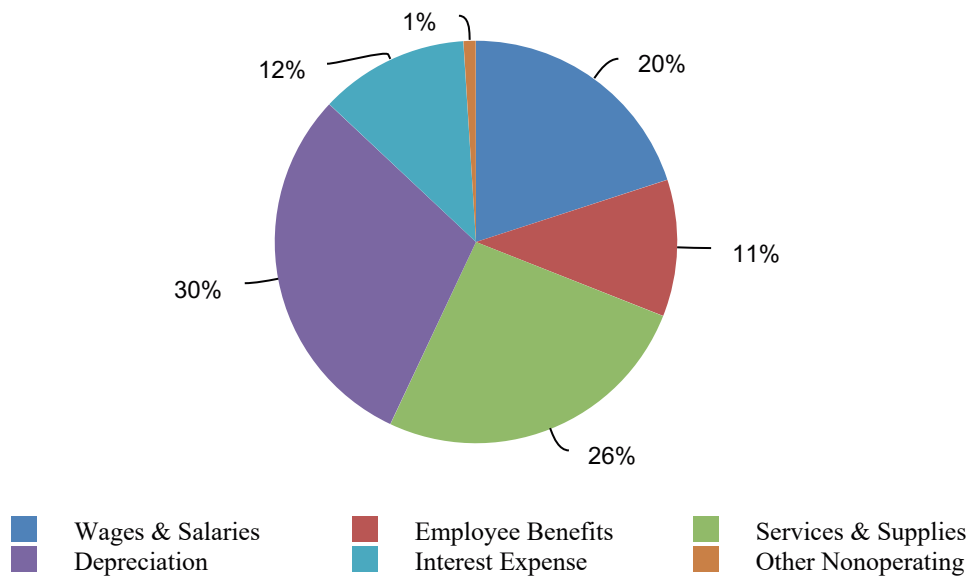
For fiscal year 2019, capital contributions increased by \$4.8 million. Increased developer contributed infrastructure at \$19.1 million, resulted in an increase of \$4.1 million due to a continued upward trend in construction in the service area. Contributions to the water meter retrofit program were \$1.4 million lower than 2018 due to decreased sales of surface water will-serve rights by \$2.0 million, as well as phase out of this fee for a new water sustainability fee implemented in January 2019. This new sustainability fee related to surface water will-serve rights resulted in \$0.7 million in contributions. Contributions from developer facility charges increased \$2.7 million. Grants income increased by \$0.5 million, and other capital contributions increased by \$0.2 million.

TMWA’s Expenses
(in millions)

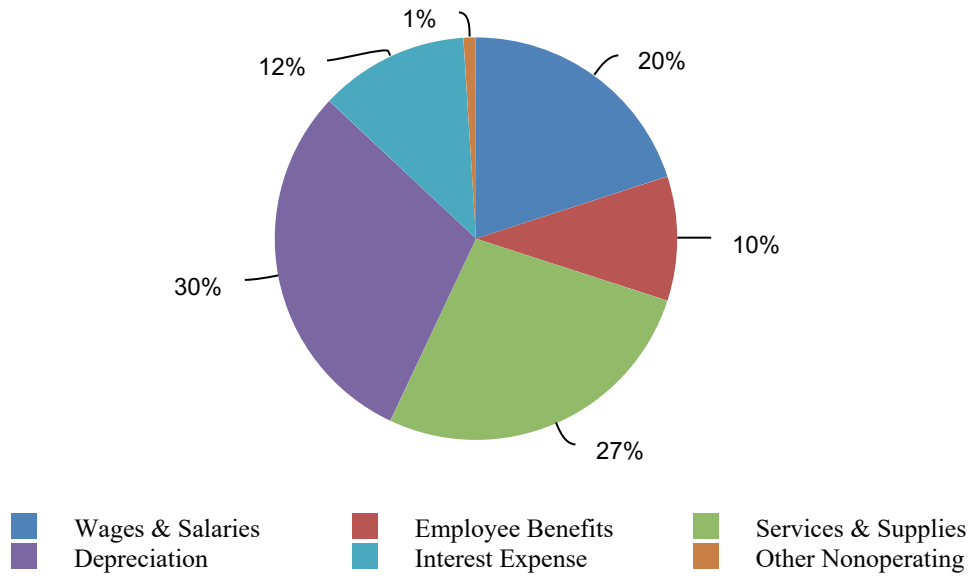
	<u>June 30, 2020</u>	<u>June 30, 2019</u>	<u>June 30, 2018</u>
Expenses			
Operating Expenses			
Wages & Salaries	\$ 21.5	\$ 21.0	\$ 18.7
Employee Benefits	11.5	10.2	12.9
Services & Supplies	27.8	28.5	25.8
Depreciation	33.3	32.8	32.8
	<u>94.1</u>	<u>92.5</u>	<u>90.2</u>
Nonoperating Expenses			
Interest Expense	12.7	13.3	11.7
Other Nonoperating Expenses	1.4	0.7	1.9
	<u>14.1</u>	<u>14.0</u>	<u>13.6</u>
Total Expenses	<u>\$ 108.2</u>	<u>\$ 106.5</u>	<u>\$ 103.8</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, 2020, 2019 and 2018:

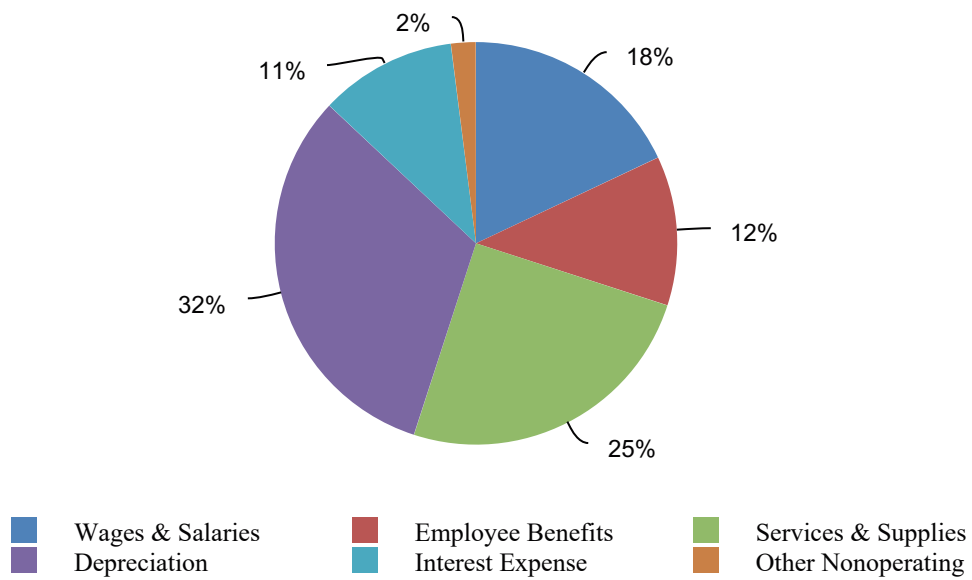
Total Expenses for the Year Ended June 30, 2020



Total Expenses for the Year Ended June 30, 2019



Total Expenses for the Year Ended June 30, 2018



Results of Operations-Expenses

Fiscal Year 2020 Summary

Operating expenses were \$94.1 million, \$1.6 million or 1.7% higher than fiscal year 2019. Spending on salaries and wages was \$0.5 million or 2.4% higher, due to a wage increase of approximately 3%, offset by a higher allocation to capital due to more labor intensive capital projects. Employee benefits were \$1.3 million or 12.7% higher than prior year due mainly to pension expense related to Nevada Public Employees' Retirement System (PERS). Higher pension expense was recognized as a result of prior year deferred outflows being recognized in fiscal year 2020. Spending on services and supplies was \$0.7 million or 2.5% less than prior year due primarily to one-time expenses incurred in fiscal year 2019 related to maintenance at the Donner Lake outlet channel.

Nonoperating expenses were \$0.1 higher compared to prior year. Lower interest expense was offset by higher asset disposal costs as more projects came into service during the year requiring more disposals/demolition of existing assets.

Fiscal Year 2019 Summary

Operating expenses were \$92.5 million, \$2.3 million or 2.5% higher than fiscal year 2018. Spending on salaries and wages was \$2.3 million or 12.3% higher, due to a wage increase of approximately 3%, additional employees of 7%, and promotions. Employee benefits were \$2.7 million or 20.9% lower mainly due to a \$4.6 million adjustment to pension expense related to GASB Statement No. 82 in 2018, offset by higher expenses related to increased headcount and wages. Spending on services and supplies was \$2.7 million or 10.5% more than prior year, mainly due to \$0.7 million in higher chemical costs, \$0.5 million in higher power costs, a \$0.4 million increase in donations to the Truckee River Fund, and general price increases in other operating supplies.

Net nonoperating expenses were unfavorable \$0.4 million as compared to prior year. Higher interest expense in 2019 by \$1.6 million was due to the 2018 bond refunding, which replaced a portion of TMWA's commercial paper with fixed rate bonds. TMWA refunded this commercial paper because bond rates were low, providing an opportunity to fix rates on balances in commercial paper that were not expected to be paid off in the next five years. Other nonoperating expenses were \$1.2 million favorable mainly due to decreases in fair value of investments in 2018 of \$0.9 million, higher amortization expense by \$0.7 million in 2018, offset by a loss on disposal off assets of \$0.2 million in 2019 and a \$0.2 million increase in other nonoperating expenses in 2019.

CAPITAL ASSETS

At June 30, 2020, TMWA's total capital assets were \$1,495.3 million before accumulated depreciation of \$487.6 million, for a net book value of \$1,007.7 million. Included in the total capital assets reported on the Statement of Net Position was \$58.3 million in construction work in progress.

At June 30, 2019, TMWA's total capital assets were \$1,435.0 million before accumulated depreciation of \$454.3 million, for a net book value of \$980.7 million. Included in the total capital assets reported on the Statement of Net Position was \$56.4 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, 2020, TMWA had \$412.8 million in total reported debt outstanding. This amount reflects \$370.3 million in total outstanding principal indebtedness, and \$42.4 million net bond premium. Of the \$370.3 million in total reported debt outstanding, \$29.5 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 \$16.0 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 \$370.3 million as of June 30, 2020 reflects a decrease of \$10.3 million or 2.7% from total outstanding principal of \$380.7 million as of June 30, 2019. Total outstanding principal indebtedness of \$380.7 million as of June 30, 2019 reflects a decrease of \$9.2 million or 2.4% from total outstanding principal of \$389.9 million as of June 30, 2018.

During fiscal years 2020 and 2019, TMWA maintained credit ratings from Standard and Poor's of AA+, outlook Stable, from Moody's of Aa2, outlook Stable, and from Fitch of AA-, outlook Positive. Subsequent to year end, in August 2020, Fitch upgraded TMWA's rating to AA, and maintained the outlook Positive.

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 89520-3013.

	2020	2019
Assets		
Current Assets		
Cash and investments	\$ 148,700,798	\$ 153,131,648
Accounts receivable, net	14,929,911	14,637,242
Due from others	246,133	332,456
Due from other governments	1,485,566	432,586
Interest receivable	747,174	769,266
Prepaid assets and other assets	2,579,506	1,810,519
	168,689,088	171,113,717
Restricted Current Assets		
Cash and investments		
Water meter retrofit program	5,711,052	5,711,052
Water resource sustainability program	2,173,503	689,060
Current bond debt service	19,845,275	9,283,775
	27,729,830	15,683,887
Total current assets	196,418,918	186,797,604
Restricted Noncurrent Assets		
Cash and investments		
Future bond debt service	2,423,505	2,376,329
Operations and maintenance	11,105,627	9,912,052
Renewal and replacement	15,299,289	16,214,654
Water rate stabilization	500,000	500,000
	29,328,421	29,003,035
Noncurrent Assets		
Capital assets, not depreciated	188,470,651	186,576,533
Capital assets, depreciated	819,262,811	794,103,532
Other noncurrent assets	453,757	480,255
Net other postemployment benefits	2,325,419	—
	1,010,512,638	981,160,320
Total noncurrent assets	1,039,841,059	1,010,163,355
Total assets	1,236,259,977	1,196,960,959
Deferred Outflow of Resources		
Bond refundings	2,510,330	2,724,979
Net pension liability	11,881,150	10,546,937
Other postemployment benefits	520,656	791,303
	14,912,136	14,063,219
Total deferred outflow of resources	14,912,136	14,063,219
Total Assets and Deferred Outflow of Resources	\$ 1,251,172,113	\$ 1,211,024,178

	2020	2019
Liabilities		
Current Liabilities Payable from Unrestricted Current Assets		
Accounts payable	\$ 1,709,684	\$ 1,565,435
Contracts and retention payable	2,605,122	4,874,567
Accrued liabilities	1,608,960	1,612,935
Current portion of compensated absences	434,707	463,562
Due to other governments	1,538,488	1,525,588
Accrued interest payable	240,787	306,226
Current portion of long-term debt	17,955,867	25,404,058
Customer deposits and amounts due to developers	1,975,621	2,021,318
	<u>28,069,236</u>	<u>37,773,689</u>
Current Liabilities Payable from Restricted Current Assets		
Current portion of long-term debt	11,505,000	925,000
Interest payable	8,340,275	8,358,775
	<u>19,845,275</u>	<u>9,283,775</u>
Total current liabilities	<u>47,914,511</u>	<u>47,057,464</u>
Noncurrent Liabilities		
Net pension liability	40,582,611	37,658,701
Long-term debt, net of current portion	383,330,622	401,665,043
Net other postemployment benefits liability	660,570	1,882,222
Compensated absences, net of current portion	2,192,761	2,049,776
	<u>426,766,564</u>	<u>443,255,742</u>
Total noncurrent liabilities	<u>426,766,564</u>	<u>443,255,742</u>
Total liabilities	<u>474,681,075</u>	<u>490,313,206</u>
Deferred Inflow of Resources		
Net pension liability	3,592,032	2,425,248
Bond refundings	88,047	97,629
Other postemployment benefits	3,067,462	—
	<u>6,747,541</u>	<u>2,522,877</u>
Total deferred inflows of resources	<u>6,747,541</u>	<u>2,522,877</u>
Total liabilities and deferred inflow of resources	<u>481,428,616</u>	<u>492,836,083</u>
Net Position		
Net investment in capital assets	617,541,639	573,174,076
Restricted for water meter retrofit program	5,711,052	5,711,052
Restricted for water resource sustainability program	2,173,503	689,060
Restricted for debt service	11,505,000	925,000
Restricted for operations and maintenance reserve	6,505,627	5,312,052
Restricted for renewal and replacement reserve	15,299,289	16,214,654
Restricted for water rate stabilization	500,000	500,000
Unrestricted	110,507,387	115,662,201
	<u>769,743,497</u>	<u>718,188,095</u>
Total net position	<u>769,743,497</u>	<u>718,188,095</u>
Total Liabilities, Deferred Inflow of Resources and Net Position	<u>\$ 1,251,172,113</u>	<u>\$ 1,211,024,178</u>

Truckee Meadows Water Authority
Statements of Revenues, Expenses, and Changes in Net Position
Years Ended June 30, 2020 and 2019

	2020	2019
Operating Revenues		
Charges for water sales	\$ 102,487,078	\$ 101,776,649
Hydroelectric sales	3,298,850	2,624,285
Other operating sales	2,286,729	2,688,584
Total operating revenues	<u>108,072,657</u>	<u>107,089,518</u>
Operating Expenses		
Salaries and wages	21,455,982	20,973,151
Employee benefits	11,529,749	10,184,189
Services and supplies	27,808,959	28,475,960
Total operating expenses before depreciation	<u>60,794,690</u>	<u>59,633,300</u>
Depreciation	<u>33,327,134</u>	<u>32,833,604</u>
Total operating expenses	<u>94,121,824</u>	<u>92,466,904</u>
Operating Income	<u>13,950,833</u>	<u>14,622,614</u>
Nonoperating Revenues (Expenses)		
Investment earnings	4,119,737	4,409,486
Net increase in fair value of investments	3,410,242	2,843,154
Loss on disposal of assets	(1,189,776)	(225,687)
Debt issuance costs	(216,981)	(218,132)
Interest expense	(12,698,972)	(13,268,153)
Other nonoperating expense	—	(233,494)
Total nonoperating revenues (expenses)	<u>(6,575,750)</u>	<u>(6,692,826)</u>
Income before Capital Contributions	<u>7,375,083</u>	<u>7,929,788</u>
Capital Contributions		
Grants	232,153	831,116
Water meter retrofit program	—	994,706
Water resource sustainability program	1,484,443	689,060
Developer infrastructure contributions	20,145,641	19,112,590
Developer will-serve contributions (net of refunds)	4,082,279	4,663,826
Developer capital contributions-other	7,847,962	6,636,417
Developer facility charges (net of refunds)	9,657,274	9,154,403
Contributions from others	343,630	—
Contributions from other governments	386,937	100,000
Net capital contributions	<u>44,180,319</u>	<u>42,182,118</u>
Change in Net Position	51,555,402	50,111,906
Net Position, Beginning of Year	<u>718,188,095</u>	<u>668,076,189</u>
Net Position, End of Year	<u>\$ 769,743,497</u>	<u>\$ 718,188,095</u>

Truckee Meadows Water Authority

Statements of Cash Flows

Years Ended June 30, 2020 and 2019

	2020	2019
Operating Activities		
Cash received from customers	\$ 107,820,614	\$ 105,272,760
Cash paid to employees	(30,345,059)	(30,024,544)
Cash paid to suppliers	(29,151,610)	(33,218,430)
Net Cash from Operating Activities	48,323,945	42,029,786
Capital and Related Financing Activities		
Acquisition and construction of capital assets	(43,923,104)	(41,281,759)
Interest paid on financing	(17,411,353)	(17,050,980)
Principal paid on financing	(2,829,058)	(2,738,723)
Redemption of commercial paper notes	(7,500,000)	(6,500,000)
Proceeds from capital asset disposal	228,993	38,499
Grants	27,273	582,755
Contributions for water meter retrofit program	—	994,706
Contributions for water resource sustainability program	1,484,443	689,060
Contributions from developers-will-serve letters	4,082,279	4,663,826
Contributions from developers-other	7,847,962	6,636,417
Contributions from developers-facility charges	9,657,274	9,154,403
Contributions from others	343,630	—
Contributions from other governments	286,937	200,000
Bond/note issuance costs	(216,981)	(218,132)
Net Cash used for Capital and Related Financing Activities	(47,921,705)	(44,829,928)
Investing Activities		
Payments received on loan receivables	26,213	24,835
Investment interest/earnings	7,512,026	7,222,281
Net Cash from Investing Activities	7,538,239	7,247,116
Net Change in Cash and Cash Equivalents	7,940,479	4,446,974
Cash and Cash Equivalents, Beginning of Year	197,818,570	193,371,596
Cash and Cash Equivalents, End of Year	\$ 205,759,049	\$ 197,818,570

Truckee Meadows Water Authority

Statements of Cash Flows

Years Ended June 30, 2020 and 2019

	2020	2019
Reconciliation of Operating Income to Net Cash from Operating Activities		
Operating Income	\$ 13,950,833	\$ 14,622,614
Adjustments to reconcile operating income to net cash from operating activities		
Depreciation	33,327,134	32,833,604
Other nonoperating expenses	—	(233,494)
OPEB expense	37,239	295,196
OPEB contributions	(246,201)	(179,325)
Pension expense	5,912,813	3,768,215
Pension contributions	(3,156,332)	(2,865,963)
Changes in assets and liabilities		
Accounts receivable, net	(292,669)	(1,048,437)
Due from others	86,323	(23,364)
Due from other governments	(748,100)	28,729
Prepaid assets	(768,702)	(373,347)
Accounts payable	144,249	(2,808,142)
Accrued liabilities	(3,975)	19,228
Compensated absences	114,130	78,281
Due to other governments	12,900	(1,339,052)
Due to customers and developers	(45,697)	(744,957)
Total adjustments	34,373,112	27,407,172
Net Cash from Operating Activities	<u>\$ 48,323,945</u>	<u>\$ 42,029,786</u>
Non-Cash Capital and Related Financing Activities		
Amortization of net bond premium	\$ (4,873,553)	\$ (4,693,893)
Amortization of refunding allowances to interest expense	205,067	204,743
Acquisition and construction of capital assets financed by cash	\$ 43,923,104	\$ 41,281,759
Developer infrastructure contributions	20,145,641	19,112,590
Change in contracts and retention payable	(2,269,445)	665,347
Total Acquisition and Construction of Capital Assets	<u>\$ 61,799,300</u>	<u>\$ 61,059,696</u>

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 (Board) appointed by:

- Reno City Council (3 seats)
- Sparks City Council (2 seats)
- Washoe County Commissioners (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 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 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 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 GAAP. Appropriations lapse at year-end.
- In accordance with State statute, actual expenses may not exceed the sum of operating and nonoperating appropriations.

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 (LGIP), 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 the same as TMWA's proportionate share of the pool's fair value.

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 and water resource sustainability programs adopted under Title II of 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	Canals	15-50
Plants	15-50	Reservoirs	20-75
Services	15-60	Vehicles	5-10
Pump stations	10-60	Furniture and fixtures	10
Tanks	65-75	Computer hardware and software	3-5
Wells	7-50	Equipment	5-10
Pressure reducing stations	25	Administration buildings	50
Hydroelectric facilities	20-80		

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 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, deferred outflows and deferred inflows of resources, 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.

Postemployment Benefits Other Than Pensions (OPEB)

For purposes of measuring TMWA's OPEB liability, deferred outflows and deferred inflows of resources, and OPEB expense, information about the fiduciary net position of TMWA's OPEB Plans and additions to/deductions from the fiduciary net position have been determined on the same basis as they are reported by TMWA's OPEB Plans. For this purpose, TMWA recognizes benefit payments when due and payable in accordance with the benefit terms. Investments are reported at fair value.

Compensated Absences

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 current and noncurrent liabilities in the accompanying Statements of Net Position.

Long-Term Debt

Long-term debt is reported at face value, net of any premium or discounts, in the Statements of Net Position. Premiums and discounts are amortized using the effective interest method over the life of the related debt. Debt issuance costs are expensed in the period incurred.

Classification of Revenues

Operating revenues consist of water sales, hydroelectric sales, and miscellaneous fee income. 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.

Net Position

Net Position is displayed in three classifications:

- Net investment in capital assets. This component represents TMWA's net position in its capital assets. It reflects the cost of capital assets, less accumulated depreciation and less the outstanding principal of related debt, excluding unspent proceeds.
- Restricted. This component reflects the carrying value of assets, less related liabilities, that are restricted by law or by other externally imposed restrictions, such as bond covenants. Assets restricted only by TMWA or Board imposed limitations are not included in the calculation.
- Unrestricted. This component represents the remaining net position balance that is available to support TMWA's operations and capital asset acquisition/construction.

Reclassifications

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

Use of Estimates in Preparing Financial Statements

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. Actual results could differ from those estimates.

New Accounting Pronouncements

In November 2016, the GASB issued Statement No. 83, *Certain Asset Retirement Obligations*, which is effective for fiscal years beginning after June 15, 2019. 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. The implementation of Statement No. 83 in fiscal year ended June 30, 2019 resulted in no impact to TMWA's financial statements.

In January 2017, the GASB issued Statement No. 84, *Fiduciary Activities*, which is effective for fiscal years beginning after December 15, 2019. The objective of this statement is to improve guidance regarding the identification of fiduciary activities for accounting and financial reporting purposes and how those activities should be reported. TMWA does not expect the adoption of Statement No. 84 to have a material affect on TMWA's financial position, results of operation or cash flow.

In June 2017, the GASB issued Statement No. 87, *Leases*, which is effective for fiscal years beginning after June 15, 2021. 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 operations or cash flow.

In August 2018, the GASB issued Statement No. 90, *Majority Equity Interests - An Amendment of GASB Statements No. 14 and No. 61*, which is effective for fiscal years beginning after December 18, 2019. The primary objective of this Statement is to provide users of financial statements with essential information related to presentation of majority equity interests in legally separate organizations and requiring reporting of certain information about component units of the government. The implementation of Statement No. 90 in fiscal year ended June 30, 2020 resulted in no impact to TMWA's financial statements.

In May 2019, the GASB issued Statement No. 91, *Conduit Debt Obligations*, which is effective for fiscal years beginning after December 15, 2021. Earlier application is encouraged. The primary objectives of this Statement are to provide a single method of reporting conduit debt obligations by issuers and eliminate diversity in practice associated with (1) commitments extended by issuers, (2) arrangements associated with conduit debt obligations, and (3) related note disclosures. TMWA does not expect the adoption of Statement No. 91 to have a material affect on TMWA's financial position, results of operations or cash flow.

In March 2020, the GASB issued Statement No. 94, *Public-private and public-public partnerships and availability payment arrangements*, which is effective for fiscal years beginning after June 15, 2022. The primary objective of this Statement is to improve financial reporting concerning public-private and public-public partnerships by addressing certain accounting issues with these arrangements. TMWA does not expect the adoption of Statement No. 94 to have a material affect on TMWA's financial position, results of operations or cash flow.

In May 2020, the GASB issued Statement No. 96, *Subscription-Based Information Technology Arrangements*, which is effective for fiscal years beginning after June 15, 2022. The primary objective of this Statement is to improve financial reporting concerning subscription-based information technology arrangements. This Statement will require governments to report such arrangements as intangible assets and corresponding liabilities in their statements of net position. TMWA is evaluating the impact of Statement No. 96, and does expect the adoption to have a material affect on TMWA's financial position, results of operations or cash flow.

In June 2020, the GASB issued Statement No. 97, *Certain Component Unit Criteria, and Accounting and Financial Reporting for Internal Revenue Code Section 457 Deferred Compensation Plans—an amendment of GASB Statements No. 14 and No. 84, and a supersession of GASB Statement No. 32*. Certain aspects of the Statement are effective immediately and other aspects are effective for fiscal years beginning after June 15, 2021. The primary objective of this Statement is to improve reporting and comparability related to fiduciary component units, OPEB and Section 457 deferred compensation retirement plans. TMWA does not expect the adoption of Statement No. 97 to have a material affect on TMWA's financial position, results of operations 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, 2020	June 30, 2019
Billed amounts	\$ 6,264,640	\$ 6,829,381
Earned, but unbilled amounts	9,062,242	8,149,678
	15,326,882	14,979,059
Allowance for uncollectible accounts	(396,971)	(341,817)
Accounts receivable, net	<u>\$ 14,929,911</u>	<u>\$ 14,637,242</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. TMWA's deposits are collateralized by the Office of the State Treasurer/Nevada Collateral Pool.

As of June 30, 2020, TMWA had the following investments and maturities:

	Less than 1 Year	1 - 3 Years	4 - 5 Years	Total
Investments				
U.S. Treasuries	\$ 9,303,045	\$ 29,746,300	\$ 4,048,565	\$ 43,097,910
U.S. Agencies	39,960,824	29,996,334	24,111,033	94,068,191
LGIP	2,423,505	—	—	2,423,505
Money Market Mutual Funds	29,054,454	—	—	29,054,454
Certificates of Deposit	1,259,348	7,555,592	2,726,870	11,541,810
Corporate Commercial Paper	2,529,545	—	—	2,529,545
Corporate Notes	—	6,888,544	11,910,845	18,799,389
Total Investments	84,530,721	74,186,770	42,797,313	201,514,804
Total Cash	4,244,245	—	—	4,244,245
Total Cash and Investments	\$ 88,774,966	\$ 74,186,770	\$ 42,797,313	\$ 205,759,049

As of June 30, 2019, TMWA had the following investments and maturities:

	Less than 1 Year	1 - 3 Years	4 - 5 Years	Total
Investments				
U.S. Treasuries	\$ 19,236,990	\$ 21,012,120	\$ 12,401,595	\$ 52,650,705
U.S. Agencies	24,293,349	40,159,868	29,499,980	93,953,197
LGIP	2,376,329	—	—	2,376,329
Money Market Mutual Funds	22,617,511	—	—	22,617,511
Certificates of Deposit	2,494,010	3,241,618	10,807,240	16,542,868
Corporate Commercial Paper	7,834,444	—	—	7,834,444
Total Investments	78,852,633	64,413,606	52,708,815	195,975,054
Total Cash	1,843,516	—	—	1,843,516
Total Cash and Investments	\$ 80,696,149	\$ 64,413,606	\$ 52,708,815	\$ 197,818,570

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 five 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 130 days at June 30, 2020, and 116 days at June 30, 2019. 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, 2020 and 2019, the following investments by issuer exceeded 5% of TMWA’s total investments:

	June 30, 2020	
U.S. Treasuries	\$ 43,097,910	22 %
Federal Home Loan Bank	31,658,081	16 %
Federal National Mortgage Association	30,960,843	16 %
Federated Hermes Treasury Obligations	20,042,429	10 %
Federal Home Loan Mortgage Corporation	17,278,214	9 %
Federal Farm Credit Bank	10,986,030	6 %
	June 30, 2019	
U.S. Treasuries	\$ 52,650,704	27 %
Federal Home Loan Bank	41,143,051	21 %
Federal National Mortgage Association	17,759,156	9 %
Federal Home Loan Mortgage Corporation	15,843,376	8 %
Federal Farm Credit Bank	15,184,737	8 %

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, 2020:

	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	\$ 43,097,910	\$ 43,097,910	\$ —
U.S. Agencies	94,068,191	—	94,068,191
Money Market Mutual Funds	29,054,454	29,054,454	—
Certificates of Deposit	11,541,810	—	11,541,810
Corporate Commercial Paper	2,529,545	—	2,529,545
Corporate Notes	18,799,389	—	18,799,389
	199,091,299	\$ 72,152,364	\$ 126,938,935
LGIP*	2,423,505		
	<u>\$ 201,514,804</u>		

TMWA has the following recurring fair value measurements as of June 30, 2019:

	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	\$ 52,650,705	\$ 52,650,705	\$ —
U.S. Agencies	93,953,197	—	93,953,197
Money Market Mutual Funds	22,617,511	22,617,511	—
Certificates of Deposit	16,542,868	—	16,542,868
Corporate Commercial Paper	7,834,444	—	7,834,444
	193,598,725	\$ 75,268,216	\$ 118,330,509
LGIP*	2,376,329		
	<u>\$ 195,975,054</u>		

*LGIP is reported at Net Asset Value. TMWA is able to withdraw funds on a daily basis and has no outstanding, unfunded commitments as of June 30, 2020 and 2019.

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 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.

Corporate Notes - Valued using institutional bond quotes based on various market and industry inputs.

Note 5 - Capital Assets

Capital asset activity for the year ended June 30, 2020 follows:

	Beginning Balance	Increases	Decreases	Ending Balance
Capital assets, not being depreciated				
Construction in progress	\$ 56,443,875	\$ 41,207,838	\$ (39,335,765)	\$ 58,315,948
Land	20,426,913	—	—	20,426,913
Water rights	109,705,745	22,045	—	109,727,790
Total capital assets, not being depreciated	<u>186,576,533</u>	<u>41,229,883</u>	<u>(39,335,765)</u>	<u>188,470,651</u>
Capital assets, being depreciated				
Distribution mains	543,663,195	26,184,535	—	569,847,730
Water treatment (plants)	188,054,871	5,825,458	—	193,880,329
Services	151,712,612	7,573,677	—	159,286,289
Pump stations	67,960,625	3,294,227	—	71,254,852
Treated water storage (tanks)	93,691,753	2,108,836	—	95,800,589
Wells	74,905,271	882,343	—	75,787,614
Pressure regulating stations	13,350,871	4,367,207	—	17,718,078
Canals	41,254,883	3,470,611	—	44,725,494
Reservoirs	18,804,258	496,412	—	19,300,670
Vehicles	7,697,907	787,839	(82,368)	8,403,378
Furniture and fixtures	808,750	—	—	808,750
Computer hardware and software	3,618,310	341,804	—	3,960,114
Equipment	235,066	17,593	—	252,659
Hydroelectric facilities	28,262,890	3,222,648	(101,775)	31,383,763
Administrative buildings	14,411,790	20,331	—	14,432,121
Total capital assets, being depreciated	<u>1,248,433,052</u>	<u>58,593,521</u>	<u>(184,143)</u>	<u>1,306,842,430</u>
Less accumulated depreciation:				
Distribution mains	(129,743,924)	(10,176,964)	—	(139,920,888)
Water treatment (plants)	(91,724,318)	(5,913,605)	—	(97,637,923)
Services	(107,519,323)	(6,730,400)	—	(114,249,723)
Pump stations	(23,639,884)	(2,123,232)	—	(25,763,116)
Treated water storage (tanks)	(28,639,556)	(2,041,176)	—	(30,680,732)
Wells	(33,190,578)	(1,875,363)	—	(35,065,941)
Pressure regulating stations	(6,654,558)	(574,723)	—	(7,229,281)
Canals	(11,334,202)	(1,030,423)	—	(12,364,625)
Reservoirs	(6,810,500)	(561,731)	—	(7,372,231)
Vehicles	(4,164,671)	(907,384)	71,241	(5,000,814)
Furniture and fixtures	(594,161)	(61,584)	—	(655,745)
Computer hardware and software	(2,373,825)	(290,887)	—	(2,664,712)
Equipment	(155,707)	(24,152)	—	(179,859)
Hydroelectric facilities	(4,698,887)	(598,588)	5,794	(5,291,681)
Administrative buildings	(3,085,426)	(416,922)	—	(3,502,348)
Total accumulated depreciation	<u>(454,329,520)</u>	<u>(33,327,134)</u>	<u>77,035</u>	<u>(487,579,619)</u>
Total capital assets, being depreciated net	<u>794,103,532</u>	<u>25,266,387</u>	<u>(107,108)</u>	<u>819,262,811</u>
Total Capital Assets, Net	<u>\$ 980,680,065</u>	<u>\$ 66,496,270</u>	<u>\$ (39,442,873)</u>	<u>\$ 1,007,733,462</u>

Capital asset activity for the year ended June 30, 2019 follows:

	Beginning Balance	Increases	Decreases	Ending Balance
Capital assets, not being depreciated				
Construction in progress	\$ 29,199,340	\$ 40,345,726	\$ (13,101,191)	\$ 56,443,875
Land	20,160,383	266,530	—	20,426,913
Water rights	109,705,745	—	—	109,705,745
Total capital assets, not being depreciated	159,065,468	40,612,256	(13,101,191)	186,576,533
Capital assets, being depreciated				
Distribution mains	528,175,088	15,488,107	—	543,663,195
Water treatment (plants)	187,200,554	854,317	—	188,054,871
Services	146,785,819	4,934,818	(8,025)	151,712,612
Pump stations	64,975,905	2,984,720	—	67,960,625
Treated water storage (tanks)	90,236,937	3,454,816	—	93,691,753
Wells	73,067,381	1,837,890	—	74,905,271
Pressure regulating stations	10,650,226	2,731,181	(30,536)	13,350,871
Canals	41,254,883	—	—	41,254,883
Reservoirs	18,804,258	—	—	18,804,258
Vehicles	6,948,935	748,972	—	7,697,907
Furniture and fixtures	808,750	—	—	808,750
Computer hardware and software	3,431,412	186,898	—	3,618,310
Equipment	197,578	63,094	(25,606)	235,066
Hydroelectric facilities	28,262,890	—	—	28,262,890
Administrative buildings	14,411,790	—	—	14,411,790
Total capital assets, being depreciated	1,215,212,406	33,284,813	(64,167)	1,248,433,052
Less accumulated depreciation:				
Distribution mains	(119,987,675)	(9,756,249)	—	(129,743,924)
Water treatment (plants)	(86,020,412)	(5,703,906)	—	(91,724,318)
Services	(100,176,556)	(7,350,424)	7,657	(107,519,323)
Pump stations	(21,637,979)	(2,001,905)	—	(23,639,884)
Treated water storage (tanks)	(26,689,852)	(1,949,704)	—	(28,639,556)
Wells	(31,348,819)	(1,841,759)	—	(33,190,578)
Pressure regulating stations	(6,167,406)	(517,688)	30,536	(6,654,558)
Canals	(10,390,074)	(944,128)	—	(11,334,202)
Reservoirs	(6,261,847)	(548,653)	—	(6,810,500)
Vehicles	(3,337,301)	(827,370)	—	(4,164,671)
Furniture and fixtures	(513,573)	(80,588)	—	(594,161)
Computer hardware and software	(2,061,507)	(312,318)	—	(2,373,825)
Equipment	(145,984)	(35,329)	25,606	(155,707)
Hydroelectric facilities	(4,138,759)	(560,128)	—	(4,698,887)
Administrative buildings	(2,681,971)	(403,455)	—	(3,085,426)
Total accumulated depreciation	(421,559,715)	(32,833,604)	63,799	(454,329,520)
Total capital assets, being depreciated net	793,652,691	451,209	(368)	794,103,532
Total Capital Assets, Net	\$ 952,718,159	\$ 41,063,465	\$ (13,101,559)	\$ 980,680,065

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 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. 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. On September 4, 2018, TMWA redeemed \$6,500,000. This left an outstanding balance of \$23,500,000 as of June 30, 2019. On October 2, 2019, TMWA redeemed \$5,000,000. On March 3, 2020, TMWA redeemed \$2,500,000. This left an outstanding balance of \$16,000,000 as of June 30, 2020. TMWA intends to pay off this balance over the next three years using proceeds from will-serve sales. Subsequent to fiscal-year end 2020, in the first quarter of fiscal year 2021, TMWA paid off \$1,500,000 of the \$16,000,000 outstanding. TMWA has remaining authorization to issue \$53,600,000 as of June 30, 2020 and 2019. 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 as of June 30, 2020 is \$17,420,274 reduced from \$32,663,014 on March 4, 2020. The average interest rate on the outstanding balance of TECP as of June 30, 2020 was 0.15% and June 30, 2019 was 1.44%. As of June 30, 2020, the total TECP notes outstanding were comprised of three tranches ranging from \$2,000,000 to \$8,318,000 with maturities ranging from 62 to 63 days. As of June 30, 2019, the total TECP notes outstanding were comprised of five tranches ranging from \$412,000 to \$12,870,000 with maturities ranging from 28 to 93 days.

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, 2020:

	Final Maturity Date	Authorized	Balance July 1, 2019	Additions	Deletions	Balance June 30, 2020	Due in 2020-2021
Direct Borrowings							
2005 - DWSRF Bonds 3.21%	1/1/2025	\$ 4,669,565	\$ 1,824,283	\$ —	\$ 280,365	\$ 1,543,918	\$ 289,437
2009 A - DWSRF ARRA Bonds 0.00%	7/1/2029	2,401,120	1,298,522	—	123,669	1,174,853	123,669
2010 A - DWSRF Bonds 3.25%	1/1/2030	4,381,614	3,100,507	—	238,660	2,861,847	246,480
2014 - DWSRF Bonds 2.81%	1/1/2025	9,109,437	5,529,367	—	858,488	4,670,879	882,781
2015 B - DWSRF Bonds 2.62%	7/1/2035	8,971,562	8,195,717	—	402,876	7,792,841	413,500
		<u>29,533,298</u>	<u>19,948,396</u>	<u>—</u>	<u>1,904,058</u>	<u>18,044,338</u>	<u>1,955,867</u>
Bonds Payable							
2015 A - Refunding Bonds 2.00%-5.00%	7/1/2036	28,750,000	26,185,000	—	925,000	25,260,000	970,000
2016 - Refunding Bonds 5.00%	7/1/2037	124,790,000	124,790,000	—	—	124,790,000	—
2017 - Refunding Bonds 4.00%-5.00%	7/1/2030	147,415,000	147,415,000	—	—	147,415,000	10,535,000
2018 - Refunding Bonds 5.00%	7/1/2039	38,835,000	38,835,000	—	—	38,835,000	—
		<u>339,790,000</u>	<u>337,225,000</u>	<u>—</u>	<u>925,000</u>	<u>336,300,000</u>	<u>11,505,000</u>
Subtotal		369,323,298	357,173,396	—	2,829,058	354,344,338	13,460,867
Plus unamortized net bond premium			47,320,705	—	4,873,554	42,447,151	
Total debt before TECP			404,494,101	—	7,702,612	396,791,489	
TECP		69,600,000	23,500,000	—	7,500,000	16,000,000	16,000,000
Total Debt		<u>\$438,923,298</u>	<u>\$427,994,101</u>	<u>\$ —</u>	<u>\$ 15,202,612</u>	<u>\$412,791,489</u>	<u>\$ 29,460,867</u>

The following schedules summarize the changes in long-term obligations as of June 30, 2019:

	Final Maturity Date	Authorized	Balance July 1, 2018	Additions	Deletions	Balance June 30, 2019	Due in 2019-2020
Direct Borrowings							
2005 - DWSRF Bonds 3.21%	1/1/2025	\$ 4,669,565	\$ 2,095,861	\$ —	\$ 271,578	\$ 1,824,283	\$ 280,365
2009 A - DWSRF ARRA Bonds 0.00%	7/1/2029	2,401,120	1,422,190	—	123,668	1,298,522	123,669
2010 A - DWSRF Bonds 3.25%	1/1/2030	4,381,614	3,331,595	—	231,088	3,100,507	238,660
2014 - DWSRF Bonds 2.81%	1/1/2025	9,109,437	6,364,231	—	834,864	5,529,367	858,488
2015 B - DWSRF Bonds 2.62%	7/1/2035	8,971,562	8,589,045	—	393,328	8,195,717	402,876
		<u>29,533,298</u>	<u>21,802,922</u>	<u>—</u>	<u>1,854,526</u>	<u>19,948,396</u>	<u>1,904,058</u>
Bonds Payable							
2015 A - Refunding Bonds 2.00%-5.00%	7/1/2036	28,750,000	27,070,000	—	885,000	26,185,000	925,000
2016 - Refunding Bonds 5.00%	7/1/2037	124,790,000	124,790,000	—	—	124,790,000	—
2017 - Refunding Bonds 4.00%-5.00%	7/1/2030	147,415,000	147,415,000	—	—	147,415,000	—
2018 - Refunding Bonds 5.00%	7/1/2039	38,835,000	38,835,000	—	—	38,835,000	—
		<u>339,790,000</u>	<u>338,110,000</u>	<u>—</u>	<u>885,000</u>	<u>337,225,000</u>	<u>925,000</u>
Subtotal		369,323,298	359,912,922	—	2,739,526	357,173,396	2,829,058
Plus unamortized net bond premium			52,014,598	—	4,693,893	47,320,705	
Total debt before TECP			411,927,520	—	7,433,419	404,494,101	
TECP		77,100,000	30,000,000	—	6,500,000	23,500,000	23,500,000
Total Debt		<u>\$446,423,298</u>	<u>\$441,927,520</u>	<u>\$ —</u>	<u>\$ 13,933,419</u>	<u>\$427,994,101</u>	<u>\$ 26,329,058</u>

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

Year Ending June 30,	Direct Borrowings		Bonds and TECP		Total Debt Service
	Principal Payment	Interest Payment	Principal Payment	Interest Payment	
2021	\$ 1,955,868	\$ 464,854	\$ 27,504,999	\$ 16,460,150	\$ 46,385,871
2022	2,009,193	411,528	11,590,001	15,950,000	29,960,722
2023	2,064,081	356,640	12,615,000	15,344,875	30,380,596
2024	2,120,578	300,143	13,245,000	14,698,375	30,364,096
2025	2,178,730	241,991	13,920,000	14,019,250	30,359,971
2026-2030	4,584,917	734,019	79,740,000	58,892,500	143,951,436
2031-2035	2,827,456	247,455	127,175,000	33,713,375	163,963,286
2036-2040	303,515	3,976	66,510,000	7,817,250	74,634,741
Total	<u>\$ 18,044,338</u>	<u>\$ 2,760,606</u>	<u>\$ 352,300,000</u>	<u>\$ 176,895,775</u>	<u>\$ 550,000,719</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.

Restricted for water resource sustainability: Adopted by the TMWA Board in January 2019, this restriction replaced the water meter retrofit program and was created to segregate the portion of net position derived from contributions made by developers to fund certain projects that are intended to benefit TMWA's long-term water resources sustainability.

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 \$5,299,289 and \$6,214,654 as of June 30, 2020 and 2019, respectively, is included in the amount restricted for renewal and replacement.

Board Designation

On September 19, 2018, the Board adopted a resolution to designate 3% of total projected water sales for the most recent three year forecast as a rate stabilization fund. This amount was \$9,764,911 and \$9,544,274 as of June 30, 2020 and 2019, respectively. 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.

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 entering PERS prior to January 1, 2010, are eligible for retirement at age 65 with five years of service, at age 60 with ten 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 ten 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 thirty-three and a third 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 actuary 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 29.25% and 28.00% for fiscal years June 30, 2020 and 2019, respectively.

TMWA's contributions were \$3,156,332 and \$2,865,963 for the years ended June 30, 2020 and 2019, 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, 2019:

	<u>Target Allocation</u>	<u>Long-Term Geometric Expected Real Rate of Return</u>
Domestic Equity	42%	5.50%
International Equity	18%	5.50%
Domestic Fixed Income	28%	0.75%
Private Markets	12%	6.65%

The following was the PERS Board adopted policy target asset allocation as of June 30, 2018:

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

Net Pension Liability

At June 30, 2020, TMWA reported a liability for its proportionate share of the net pension liability of \$40,582,611. The net pension liability was measured as of June 30, 2019, 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, 2019, TMWA reported a liability for its proportionate share of the net pension liability of \$37,658,701. The net pension liability was measured as of June 30, 2018, 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, 2019 and 2018, TMWA's proportion was 0.2976 and 0.2761 percent, respectively, representing an increase of 0.0215 percent and a decrease of 0.0045 percent from its proportion measured at June 30, 2018 and 2017, respectively.

Pension Liability Discount Rate Sensitivity

The following presents the net pension liability of TMWA measured as of June 30, 2019 and 2018, calculated using the discount rate of 7.50% 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, 2019	\$ 62,837,262	\$ 40,582,611	\$ 22,083,349
	1% Decrease in Discount Rate (6.50%)	Discount Rate (7.50%)	1% Decrease in Discount Rate (8.50%)
Net Pension Liability, June 30, 2018	\$ 57,427,995	\$ 37,658,701	\$ 21,231,569

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, 2020 net pension liability was measured as of June 30, 2019, 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, 2019 net pension liability was measured as of June 30, 2018, 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, 2019	June 30, 2018
Inflation Rate	2.75%	2.75%
Payroll Growth	5.50% including inflation	5.00% including inflation
Investment Rate of Return	7.50%	7.50%
Productivity Pay Increase	0.50%	0.50%
Projected Salary Increases	4.25% to 9.15%, depending on service. Rates include inflation and productivity increases	4.25% to 9.15%, depending on service. Rates include inflation and productivity increases
Consumer Price Index	2.75%	2.75%
Other Assumptions	Same as those used in the June 30, 2019 funding actuarial valuation	Same as those used in the June 30, 2018 funding actuarial valuation

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

Actuarial assumptions used in the June 30, 2019 and 2018 valuations were based on the results of the experience review issued October 16, 2017.

The projection of cash flows used to determine the discount rate assumed plan contributions will be made in amounts consistent with statutory provisions and recognizing the plan’s current funding policy and cost-sharing mechanism between employers and members. For this purpose, all contributions that are intended to fund benefits for all plan members and their beneficiaries are included, except that projected contributions that are intended to fund the service costs for future plan members and their beneficiaries are not included.

Based on those assumptions, the pension plan’s fiduciary net position was projected to be available to make all projected future benefit payments for current plan members. 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, 2019 and June 30, 2018.

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

For the years ended June 30, 2020 and 2019, TMWA recognized pension expense of \$9,031,335 and \$6,571,967, respectively.

At June 30, 2020, 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	\$ 1,521,853	\$ 1,170,593
Changes in assumptions or other inputs	1,651,600	—
Net difference between projected and actual earnings on pension plan investments	—	2,018,907
Changes in TMWA’s proportion and differences between TMWA's contributions and TMWA's proportionate contributions	5,551,365	402,532
TMWA contributions subsequent to the measurement date	3,156,332	—
	<u>\$ 11,881,150</u>	<u>\$ 3,592,032</u>

Deferred outflows of resources of \$3,156,332 resulted from TMWA contributions subsequent to the measurement date and will be recognized as a reduction of the net pension liability in the year ended June 30, 2021.

At June 30, 2019, 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	\$ 1,179,759	\$ 1,748,035
Changes in assumptions or other inputs	1,984,404	—
Net difference between projected and actual earnings on pension plan investments	—	179,295
Changes in TMWA’s proportion and differences between TMWA's contributions and TMWA's proportionate contributions	4,516,811	497,918
TMWA contributions subsequent to the measurement date	2,865,963	—
	<u>\$ 10,546,937</u>	<u>\$ 2,425,248</u>

Deferred outflows of resources of \$2,865,963 resulted from TMWA contributions subsequent to the measurement date, and was recognized as a reduction of the net pension liability in the year ended June 30, 2020.

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, 2018 (the beginning of the measurement period ended June 30, 2019) is 6.18 years.

Other estimated amounts reported by TMWA as deferred outflows of resources and deferred inflows of resources related to pensions at June 30, 2020 will be recognized in pension expense as follows:

Year ending June 30,	
2021	\$ 1,935,972
2022	831,224
2023	1,212,376
2024	526,989
2025	522,880
Thereafter	103,345

Additional Information

The PERS Comprehensive Annual Financial Report 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, 2020 and June 30, 2019, TMWA had matching contributions totaling \$1,408,776, and \$1,322,978, 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, 2020 for both plans is as follows:

	<u>§501(c)(9) Plan</u>	<u>§115 Plan</u>
Retirees currently receiving benefits	45	6
Retirees entitled to, but not yet receiving benefits	1	—
Active plan members	<u>187</u>	<u>16</u>
Total	<u><u>233</u></u>	<u><u>22</u></u>

Census data as of June 30, 2019 for both plans is as follows:

	<u>§501(c)(9) Plan</u>	<u>§115 Plan</u>
Retirees currently receiving benefits	40	6
Retirees entitled to, but not yet receiving benefits	1	—
Active plan members	<u>197</u>	<u>16</u>
Total	<u><u>238</u></u>	<u><u>22</u></u>

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, 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. Effective December 13, 2018, the Board adopted a resolution to close the Plan to employees hired on or after December 13, 2018. Existing employees and plan participants currently receiving benefits were not impacted by this resolution. 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 hired prior to December 13, 2018. 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 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 age 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. 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 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 §115 Plan 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 §115 Plan 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 §115 Plan will be 100% of the premium for coverage of such retiree under the benefit plans.

For Tier I retirees who have attained the Medicare Eligibility Age (currently age 65) during a plan year must enroll in and pay the cost of Medicare Part “A” and Medicare Part “B” or Medicare Part “C” coverage and the §115 Plan 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 retirees the maximum benefits to be paid by the §115 Plan who have not attained Medicare Eligibility Age (currently age 65) is to be the same amount as 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 Insurance 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 §115 Plan towards their coverage under the employer Benefit Plans rather than the PEBP Retiree Health Plan.

For Tier II retirees who have attained the Medicare Eligibility Age (currently age 65) or older will instead receive benefits equal to 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. 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 §115 Plan based on the ADC each year.

OPEB Expense and Net Position

Total OPEB Expense (Benefit) recognized for fiscal years June 30, 2020 and 2019 is below:

	§501(c)(9) Plan	§115 Plan	Total
2020	\$ (82,879)	\$ 87,384	\$ 4,505
2019	\$ 362,331	\$ 133,768	\$ 496,099

Changes in Net Position for each plan for the measurement period ended December 31, 2019 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, 2019	\$ 11,283,691	\$ 10,344,365	\$ 939,326	\$ 1,961,246	\$ 1,018,350	\$ 942,896
<i>Measurement Date - December 31, 2018</i>						
Changes During the Period:						
Service Cost	307,252	—	307,252	59,239	—	59,239
Interest Cost	682,186	—	682,186	119,591	—	119,591
Expected Investment Income	—	614,617	(614,617)	—	62,616	(62,616)
Employer Contributions	—	258,430	(258,430)	—	121,798	(121,798)
Auditing Fees	—	(12,600)	12,600	—	(12,100)	12,100
Investment & Administrative Fees	—	(3,206)	3,206	—	(315)	315
Legal Fees	—	(1,750)	1,750	—	(4,288)	4,288
Retiree Contributions In	—	103,249	(103,249)	—	21,302	(21,302)
Retiree Contributions Out	—	(103,249)	103,249	—	(21,302)	21,302
Benefit Payments	(442,363)	(442,363)	—	(54,605)	(54,605)	—
Assumption Changes	301,774	—	301,774	44,279	—	44,279
Plan Experience	(2,013,876)	—	(2,013,876)	(179,517)	—	(179,517)
Investment Experience	—	1,686,590	(1,686,590)	—	158,207	(158,207)
Net Changes	(1,165,027)	2,099,718	(3,264,745)	(11,013)	271,313	(282,326)
Balance at Fiscal Year Ending June 30, 2020	\$ 10,118,664	\$ 12,444,083	\$ (2,325,419)	\$ 1,950,233	\$ 1,289,663	\$ 660,570
<i>Measurement Date - December 31, 2019</i>						

Changes in Net Position for each plan for the measurement period ended December 31, 2018 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, 2018	\$ 10,694,671	\$ 10,926,894	\$ (232,223)	\$ 1,826,373	\$ 999,831	\$ 826,542
<i>Measurement Date - December 31, 2017</i>						
Changes During the Period:						
Service Cost	295,437	—	295,437	56,960	—	56,960
Interest Cost	648,751	—	648,751	111,978	—	111,978
Expected Investment Income	—	653,877	(653,877)	—	61,939	(61,939)
Employer Contributions	—	324,529	(324,529)	—	119,366	(119,366)
Auditing Fees	—	(18,545)	18,545	—	(13,690)	13,690
Investment & Administrative Fees	—	(3,441)	3,441	—	(770)	770
Legal Fees	—	(5,250)	5,250	—	(5,864)	5,864
Retiree Contributions In	—	117,015	(117,015)	—	5,244	(5,244)
Retiree Contributions Out	—	(117,015)	117,015	—	(5,244)	5,244
Benefit Payments	(355,168)	(355,168)	—	(34,065)	(34,065)	—
Investment Experience	—	(1,178,531)	1,178,531	—	(108,397)	108,397
Net Changes	<u>589,020</u>	<u>(582,529)</u>	<u>1,171,549</u>	<u>134,873</u>	<u>18,519</u>	<u>116,354</u>
Balance at Fiscal Year Ending June 30, 2019	<u>\$ 11,283,691</u>	<u>\$ 10,344,365</u>	<u>\$ 939,326</u>	<u>\$ 1,961,246</u>	<u>\$ 1,018,350</u>	<u>\$ 942,896</u>
<i>Measurement Date - December 31, 2018</i>						

A schedule of the plans' deferred resources as of June 30, 2020 is below:

	§501(c)(9) Plan		§115 Plan	
	Deferred Outflows of Resources	Deferred Inflows of Resources	Deferred Outflows of Resources	Deferred Inflows of Resources
Changes of Assumptions	\$ 269,568	\$ —	\$ 37,621	\$ —
Differences Between Expected and Actual Experience	—	1,798,948	—	152,522
Net Difference Between Projected and Actual Earnings on Investments	—	1,023,996	—	91,996
Contributions Made Subsequent to the Measurement Date	127,724	—	85,743	—
Total	<u>\$ 397,292</u>	<u>\$ 2,822,944</u>	<u>\$ 123,364</u>	<u>\$ 244,518</u>

A schedule of the plans' deferred resources as of June 30, 2019 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	\$ 370,060	\$ —	\$ 41,015	\$ —
Contributions Made Subsequent to the Measurement Date	258,430	—	121,798	—
Total	<u>\$ 628,490</u>	<u>\$ —</u>	<u>\$ 162,813</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, 2020 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
2021	\$ 475,256	\$ 45,533
2022	475,255	45,534
2023	284,333	30,297
2024	520,040	51,980
2025	182,722	20,337
Thereafter	615,770	13,216

Actuarial Valuation Assumptions

The total OPEB liability as of December 31, 2019 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
2020	Actual	2050-2053	5.0%
2021	7.0%	2054-2059	4.9%
2022	6.5%	2060-2066	4.8%
2023	6.0%	2067	4.7%
2024	5.9%	2068	4.6%
2025	5.8%	2069	4.5%
2026	5.6%	2070-2071	4.4%
2027	5.5%	2072	4.3%
2028	5.4%	2073-2074	4.2%
2029-2046	5.3%	2075	4.1%
2047	5.2%	2076	4.0%
2048-2049	5.1%	Thereafter	4.0%

Additional significant assumptions are listed below for each plan:

Assumption	§501(c)(9) Plan	§115 Plan
Valuation Date	December 31, 2019	December 31, 2019
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>Non-disabled life rates for Regular & Safety employees: Males and Females: Headcount-weighted RP-2014 Healthy Annuitant Table set forward 1 year.</i></p> <p><i>Pre-retirement life rates for Regular & Safety employees: Males and Females: Headcount-weighted RP-2014 Employee Table.</i></p> <p>The mortality rates above were adjusted to anticipate future mortality improvements by applying MacLeod Watts Scale 2018 on a generational basis from 2015 forward.</p>	<p><i>Non-disabled life rates for Regular & Safety employees: Males and Females: Headcount-weighted RP-2014 Healthy Annuitant Table set forward 1 year.</i></p> <p><i>Pre-retirement life rates for Regular & Safety employees: Males and Females: Headcount-weighted RP-2014 Employee Table.</i></p> <p>The mortality rates above were adjusted to anticipate future mortality improvements by applying MacLeod Watts Scale 2018 on a generational basis from 2015 forward.</p>
Long-Term Return on Assets and Discount Rate	6.0% net of plan investment expenses and including inflation	6.0% net of plan investment expenses and including inflation
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	3.0% per year; since benefits do not depend on salary, this is used to allocate the cost of benefits between service years.	3.0% per year; since benefits do not depend on salary, this is used to allocate the cost of benefits between service years.
General Inflation Rate	2.5% per year	2.5% 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>

GASB Statement No. 75 allows reporting liabilities as of any fiscal year end based on: (1) a *valuation date* no more than 30 months plus 1 day prior to the close of the fiscal year end; and (2) a *measurement date* up to one year prior to the close of the fiscal year. The following dates were used for this report:

Fiscal Year End	June 30, 2020
Measurement Date	December 31, 2019
Measurement Period	December 31, 2018 to December 31, 2019
Valuation Date	December 31, 2019

The discount rates used for the measurement periods ended December 31, 2019 and 2018 is 6.0%. Medical Cost Inflation was assumed to start at 7.0% and grade down to 4.0% for years 2076 and thereafter. The impact of a 1% increase or decrease in these assumptions is shown in the charts below for the two measurement periods.

Measurement Date - December 31, 2019

§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	\$ 11,317,631	\$ 10,118,664	\$ 9,100,177	\$ 9,274,689	\$ 10,118,664	\$ 11,127,000
Net OPEB Liability (Asset)	\$ (1,126,452)	\$ (2,325,419)	\$ (3,343,906)	\$ (3,169,394)	\$ (2,325,419)	\$ (1,317,083)

§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	\$ 2,234,476	\$ 1,950,233	\$ 1,715,811	\$ 1,701,710	\$ 1,950,233	\$ 2,257,104
Net OPEB Liability (Asset)	\$ 944,813	\$ 660,570	\$ 426,148	\$ 412,047	\$ 660,570	\$ 967,441

Measurement Date - December 31, 2018

§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	\$ 12,547,968	\$ 11,283,691	\$ 10,199,752	\$ 10,132,109	\$ 11,283,691	\$ 12,794,928
Net OPEB Liability (Asset)	\$ 2,203,603	\$ 939,326	\$ (144,613)	\$ (212,256)	\$ 939,326	\$ 2,450,563

§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	\$ 2,237,539	\$ 1,961,246	\$ 1,731,316	\$ 1,670,402	\$ 1,961,246	\$ 2,347,587
Net OPEB Liability (Asset)	\$ 1,219,189	\$ 942,896	\$ 712,966	\$ 652,052	\$ 942,896	\$ 1,329,237

OPEB Plans Fiduciary Net Position

Detailed information about the OPEB plans fiduciary net position are available in separately issued financial statements and can be requested by contacting TMWA's Finance Department at P.O. Box 30013, Reno, NV 89509-3013.

Note 12 - Commitments

TMWA has committed \$650,000 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 July 2020.

Note 13 - Subsequent Events

In August 2020, TMWA reduced its outstanding commercial paper balance from \$16,000,000 to \$14,500,000 with a payment from unrestricted cash of \$1,500,000.

Required Supplementary Information
Truckee Meadows Water Authority

Truckee Meadows Water Authority
Schedules of Changes in Net OPEB Liability and Related Ratios
Last Ten Fiscal Years*

	2020	2019	2018	2017
§501(c)(9) Plan				
<u>Total OPEB Liability</u>				
Service Cost	\$ 307,252	\$ 295,437	\$ 284,073	\$ 273,146
Interest	682,186	648,751	612,850	576,050
Changes of benefit terms ⁽¹⁾	—	—	—	—
Differences between expected and actual experience	(2,013,876)	—	—	—
Changes of assumptions ⁽²⁾	301,774	—	—	—
Benefit payments	(442,363)	(355,168)	(264,699)	(228,880)
Total OPEB Liability - Beginning	11,283,691	10,694,671	10,062,447	9,442,131
Total OPEB Liability - Ending	\$ 10,118,664	\$ 11,283,691	\$ 10,694,671	\$ 10,062,447
<u>Plan Fiduciary Net Position</u>				
Contributions - employer	\$ 258,430	\$ 324,529	\$ 445,063	\$ 244,429
Net investment income	2,301,207	(524,654)	1,515,031	536,863
Benefit payments	(442,363)	(355,168)	(264,699)	(228,880)
Auditing fees	(12,600)	(18,545)	(15,500)	(12,900)
Investment & administrative fees	(3,206)	(3,441)	(2,612)	(2,490)
Legal fees	(1,750)	(5,250)	(19,268)	(1,663)
Retiree contributions in	103,249	117,015	93,172	90,145
Retiree contributions out	(103,249)	(117,015)	(93,172)	(90,145)
Net change in plan fiduciary net position	2,099,718	(582,529)	1,658,015	535,359
Plan fiduciary net position - beginning	10,344,365	10,926,894	9,268,879	8,733,520
Plan fiduciary net position - ending	\$ 12,444,083	\$ 10,344,365	\$ 10,926,894	\$ 9,268,879
Net OPEB liability - ending	\$ (2,325,419)	\$ 939,326	\$ (232,223)	\$ 793,568
Plan fiduciary net position as a percentage of total OPEB liability	123.0 %	91.7 %	102.2 %	92.1 %
Covered-employee payroll, as of 12/31 measurement date	\$ 21,658,320	\$ 20,674,304	\$ 18,517,678	\$ 17,467,908
Net OPEB liability as a percentage of covered-employee payroll	(10.7)%	4.5 %	(1.3)%	4.5 %

Notes to Schedule

*Historical information is required only for measurement periods for which GASB Statement No. 75 is applicable. Future years' information will be disclosed up to 10 years as information becomes available.

⁽¹⁾ Effective December 13, 2018, the Board adopted a resolution to close the Plan to employees hired on or after December 13, 2018.

⁽²⁾ In 2020, mortality tables were updated from MacLeod Watts Scale 2017 to MacLeod Watts Scale 2018; and the medical trend model was updated from combined sources, Nevada Public Employee Benefit Plan along with other healthcare trends, to the Getzen healthcare trend model.

Truckee Meadows Water Authority
Schedules of Changes in Net OPEB Liability and Related Ratios
Last Ten Fiscal Years*

	2020	2019	2018	2017
§115 Plan				
<u>Total OPEB Liability</u>				
Service Cost	\$ 59,239	\$ 56,960	\$ 54,769	\$ 52,663
Interest	119,591	111,978	103,644	94,941
Changes of benefit terms	—	—	—	—
Differences between expected and actual experience	(179,517)	—	—	—
Changes of assumptions ⁽¹⁾	44,279	—	—	—
Benefit payments	(54,605)	(34,065)	(9,334)	—
Total OPEB Liability - Beginning	<u>1,961,246</u>	<u>1,826,373</u>	<u>1,677,294</u>	<u>1,529,690</u>
Total OPEB Liability - Ending	\$ 1,950,233	\$ 1,961,246	\$ 1,826,373	\$ 1,677,294
<u>Plan Fiduciary Net Position</u>				
Contributions - employer	\$ 121,798	\$ 119,366	\$ 103,441	\$ 151,176
Net investment income	220,823	(46,458)	126,004	35,423
Benefit payments	(54,605)	(34,065)	(9,334)	—
Auditing fees	(12,100)	(13,690)	(6,000)	(8,900)
Investment & administrative fees	(315)	(770)	(780)	(675)
Legal fees	(4,288)	(5,864)	(788)	(1,138)
Retiree contributions in	21,302	5,244	930	—
Retiree contributions out	(21,302)	(5,244)	(930)	—
Net change in plan fiduciary net position	<u>271,313</u>	<u>18,519</u>	<u>212,543</u>	<u>175,886</u>
Plan fiduciary net position - beginning	<u>1,018,350</u>	<u>999,831</u>	<u>787,288</u>	<u>611,402</u>
Plan fiduciary net position - ending	\$ 1,289,663	\$ 1,018,350	\$ 999,831	\$ 787,288
Net OPEB liability - ending	\$ 660,570	\$ 942,896	\$ 826,542	\$ 890,006
Plan fiduciary net position as a percentage of total OPEB liability	66.1 %	51.9 %	54.7 %	46.9 %
Covered-employee payroll, as of 12/31 measurement date	\$ 1,688,340	\$ 1,954,488	\$ 1,951,733	\$ 1,992,447
Net OPEB liability as a percentage of covered-employee payroll	39.1 %	48.2 %	42.3 %	44.7 %

Notes to Schedule

*Historical information is required only for measurement periods for which GASB Statement No. 75 is applicable. Future years' information will be disclosed up to 10 years as information becomes available.

⁽¹⁾ In 2020, mortality tables were updated from MacLeod Watts Scale 2017 to MacLeod Watts Scale 2018; and the medical trend model was updated from combined sources, Nevada Public Employee Benefit Plan along with other healthcare trends, to the Getzen healthcare trend model.

	2020	2019	2018	2017
§501(c)(9) Plan				
Actuarially Determined Contribution	\$ 50,113	\$ 298,077	\$ 284,882	\$ 445,063
Contributions in relation to the actuarially determined contribution	127,724	258,430	324,529	445,063
Contribution deficiency (excess)	(77,611)	39,647	(39,647)	—
Covered-employee payroll	21,402,817	21,538,008	19,282,157	17,924,948
Contributions as a percentage of covered employee payroll	0.6 %	1.2 %	1.7 %	2.5 %
§115 Plan				
Actuarially Determined Contribution	85,743	121,798	119,366	103,441
Contributions in relation to the actuarially determined contribution	70,921	121,798	119,366	103,441
Contribution deficiency (excess)	14,822	—	—	—
Covered-employee payroll	1,714,076	1,841,575	1,955,987	1,965,933
Contributions as a percentage of covered employee payroll	4.1 %	6.6 %	6.1 %	5.3 %

Notes to Schedule

*Historical information is required only for measurement periods for which GASB Statement No. 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
2020	Actual	2050-2053	5.0%
2021	7.0%	2054-2059	4.9%
2022	6.5%	2060-2066	4.8%
2023	6.0%	2067	4.7%
2024	5.9%	2068	4.6%
2025	5.8%	2069	4.5%
2026	5.6%	2070-2071	4.4%
2027	5.5%	2072	4.3%
2028	5.4%	2073-2074	4.2%
2029-2046	5.3%	2075	4.1%
2047	5.2%	2076	4.0%
2048-2049	5.1%	Thereafter	4.0%

Additional significant assumptions are listed below for each plan:

Assumption	§501(c)(9) Plan	§115 Plan
Valuation Date	December 31, 2019	December 31, 2019
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>Non-disabled life rates for Regular & Safety employees: Males and Females: Headcount-weighted RP-2014 Healthy Annuitant Table set forward 1 year.</p> <p>Pre-retirement life rates for Regular & Safety employees: Males and Females: Headcount-weighted RP-2014 Employee Table.</p> <p>The mortality rates above were adjusted to anticipate future mortality improvements by applying MacLeod Watts Scale 2018 on a generational basis from 2015 forward.</p>	<p>Non-disabled life rates for Regular & Safety employees: Males and Females: Headcount-weighted RP-2014 Healthy Annuitant Table set forward 1 year.</p> <p>Pre-retirement life rates for Regular & Safety employees: Males and Females: Headcount-weighted RP-2014 Employee Table.</p> <p>The mortality rates above were adjusted to anticipate future mortality improvements by applying MacLeod Watts Scale 2018 on a generational basis from 2015 forward.</p>
Long-Term Return on Assets and Discount Rate	6.0% net of plan investment expenses and including inflation	6.0% net of plan investment expenses and including inflation
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	3.0% per year; since benefits do not depend on salary, this is used to allocate the cost of benefits between service years.	3.0% per year; since benefits do not depend on salary, this is used to allocate the cost of benefits between service years.
General Inflation Rate	2.5% per year	2.5% 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>
Other Information	In the 2018 and 2017 actuarial valuation, mortality rates were based on the MacLeod Watts Scale 2017 and the healthcare cost trend rates for medical were based on combined sources, Nevada Public Employee Benefit Plan along with other healthcare trends.	In the 2018 and 2017 actuarial valuation, mortality rates were based on the MacLeod Watts Scale 2017 and the healthcare cost trend rates for medical were based on combined sources, Nevada Public Employee Benefit Plan along with other healthcare trends.

	2019	2018	2017	2016	2015	2014
TMWA's proportion of the net pension liability	0.2976 %	0.2761 %	0.2806 %	0.2674 %	0.2345 %	0.2139 %
TMWA's proportionate share of the net pension liability	\$40,582,611	\$37,658,701	\$37,323,782	\$35,783,246	\$26,869,406	\$22,293,306
TMWA's covered payroll	\$20,440,658	\$18,259,883	\$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	198.54 %	206.24 %	207.96 %	219.33 %	190.86 %	177.30 %
Plan fiduciary net position as a percentage of the total pension liability	75.24 %	75.24 %	74.42 %	72.23 %	75.13 %	76.30 %

Notes to Schedule

*Historical information is required only for measurement periods for which GASB Statement No. 68 is applicable. Future years' information will be disclosed up to 10 years as information becomes available.

	2020	2019	2018	2017	2016	2015
Statutorily required contribution	\$3,156,332	\$2,865,963	\$2,562,356	\$5,037,877	\$4,534,811	\$3,629,441
Contributions in relation to the statutorily required contribution	\$3,156,332	\$2,865,963	\$2,562,356	\$5,037,877	\$4,534,811	\$3,629,441
Contribution (deficiency) excess	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —
TMWA's covered payroll	\$21,627,820	\$20,440,658	\$18,259,883	\$17,947,692	\$16,314,669	\$14,077,995
Contributions as a percentage of covered payroll	14.59 %	14.02 %	14.03 %	28.07 %	27.80 %	25.78 %

Notes to Schedule

*Historical information is required only for measurement periods for which GASB Statement No. 68 is applicable. Future years' information will be disclosed up to 10 years as information becomes available.

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

Supplementary Information
June 30, 2020 and 2019

Truckee Meadows Water Authority

Truckee Meadows Water Authority
 Schedule of Revenues, Expenses, and Changes in Net Position - Budget and Actual
 Year Ended June 30, 2020

	Final Budget	Actual	Variance
Operating Revenues			
Charges for water sales	\$ 102,706,086	\$ 102,487,078	\$ (219,008)
Hydroelectric sales	3,664,180	3,298,850	(365,330)
Other operating sales	3,320,950	2,286,729	(1,034,221)
Total operating revenues	<u>109,691,216</u>	<u>108,072,657</u>	<u>(1,618,559)</u>
Operating Expenses			
Salaries and wages	23,183,489	21,455,982	1,727,507
Employee benefits	12,324,771	11,529,749	795,022
Services and supplies	31,125,499	27,808,959	3,316,540
Total operating expenses before depreciation	<u>66,633,759</u>	<u>60,794,690</u>	<u>5,839,069</u>
Depreciation	33,136,228	33,327,134	(190,906)
Total operating expenses	<u>99,769,987</u>	<u>94,121,824</u>	<u>5,648,163</u>
Operating Income	<u>9,921,229</u>	<u>13,950,833</u>	<u>4,029,604</u>
Nonoperating Revenues (Expenses)			
Investment earnings	3,409,815	4,119,737	709,922
Net change in fair value of investments	—	3,410,242	3,410,242
Loss on disposal of assets	—	(1,189,776)	(1,189,776)
Bond/note issue costs and amortization of bond insurance	(190,800)	(216,981)	(26,181)
Interest expense	(13,052,442)	(12,698,972)	353,470
Total nonoperating revenues (expenses)	<u>(9,833,427)</u>	<u>(6,575,750)</u>	<u>3,257,677</u>
Income (Loss) before Capital Contributions	<u>87,802</u>	<u>7,375,083</u>	<u>7,287,281</u>
Capital Contributions			
Grants	1,937,500	232,153	(1,705,347)
Water resource sustainability program	926,425	1,484,443	558,018
Developer infrastructure contributions	15,768,318	20,145,641	4,377,323
Developer will-serve contributions (net of refunds)	5,067,536	4,082,279	(985,257)
Developer capital contributions-other	6,697,000	7,847,962	1,150,962
Developer facility charges (net of refunds)	8,517,248	9,657,274	1,140,026
Contributions from others	—	343,630	343,630
Contributions from other governments	—	386,937	386,937
Net capital contributions	<u>38,914,027</u>	<u>44,180,319</u>	<u>5,266,292</u>
Change in Net Position	<u>\$ 39,001,829</u>	<u>\$ 51,555,402</u>	<u>\$ 12,553,573</u>

Truckee Meadows Water Authority
Schedule of Revenues, Expenses, and Changes in Net Position - Budget and Actual
Year Ended June 30, 2019

	Final Budget	Actual	Variance
Operating Revenues			
Charges for water sales	\$ 100,626,513	\$ 101,776,649	\$ 1,150,136
Hydroelectric sales	2,812,568	2,624,285	(188,283)
Other operating sales	3,404,500	2,688,584	(715,916)
Total operating revenues	<u>106,843,581</u>	<u>107,089,518</u>	<u>245,937</u>
Operating Expenses			
Salaries and wages	21,078,271	20,973,151	105,120
Employee benefits	10,125,919	10,184,189	(58,270)
Services and supplies	28,268,124	28,475,960	(207,836)
Total operating expenses before depreciation	<u>59,472,314</u>	<u>59,633,300</u>	<u>(160,986)</u>
Depreciation	33,862,476	32,833,604	1,028,872
Total operating expenses	<u>93,334,790</u>	<u>92,466,904</u>	<u>867,886</u>
Operating Income	<u>13,508,791</u>	<u>14,622,614</u>	<u>1,113,823</u>
Nonoperating Revenues (Expenses)			
Investment earnings	2,833,548	4,409,486	1,575,938
Net change in fair value of investments	—	2,843,154	2,843,154
Loss on disposal of assets	—	(225,687)	(225,687)
Bond/note issue costs and amortization of bond insurance	(215,748)	(218,132)	(2,384)
Interest expense	(13,436,520)	(13,268,153)	168,367
Other nonoperating expense	—	(233,494)	(233,494)
Total nonoperating revenues (expenses)	<u>(10,818,720)</u>	<u>(6,692,826)</u>	<u>4,125,894</u>
Income (Loss) before Capital Contributions	<u>2,690,071</u>	<u>7,929,788</u>	<u>5,239,717</u>
Capital Contributions			
Grants	1,700,000	831,116	(868,884)
Water meter retrofit program	676,020	994,706	318,686
Water resource sustainability program	—	689,060	689,060
Developer infrastructure contributions	—	19,112,590	19,112,590
Developer will-serve contributions (net of refunds)	3,470,232	4,663,826	1,193,594
Developer capital contributions-other	5,922,000	6,636,417	714,417
Developer facility charges (net of refunds)	4,950,708	9,154,403	4,203,695
Contributions from other governments	—	100,000	100,000
Net capital contributions	<u>16,718,960</u>	<u>42,182,118</u>	<u>25,463,158</u>
Change in Net Position	<u>\$ 19,409,031</u>	<u>\$ 50,111,906</u>	<u>\$ 30,702,875</u>

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 TMWA'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 TMWA'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 TMWA'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 TMWA'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 TMWA'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 TMWA's operations and resources to help the reader understand how the TMWA'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 TMWA'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.

Truckee Meadows Water Authority
Schedule No. 1 - Net Position by Component
Last Ten Fiscal Years

	Fiscal Year									
	2020	2019	2018	Restated 2017	2016	2015*	2014	2013	2012	2011
Net Position										
Net investment in capital assets	\$ 617,541,639	\$ 573,174,076	\$ 533,058,874	\$ 506,700,472	\$ 478,543,111	\$ 444,402,572	\$ 232,327,785	\$ 227,319,870	\$ 222,418,497	\$ 223,410,534
Restricted	41,694,471	29,351,818	30,123,412	28,589,861	40,505,804	42,158,803	25,198,683	22,644,404	13,678,852	22,873,643
Unrestricted	<u>110,507,387</u>	<u>115,662,201</u>	<u>104,893,903</u>	<u>95,037,226</u>	<u>65,933,399</u>	<u>77,312,759</u>	<u>54,036,550</u>	<u>51,471,349</u>	<u>57,107,888</u>	<u>41,907,040</u>
Total Net Position	<u>\$ 769,743,497</u>	<u>\$ 718,188,095</u>	<u>\$ 668,076,189</u>	<u>\$ 630,327,559</u>	<u>\$ 584,982,314</u>	<u>\$ 563,874,134</u>	<u>\$ 311,563,018</u>	<u>\$ 301,435,623</u>	<u>\$ 293,205,237</u>	<u>\$ 288,191,217</u>

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

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
2020	\$108,072,657	\$ 94,121,824	\$ 13,950,833	\$ (6,575,750)	\$ 7,375,083	\$ 44,180,319	\$ —	\$ 51,555,402
2019	107,089,518	92,466,904	14,622,614	(6,692,826)	7,929,788	42,182,118	—	50,111,906
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

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

Truckee Meadows Water Authority
Schedule No. 3 - Operating Revenues by Customer Class
Last Ten Fiscal Years

	Fiscal Year									
	2020	2019	2018	2017	2016	2015*	2014	2013	2012	2011
Revenues from water sales										
Residential unmetered water sales	\$ 2,571,216	\$ 2,558,779	\$ 2,505,172	\$ 2,446,144	\$ 3,725,916	\$ 9,366,307	\$ 9,731,811	\$ 10,288,324	\$ 10,899,330	\$ 11,611,351
Residential metered water sales	73,295,343	71,651,437	67,393,672	65,829,635	60,198,267	51,796,871	44,137,033	43,957,551	41,476,536	37,636,859
Commercial metered water sales	11,888,963	12,807,427	12,238,940	11,369,179	11,026,132	11,339,953	10,755,824	10,885,539	10,473,659	10,214,401
Irrigation metered & fire protection	13,457,574	13,509,567	12,169,406	11,887,395	11,554,063	11,123,168	10,720,156	11,031,924	10,129,233	9,007,523
Wholesale sales	1,273,982	1,249,439	1,165,607	1,154,907	1,029,954	2,560,399	3,845,593	3,748,276	3,473,100	2,938,106
Total water sales	102,487,078	101,776,649	95,472,797	92,687,260	87,534,332	86,186,698	79,190,417	79,911,614	76,451,858	71,408,240
Hydroelectric revenue	3,298,850	2,624,285	3,757,043	1,788,934	1,175,195	1,366,786	3,045,147	3,557,965	3,519,897	3,079,158
Other operating revenues	2,286,729	2,688,584	2,582,252	2,791,989	3,219,416	2,475,832	2,079,826	2,107,528	1,818,744	1,759,035
Total operating revenues	<u>\$ 108,072,657</u>	<u>\$ 107,089,518</u>	<u>\$101,812,092</u>	<u>\$ 97,268,183</u>	<u>\$ 91,928,943</u>	<u>\$ 90,029,316</u>	<u>\$ 84,315,390</u>	<u>\$ 85,577,107</u>	<u>\$ 81,790,499</u>	<u>\$ 76,246,433</u>

* Fiscal Year 2015 reflect changes as a result of the water utility consolidation discussed in Note 1 of the financial statements.

Truckee Meadows Water Authority
 Schedule No. 4 - Operating Expenses
 Last Ten Fiscal Years

	Fiscal Year									
	2020	2019	2018	2017	2016	2015*	2014	2013	2012	2011
Salaries and wages	\$ 21,455,982	\$ 20,973,151	\$ 18,735,892	\$ 17,257,014	\$ 16,541,811	\$ 13,763,006	\$ 12,007,022	\$ 11,128,162	\$ 11,049,337	\$ 11,180,101
Employee benefits	11,529,749	10,184,189	12,919,692	8,931,838	6,364,279	5,271,735	5,045,922	4,819,187	4,537,531	4,378,347
Contract services	9,169,895	8,191,575	8,678,689	6,204,863	7,335,521	6,321,061	4,826,066	4,868,532	5,090,741	5,488,432
Utilities/power	5,693,594	5,953,121	5,322,771	5,201,870	5,386,413	5,449,347	5,189,312	4,571,453	4,432,932	6,639,620
Prof services (general/legal/media/leg)	2,406,428	2,821,923	2,905,859	2,258,454	2,512,154	3,132,132	2,538,097	1,610,614	1,254,751	1,909,575
Supplies	2,534,762	2,660,187	2,317,853	2,635,229	2,700,906	2,572,699	1,736,763	1,522,106	1,155,351	1,112,419
Chemicals	1,873,444	2,286,659	1,605,280	1,984,300	1,803,614	1,554,496	1,383,824	1,333,002	1,361,144	1,653,424
Insurance and claims	978,791	847,844	675,430	719,604	742,006	684,021	501,300	534,577	608,352	647,983
Leases and rentals	143,604	256,836	104,243	146,999	96,290	79,640	70,196	74,596	84,844	69,472
Other expenses	5,008,441	5,457,815	4,225,193	4,829,445	4,998,323	3,387,273	3,802,687	3,810,821	3,645,078	3,318,784
Total operating expenses before depreciation	60,794,690	59,633,300	57,490,902	50,169,616	48,481,317	42,215,411	37,101,189	34,273,049	33,220,059	36,398,157
Depreciation	33,327,134	32,833,604	32,820,720	32,169,578	32,134,190	27,899,449	22,517,885	22,349,225	22,322,217	21,990,618
Total Operating Expenses	<u>\$ 94,121,824</u>	<u>\$ 92,466,904</u>	<u>\$ 90,311,622</u>	<u>\$ 82,339,194</u>	<u>\$ 80,615,507</u>	<u>\$ 70,114,860</u>	<u>\$ 59,619,074</u>	<u>\$ 56,622,274</u>	<u>\$ 55,542,276</u>	<u>\$ 58,388,775</u>

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

Truckee Meadows Water Authority
 Schedule No. 5 - Nonoperating Revenues and Expenses
 Last Ten Fiscal Years

Fiscal Year	Investment Earnings	Interest Expense	Gain/(Loss) on Disposal of Assets	Other Revenue or Expenses	Total Nonoperating Expenses
2020	\$ 4,119,737	\$ (12,698,972)	\$ (1,189,776)	\$ 3,193,261	\$ (6,575,750)
2019	4,409,486	(13,268,153)	(225,687)	2,391,528	(6,692,826)
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)	(611,086)	305,640	(19,814,823)
2011	2,322,169	(22,431,967)	(4,705)	(1,963,275)	(22,077,778)

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

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	Grants	Water Resource Sustainability Program	From Others	Total
2020	\$ 4,082,279	\$ 20,145,641	\$ 7,847,962	\$ —	\$ 9,657,274	\$ 232,153	\$ 1,484,443	\$ 730,567	\$ 44,180,319
2019	4,663,826	19,112,590	6,636,417	994,706	9,154,403	831,116	689,060	100,000	42,182,118
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	791,773	—	82,556	1,900,835
2011	125,123	507,970	126,899	170,201	252,748	274,837	—	150,000	1,607,778

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

Truckee Meadows Water Authority
Schedule No. 7 - Gallons of Water Sold and Revenues by Category
Last Ten Fiscal Years

Category	2020		2019	
	Gallons		Gallons	
	Sold (000)	Revenue	Sold (000)	Revenue
Residential-Unmetered (1)	—	\$ 2,571,216	—	\$ 2,558,779
Residential Metered	17,111,305	73,295,343	16,970,042	71,651,437
Commercial	3,952,196	11,888,963	4,315,407	12,807,427
Other (2)	2,896,243	13,457,574	2,974,110	13,509,567
Wholesale	606,627	1,273,982	619,928	1,249,439
Total	24,566,371	\$ 102,487,078	24,879,487	\$ 101,776,649
	2018		2017	
	Gallons		Gallons	
	Sold (000)	Revenue	Sold (000)	Revenue
Residential-Unmetered (1)	—	\$ 2,505,172	—	\$ 2,446,145
Residential Metered	16,335,308	67,393,672	16,487,693	65,829,634
Commercial	4,232,836	12,238,940	4,277,917	11,887,395
Other (2)	2,698,977	12,169,406	2,749,795	11,369,179
Wholesale	591,624	1,165,607	613,051	1,154,907
Total	23,858,745	\$ 95,472,797	24,128,456	\$ 92,687,260
	2016		2015*	
	Gallons		Gallons	
	Sold (000)	Revenue	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	21,841,659	\$ 87,534,332	24,015,050	\$ 86,186,698
	2014		2013	
	Gallons		Gallons	
	Sold (000)	Revenue	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	20,253,396	\$ 79,190,417	20,799,458	\$ 79,911,614
	2012		2011	
	Gallons		Gallons	
	Sold (000)	Revenue	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	19,354,313	\$ 76,451,858	18,011,521	\$ 71,408,240

* 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.

Truckee Meadows Water Authority

Schedule No. 8 - Ten Largest Customers

June 30, 2020

Customer Name	Water Used (000s Gallons)	Total Revenue	% of Total Water Sales
1. Sun Valley Water	606,627	\$ 1,215,965	1.2 %
2. Washoe County School District	329,598	1,038,233	1.0 %
3. City of Reno	261,011	937,478	0.9 %
4. City of Sparks	135,985	491,722	0.5 %
5. Washoe County	152,639	489,108	0.5 %
6. Somersett HOA	109,926	398,410	0.4 %
7. University of Nevada, Reno	133,787	356,734	0.4 %
8. Nevada Properties, Peppermill	124,628	353,156	0.3 %
9. Renown System	97,376	298,692	0.3 %
10. GSR Holdings, LLC	124,707	231,182	0.2 %
Totals	<u>2,076,284</u>	<u>\$ 5,810,680</u>	<u>5.7 %</u>

City of Reno includes the Reno Housing Authority.

Truckee Meadows Water Authority
 Schedule No. 9 - Debt Service Coverage Ratios
 Last Ten Fiscal Years

	Fiscal Year (in millions)									
	2020	2019	2018	2017	2016	2015*	2014	2013	2012	2011
Operating revenues ⁽¹⁾	\$ 102,487	\$ 101,777	\$ 95,473	\$ 92,687	\$ 87,534	\$ 86,187	\$ 79,190	\$ 79,912	\$ 76,452	\$ 71,408
Nonoperating revenues ⁽²⁾	9,705	9,722	8,653	11,790	11,132	5,970	7,176	7,672	7,643	7,253
Gross revenues	112,192	111,499	104,126	104,477	98,666	92,157	86,366	87,584	84,095	78,661
Operation and maintenance expenses ⁽³⁾	60,076	58,955	57,021	50,958	48,030	41,772	35,850	36,672	33,851	32,802
Taxes other than income taxes ⁽⁴⁾	719	678	470	462	451	443	440	429	422	418
Total expenses	60,795	59,633	57,491	51,420	48,481	42,215	36,290	37,101	34,273	33,220
Net Revenues	\$ 51,398	\$ 51,866	\$ 46,635	\$ 53,057	\$ 50,185	\$ 49,942	\$ 50,076	\$ 50,483	\$ 49,822	\$ 45,441
Senior Lien Annual Debt Service ⁽⁵⁾	\$ 28,186	\$ 17,891	\$ 15,696	\$ 18,916	\$ 31,780	\$ 29,955	\$ 31,285	\$ 29,672	\$ 21,295	\$ 31,191
Senior Lien Debt Coverage excluding SDCs	1.82	2.90	2.97	2.80	1.58	1.67	1.60	1.70	2.34	1.46
System Development Charges (SDCs):										
Developer facility charges	\$ 9,657	\$ 9,154	\$ 6,465	\$ 5,117	\$ 2,932	\$ 2,494	\$ 964	\$ 1,048	\$ 263	\$ 253
Developer capital contributions - other	7,848	6,636	6,449	6,062	2,473	1,588	410	470	153	127
Senior Lien Debt Coverage including SDCs ⁽⁶⁾	2.44	3.78	3.79	3.40	1.75	1.80	1.64	1.75	2.36	1.47

* 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 years 2017, 2018 and 2019, TMWA deferred principal payments on debt which increased the debt coverage ratio.

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
2020	4,194	— ⁽¹⁾	4,103
2019	4,307	4,709	3,890
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

Source: As reported by each local governmental entity.

⁽¹⁾ Entity was unable to provide data.

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)	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)
2020	472,069	\$ 60	38.1	66,913	\$ 27,776,003	3.2 %	255,915	\$ 450,868,000	617	\$9,250,416,000	\$ 630,862,000	3,378,405
2019	464,630	55	38.0	66,960	22,556,498	3.6 %	250,005	458,823,000	572	8,829,864,000	785,532,000	4,298,555
2018	460,237	49	37.9	66,989	22,549,907	4.2 %	239,119	345,710,000	481	8,531,253,000	779,347,000	4,128,476
2017	459,142	48	37.5	63,919	21,265,000	4.0 %	232,719	240,534,583	394	7,989,009,111	805,557,000	3,819,896
2016	451,248	51	37.5	63,670	20,165,000	5.9 %	231,570	231,741,537	320	7,550,466,734	789,359,000	3,563,818
2015	441,165	48	37.4	63,108	19,077,000	6.4 %	228,430	246,627,580	255	6,817,588,648	765,248,320	3,297,642
2014	436,647	48	37.6	62,986	18,833,000	7.2 %	222,607	225,096,997	198	6,370,684,534	744,962,250	3,312,839
2013	434,120	47	37.6	62,424	18,284,145	9.8 %	219,607	126,468,377	159	5,824,726,136	741,038,030	3,514,421
2012	427,704	45	37.4	62,323	17,849,009	12.3 %	221,764	95,875,949	83	5,522,605,351	738,151,877	3,561,557
2011	421,593	49	37.2	62,324	17,944,975	13.2 %	212,480	67,721,019	55	5,282,935,192	751,466,957	3,795,421

Sources:

- (1) US Census-Nevada, 2011 - 2012. Washoe County Community Development, 2013 - 2017. Washoe County Schedule 4.1, 2018, 2019, 2020
- (2) U.S. Department of Commerce, 2008. Washoe County Community Demographic Information 2009 - 2017. Washoe County Schedule 4.1, 2018, 2019, 2020
- (3) Center for Regional Studies, University of Nevada, Reno 2011 - 2017. Washoe County Schedule 4.1, 2018, 2019, 2020
- (4) Washoe County School District. Washoe County Schedule 4.1, 2018, 2019, 2020
- (5) State Department of Employment, Training and Rehabilitation (DETR). Washoe County Schedule 4.1, 2018, 2019, 2020
- (6) Washoe County Building and Safety. Department. Washoe County Schedule 4.1, 2018, 2019, 2020
- (7) Nevada State Department of Taxation. Washoe County Schedule 4.1, 2018, 2019, 2020
- (8) Nevada State Gaming Control Board. Washoe County Schedule 4.1, 2018, 2019, 2020
- (9) Reno/Tahoe International Airport. (RTIA) Washoe County Schedule 4.1, 2018, 2019, 2020

Truckee Meadows Water Authority
 Schedule No. 12 - Principal Employers
 Current and Nine Years Ago

Employer	December, 2019			December, 2010		
	Employees	Rank	Percentage of Total County Employment	Employees	Rank	Percentage of Total County Employment
Washoe County School District	8,750	1	3.47 %	7,750	1	4.22 %
Renown Medical Center	7,500	2	1.88 %	4,750	2	2.58 %
University of Nevada - Reno	4,750	3	2.97 %	2,250	4	1.22 %
Peppermill Hotel Casino - Reno	3,000	4	1.19 %	2,250	5	1.22 %
Grand Sierra Resort	3,000	5	1.19 %	1,750	9	0.95 %
Silver Legacy Resort Casino	3,000	6	1.19 %	1,750	7	0.95 %
Harrahs	3,000	7	1.19 %	—	—	—
Eldorado Hotel & Casino	3,000	8	1.19 %	—	—	—
St. Mary's	3,000	9	1.19 %	1,750	10	0.95 %
Washoe County	2,800	10	1.11 %	2,750	3	1.50 %
Atlantis Casino Resort	—	—	—	1,750	8	0.95 %
International Game Technology PLC2	—	—	—	2,250	6	1.22 %
Total Washoe Covered Employment	<u>252,484</u>			<u>183,850</u>		

Note: Each of the years reflect respective 4th quarter calendar year information. Nevada Revised Statutes Chapter 612 stipulate that actual employment for individual employers may not be published. The Nevada Department of Employment Training and Rehabilitation outsources the publication of this information to Infogroup. Infogroup publishes employee counts in ranges of 5000. The number of employees are estimated using the midpoint.

Source: Nevadaworkforce.com

Nevada Employment and Unemployment Data (DES and Laus)

Washoe County Schedule 4.2

Truckee Meadows Water Authority
 Schedule No. 13 - Customer and Water Sales by Category
 Last Ten Fiscal Years

2020				
Category	Average Number of Accounts	% of Total Accounts	Fiscal Year Water Revenues ⁽¹⁾	% of Total Revenues
Residential unmetered	652	0.51 %	\$ 2,571,216	2.51 %
Residential metered	116,104	91.41 %	73,295,343	71.52 %
Commercial metered	10,262	8.08 %	11,888,963	11.60 %
Other ⁽²⁾	2	— %	13,457,574	13.13 %
Wholesale	2	— %	1,273,982	1.24 %
Total	127,022	100.00 %	\$ 102,487,078	100.00 %

2019				
Category	Average Number of Accounts	% of Total Accounts	Fiscal Year Water Revenues ⁽¹⁾	% of Total Revenues
Residential unmetered	663	0.53 %	\$ 2,558,779	2.51 %
Residential metered	113,934	91.33 %	71,651,437	70.41 %
Commercial metered	10,161	8.14 %	12,807,427	12.58 %
Other ⁽²⁾	2	— %	13,509,567	13.27 %
Wholesale	2	— %	1,249,439	1.23 %
Total	124,762	100.00 %	\$ 101,776,649	100.00 %

2018				
Category	Average Number of Accounts	% of Total Accounts	Fiscal Year Water Revenues ⁽¹⁾	% of Total Revenues
Residential unmetered	672	0.55 %	\$ 2,505,172	2.62 %
Residential metered	111,963	91.27 %	67,393,672	70.59 %
Commercial metered	10,038	8.18 %	12,238,940	12.82 %
Other ⁽²⁾	2	— %	12,169,406	12.75 %
Wholesale	2	— %	1,165,607	1.22 %
Total	122,677	100.00 %	\$ 95,472,797	100.00 %

2017				
Category	Average Number of Accounts	% of Total Accounts	Fiscal Year Water Revenues ⁽¹⁾	% of Total Revenues
Residential unmetered	695	0.58 %	\$ 2,446,144	2.64 %
Residential metered	109,939	91.18 %	65,829,635	71.01 %
Commercial metered	9,931	8.24 %	11,369,179	12.27 %
Other ⁽²⁾	2	— %	11,887,395	12.83 %
Wholesale	2	— %	1,154,907	1.25 %
Total	120,569	100.00 %	\$ 92,687,260	100.00 %

2016				
Category	Average Number of Accounts	% of Total Accounts	Fiscal Year Water Revenues ⁽¹⁾	% of Total Revenues
Residential unmetered	2,062	1.74 %	\$ 3,725,916	4.26 %
Residential metered	106,730	89.94 %	60,198,267	68.76 %
Commercial metered	9,873	8.32 %	11,026,132	12.60 %
Other ⁽²⁾	3	— %	11,554,063	13.20 %
Wholesale	1	— %	1,029,954	1.18 %
Total	118,669	100.00 %	\$ 87,534,332	100.00 %

Truckee Meadows Water Authority
Schedule No. 13 - Customer and Water Sales by Category
Last Ten Fiscal Years

2015*				
Category	Average Number of Accounts	% of Total Accounts	Fiscal Year Water Revenues ⁽¹⁾	% of Total Revenues
Residential unmetered	6,224	5.15 %	\$ 9,366,307	10.87 %
Residential metered	100,446	83.12 %	51,796,871	60.09 %
Commercial metered	9,648	7.98 %	11,339,953	13.16 %
Other ⁽²⁾	4,528	3.75 %	11,123,168	12.91 %
Wholesale	2	— %	2,560,399	2.97 %
Total	<u>120,848</u>	<u>100.00 %</u>	<u>\$ 86,186,698</u>	<u>100.00 %</u>
2014				
Category	Average Number of Accounts	% of Total Accounts	Fiscal Year Water Revenues ⁽¹⁾	% of Total Revenues
Residential unmetered	6,379	6.68 %	\$ 9,731,811	12.29 %
Residential metered	76,422	79.98 %	44,137,033	55.73 %
Commercial metered	8,743	9.15 %	10,755,824	13.58 %
Other ⁽²⁾	4,008	4.19 %	10,720,156	13.54 %
Wholesale	2	— %	3,845,593	4.86 %
Total	<u>95,554</u>	<u>100.00 %</u>	<u>\$ 79,190,417</u>	<u>100.00 %</u>
2013				
Category	Average Number of Accounts	% of Total Accounts	Fiscal Year Water Revenues ⁽¹⁾	% of Total Revenues
Residential-Unmetered	6,927	7.31 %	\$ 10,288,324	12.87 %
Residential Metered	75,113	79.31 %	43,957,551	55.01 %
Commercial and Irrigation	8,702	9.19 %	10,885,539	13.62 %
Other ⁽²⁾	3,965	4.19 %	11,031,924	13.81 %
Wholesale	2	— %	3,748,276	4.69 %
Total	<u>94,709</u>	<u>100.00 %</u>	<u>\$ 79,911,614</u>	<u>100.00 %</u>
2012				
Category	Average Number of Accounts	% of Total Accounts	Fiscal Year Water Revenues ⁽¹⁾	% of Total Revenues
Residential unmetered	7,699	8.16 %	\$ 10,899,330	14.26 %
Residential metered	73,836	78.29 %	41,476,536	54.25 %
Commercial metered	8,695	9.22 %	10,473,659	13.70 %
Other ⁽²⁾	4,088	4.33 %	10,129,233	13.25 %
Wholesale	2	— %	3,473,100	4.54 %
Total	<u>94,320</u>	<u>100.00 %</u>	<u>\$ 76,451,858</u>	<u>100.00 %</u>
2011				
Category	Average Number of Accounts	% of Total Accounts	Fiscal Year Water Revenues ⁽¹⁾	% of Total Revenues
Residential unmetered	8,685	9.26 %	\$ 11,611,351	16.26 %
Residential metered	72,457	77.26 %	37,636,859	52.72 %
Commercial metered	8,564	9.13 %	10,214,401	14.30 %
Other ⁽²⁾	4,078	4.35 %	9,007,523	12.61 %
Wholesale	2	— %	2,938,106	4.11 %
Total	<u>93,786</u>	<u>100.00 %</u>	<u>\$ 71,408,240</u>	<u>100.00 %</u>

* 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.

Coverage	Carrier/Policy	Term	Limits/Deductible
Property/Boiler and Machinery Policy	America Home Assurance Company (AIG)	6/11/2017 to 6/11/2020	Blanket limit of \$370,444,139 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	6/11/2019 to 6/11/2020	First \$1,000,000 in liability limits. General Liability Aggregate limit of \$3,000,000 Inland Marine Physical Damage \$1,014,750. General liability deductible of \$25,000 per occurrence. Auto Physical Damage deductible of \$1,000.
Excess Umbrella Liability Policy	Philadelphia Indemnity Insurance Company	6/11/2019 to 6/11/2020	First Layer Excess Liability limit of \$10,000,000.
	Travelers Insurance Company	6/11/2019 to 6/11/2020	Second Layer Excess Liability Limit of \$10,000,000.
Workers' Compensation	Employer's Insurance Company of Nevada	6/11/2019 to 6/11/2020	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	6/11/2019 to 6/11/2020	Varies by plan selected.
Commercial Crime/ Government Crime	Fidelity & Deposit Company of Maryland	6/11/2019 to 6/11/2020	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	6/11/2019 to 6/11/2020	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	6/11/2016 to 6/11/2022	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

Truckee Meadows Water Authority

Schedule No. 15 - Authorized Full-Time Equivalent Employees by Department ⁽¹⁾
Last Ten Fiscal Years ⁽²⁾

	Fiscal Year									
	2020	2019	2018	2017	2016	2015*	2014	2013	2012	2011
Administration/IT	33	30	28	25	28	22	20	18	20	22
Supply/Treatment Operations	48	44	40	40	32	30	31	26	27	28
Distribution Maintenance	71	71	65	65	63	62	48	45	44	42
Hydroelectric	8	7	7	7	6	6	6	7	8	7
Customer Service/Conservation	26	23	23	25	25	24	20	26	33	28
Water Planning/Resources	15	15	15	17	19	19	13	15	12	13
Engineering/Construction	30	31	28	25	24	23	14	15	11	14
Total Authorized Employees	231	221	206	204	197	186	152	152	155	154

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

⁽¹⁾ Source - Truckee Meadows Water Authority Budget

⁽²⁾ The number of employees shown are approved full-time equivalent positions. Actual employee numbers may be less if there are vacant positions at year end.

Truckee Meadows Water Authority
 Schedule No. 16 - Current and Historical Water Rates
 Last Ten Fiscal Years

Fiscal Year																					
2020			2019			2018			2017			2016			2015*			2014	2013	2012	2011
TMWA	WC	STMGID	TMWA	WC	STMGID	TMWA	WC	STMGID	TMWA	WC	STMGID	TMWA	WC	STMGID	TMWA	WC	STMGID	TMWA	WC	STMGID	

Customer Charges by Meter Size

3/4"	19.67	18.49	10.07	19.67	18.49	10.07	19.67	18.49	10.07	19.10	17.95	9.77	18.54	17.43	9.49	18.54	17.43	9.49	18.54	17.12	17.12	15.70
1"	21.64	23.79	12.32	21.64	23.79	12.32	21.64	23.79	12.32	21.01	23.09	11.96	20.40	22.42	11.61	20.40	22.42	11.61	20.40	18.80	18.80	17.30
1 1/2"	24.61	34.02	17.47	24.61	34.02	17.47	24.61	34.02	17.47	23.90	33.03	16.96	23.20	32.07	16.47	23.20	32.07	16.47	23.20	21.40	21.40	19.60
2"	28.54	45.36	n/a	28.54	45.36	n/a	28.54	45.36	n/a	27.71	44.04	n/a	26.90	42.76	n/a	26.90	42.76	n/a	26.90	24.80	24.80	22.80
3"	32.46	73.04	n/a	32.46	73.04	n/a	32.46	73.04	n/a	31.52	70.92	n/a	30.60	68.85	n/a	30.60	68.85	n/a	30.60	28.20	28.20	25.90
4"	37.34	106.98	n/a	37.34	106.98	n/a	37.34	106.98	n/a	36.26	103.87	n/a	35.20	100.84	n/a	35.20	100.84	n/a	35.20	32.50	32.50	29.80
6"	43.28	195.05	n/a	43.28	195.05	n/a	43.28	195.05	n/a	42.02	189.37	n/a	40.80	183.85	n/a	40.80	183.85	n/a	40.80	37.70	37.70	34.50

Commodity Charge (all meter sizes)

TMWA Tier 1	1.82			1.82			1.82			1.77			1.72			1.72			1.72	1.72	1.72	1.72
TMWA Tier 2	2.95			2.95			2.95			2.86			2.78			2.78			2.78	2.78	2.78	2.78
TMWA Tier 3	3.45			3.45			3.45			3.35			3.25			3.25			3.25	3.25	3.25	3.25

WC Tier 1		2.78			2.78			2.78			2.70			2.62			2.62					
WC Tier 2		3.47			3.47			3.47			3.37			3.27			3.27					
WC Tier 3		4.17			4.17			4.17			4.05			3.93			3.93					
WC Tier 4		5.57			5.57			5.57			5.41			5.25			5.25					

STMGID Tier 1			1.44			1.44			1.44			1.40			1.36			1.36				
STMGID Tier 2			1.91			1.91			1.91			1.85			1.80			1.80				
STMGID Tier 3			2.34			2.34			2.34			2.28			2.21			2.21				
STMGID Tier 4			2.74			2.74			2.74			2.66			2.58			2.58				
STMGID Tier 5			2.90			2.90			2.90			2.81			2.73			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	47.65	n/a	n/a	47.65	n/a	n/a	46.26	100.63	89.82	44.91	n/a	n/a	46.26	100.63	94.10	94.10	86.30
1"	n/a	n/a	47.65	n/a	n/a	47.65	n/a	n/a	47.65	n/a	n/a	46.26	144.90	90.18	44.91	n/a	n/a	46.26	144.90	135.50	135.50	124.30
1 1/2"	n/a	n/a	47.65	n/a	n/a	47.65	n/a	n/a	47.65	n/a	n/a	46.26	262.60	92.12	44.91	n/a	n/a	46.26	262.60	245.60	245.60	225.20
2"	n/a	n/a	47.65	n/a	n/a	47.65	n/a	n/a	47.65	n/a	n/a	46.26	374.30	93.55	44.91	n/a	n/a	46.26	374.30	350.10	350.10	321.00
3"	n/a	n/a	47.65	n/a	n/a	47.65	n/a	n/a	47.65	n/a	n/a	46.26	469.90	94.96	44.91	n/a	n/a	46.26	469.90	439.40	439.40	403.00
4"	n/a	n/a	47.65	n/a	n/a	47.65	n/a	n/a	47.65	n/a	n/a	46.26	595.70	99.18	44.91	n/a	n/a	46.26	595.70	557.10	557.10	510.00
6"	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	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.*

Truckee Meadows Water Authority
 Schedule No. 17 - Selected Operating and Capital Indicators
 Last Ten Fiscal Years

	Fiscal Year									
	2020	2019	2018	2017	2016	2015*	2014	2013	2012	2011
Miles of water mains	2,048	2,019	1,986	1,961	1,940	1,915	1,341	1,337	1,352	1,339
Number of storage tanks	95	95	93	93	93	93	42	42	42	42
Number of Finished Water Storage	2	2	2	2	2	2	2	2	2	2
Number of pump stations	115	114	113	113	121	112	93	94	95	94
Number of wells	99	100	82	81	79	86	32	32	32	32
Treatment capacity (millions of gallons/day)										
Glendale Plant	34.5	34.5	34.5	34.5	34.5	37.5	37.5	37.5	37.5	25.0
Chalk Bluff	90.0	90.0	90.0	90.0	90.0	95.0	95.0	95.0	95.0	95.0
Longley Lane	3.6	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.

12-16-20 BOARD Agenda Item 11
 12-01-20 SAC Agenda Item 6
Truckee Meadows Water Authority
 Schedule No. 18 - Schedule of Changes in Debt
 Last Ten Fiscal Years

	Final Maturity Date	Authorized	Balance	Balance	Balance	Balance	Balance	Balance	Balance	Balance	Balance	Balance
			June 30, 2020	June 30, 2019	June 30, 2018	June 30, 2017	June 30, 2016	June 30, 2015	June 30, 2014	June 30, 2013	June 30, 2012	June 30, 2011
2001 A Water Revenue (Tax Exempt) Bonds 3.70%-5.50%	7/1/2034	\$ 448,810,000	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —	\$ 8,810,000
2005 Water Revenue DWSRF (Tax Exempt) Bonds 3.21%	1/1/2025	4,669,565	1,543,918	1,824,283	2,095,861	2,358,926	2,613,744	2,860,578	3,099,675	3,331,277	3,555,620	3,772,931
2005 A Water Revenue (Tax Exempt) Bonds 4.25%-5.00%	7/1/2036	40,000,000	—	—	—	—	—	890,000	34,795,000	35,620,000	36,415,000	37,180,000
2006 Water Revenue (Tax Exempt) Refunding Bonds 3.50%-4.875%	7/1/2034	150,745,000	—	—	—	—	400,000	148,415,000	148,785,000	149,140,000	149,485,000	149,815,000
2007 Water Revenue (Tax Exempt) Refunding Bonds 4.00%-5.00%	7/1/2030	218,975,000	—	—	—	—	214,290,000	214,800,000	215,285,000	215,745,000	216,185,000	216,605,000
2009 A Water Revenue DWSRF ARRA (Tax Exempt) Bonds 0%	7/1/2029	2,401,120	1,174,853	1,298,522	1,422,190	1,545,859	1,669,527	1,793,196	1,916,866	2,040,534	2,164,202	2,282,661
2010 Water Revenue (Tax Exempt) Refunding Bonds 5.00%	7/1/2015	28,240,000	—	—	—	—	—	9,435,000	19,855,000	28,240,000	28,240,000	28,240,000
2010 A Water Revenue DWSRF (Tax Exempt) Bonds 3.25%	1/1/2030	4,381,614	2,861,847	3,100,507	3,331,595	3,555,353	3,772,013	3,981,798	4,184,928	4,381,614	4,381,614	3,921,904
2014 Water Revenue DWSRF (Tax Exempt) Bonds 2.81%	1/1/2025	9,109,437	4,670,879	5,529,367	6,364,231	7,176,120	7,965,667	8,733,487	—	—	—	—
2015-A Water Revenue (Tax Exempt) Refunding Bonds 2.00%-5.00%	7/1/2036	28,750,000	25,260,000	26,185,000	27,070,000	27,920,000	28,750,000	28,750,000	—	—	—	—
2015-B Water Revenue DWSRF (Tax Exempt) Bonds 2.62%	1/1/2035	15,000,000	7,792,841	8,195,717	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	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	147,415,000	147,415,000	—	—	—	—	—	—
2018 Water Revenue (Tax Exempt) Refunding Bonds 5.00%	7/1/2039	38,835,000	38,835,000	38,835,000	38,835,000	—	—	—	—	—	—	—
Subtotal			354,344,338	357,173,396	359,912,922	323,732,820	392,489,985	419,659,059	427,921,468	438,498,425	440,426,436	450,627,496
Less unamortized net bond discount (premium)			(42,447,151)	(47,320,705)	(52,014,598)	(51,182,862)	(28,441,399)	(3,673,290)	(35,590)	(661,198)	(1,286,806)	(3,440,321)
Total debt before tax exempt commercial paper			396,791,489	404,494,101	411,927,520	374,915,682	420,931,384	423,332,349	427,957,058	439,159,623	441,713,242	454,067,817
Tax-Exempt Commercial Paper		\$ 69,600,000	16,000,000	23,500,000	30,000,000	83,400,000	87,800,000	95,000,000	68,000,000	68,000,000	79,400,000	79,400,000
Total Debt			<u>\$ 412,791,489</u>	<u>\$ 427,994,101</u>	<u>\$ 441,927,520</u>	<u>\$ 458,315,682</u>	<u>\$ 508,731,384</u>	<u>\$ 518,332,349</u>	<u>\$ 495,957,058</u>	<u>\$ 507,159,623</u>	<u>\$ 521,113,242</u>	<u>\$ 533,467,817</u>

Truckee Meadows Water Authority
Schedule No. 19 - Debt by Service Connection
Last Ten Fiscal Years

	Fiscal Year									
	2020	2019	2018	2017	2016	2015*	2014	2013	2012	2011
Total Debt	\$ 354,344,338	\$ 357,173,396	\$ 359,912,922	\$ 323,732,820	\$ 392,489,985	\$ 419,659,060	\$ 427,921,468	\$ 438,498,425	\$ 440,426,436	\$ 450,627,496
Total Service Connections	127,977	125,911	123,845	121,572	119,772	114,529	89,070	88,268	87,464	87,013
Debt per Service Connection	<u>\$ 2,769</u>	<u>\$ 2,837</u>	<u>\$ 2,906</u>	<u>\$ 2,663</u>	<u>\$ 3,277</u>	<u>\$ 3,664</u>	<u>\$ 4,804</u>	<u>\$ 4,968</u>	<u>\$ 5,036</u>	<u>\$ 5,179</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.

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, 2020 and 2019, and the related notes to the financial statements, which collectively comprise TMWA's basic financial statements, and have issued our report thereon dated November 25, 2020.

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) as a basis for designing 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 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 financial statements. 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 Sully LLP".

Reno, Nevada
November 25, 2020



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, 2020, 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

There were no potential statute violations reported in the June 30, 2019 audit report.

Prior Year Recommendations

There were no findings for the year ended June 30, 2019.

Current Year Recommendations

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

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

Reno, Nevada
November 25, 2020



TO: Board of Directors
THRU: Mark Foree, General Manager
FROM: Michele Sullivan, Chief Financial Officer
 Matt Bowman, Financial Controller
DATE: November 23, 2020
SUBJECT: **Presentation of Financial Performance for First Quarter Fiscal Year 2021**

Summary

Please refer to Attachments A-1 and A-2 for full Statements of Revenues, Expenses and Changes in Net Position for both actual to budget and year-over-year comparisons as discussed in the report below.

Budget to Actual

	Actual YTD 2021	Budget YTD 2021	Variance \$	Variance %
CHANGE IN NET POSITION	\$ 22,799,050	\$ 19,042,308	\$ 3,756,742	20 %

Change in net position was \$3.8m or 20% higher than budget for the first quarter fiscal year 2021. This was due to higher operating income of \$3.7m and higher capital contributions of \$0.7m, offset by higher nonoperating expenses of \$0.6m.

Year over Year

	Actual YTD 2021	Actual YTD 2020	Variance \$	Variance %
CHANGE IN NET POSITION	\$ 22,799,050	\$ 22,724,861	\$ 74,189	— %

Change in net position was \$0.07m or 0.3% higher than prior year for the first quarter fiscal year 2021. This was due to higher operating income of \$1.2m, offset by lower capital contributions of \$0.3m and higher nonoperating expenses of \$0.8m.

RevenueBudget to Actual

	Actual YTD 2021	Budget YTD 2021	Variance \$	Variance %
OPERATING REVENUES				
Charges for Water Sales	41,276,508	38,998,848	2,277,660	6 %
Hydroelectric Sales	769,978	780,045	(10,067)	(1)%
Other Operating Sales	524,260	700,029	(175,769)	(25)%
Total Operating Revenues	42,570,746	40,478,922	2,091,824	5 %

Operating revenue was \$2.1m or 5% higher than budget for the first quarter of the fiscal year due to higher water sales offset by lower hydroelectric and other operating sales revenue. Water sales revenue was higher by \$2.3m or 6% due to higher usage than budgeted in the residential and irrigation categories. This was due to the continued dry weather during the summer months. Other operating sales are lower due to lower late fee revenue (late fees were suspended for two months during the quarter) and lower customer service call charges due to lower volume of calls.

Year over Year

	Actual YTD 2021	Actual YTD 2020	Variance \$	Variance %
OPERATING REVENUES				
Charges for Water Sales	41,276,508	38,624,282	2,652,226	7 %
Hydroelectric Sales	769,978	1,069,464	(299,486)	(28)%
Other Operating Sales	524,260	832,757	(308,497)	(37)%
Total Operating Revenues	42,570,746	40,526,503	2,044,243	5 %

Total operating revenues were \$2.0m higher than prior year due to higher water sales offset by lower hydroelectric and other operating sales revenue. Water sales revenue was higher by \$2.7m or 7% due to more consumption as discussed above. Hydroelectric revenue was lower due to the Washoe plant being out of service for the entire quarter for the rebuilding of the damaged flume. Other operating sales were lower than prior year for the same reasons discussed above (lower late fee and service call revenue).

Operating ExpensesBudget to Actual

	Actual YTD 2021	Budget YTD 2021	Variance \$	Variance %
OPERATING EXPENSES				
Salaries and Wages	5,764,424	6,233,432	(469,008)	(8)%
Employee Benefits	2,553,203	2,738,994	(185,791)	(7)%
Services and Supplies	8,820,353	9,655,362	(835,009)	(9)%
Total Operating Expenses Before Depreciation	17,137,980	18,627,788	(1,489,808)	(8)%
Depreciation	8,280,262	8,379,713	(99,451)	(1)%
Total Operating Expenses	25,418,242	27,007,501	(1,589,259)	(6)%

Total operating expenses were \$1.6m lower than budget due to all categories. Salaries and wages and employee benefits are lower due to position vacancies and labor charged to capital projects. Services and supplies expenses are lower primarily due to timing of certain expenses (temporary), and also lower training/travel expenses which are expected to continue throughout the year due to the pandemic. Services and supplies expenses are expected to "catch up" to budget through the remaining three quarters.

Year over Year

	Actual YTD 2021	Actual YTD 2020	Variance \$	Variance %
OPERATING EXPENSES				
Salaries and Wages	5,764,424	5,760,051	4,373	— %
Employee Benefits	2,553,203	2,495,410	57,793	2 %
Services and Supplies	8,820,353	8,066,985	753,368	9 %
Total Operating Expenses Before Depreciation	17,137,980	16,322,446	815,534	5 %
Depreciation	8,280,262	8,290,967	(10,705)	— %
Total Operating Expenses	25,418,242	24,613,413	804,829	3 %

Year over year for the first quarter, operating expenses were \$0.8m higher than budget due primarily to higher services and supplies expenses. There are not any significant changes within any one category in services and supplies, but the main drivers in the year over year change are higher chemical, power, and TROA administrative costs. Chemical and power costs increased due to higher water consumption and price increases and the TROA administrative costs commenced in October 2019, so the first three months of the prior fiscal year had no costs.

Non-Operating ExpensesBudget to Actual

	Actual YTD 2021	Budget YTD 2021	Variance \$	Variance %
NONOPERATING REVENUES (EXPENSES)				
Investment Earnings	738,928	966,276	(227,348)	(24)%
Net Increase (Decrease) in FV of Investments	(386,631)	—	(386,631)	— %
Gain (Loss) on Disposal of Assets	—	—	—	— %
Amortization of Bond/note Issuance Costs	(52,484)	(47,700)	(4,784)	10 %
Interest Expense	(3,066,607)	(3,047,044)	(19,563)	1 %
Other Nonoperating Revenue	—	—	—	— %
Other Nonoperating Expense	—	—	—	— %
Total Nonoperating Revenues (Expenses)	(2,766,794)	(2,128,468)	(638,326)	30 %

Nonoperating expenses were \$0.6m higher than budgeted. This is due mostly to lower investment income and a net decrease in the fair value of investments due to continued low interest rates on invested cash balances. The ten-year US Treasury Yield was at 0.69% at September 30, 2020, down from 1.88% on January 2, 2020.

Year over Year

	Actual YTD 2021	Actual YTD 2020	Variance \$	Variance %
NONOPERATING REVENUES (EXPENSES)				
Investment Earnings	738,928	1,044,527	(305,599)	(29)%
Net Increase (Decrease) in FV of Investments	(386,631)	470,475	(857,106)	(182)%
Gain (Loss) on Disposal of Assets	—	(168,898)	168,898	(100)%
Amortization of Bond/note Issuance Costs	(52,484)	(71,199)	18,715	(26)%
Interest Expense	(3,066,607)	(3,193,572)	126,965	(4)%
Other Nonoperating Revenue	—	—	—	— %
Other Nonoperating Expense	—	—	—	— %
Total Nonoperating Revenues (Expenses)	(2,766,794)	(1,918,667)	(848,127)	44 %

Nonoperating expenses were higher than prior year in the first quarter by \$0.9m or 44%. Similar to the reasons above, this variance is primarily due to lower investment earnings and a decrease in the fair value of investments. Offsetting decreases in those categories were lower gain/loss on disposal of assets (timing related) and lower interest expense (lower rates on commercial paper).

Capital ContributionsBudget to Actual

	Actual YTD 2021	Budget YTD 2021	Variance \$	Variance %
CAPITAL CONTRIBUTIONS				
Grants	—	475,000	(475,000)	(100)%
Water Resource Sustainability Program	137,148	217,425	(80,277)	(37)%
Developer Infrastructure Contributions	3,520,843	2,806,637	714,206	25 %
Developer Will-serve Contributions (Net of Refunds)	362,645	1,046,352	(683,707)	(65)%
Developer Capital Contributions - Other	1,899,175	1,585,539	313,636	20 %
Developer Facility Charges (Net of Refunds)	2,318,928	1,499,652	819,276	55 %
Contributions from Others	174,601	68,750	105,851	154 %
Net Capital Contributions	8,413,340	7,699,355	713,985	9 %

Capital contributions were \$0.7m higher than budget for the first quarter. Increases from budget related to developer infrastructure contributions, area fees and facility charges were offset by lower grant revenue, proceeds from the water resource sustainability program and will-serve sales. Developer contributions and will-serve sales can fluctuate due to large project contributions coming in from time to time. Given the project activity in the region, it's expected that will-serve sales will make up the first quarter's budget variance throughout the year. Similarly, the area fees and facility charges are not expected to be over budget for the year. Grant revenue is lower due to timing of receiving grant awards for two outstanding FEMA grants which are still expected to be received during the year.

Year over Year

	Actual YTD 2021	Actual YTD 2020	Variance \$	Variance %
CAPITAL CONTRIBUTIONS				
Grants	—	—	—	— %
Water Resource Sustainability Program	137,148	481,640	(344,492)	(72)%
Developer Infrastructure Contributions	3,520,843	84,627	3,436,216	4,060 %
Developer Will-serve Contributions (Net of Refunds)	362,645	1,818,433	(1,455,788)	(80)%
Developer Capital Contributions - Other	1,899,175	2,853,471	(954,296)	(33)%
Developer Facility Charges (Net of Refunds)	2,318,928	3,492,267	(1,173,339)	(34)%
Contributions from Others	174,601	—	174,601	— %
Net Capital Contributions	8,413,340	8,730,438	(317,098)	(4)%

Year over year, capital contributions are \$0.3m or 4% lower in the first quarter. For the first time in FY 2021, TMWA is recognizing developer infrastructure contributions on a quarterly basis, which is why there is a large variance in this category. This represents non-cash water infrastructure constructed by developers. Other categories of developer related contributions are all lower than prior year in the first quarter. As discussed above, through one quarter there can be significant variances due to timing of large contributions. However, TMWA's internal tracking of total new business projects has shown that project volume has decreased over the last six months.

Capital Spending

Spending on capital outlays and construction projects during the first quarter was approximately \$5.7m. Total budgeted capital spend for fiscal year 2021 is \$54.7m. Projected capital spending for the year is \$40m - \$45m. Top project spend through the first quarter is below -

- | | |
|---|--------|
| • Mount Rose Water Treatment Plant | \$1.3m |
| • Customer Information System Replacement | \$0.5m |
| • Boomtown to TMWA Connection | \$0.5m |

Cash Position

At September 30, 2020 total cash on hand was \$209.0m or \$3.2m higher than at the beginning of the fiscal year. Of the total cash on hand, \$152.1m was unrestricted to be used to meet upcoming and future operating & maintenance expenses, principal & interest payments and construction project payments. The remaining \$56.9m was restricted to pay for scheduled bond principal and interest payments as well as maintaining required reserves as stipulated in our bond covenants.

Truckee Meadows Water Authority

Comparative Statements of Revenues, Expenses and Changes in Net Position

For the first quarter ended September 30, 2020

	Actual YTD 2021	Budget YTD 2021	Variance \$	Variance %
OPERATING REVENUES				
Charges for Water Sales	\$ 41,276,508	\$ 38,998,848	\$ 2,277,660	6 %
Hydroelectric Sales	769,978	780,045	(10,067)	(1)%
Other Operating Sales	524,260	700,029	(175,769)	(25)%
Total Operating Revenues	42,570,746	40,478,922	2,091,824	5 %
OPERATING EXPENSES				
Salaries and Wages	5,764,424	6,233,432	(469,008)	(8)%
Employee Benefits	2,553,203	2,738,994	(185,791)	(7)%
Services and Supplies	8,820,353	9,655,362	(835,009)	(9)%
Total Operating Expenses Before Depreciation	17,137,980	18,627,788	(1,489,808)	(8)%
Depreciation	8,280,262	8,379,713	(99,451)	(1)%
Total Operating Expenses	25,418,242	27,007,501	(1,589,259)	(6)%
OPERATING INCOME	17,152,504	13,471,421	3,681,083	27 %
NONOPERATING REVENUES (EXPENSES)				
Investment Earnings	738,928	966,276	(227,348)	(24)%
Net Increase (Decrease) in FV of Investments	(386,631)	—	(386,631)	— %
Gain (Loss) on Disposal of Assets	—	—	—	— %
Amortization of Bond/note Issuance Costs	(52,484)	(47,700)	(4,784)	10 %
Interest Expense	(3,066,607)	(3,047,044)	(19,563)	1 %
Other Nonoperating Revenue	—	—	—	— %
Other Nonoperating Expense	—	—	—	— %
Total Nonoperating Revenues (Expenses)	(2,766,794)	(2,128,468)	(638,326)	30 %
Gain (Loss) Before Capital Contributions	14,385,710	11,342,953	3,042,757	27 %
CAPITAL CONTRIBUTIONS				
Grants	—	475,000	(475,000)	(100)%
Water Resource Sustainability Program	137,148	217,425	(80,277)	(37)%
Developer Infrastructure Contributions	3,520,843	2,806,637	714,206	25 %
Developer Will-serve Contributions (Net of Refunds)	362,645	1,046,352	(683,707)	(65)%
Developer Capital Contributions - Other	1,899,175	1,585,539	313,636	20 %
Developer Facility Charges (Net of Refunds)	2,318,928	1,499,652	819,276	55 %
Contributions from Others	174,601	68,750	105,851	154 %
Net Capital Contributions	8,413,340	7,699,355	713,985	9 %
CHANGE IN NET POSITION	\$ 22,799,050	\$ 19,042,308	\$ 3,756,742	20 %

Truckee Meadows Water Authority

Comparative Statements of Revenues, Expenses and Changes in Net Position

For the first quarter ended September 30, 2020

	Actual YTD 2021	Actual YTD 2020	Variance \$	Variance %
OPERATING REVENUES				
Charges for Water Sales	\$ 41,276,508	\$ 38,624,282	\$ 2,652,226	7 %
Hydroelectric Sales	769,978	1,069,464	(299,486)	(28)%
Other Operating Sales	524,260	832,757	(308,497)	(37)%
Total Operating Revenues	42,570,746	40,526,503	2,044,243	5 %
OPERATING EXPENSES				
Salaries and Wages	5,764,424	5,760,051	4,373	— %
Employee Benefits	2,553,203	2,495,410	57,793	2 %
Services and Supplies	8,820,353	8,066,985	753,368	9 %
Total Operating Expenses Before Depreciation	17,137,980	16,322,446	815,534	5 %
Depreciation	8,280,262	8,290,967	(10,705)	— %
Total Operating Expenses	25,418,242	24,613,413	804,829	3 %
OPERATING INCOME	17,152,504	15,913,090	1,239,414	8 %
NONOPERATING REVENUES (EXPENSES)				
Investment Earnings	738,928	1,044,527	(305,599)	(29)%
Net Increase (Decrease) in FV of Investments	(386,631)	470,475	(857,106)	(182)%
Gain (Loss) on Disposal of Assets	—	(168,898)	168,898	(100)%
Amortization of Bond/note Issuance Costs	(52,484)	(71,199)	18,715	(26)%
Interest Expense	(3,066,607)	(3,193,572)	126,965	(4)%
Other Nonoperating Revenue	—	—	—	— %
Other Nonoperating Expense	—	—	—	— %
Total Nonoperating Revenues (Expenses)	(2,766,794)	(1,918,667)	(848,127)	44 %
Gain (Loss) Before Capital Contributions	14,385,710	13,994,423	391,287	3 %
CAPITAL CONTRIBUTIONS				
Grants	—	—	—	— %
Water Resource Sustainability Program	137,148	481,640	(344,492)	(72)%
Developer Infrastructure Contributions	3,520,843	84,627	3,436,216	4,060 %
Developer Will-serve Contributions (Net of Refunds)	362,645	1,818,433	(1,455,788)	(80)%
Developer Capital Contributions - Other	1,899,175	2,853,471	(954,296)	(33)%
Developer Facility Charges (Net of Refunds)	2,318,928	3,492,267	(1,173,339)	(34)%
Contributions from Others	174,601	—	174,601	— %
Net Capital Contributions	8,413,340	8,730,438	(317,098)	(4)%
CHANGE IN NET POSITION	\$ 22,799,050	\$ 22,724,861	\$ 74,189	— %



STAFF REPORT

TO: Chairman and Board Members
FROM: Mark Foree, General Manager
FROM: Sonia Folsom, SAC Liaison
DATE: December 3, 2020
SUBJECT: Discussion and action, and possible direction to staff regarding appointments to the Standing Advisory Committee to fill vacancies in existing positions whose terms expire December 31, 2020, such appointments to be made for new terms from January 1, 2021 to December 31, 2022 from the following list of candidates: (1) Neil McGuire, primary representative, irrigation customer; (2) Karl Katt, alternate representative, irrigation customer; (3) Donald Kowitz, primary representative, commercial customer; (4) Robert Chambers, primary representative, senior customer; (5) Ken McNeil, primary representative, at-large 1 customer; (6) Ken Becker, alternate representative, at-large 1 customer; (7) Jordan Hastings, primary representative, at-large 2 customers; (8) Carol Litster, primary representative, representative 1 customer; (9) Dale Sanderson, alternate representative, representative 2 customers; (10) Harry Culbert, primary representative, representative 2 customer; (11) Fred Arndt, alternate representative, representative 2 customers; and (12) Jerry Wager, primary representative, representative 3 customer

Recommendation

Staff recommends that current Standing Advisory Committee (SAC) members whose terms are set to expire on December 31, 2020, eight primary and four alternates, be reappointed for an additional two year term beginning January 1, 2021. *(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. *(Please see the attached SAC History and Governing Rules)*

Discussion

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

TMWA Standing Advisory Committee

Term Appointments
2021 Membership List

Customer Class	Primary Representative	Member Since	Term Ends	Alternate Representative	Member Since	Term Ends
Wholesale (Sun Valley)	Chris Melton	2020	12/31/2021	<i>Vacant</i>		
Irrigation	Neil McGuire	2005	12/31/2022	Karl Katt	2013	12/31/2022
Multi-family Residential	Mike Schulewitch	2013	12/31/2020	Jonnie Pullman	2012	12/31/2021
Commercial	Donald Kowitz	2017	12/31/2022	John Krmpotic	2020	12/31/2021
Senior Citizen	Robert Chambers	2005	12/31/2022	<i>Vacant</i>		
At-Large 1	Ken McNeil	2013	12/31/2022	Ken Becker	2017	12/31/2022
At-Large 2	Jordan Hastings	2017	12/31/2022	Susan Hoog	2019	12/31/2021
Residential:						
Representative 1	Carol Litster	2014	12/31/2022	Dale Sanderson	2017	12/31/2022
Representative 2	Harry Culbert	2006	12/31/2022	Fred Arndt	2017	12/31/2022
Representative 3	Jerry Wager	2014	12/31/2022	<i>Vacant</i>		
Appointments:						
BANN	Colin Hayes	2010	12/31/2021	Jim Smith	2010	12/31/2021
Reno-Sparks Chamber	Kristine Brown	2020	12/31/2021	Ann Silver	2019	12/31/2021
Member not continuing						
Members continuing						



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.
- The SAC reviewed rate proposals in 2016, 2017 and 2019.

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

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

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

As amended, February 7, 2017



STAFF REPORT

TO: Chairman and Board Members
THRU: Mark Foree, General Manager
FROM: John Enloe, Director of Natural Resources
Sonia Folsom, Executive Assistant
DATE: December 7, 2020
SUBJECT: **Presentation of Truckee River Fund Activities for Calendar Year 2020**

Summary

- Since the 2005 Fund inception, 181 Projects Approved by TMWA Board for Funding (By Resolution) -- Total Resolution Amount to Date: \$14.1 million
- Total Match from Grantees: \$23.2 million
- Funding available for the Spring 2021 request for proposals is \$321,621
- Project Status and Tracking: *See attached TRF Project Spreadsheet – Attachment 1*

Purpose

The purpose of this report is to provide the TMWA Board of Directors a summary of Truckee River Fund program (the Fund) activities from its 2005 inception, including a detailed summary of 2020 activities. This report will also be helpful to new Board members in getting familiar with the purpose and workings of the Truckee River Fund.

TMWA and the Board should be proud of this program and the outstanding contributions the Fund has made for the community, region, and the Truckee River watershed. Over the years, the Truckee River Fund Advisory Committee has developed a prudent and rigorous approach to the evaluation of proposals, to ensure that those recommended for approval by the TMWA Board have tangible and measurable outcomes and meet the objectives of the Fund. Through the able assistance of the Community Foundation of Western Nevada, all project proponents are required to account for funds dispersed and to provide reports on project status, success metrics and completion.

The Fund Advisory Board Committee represents the Cities of Reno and Sparks and Washoe County, where each entity appoints three representatives. The current members are:

Entity	Member	Appointed
City of Reno	Janet Phillips (Chair)	2005
	Bill Bradley	2005
	Michael Cameron	2005
City of Sparks	Candice Elder	2013
	Mike Brisbin	2006
	<i>Vacant</i>	
Washoe County	Brian Bonnenfant (Vice Chair)	2017
	Don Mahin	2016
	Terri Svetich	2020

Program Background

As the Board may recall, the Fund was conceived and established in 2005 with the intent of supporting water quality and watershed protection projects that TMWA could not pursue on its own. Since inception, the program has evolved into an important component of TMWA's overall water quality protection program, funding projects which have directly or indirectly improved water quality or the watershed of the Truckee River.

Financially, the Fund provides significant financial leverage for watershed and source water protection projects that TMWA could not ordinarily implement or afford. To date, the Fund has collaborated with other non-profit groups and governmental agencies to support 181 projects, with a \$14.1 million contribution from the Fund (via TMWA) being matched by \$23.2 million from its partners.

On a macro basis, the Fund has supported important water quality and watershed improvement projects in the following areas:

- Invasive Species:** The introduction and proliferation of invasive species, both land-based (terrestrial) and aquatic, is a major concern for TMWA. As such, TMWA has supported projects to mitigate terrestrial and aquatic invasive plants and has funded the development and implementation of watercraft inspection programs at Lake Tahoe and nearby reservoirs to prevent the introduction of aquatic invasive species, including the quagga and zebra mussel into the waters of Lake Tahoe and nearby reservoirs, and control efforts to remove Eurasian watermilfoil from the Truckee River.
- Urbanization of the Local Watershed:** Development in the foothill areas has led to degradation of local tributaries to the Truckee River via irrigation run-off and storm water discharges. Local tributaries upstream of TMWA's primary water treatment plants have been adversely impacted causing increased sediment, total dissolved solids (TDS) and turbidity loading. Because of this concern, the Fund has supported projects and programs that have helped to mitigate these problems.

- **Wildfires and Forest Thinning:** Wildfires have taken their toll on the Truckee River watershed, thereby increasing the likelihood of additional sediment and turbidity loading to the river. In response to the fires and watershed damage, TMWA has provided grants towards recovery and rehabilitation efforts. TMWA, through the Fund, has supported forest thinning efforts designed to reduce potential of forest fires that, as a result of sediment run-off, impact the Truckee River, tributary creeks and water storage reservoirs.
- **Erosion due to Past Logging Operations:** Some areas of the bi-state Truckee River watershed have been impacted by past logging practices that neglected reforestation and erosion control. As a result, some of these areas have experienced erosion of old logging roads and incising of tributary creeks, which have impacted the River with increased sediment, suspended solids, and TDS loading. TMWA, through the Fund, has supported projects designed and constructed to restore the watershed forest to its natural state.
- **Impaired Sections of the Truckee River and its Tributaries:** In conformance with the requirements of the Clean Water Act, both the State of Nevada and State of California have developed water quality standards for the River taking into account an analysis of beneficial uses. As an outgrowth of these standards, both States have identified impaired sections of the River through establishment of 303d lists. TMWA, again through the Fund, has supported improvement projects targeting impaired sections of the River.

2020 Grants

In 2020 the Fund, with Board approval, provided grants to 8 projects or programs.

1. **Project #230: Watershed Education Initiative (WEI)**, Sierra Nevada Journeys (SNJ). Grant Amount: \$30,912; Match: \$6,251 of cash and \$1,917 of in-kind services. To continue implementing the Watershed Education Initiative (WEI) in Washoe County schools based on local issues associated with the Truckee River, such as water quality and invasive species while empowering youth to protect and enhance the quality of the Truckee River. Significantly increase parent engagement, citizen science, and volunteer components to increase the long-term sustainability of our Watershed Education Initiative, thereby fostering protection of the primary water source for our community
2. **Project #234: Mount Rose Noxious Weed Monitoring, Treatment, and Re-Seeding #8**, Friends of Nevada Wilderness: \$28,549; Match: \$4,000 of cash and \$10,080 of in-kind services The project will protect the water quality of the Truckee River and its watershed by removing noxious weeds from the heavily used Hunter creek watershed and reseeded treated areas with native plants. Staff will monitor known weed locales and scout for appropriate re-seeding sites in the spring. During May & June, staff will lead volunteers to remove noxious weeds with shovels and by hand. In the fall, staff and USFS agency partners will lead volunteers to previously identified sites to disperse seed by hand.
3. **Project #235: One Truckee River Overall Support**, Nevada Land Trust for One Truckee River. Grant Amount: \$74,293; Match: \$18,575 of cash. One Truckee River (OTR) is requesting support to continue to build the overall capacity of the OTR Partnership to advance the implementation of the OTR Management Plan, Phase I with a

focus on OTR's highest priority action items by: 1) Filling a gap in funding to have the OTR Partnership Coordinator, Iris Jehle-Peppard, continue in her current capacity, 2) Continue the contract with Turning Point, Inc. to the end of 2021, and 3) Support a River Restroom Attendant to ensure the River Restroom Project pilot is a success.

4. **Project #236: 2020 Watershed Education Initiative for the Urban Truckee River Corridor**, Sierra Nevada Journeys (SNJ). Grant Amount: \$32,041; Match: \$7,959 of cash. Deliver high-quality, experiential watershed education programs based on water quality issues and invasive species along the urban Truckee River corridor to empower youth to take action for the protection and enhancement of the water quality of the Truckee River. To meet schools' needs in case of closures, they have a distance learning program in place called Sierra Nevada Journeys Virtual Classrooms that will still significantly engage students, teachers and parents with watershed education.
5. **Project: #239: 2021 Spring Great Community Cleanup, 2021 Fall Truckee River Cleanup, Adopt-A-River & Adult Outreach and Education**, Keep Truckee Meadows Beautiful (KTMB). Grant Amount: \$74,245; Match: \$144,805 of cash and \$154,514 of in-kind services. KTMB supports a clean and invasive weed-free community by educating and informing residents and visitors about the importance of maintaining a healthy river and watershed by removing litter and invasive weeds. Local park staff report that weed removal is often the most challenging aspect of their job. With current staff reductions, the incorporation of weed removal prior to weed seeding in the spring is vital and aligns perfectly with the timing of KTMB's Great Community Cleanup. The cleanup is designed to address both the direct and immediate presence of weeds, litter and nonpoint pollution runoff, and the underlying causes of these challenges by educating and engaging the community. The cleanups have shown to save taxpayers money.
6. **Project #240: Truckee River Parks and Open Space Weed Management and Revegetation**, Washoe County Parks and Open Space. Grant Amount: \$45,000; Match: \$8,000 of cash and \$7,000 of in-kind services. Removal of noxious and invasive weeds, and re-establish native vegetation in Washoe County Parks and Open Space areas along the Truckee River corridor. Project implementation would include weed inventory, GIS mapping and reporting, chemical and mechanical treatments, re-vegetation, and monitoring. A combination of Washoe County staff time, contracts, and volunteer efforts would be used to implement the project. An Integrated Vegetation Management (IVM) Plan was developed for Washoe County Parks in June 2020. Treatments would follow the guidance and recommendations in the IVM Plan to establish stable perennial plant communities which will help to improve fish and wildlife habitat, enhance recreational opportunities, improve water quality through soil stabilization, reduce fire hazard, and increase the visual quality of parks along the Truckee River.
7. **Project #241: Restoration: Coldstream Canyon and Bear Creek**, Truckee River Watershed Council. Grant Amount: \$86,500; Match: \$34,125 of cash. The project will fill critical funding gaps in two restoration projects: the Coldstream Canyon Sediment Reduction Project and the Bear Creek Lower Meadow Restoration Project. Both projects will support the Truckee River TMDL by reducing excess sedimentation and improving hydrologic connectivity and watershed functionality. The overall goal is to reduce erosion and excess sedimentation to the main stem Truckee River by: 1) Restoring impaired

meadow/wetland systems on key tributaries to the Truckee River, and 2) Correcting drainage on improperly constructed roadways on the same key tributaries.

8. **Project #244: Encampment Clean-up and Unsheltered Individual Data Collection,** Washoe County. Grant Amount: \$179,932; Match: \$77,650 of cash. This project is set out to improve Truckee River water quality by reducing the amount of pollution in the River as a result of encampments along and near the Truckee River with the eventual goal of drastically reducing the number of people camping along the River and provide those vulnerable populations with resources. Encampments result in the production of human waste, trash, medical waste and sharps (devices with sharp points or edges which are often also biohazards) being disposed in or near the Truckee River, instead of in an appropriate fashion that would keep waste out of the Truckee River. By creating relationships with unsheltered individuals, empowering them to participate in river-clean ups, and engaging them with the goal of moving into housing, the utilization of encampments along the Truckee River will be diminished.

Project #	Category	Proposal Date	Grantee	Grant Description	Funded	Resolution Amount	Match - Monetary	Match - In Kind	Match total
*Projects in Progress			* Projects not funded						
183	C	Feb-17	City of Reno	Truckee River Cleanup	139	\$28,694.00	\$59,554.00	\$17,491.00	\$77,045.00
184	E	Feb-17	Sierra Nevada Journeys	Watershed Education Initiative	140	\$32,998.00	\$2,610.00	\$10,440.00	\$13,050.00
185	D	Feb-17	Friends of Nevada Wilderness	Mount Rose Noxious Weed Monitoring and Treatment #5	141	\$22,405.40	\$12,232.00	\$8,640.00	\$20,872.00
186	E	Feb-17	Sierra Business Council	Lake Tahoe Water Trail Educational Wayfinding Interpretive Signage	no				
187	A,C,E	Feb-17	The Nature Conservancy	Landscape Conservation Forecasting for the Truckee River Watershed	142	\$60,000.00	\$25,000.00	-	\$25,000.00
188	A,C, E	Feb-17	Nevada Land Trust	One Truckee River Phase 1 Action	143	\$306,220.00	\$75,614.00	\$27,500.00	\$103,114.00
189	A,B, C	Feb-17	Truckee River Watershed Council	Big Chief: F4M Restoration Culvert Outflows	144	\$50,000.00	-	\$15,000.00	\$15,000.00
190	E	Aug-17	Sierra Nevada Journeys	Watershed Education Program	145	\$35,065.00	\$2,700.00	\$10,200.00	\$12,900.00
191		Aug-17	City of Reno	Invasive Weed Removal - Reno Park Property	no				
192	A,B,C	Aug-17	Truckee River Watershed Council	Truckee River Tributaries Sediment Reduction Project	146	\$165,000.00	\$41,250.00	\$900.00	\$42,150.00
193	C,D	Aug-17	Keep Truckee Meadows Beautiful	2018 Spring Invasive Weed Pull & Fall Truckee River Cleanup	147	\$69,760.00	\$15,000.00	\$29,932.00	\$44,932.00
194		Aug-17	Sierra Nevada Alliance	Sierra Nevada Americorps Partnership (SNAP)	no				
195	E	Feb-18	Sierra Nevada Journeys	Watershed Education Initiative	148	\$46,376.00	\$12,707.00	\$15,385.00	\$28,092.00
196	D	Feb-18	Friends of Nevada Wilderness	Mount Rose Noxious Weed Monitoring & Treatment #6	149	\$23,500.00	\$6,761.00	\$8,400.00	\$15,161.00
197	C,E	Feb-18	Truckee Meadows Park Foundation	Doggie Ambassador Program	no				
198	D	Feb-18	Desert Research Institute	Determining the role of signal crayfish in the Truckee River foodweb	no				
199	A,B,C	Feb-18	Truckee Donner Land Trust	Cold Stream Meadow Road Decommissioning & Restoration Project	150	\$65,000.00	\$17,800.00	\$2,200.00	\$20,000.00
200	A,B,C	Feb-18	Truckee River Watershed Council	Truckee Meadows Restoration Project- Phase 2 Construction	151	\$30,000.00	\$47,750.00	-	\$47,750.00
201	A,B,C	Feb-18	National Forest Foundation	Perazzo Meadows Watershed Restoration & Erosion Control Project	152	\$148,000.00	-	\$51,526.55	\$51,526.55
202	E	Feb-18	Mountain Area Preservation Foundation	Trout Creek Pocket Park Stewardship & Service Learning Program	no				
203	A,C,E	Feb-18	Nevada Land Trust	One Truckee River: Watershed Management & Source Protection Plan & OTR Partnership Support	153	\$173,580.00	\$99,780.00	\$144,000.00	\$243,780.00
204	C,D	Aug-18	Keep Truckee Meadows Beautiful	2019 Spring Invasive Weed Pull & Fall Truckee River Cleanup	154	\$31,640.00	\$14,500.00	\$83,272.00	\$97,772.00
205	E	Aug-18	Sierra Nevada Journeys	Watershed Education Initiative	155	\$36,207.00	\$2,917.00	\$12,238.00	\$15,155.00
206	D,E	Aug-18	Truckee Meadows Parks Foundation	Truckee Meadows Nature Study Area Project: Planning Phase	156	\$38,400.00	\$74,968.00	-	\$74,968.00
207	C	Aug-18	City of Reno	2nd Truckee River Cleanup Crew	no				
208	E	Aug-18	The Nature Conservancy of Nevada	Truckee River Watershed Forest Restoration	157	\$57,826.00	\$57,152.28	-	\$57,152.28
209	A,B,C	Aug-18	Truckee River Watershed Council	Restoration Projects: Donner Creek & Dry Creek Meadow	158	\$92,000.00	\$192,000.00	-	\$192,000.00
210	C,E	Aug-18	Truckee River Watershed Council	Truckee River Water Quality Monitoring Program	159	\$25,000.00	-	\$32,675.00	\$32,675.00

Project #	Category	Proposal Date	Grantee	Grant Description	Funded	Resolution Amount	Match - Monetary	Match - In Kind	Match total
*Projects in Progress			* Projects not funded						
211	C,D	Sep-18	Tahoe Resource Conservation District	Truckee River Watershed AIS Survey and Control, and Trash Removal	no				
212	B,C	Sep-18	Nevada Tahoe Conservation District	Burnt Cedar Beach Water Quality Improvement Project	no				
213	A,B,C	Sep-18	City of Reno	Chalk Creek Restoration Project, Sapphire Ridge and Royal Vista Way	no				
214	E	Feb-19	Sierra Nevada Journeys	Watershed Education Initiative	160	\$36,207.00	\$2,917.00	\$12,238.00	\$15,155.00
215	D, E	Feb-19	Truckee Meadows Parks Foundation	Truckee Meadows Nature Study Area: First Year Operational Phase	161	\$61,400.00	\$18,744.00	-	\$18,744.00
216	A, B, C	Feb-19	Truckee River Watershed Council	Mclver Dairy Meadow Restoration Project	162	\$161,000.00	\$119,300.00	-	\$119,300.00
217	C, D	Feb-19	Keep Truckee Meadows Beautiful	2019 Fall Truckee River Cleanup, Adopt-A-River, and Adult Outreach & Education	163	\$53,000.00	\$103,800.00	\$57,407.00	\$161,207.00
218	E	Feb-19	Nation Judicial College	Dividing the Waters Conference: "Sustainable Water Rights Management in Times of Shortage" at Stanford Law School	no				
219	D	Feb-19	Friends of Nevada Wilderness	Mount Rose Noxious Weed Monitoring and Treatment #7	164	\$24,094.00	\$2,446.00	\$10,080.00	\$12,526.00
220	A, D	Feb-19	Washoe County Parks and Open Space	Weed Treatment and Revegetation Project Along Truckee River	165	\$45,000.00	\$16,200.00	\$1,600.00	\$17,800.00
221	C, E	Feb-19	Nevada Land Trust for One Truckee River	River Restroom Project lead by One Truckee River	166	\$124,976.00	\$31,224.00	-	\$31,224.00
222	A, C	Feb-19	Great Basin Institute	Galena Creek Ecological Restoration & Demonstration Project	167	\$35,054.00	\$141,196.94	-	\$141,196.94
223	E	Aug-19	Sierra Nevada Journeys	Watershed Education Initiative	168	\$37,200.00	\$2,667.00	\$12,058.00	\$14,725.00
224	C, D	Aug-19	Keep Truckee Meadows Beautiful	2020 Spring Great Community Cleanup, 2020 Fall Truckee River Cleanup, Adopt-A-River & Adult Outreach and Educatio	169	\$79,245.00	\$152,805.00	\$154,514.00	\$307,319.00
225	A, D	Aug-19	Truckee River Watershed Council	Truckee River Invasive Species Control Project	170	\$19,250.00	\$16,000.00	-	\$16,000.00
226	D, E	Aug-19	Truckee Meadows Parks Foundation	Truckee Meadows Nature Study Area: First Year Operational	171	\$101,526.00	\$35,000.00	-	\$35,000.00
227	E	Aug-19	The Nature Conservancy of Nevada	Truckee River Watershed Forest Restoration and Community Outreach-Phase 2	172	\$265,600.00	\$264,600.49	-	\$264,600.49
228	A, C	Aug-19	Great Basin Institute	Galena Creek Ecological Restoration & Demonstration Project, Phase II	173	\$34,778.00	\$46,240.05	\$2,097.00	\$48,337.05
229	A	Feb-20	Tahoe Rim Trail Association	Enhancing Water Quality Along the Tahoe Rim Trail in Tahoe City	no				
230	E	Feb-20	Sierra Nevada Journeys	Watershed Education Initiative for the Urban Truckee River Corridor	174	\$30,912.00	\$ 6,251.00	\$ 1,917.00	\$8,168.00
231	A,B,C	Feb-20	Truckee River Watershed Council	Coldstream Canyon Sediment Reduction Project	no				
232	E	Feb-20	Truckee Donner Land Trust	Truckee Springs Open Space Trail Planning	no				
233	E	Feb-20	Sierra Watershed Education Partnerships (SWEP)	Water Quality and Watershed Education Projects	no				
234	D	Feb-20	Friends of Nevada Wilderness	Mount Rose Noxious Weed Monitoring, Treatment, and Re-Seeding #8	175	\$ 28,549.00	\$ 4,000.00	\$ 10,080.00	\$14,080.00

Project #	Category	Proposal Date	Grantee	Grant Description	Funded	Resolution Amount	Match - Monetary	Match - In Kind	Match total
*Projects in Progress			* Projects not funded						
235	A,C,E	Feb-20	Nevada Land Trust for One Truckee River	One Truckee River Overall Support	176	\$ 74,293.00	\$ 18,575.00	-	\$18,575.00
236	E	Aug-20	Sierra Nevada Journeys	Watershed Education Initiative for the Urban Truckee River Corridor	177	\$ 32,041.00	\$ 7,959.00	-	\$7,959.00
237	A,E	Aug-20	The Nature Conservancy	Developing Forest Resilience to Fire – Independence Lake	no				
238	C,E	Aug-20	Truckee Meadows Parks Foundation	Doggie Ambassador Program	no				
239	C,D	Aug-20	Keep Truckee Meadows Beautiful	2021 Spring Great Community Cleanup, 2021 Fall Truckee River Cleanup, Adopt-A-River & Adult Outreach and Education	178	\$74,245.00	\$144,805.00	\$154,514.00	\$299,319.00
240	A,D	Aug-20	Washoe County Regional Parks and Open Space	Truckee River Parks and Open Space Weed Management and Revegetation	179	\$45,000.00	\$8,000.00	\$7,000.00	\$15,000.00
241	A,B,C	Aug-20	Truckee River Watershed Council	Restoration: Coldstream Canyon and Bear Creek	180	\$86,500.00	\$34,125.00	-	\$34,125.00
242	E	Aug-20	Truckee Donner Land Trust	Truckee Springs	no				
243	C	Aug-20	Desert Research Institute	Occurrence, Fate and Risk of PFAS in the Truckee River	no				
244	C	Aug-20	Washoe County	Encampment Clean-up and Unsheltered Individual Data Collection	181	\$179,932.00	\$ 77,650.00	-	\$77,650.00
				TOTAL FUNDING AMOUNT:		\$14,076,944.24			\$23,157,180.80



STAFF REPORT

TO: Chairman and Board Members
THRU: Mark Foree, General Manager
FROM: Sonia Folsom, Executive Assistant
DATE: December 1, 2020
SUBJECT: Discussion and action on scheduling regular board meeting dates and times for the Calendar Year 2021

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. However, when the Coronavirus (COVID-19) pandemic was reported in our region in March, all in-person meetings were suspended pursuant to the Governor's Declaration of Emergency Directive 006 dated March 22, 2020, Section 1, as extended by Emergency Directives, 016, 018, 021, 026, and 029. Since then, TMWA has held its Board of Directors meetings virtually via Zoom video conference. It is anticipated all TMWA Board meetings will continue with this platform in 2021 until such time is deemed safe to return to in-person meetings and the City of Sparks Council Chambers is open to the public.

In checking the current Cities and County calendars, the third Wednesday of the month continues to present the best option in terms of avoiding conflicts with the other agency meetings; except for the two months highlighted below that indicate a conflict with scheduled Reno City Council meetings. Also, staff proposes the May Budget Hearing be held on the third Thursday to accommodate the conflict with the Reno City Council meeting scheduled for Wednesday, May 19th.

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; 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 2021. Based on your input, Staff will then issue the agreed-upon schedule.

2021 Board Meeting Dates – Proposed

Wednesday January 20	10 a.m.
Wednesday February 17	10 a.m.
Wednesday March 17	10 a.m.
Wednesday April 21	10 a.m.
Thursday, May 20	10 a.m. NOTE: NRS-MANDATED BUDGET HEARING DATE
Wednesday June 16	10 a.m.
Wednesday July 21	10 a.m.
Wednesday August 18	10 a.m.
Wednesday September 15	10 a.m.
*Wednesday October 20	10 a.m. STRATEGIC PLANNING WORKSHOP
Wednesday November 17	10 a.m.
Wednesday, December 15	10 a.m.

*Due to the nature of the October 20 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, 2020
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*).

Included in your agenda packet are press clippings from October 15, 2020 through December 9, 2020.

Also, a *Tell the Board Submission* was received regarding a complaint of the south access gate closure to the public of the Hunter Creek Ponds. TMWA staff responded that the gate was closed due to increased foot and equestrian traffic as well as complaints received from several neighboring homeowners in the area. However, since putting up signs that clearly state fishing, camping, campfires, and equestrian use are prohibited, access was limited to daylight hours only, access to the ponds was prohibited, and users must stay on the paved path and pick up after their pets, as well as being removed from a fishing app, the issues have significantly reduced. Based on these results, and in an effort to work as cooperatively as possible with neighbors who have voiced concerns with the south access closure, TMWA has decided to re-open it on a trial basis and evaluate whether the above-described issues increase. Another *Tell the Board Submission* was received providing positive feedback regarding the 2020-2040 Water Resource Plan; its layout, attention to detail and readability. Staff thanked TMWA's customer for taking the time to show their appreciation to staff.

Change in TMWA PTO 2020 Carryover

Due to unforeseen circumstances in 2020 resulting from the COVID-19 Pandemic, TMWA is allowing MPAT employees a one-time increase to their previously elected PTO carryover hours for calendar year-end 2020. TMWA's PTO policy includes a maximum carryover of 160 hours which must be elected before the year begins. This one-time change allows employees to carryover up to 240 hours. As many employees have been unable to use accrued PTO hours in 2020 due to various circumstances including travel restrictions or increased workload resulting from the Pandemic, management believes this one-time change is appropriate. Finally, this change is expected to result in less cash distributions at the end of the calendar year, which is a financial benefit to TMWA.



STAFF REPORT

TO: Board of Directors
THRU: Mark Foree, General Manager
FROM: Scott Estes, Director of Engineering
BY: Bill Hauck, Water Supply Administrator
DATE: December 7, 2020
SUBJECT: **December 2020 Operations Report**

Summary

- The water supply outlook for the region is good
- Lake Tahoe is slightly less than ½ full @ 43% of maximum capacity
- Combined total upstream reservoir storage @ 42% of maximum capacity
- Customer demands are now at wintertime levels
- Hydroelectric revenue for November 2020 was approximately \$97,800

(A) Water Supply

- **River Flows** - Truckee River flows at the CA/NV state line are below normal for this time of year. Discharge was approximately 250 cubic feet per second (CFS) this morning as a result of TROA operations.
- **Reservoir Storage** – Overall, Truckee River reservoir storage is 42% of capacity (as of 12/7). The elevation of Lake Tahoe is 6225.67 feet (3.43' below legal maximum storage elevation). Storage values for each reservoir as of 12/7 are as follows:

Reservoir	Current Storage (Acre-Feet)	% of Capacity (Percent)
Tahoe	321,000	43%
Boca	7,925	19%
Donner	4,642	49%
Independence	10,764	62%
Prosser	7,044	24%
Stampede	107,914	48%

In addition to approximately 15,400 acre-feet of storage in Donner and Independence reservoirs, TMWA had about 19,650 acre-feet of water stored between Lake Tahoe, Boca and Stampede reservoirs under the terms of TROA. TMWA's total combined upstream reservoir storage is approximately 35,050 acre-feet as of 12/7.

- Outlook** - It was a hot and particularly dry summer and early fall, and while there is not as much upstream storage as we would like to see coming into the winter months, there is still enough carry-over storage in Lake Tahoe to provide normal river flows through 2021. The water supply outlook for this region is still good as Lake Tahoe storage is at 43% of capacity. This year will be a defining one however, as another dry winter could signal the fact that the region is in the midst of another drought. Conversely, a wet winter could refill Lake Tahoe and all the other reservoirs on the system, providing years of normal river flows, while an average or normal winter would provide enough upstream storage and river flows for another two years. It has been a noticeably dry fall and start to the month of December, but anything can happen weather-wise over the next 4-5 months in terms of the region's snowpack and water supply, and the technology just does not exist to provide any further insight into that at this time.

(B) Water Production

- Demand** - TMWA's customer demand averaged 35 million gallons per day last week (11/30-12/6). Overall, surface water is providing about 77% of our supply and groundwater the other 23%.

(C) Hydro Production

Generation - Average Truckee River flow at Farad (CA/NV state line) for the month of November 2020 averaged 251 CFS. The Fleish and Verdi power plants were the only plants on-line as the Washoe Power plant is still out of service as the flume is being rebuilt. The Fleish plant was off-line for 7 days for scheduled maintenance, and the Verdi plant was off-line for 10 days also for scheduled maintenance. Scheduled maintenance activities combined with below average river flows of 251 CFS in November are the reason for the below average generation last month. Monthly statistics are as follows:

Hydro Plant	Days On-Line	Generation (Megawatt hours)	Est. Revenue (Dollars)	Est. Revenue (Dollars/Day)
Fleish	23	840	\$ 61,488	\$ 2,673
Verdi	20	500	\$ 36,270	\$ 1,814
Washoe	0	0	\$ 0	\$ 0
Totals	43	1,340	\$ 97,758	\$ 4,487



STAFF REPORT

TO: Chairman and Board Members
THRU: Mark Foree, General Manager
FROM: John Zimmerman, Manager, Water Resources
DATE: December 9, 2020
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		4,042.87 AF
Purchases of water rights	141.08 AF	
Refunds	0.00 AF	
Sales	- 68.87 AF	
Adjustments	- 0.00 AF	
Ending Balance		4,115.08 AF

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

FISH SPRINGS RANCH, LLC GROUNDWATER RESOURCES

Through the merger of Washoe County's water utility, TMWA assumed a Water Banking and Trust Agreement with Fish Springs Ranch, LLC, a subsidiary of Vidler. Under the Agreement, TMWA holds record title to the groundwater rights for the benefit of Fish Springs. Fish Springs may sell and assign its interest in these groundwater rights to third parties for dedication to TMWA for a will-serve commitment in Areas where TMWA can deliver groundwater from the Fish Springs groundwater basin. Currently, TMWA can deliver Fish Springs groundwater to Area 10 only (Stead-Silver Lake-Lemmon Valley). The following is a summary of Fish Springs' resources.

Beginning Balance		7,699.31 AF
Committed water rights	- 3.19 AF	
Ending Balance		7,696.12 AF

Price per acre foot at report date: \$41,500 (for SFR and MFR); \$36,000 (for all other services)¹

¹ Price reflects avoided cost of Truckee River water right related fees and TMWA Supply & Treatment WSF charge.

WATER SERVICE AREA ANNEXATIONS

There have been no annexations since the date of the last Board meeting.

INTERRUPTIBLE LARGE VOLUME NON-POTABLE SERVICE

None this reporting period.



STAFF REPORT

TO: Board of Directors
THRU: Mark Foree, General Manager
FROM: Marci Westlake, Manager Customer Service
DATE: December 16, 2020
SUBJECT: **October/November Customer Service Report**

The following is a summary of Customer Service activity for October/November 2020.

Ombudsman

- Customer called regarding no water, after talking to him he discovered that his water softener was frozen.

Communications

- Zoom Irrigation Winterization workshop with Chuck, Laine and Sonia, 23 people attended.
- Zoom Irrigation Winterization workshop with Chuck, Laine and Sonia, 20 people attended.
- Zoom Irrigation Winterization workshop with Chuck, Laine and Sonia, 21 people attended.
- Zoom Irrigation Winterization workshop with Chuck, Robert and Sonia, 19 people attended.
- Zoom APWA OneWater presentation with John Enloe, 81 people attended.

Conservation (2020 Calendar year to date)

- 1,457 Water Watcher Contacts
- 1,505 Water Usage Reviews

Customer Calls – October/November

- 18,304 phone calls handled
- Average handling time – -4 minutes, - 28 seconds per call
- Average speed of answer --20 seconds per call

Billing –October/November

- 268,113 bills issued.
- 16 (0.00%) corrected bills.
- 24,216/ customers (18%) have signed up for paperless billing to date.

Service Orders –October/November (% is rounded)

- 15,242 service orders taken
- 6,403 (42%) move-ins / move-outs
- 985 (7%) cut-out-for-non-payment and cut-in after receiving payments, including deposits and checks for tamper only
- 789 (5%) zero consumption meter checks
- 1,789 (12%) re-read meters
- 1,291 (8%) new meter sets and meter/register/ERT exchanges and equipment checks
- 660 (4%) problems / emergencies, including cut-out for customer repairs, dirty water, no water, leaks, pressure complaints, safety issues, installing water meter blankets, etc.
- 235 (2%) high-bill complaints / audit and water usage review requests
- 3,090 (20%) various other service orders

Remittance – October/November

- 51,982 mailed-in payments
- 51,650 electronic payments
- 76,802 payments via RapidPay (EFT)
- 38,363 one-time bank account payments
- 15,677 credit card payments
- 439 store payments
- 2,077 payments via drop box or at front desk

Collections –October/November

- 26,046 accounts received a late charge
- Mailed 17,386 10-day delinquent notices, 0.07% of accounts
- Mailed 6,726 48-hour delinquent notices, 0.03% of accounts
- 2,132 accounts eligible for disconnect
- 408 accounts were disconnected (including accounts that had been disconnected-for-non-payment that presented NSF checks for their reconnection)
- 0.12% write-off to revenue

Meter Statistics – Fiscal Year to Date

- 0 Meter retrofits completed
- 2,316 Meter exchanges completed
- 1,256 New business meter sets completed
- 130,552 Meters currently installed



TMWA Board Meeting

Wednesday, December 16, 2020

Press Clippings

October 15, 2020 – December 9, 2020



Glendale Treatment Plant Inlet



Researchers step toward understanding how toxic PFAS chemicals spread from release sites

New lab studies are helping researchers to better understand how so called “forever chemicals” behave in soil and water, which can help in understanding how these contaminants spread.



PROVIDENCE, R.I. [Brown University] — A study led by Brown University researchers sheds new light on how pollutants found in firefighting foams are distributed in water and surface soil at release sites. The findings could help researchers to better predict how pollutants in these foams spread from the spill or release sites — fire training areas or airplane crash sites, for example — into drinking water supplies.

Firefighting foams, also known as aqueous film forming foams (AFFF), are often used to combat fires involving highly flammable liquids like jet fuel. The foams contain a wide range of per- and polyfluoroalkyl substances (PFAS) including PFOA, PFOS and FOSA. Many of these compounds have been linked to cancer, developmental problems and other conditions in adults and children. PFAS are sometimes referred to as “forever chemicals” because they are difficult to break down in the environment and can lead to long-term contamination of soil and water supplies.

“We’re interested in what’s referred to as the fate and transport of these chemicals,” said Kurt Pennell, a professor in Brown’s School of Engineering and co-author of the research. “When these foams get into the soil, we want to be able to predict how long it’s going to take to reach a water body or a drinking water well, and how long the water will need to be treated to remove the contaminants.”

It had been shown previously that PFAS compounds tend to accumulate at interfaces between water and other substances. Near the surface, for example, PFAS tend to collect at the air-water interface — the moist but unsaturated soil at the top of an aquifer. However, prior experiments showing this interface activity were conducted only with individual PFAS compounds, not with complex mixtures of compounds like firefighting foams.

“You can’t assume that PFOS or PFOA alone are going to act the same way as a mixture with other compounds,” said Pennell, who is also a fellow at the Institute at Brown for Environment and Society. “So this was an effort to try to tease out the differences between the individual compounds, and to see how they behave in these more complex mixtures like firefighting foams.”

Using a series of laboratory experiments described in the journal Environmental Science and Technology (<https://pubs.acs.org/doi/10.1021/acs.est.0c03117>), Pennell and his colleagues showed that the firefighting foam mixture does indeed behave much differently than individual compounds. The research showed that the foams had a far greater affinity for the air-water interface than individual compounds. The foams had more than twice the interface activity of PFOS alone, for example.

Pennell says that insights like these can help researchers to model how PFAS compounds migrate from contaminated sites.

“We want to come up with the basic equations that describe the behavior of these compounds in the lab, then incorporate those equations into models that can be applied in field,” Pennell said. “This work is the beginning of that process, and we’ll scale it up from here.”

Ultimately, the hope is that a better understanding of the fate and transport of these compounds could help to identify wells and waterways at risk for contamination, and aid in cleaning those sites up.

Co-authors on the paper Jed Costanza and Linda Abriola. Funding for the research was provided by the Strategic Environmental Research and Development Program (W912HQ-18-C-0014).

"Do your part" - Gov. Sisolak appeals to Nevadans to mitigate spread of COVID-19

By [Audrey Owsley](#)

Published: Oct. 20, 2020 at 12:30 PM PDT | Updated: Oct. 20, 2020 at 4:30 PM PDT

RENO, Nev. (KOLO) - Governor Steve Sisolak addressed the state's COVID-19 response from Las Vegas on Tuesday, urging Nevadans to continue efforts to mitigate the spread of the virus.

Governor Sisolak said the state is seeing an alarming trend in new cases and hospitalizations.

"As of today, for the most recent 7-day period, cases are growing at a rate of .8% or 666 new cases per day," the Governor said. "For comparison, the growth rate for the 7-day period at the beginning of September was .5% or 332 new cases per day."

The Governor appealed to Nevadans to help change this trajectory, and said wearing a mask is key.

He also encouraged people to continue to wash their hands, social distance, avoid crowds, and stay home if they are sick. "Do your part," he said.

He added that flu shots are more important this year than ever before.

"What we do in the coming days and weeks will make a difference," he said.

"I know that the behavior of certain officials at the highest levels of our government run contrary to the public health experts -- creates a sense that the pandemic is over or questions on whether masks work. It creates division. But we must be united: The enemy is the disease -- not each other," he said.

The Governor also said DETR has begun processing and paying the additional unemployment insurance money through the federal lost wages program. He said payments are being made for claimants who are eligible for this program.

The Governor also said he plans to provide an update next week on the state's COVID-19 vaccination plan.

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LOCAL NEWS & EVENTS

NEWS

By Lucia Starbuck | October 15, 2020

Home > News > **Reno contracts new cleaning crew to clear homeless camps**

Reno contracts new cleaning crew to clear homeless camps

Image: Lucia Starbuck

The City of Reno's Clean and Safe Team has increased clearings of large homeless camps over the last few weeks after [Reno City Council cited concerns about environmental contamination and health hazards](#) from encampments along the Truckee River in late September.

The City of Reno's Clean and Safe Team also entered a new contract with the cleaning service Qual-Econ U.S.A., Inc. for \$510,000 for one year, which started Aug. 12. The Clean and Safe Team's contract ended with [COIT Services](#), according to a spokesperson for the city.

Qual-Econ U.S.A., Inc.'s role includes the removal of trash, debris, waste and personal property from site designated by the city. Their first major operation was a cleanup along the Truckee River near Kietzke an Kuenzli.

There was a camp of unsheltered individuals staying at the site. They were notified that they would have to leave and offered services, according to the city. A few people remained at the camp early Wednesday morning.

One woman, who uses the alias "Suspect," was standing with several piles of her belongings. The 28-year has been experiencing homelessness for three weeks and has been staying at this spot for the past two weeks.

"There's a lot of really good people here and they're all losing a place to go," Suspect said.

Suspect said she received notice that she would have to leave, but was still there this morning. Reno Polic Department officers were also on scene in the morning.

"The cops showed up and just wanted everybody to leave because they just need to clean up the riverwalk from the trash, which is understandable. It's really bad. It's gross. Some people just don't know how to ta care of things," Suspect said.

She said she doesn't know where she's going next and will probably find a spot similar to this one, but les populated this time. Suspect said she tried staying in a shelter but had a negative experience after her belongings were stolen.



1 of 18



City said shelter space usually available

Jon Humbert with the City of Reno said not every cleanup activity is to clear homeless camps, though on Wednesdays, the Clean and Safe Team have been conducting cleanups of larger encampments, like the one on today.

“The proximity to the river is a danger when it comes to flooding [and] human waste getting into the river really cause problems because it’s our drinking water and a huge part of the natural beauty of why we all here,” Humbert said, “It is difficult to ask people to uproot their lives on relatively short notice within a week or so, but we have options and opportunities for people who want to join programs and different outcomes than living here. There are options, and we just want people to take it up, and that doesn’t often happen.

There is limited shelter space in Washoe County, and there are not enough beds for every unsheltered person in the county.

“It is definitely a mounting concern,” Humbert said, “If every estimated person who’s unsheltered and lives on the street, all come line up, in theory, we would not have the space for them, but as a practical matter, incredibly rare that there isn’t at least multiple beds available for folks that night.”

Clearing encampments can cause people to disperse into the community and can potentially increase the spread of COVID-19, [according to the CDC](#).

This Is Reno asked Washoe County Health District Officer Kevin Dick how concerned he was that the cleanups are ramping up.

“I think there’s the potential for that to spread the virus, but I think that, you know, we’re not really in lockdown anymore, and we’re opening up bigger and bigger events. So, I don’t think that the homeless population right now is my biggest concern on where we may be seeing spread,” Dick said.



LUCIA STARBUCK

Lucia Starbuck is a graduate of University of Nevada, Reynolds School of Journalism. She has reported on issues impacting Northern Nevada, including the affordable housing crisis, a lack of oral healthcare, and challenges voters with disabilities face while trying to participate in the election process. She has directed and filmed two documentaries about homelessness. Through reporting, Lucia strives to shine a light on the challenges vulnerable populations face in our community.

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Stantec to design replacement Washoe County steamboat lift station

Upgrades are designed to improve capacity and redundancy.

Oct 21st, 2020

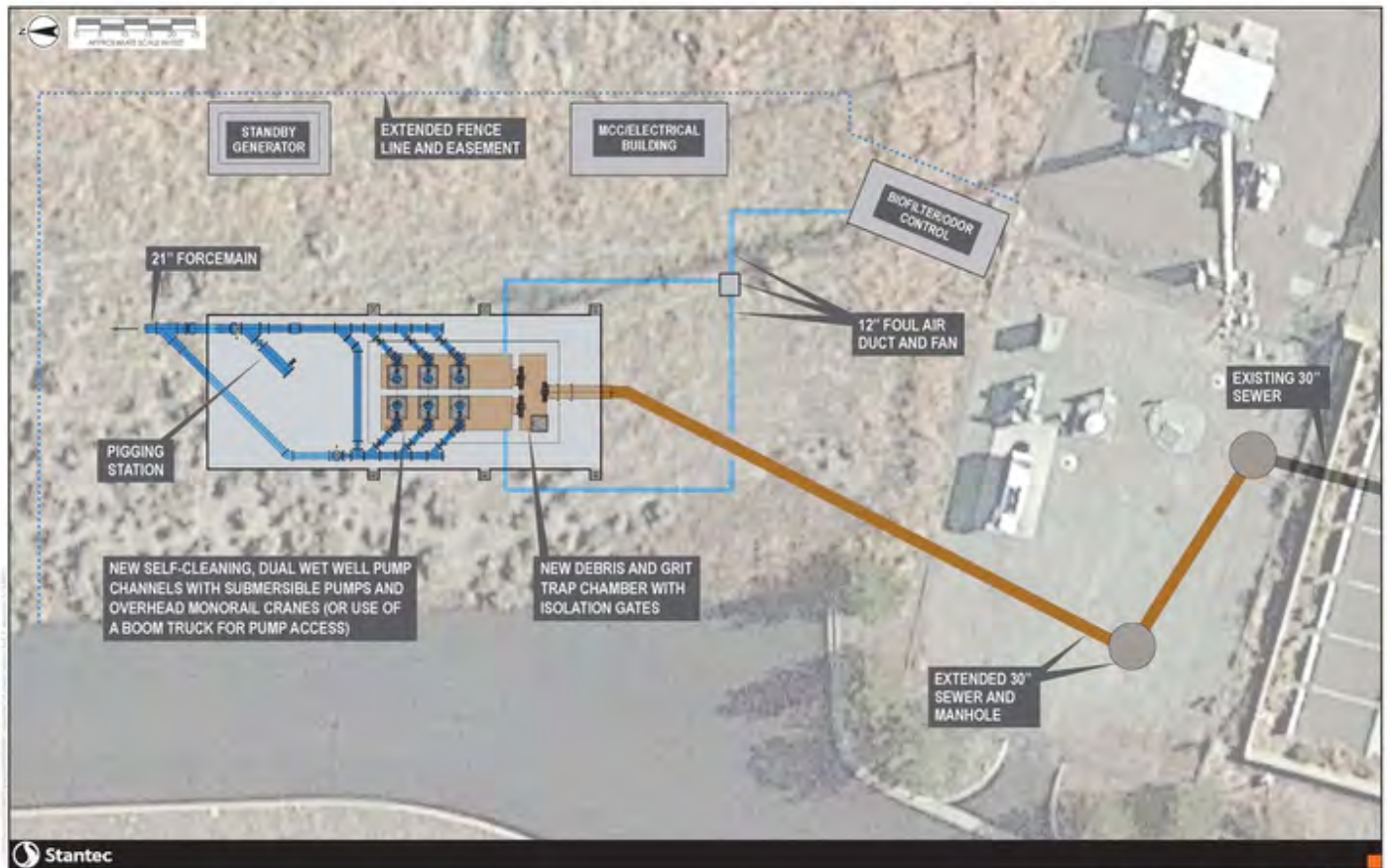


Figure 2-3
Alternative 2 and Alternative 3 Generic Site Plan

RENO, NV – As Washoe County and the greater Reno area continue to grow, the Washoe County’s Utility Division is replacing its aging Steamboat Lift Station, a crucial piece of infrastructure that feeds the South Truckee Meadows Water Reclamation Facility (STMWRF). Recently, the County selected Stantec—a global engineering, architecture, and design firm – to initiate design services on the new lift station. The existing facility has a peak capacity of 6.5 million gallons per day (mgd) and delivers approximately 60 percent of the total flow treated at STMWRF.

The \$13 million project will provide additional reliable capacity, improve resiliency and redundancy, and prevent pump-damaging debris from entering the station. Key to the design is reducing the risk to operators by incorporating

As an added benefit, the new wet well will include a self-cleaning feature to remove oils, grease, and grit to reduce maintenance and improve operator safety.

Currently, a break in the existing force main must be repaired within 10 hours to prevent sewage backups. Because a significant portion of the line extends below Thomas Creek and adjacent wetlands, repairs could potentially take weeks to complete. To address this concern and provide additional capacity for the future, a second larger force main connection to STMWRF will be installed and the existing force main reserved for backup use. Horizontal directional drilling will be used to install a new 21-inch diameter force main under Thomas Creek and avoid time consuming and costly USACE permitting.

“The resiliency and reliability of the lift station have long been a concern to the county, and we’re excited to assist the Community Services Department provide a safe and efficient facility that will serve the community for many years,” said John Buzzone, Stantec project manager based in Reno. “The new lift station aligns with the continued growth in the area and by repurposing the existing force main, we can provide an added level of redundancy and take away some of the County’s worry.”

Further, Stantec’s design will address technical various challenges, such as limited space, deep excavations, shallow groundwater, and the removal of pump-clogging and damaging debris before reaching the pumps without creating odor issues.

“Our sanitary sewer customers expect safety, resiliency, and performance in each part of the sanitary sewer system,” said Dwayne Smith, Director, Engineering and Capital Projects. “That is their expectation and that is our expectation as well, and to accomplish those requirements, we selected Stantec to design a new lift station that will give us decades of reliable performance for the South Truckee Meadows.”

Stantec is a global leader in the water industry as ranked by *Engineering News-Record*. The firm’s experience includes over 900 treatment plants, from some of the most complex facilities in the world to those supporting small, remote communities. With experts around the world focusing on innovative, fit-for-purpose solutions, the Stantec team offers expertise in such areas as advanced treatment process and technology, automation/information management, biosolids management, nutrient management and recovery, odor control, and water reclamation and reuse.

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TMWA Warns It's Time To Winterize Pipes

It's been a pretty warm fall, but cold weather is on the way. Truckee Meadows Water Authority is warning residents that now is the time to protect yourself from frozen pipes by winterizing your home.

Thursday, October 22nd 2020, 12:52 AM PDT by Jefferson Tyler

Updated:

Thursday, October 22nd 2020, 3:26 AM PDT

It's been a pretty warm fall, but cold weather is on the way. Truckee Meadows Water Authority is warning residents that now is the time to protect yourself from frozen pipes by winterizing your home.

The Truckee Meadows Water Authority wants to be clear that people need to winterize their water systems right now. "It's a really good idea to know where the shutoff valve is for your house as well as your sprinkler system. If any emergency happens like a busted pipe, you can quickly turn it off before any significant damage happens," said TMWA Supervisor of Conservation Laine Christman.

Sprinklers are out late this year with the warmer weather. TMWA says sprinkler systems and pipes are usually the first to freeze, so you need to be proactive. "Whats going to happen is that water is going to freeze. It's going to expand and then it's going to start breaking pipes," said Christman.

You want to make sure automated sprinklers are off, the system's supply line is closed, and that you use a water key to open drain valves to empty water out in the system so it doesn't freeze."You can identify the gate valve by the cross handle on the top. The key fits over the top and you can spin it one way or another," said Christman.



National Drought Resilience Partnership Responsibilities Under New Executive Order

Press Release

Release No. 0423.20

Contact: USDA Press

Email: press@oc.usda.gov

WASHINGTON, Oct. 22, 2020 – National Drought Resilience Partnership (NDRP) sta provided an overview of the NDRP’s role under the Presidential Executive Order (EO) issued October 13 on [Modernizing America’s Water Resource Management and Water Infrastructure](#) at the National Integrated Drought Information System Executive Council fall meeting on Tuesday.

Established in 2016, the NDRP is an interagency task force responsible for enhancing coordination of federal drought resilience policies and monitoring the implementation of the activities and goals as set out in the Presidential Memorandum that established the partnership. Under the EO, the NDRP will implement the “Priority Actions Supporting Long-Term Drought Resilience” document issued on July 31, 2019.

The EO also establishes the Water Subcabinet as an interagency Water Policy Committee of federal leaders to promote efficient and effective coordination across federal agencies engaged in water-related matters and directs those agencies to work together where they have joint or overlapping responsibilities, including with drought resilience.

“Our agencies have been working together for years to address water concerns, including drought,” said Bill Northey, Under Secretary of Farm Production and Conservation at the U.S. Department of Agriculture and First Co-Chair of the NDRP.

“These partnerships are a large part of how we can protect our food and water supply and build resilience on our farms and ranches and in our communities and businesses.”

“The Trump administration is taking unprecedented steps at the federal level to coordinate and empower states, tribes, local communities, and water users to promote drought preparedness and resiliency and ensure reliable water supply throughout the West,” said Dr. Tim Petty, Assistant Secretary for Water and Science at the Department of the Interior and Second Co-Chair of the NDRP. “The Water Subcabinet and the NDRP will focus on the needs of the American communities as they prepare, service, and recover from drought.”

The EO directed the Subcabinet to submit a report within 120 days that recommends actions to address a number of water-related issues, identify a recommended lead agency and other relevant agencies, and set out agency milestones for fiscal years 2021-2025. Among the recommendations to be included in the report will be actions to implement the NDRP’s “Priority Actions Supporting Long-Term Drought Resilience” document.

#

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Wildfires Lead to Increased Flood Risks: Be Prepared, Stay Alert

Published: October 23, 2020

California has experienced record-breaking wildfires in 2020 with more than 4 million acres burned, increasing the risk of flash flooding along with mud and debris flows to communities and homes downslope of burn areas.

The impacts caused by wildfires can be drastic when it comes to flood risk. In normal conditions, trees, shrubs, grass, and other protective groundcover allow rainfall to infiltrate into the soil. After a wildfire, the extreme heat can bake the soil to the point that water is unable to penetrate and can cause excessive run off in a post-wildfire area.

Due to these changes, even a small storm system occurring over burn areas can cause flash flooding. Mud and debris flows can occur up to five years after a wildfire.

Debris flows can take homes off their foundations and carry away vegetation, trees, large boulders, and vehicles. Mudflows are fast moving combination of water and soil. Both happen fast, so heed evacuation warnings.

Stay alert and be prepared before flooding occurs. Being ready also means knowing when to evacuate.

Flood After Fire Preparedness Tips:

- **BE AWARE of the potential of flooding in your community** – Know whether your home is downslope of a burn area or in an area susceptible to flooding by visiting the [FEMA Flood Map](#) website. You can visit [DWR's My Flood Risk website](#) for information on potential flooding in your area. Pay attention to weather forecasts. Check current conditions in your area by visiting the [National Weather Service Current Conditions](#). Listen to local authorities.
- **BE PREPARED** – Always have an emergency evacuation kit ready. An emergency evacuation kit is a collection of basic items your household may need in the event of an emergency, such as canned food, water, and a flashlight. Check out [FEMA's recommended items](#). Your family may not be together if a disaster strikes, so choose a family meeting place and a plan for how to communicate during an emergency. View tips to [create a family communications plan](#).
- **TAKE ACTION** – Follow evacuation orders. In emergencies, public safety officials use timely and reliable systems to alert you. Receiving timely information about weather conditions or other emergency events can make all the difference in knowing when to take action. [Review this fact sheet](#) to make sure you will receive critical information as soon as possible.

Quick links to be 'Flood Ready'

- Visit [DWR's flood preparedness week webpage](#).
- Learn more about the dangers related to Flood After Fire by viewing [our video](#).
- Learn more about your flood risk at [DWR's My Flood Risk website](#).
- For current conditions, visit the [National Weather Service's website](#).

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WEATHER ALERTS / Wind Advisory: Esmeralda and Central Nye

LOCAL NEWS

EPA Awards \$20.5M for infrastructure to protect surface waters & drinking water in Nevada



by: [Nikki Bowers](#)

Posted: Oct 26, 2020 / 04:43 PM PDT / Updated: Oct 26, 2020 / 05:08 PM PDT

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According to the EPA the money is via State Revolving Funds (SRF). SRF funding assists states, tribes, and territories with infrastructure projects that help protect surface water and provide safe drinking water to communities across the United States.

“EPA is delivering on its commitment to modernize water infrastructure and improve public health and environmental protections in the Pacific Southwest,” said EPA Pacific Southwest Regional Administrator John Busterud. “EPA’s \$346.8 million contributions to the State Revolving Funds in the region will enable more communities to make the investments needed to ensure safe drinking water and sanitation.”

The Nevada Department of Environmental Protection, also known as the NDEP, will receive and administer the SRF appropriations. NDEP helps wastewater and water systems maintain or bring them into compliance with federal and state clean water and drinking water requirements.

In 2020, EPA awarded \$1.6 billion nationwide in new federal grant funding for the Clean Water State Revolving Fund (CWSRF), including \$7,780,000 to assist Nevada. This funding is available for a wide range of water infrastructure projects, including modernizing aging wastewater infrastructure, implementing water reuse and recycling and addressing stormwater.

EPA also awarded \$1.07 billion across the country in new federal grant funding for the Drinking Water State Revolving Fund (DWSRF), including \$12,764,000 to assist Nevada. This funding can be used for loans that help drinking water systems install treatment for contaminants, improve distribution systems by removing lead service lines, and strengthen system resiliency to natural disasters such as floods.

Under the CWSRF and DWSRF programs EPA provides funding to all 50 states and

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the loan principal and interest are repaid over time, it allows the state's DWSRF and CWSRF to be recycled or "revolve."

As money is returned to the state's revolving loan fund, the state makes new loans to other eligible recipients. These funds can also be combined with EPA's Water Infrastructure Finance and Innovation Act (WIFIA) loans to create a powerful, innovative financing solution for major infrastructure projects.

For more information,

visit <https://www.epa.gov/dwsrf> and <https://www.epa.gov/cwsrf>.

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NEWS

Drought conditions spread across all of Nevada; forecast 'bleak' going into November

Amy Alonzo Reno Gazette Journal

Published 6:00 a.m. PT Oct. 28, 2020

Jim Snyder and his family have been ranching in the Yerington area for more than a century. The Snyders rely on the east and west forks of the Walker River for irrigation – but this year, the Walker River ran at some its lowest levels, impacting crop production and mirroring what the rest of the state is seeing – drought conditions across the board.

The entire state of Nevada is in some form of drought, and forecasters say the Reno/Tahoe area could set records for the driest September and October on record.

“We have no part of the state that isn’t at least in a moderate drought. It’s progressed very rapidly from the beginning of the water year when we had virtually no drought,” Tim Bardsley, hydrologist for the National Weather Service, said at a Monday state Division of Water Resources meeting.

Warm temps, little precipitation

Reno and Tahoe’s temperatures for Sept. 1 to Oct. 25 are the third warmest on record for the area since 1937, with just 2015 and 2012 coming in hotter. The warm temperatures have also come without any precipitation.

“We’re set up to set a record for Reno with no rainfall for September and October,” he said. “The forecast is pretty bleak for the rest of the month.”

The season’s first measurable rain typically falls around Oct. 4 in Tahoe City and around Oct. 8 in Reno. Measurable rain is considered more than 0.1 inches for Reno and 0.25 inches for Tahoe City, Bardsley said.

And, according to Bardsley, the outlook doesn’t look good for the coming weeks – or months.

There is less than a 40 percent chance of any measurable precipitation hitting Reno in the next two weeks, and models show below-average precipitation and above-average temperatures expected for December, January and February, he said.

For the Snyders, that means tightening belts and looking at letting fields lie fallow.

“We started out this year with some water in the reservoirs in both Topaz and Bridgeport, so that helped, they were around 50 percent. Now, they’re going to be virtually empty going into next year. That is really concerning. If we have another dry winter. It’s really concerning,” he said. “Belt tightening is about all we can do. Around March and April, we start thinking about fallowing fields and that sort of thing. As far as the economic part all we can do is tighten belts and cut costs.”

The rest of Nevada isn’t faring any better.

Remote backcountry weather stations in the Ruby Mountains near Elko and the Leavitt Meadow area that feeds into the Walker River reported their driest and second-driest years on record, according to Jeff Anderson, water supply specialist for the U.S. Department of Agriculture.

And, it’s been more than 180 days since southern Nevada reported any measurable rainfall, according to Marsha Gipson, northern Nevada field office chief for the U.S. Geological Survey’s Nevada Water Science Center.

Amy Alonzo covers the outdoors, recreation and environment for Nevada and Lake Tahoe. Reach her at aalonzo@gannett.com or (775) 741-8588. Here's how you can support ongoing coverage and local journalism.

Nevada drought vulnerability ranks as 'medium'

by Chief Meteorologist Cassie Wilson

Thursday, October 29th 2020

2020 Drought Vulnerability - Climate Central



RENO, Nev. (News 4 & Fox 11) — A [recent study](#) scored U.S. states on their overall vulnerability to drought, as being driven by three factors: exposure, sensitivity and adaptive capacity. And Nevada's is considered 'Medium' when it comes to overall drought vulnerability.

According to the U.S. Drought Monitor, 39% of the U.S. land area is currently experiencing moderate to exceptional drought that is affecting more than 74 million people, particularly across the West and Northeast. With 100% of Nevada classified in some kind of a drought and 80% of the state considered 'severe'.

Reno hasn't seen rain since August 24th and for the first time in history we won't record a drop of rain for September-October. These months matter because they tend to be the turning point after dry summers. This places September 2020 as 1 of 7 years without rain and will place October 2020 as 1 of 2 years without rain since 1937. The only other time we didn't record rain in October was back in 1995 (1995 was the turning point of the 1987 drought). As of October 29th 2020, Fall 2020 ranks as the driest Fall in Reno's 83 years of record.

Drought vulnerability is driven by three main factors: exposure, sensitivity and adaptive capacity

- Exposure -- how often we see drought
- Sensitivity -- how drought negatively impacts us
- Adaptive capacity -- how prepared are we

According to [Climate Central](#), in this June study, researchers found that states ranking highest in overall vulnerability often had less to do with how frequently drought occurs, and more with how prepared the state is for drought impacts. For instance, Oklahoma was ranked as the most vulnerable state due largely to its extensive cattle ranching and other agricultural enterprises, as well as limited possibilities for irrigation. Two other midwestern states, Iowa and South Dakota, made the top five most vulnerable list, in addition to Montana and Arizona.

Keep in mind a low vulnerability score does not mean a state is not (or will not) experience drought conditions. California, often one of the first states that comes to peoples' minds when they think of drought, has one of the lowest vulnerability scores. This is due to California's relatively strong economy and robust adaptation measures, which make it more resilient than other states with more limited adaptive capacity. But drought will only continue to worsen in a warming world.

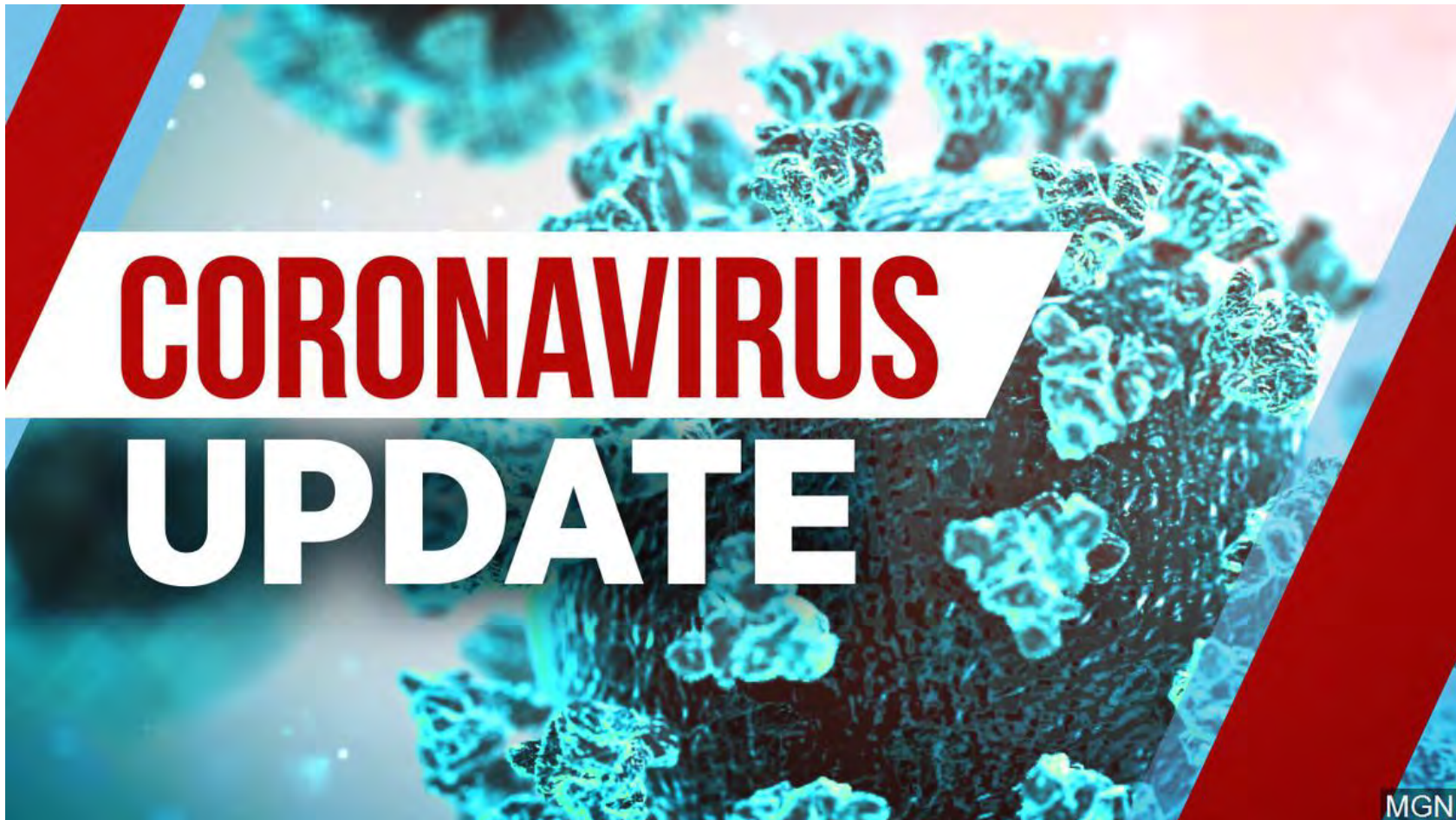
The good news is, while we are in a drought, we've been here before, and we are now more resilient to drought.

Truckee Meadows Water Authority (TMWA) says normal river flows are projected well into next year. [TMWA is prepared for how climate change](#) and population growth will impact our water. They say water supply and system reservoirs are designed to match extreme climate change stress through the next 50 years.

More from [TMWA's 2020-2040 Water Resource Plan:](#)

1. For the Truckee Meadows region, the Truckee River is a crucial component of the water supply. Nevada is the driest state in the country, with the Truckee Meadows receiving an average of only 7.5 inches of rain annually. Due to its proximity to the Sierra Nevada mountains, the climate in Northern Nevada is marked by highly variable weather patterns with alternating periods of flooding and droughts. Water supply planning based on historical droughts is crucial in helping TMWA plan for future water policies and resources.
2. Regarding the impact of drought and climate change: TMWA evaluated a range of scenarios that included historic droughts (including the worst droughts on record), climate change models, and future greenhouse gas emission projections. Precision Water Resources Engineering was also retained by TMWA to provide third-party verification regarding how climate factors may impact future conditions of the Truckee River system.
3. Regarding the impact of population growth on water demand: To estimate future water demand in the Truckee Meadows, the following data sources were used: Washoe County population, historical water services in TMWA's service area, and historical water use data. TMWA's population projection used in this report is based on a logistical growth curve, assuming that current trends and conditions continue.
4. With these conditions and projections, multiple drought and climate scenarios were simulated to the year 2098 to evaluate the resiliency and sustainability of TMWA's water resources. Using this information, the results show that TMWA's water supply is extremely resilient at least 50 years into the future, even under extreme climate change scenarios where more severe droughts are projected to occur. *Of related note: New residential development served by TMWA is required to dedicate water rights to not only meet a project's estimated water demand, but also includes an additional 11% safety factor of additional water rights which are dedicated to TMWA for drought storage.
5. Demand increases are due to projected regional growth in the future. The projected demands 50+ years out, as modeled in the climate scenarios, are extremely difficult to accurately project. TMWA conservatively estimates projected increases in water demand to prepare for potential future conditions. However, TMWA's annual water production is essentially equal to what it was in the year 2000, after adding over 36,000 new customers, an increase of approximately 30%. This speaks to TMWA's efforts regarding water conservation and increased water use efficiency.
6. The 2020–2040 Water Resource Plan builds off the foundation established in the previous plans and addresses important issues that have arisen over the past five years, including: Successful operation under TROA in storing credit water to improve total upstream drought storage for the Truckee Meadows; Recovery from meteorological drought conditions with a record-breaking winter in 2017; Expansion of TMWA's aquifer storage and recovery program to increase the ability to store treated surface water in aquifers to sustain groundwater levels and improve drought preparedness

Nevada tops 100,000 COVID-19 infections; governor seeks renewed effort against disease



Coronavirus update (MGN)

By Staff

Published: Oct. 31, 2020 at 11:10 AM PDT

CARSON CITY, Nev. (KOLO) -Nevada has topped 100,000 COVID-19 infections, prompting Gov. Steve Sisolak to call for a renewed effort to control the spread of the disease.

"We are not rounding the corner in this pandemic," Sisolak said in a statement. "Now is not the time to get complacent or to give into COVID fatigue. Especially on Nevada Day, I implore all residents to tap into their Battle Born spirit and work together to follow the public health measures, including wearing a face covering, practicing social distancing, avoiding large crowds and washing our hands frequently."

The state of Nevada released figures Saturday showing the state has 100,763 COVID-19 infections. It also has 1,777 COVID-19 related deaths.

Washoe County has become an area of concern. The state held a special meeting Thursday with the Washoe County Health District to discuss the high infection rate. Washoe County increased from 278 infections per 100,000 people on Sept. 14 to 612 on Oct. 26, the highest in the state. One result of the meeting was to ban gatherings of more than 50 people starting Nov. 5.



According to Johns Hopkins University data analyzed by The Associated Press, the seven-day rolling averages of daily new cases and the rate of positive tests in Nevada increased over the past two weeks. But the rolling average of daily deaths dropped from 7.1 to 5.6.

"In order to protect our economy, local businesses, healthcare workers, and our neighbors, Nevadans must collectively make the decision to take this virus seriously and practice mitigation measures – in our homes and in public places," Sisolak said. "If we don't, we will face tough choices and trade-offs that will be devastating to the livelihood of our state. But it doesn't have to be that way. We are not hopeless or helpless against this pandemic if we all recommit to putting the future of the Silver State first."

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From our skies to the surface of the Earth to the depths of our waterways, scientists at the Desert Research Institute (DRI) have their heads in the clouds, hands in the soil and toes in the water – quite literally! It is all in the name of science. More specifically, in their quest to solve some of the most complex issues that may impact our daily decisions and the lives of our families.

Founded in Nevada more than six decades ago, today DRI is a go-to scientific research pioneer the world over. As a non-profit educational facility, DRI counts with hundreds of scientists and faculty members who are actively looking at issues that affect us all.

Join us on Tuesday, November 10, 2020, for a complimentary, fast-paced, hour-long virtual event as four DRI Foundation Innovation Research Program (IRP) awardees dive into their respective areas of research including how a dog's nose is helping solve crimes and recover human bodies on land and in water; how one popular household appliance could be unleashing a common pollutant into the air we breathe; and how weather and climate (no, they are not the same) have the potential to affect our water resources and plans for the future.

Fueled by their passion and paired with their deep knowledge, our award-winning scientists will share their evolving answers in real-life and easy to understand terms as they find solutions for these and other diverse topics for today and tomorrow.

About the Innovation Research Program

The IRP provides the start-up funding DRI scientists need to test new ideas and produce initial data, which will help them build the scientific case for future research projects. The 2020 Innovation Research Project winners were selected through a competitive selection process. The selected projects demonstrate creative, innovative research or technological development that advances DRI's mission.

For more information about DRI and the Foundation's IRP projects visit: <https://www.dri.edu/foundation/>.

VIRTUAL EVENT DETAILS

Date: Tuesday, Nov. 10, 2020

Time: 8:30 – 9:30 a.m. PST

Location: Virtual event via Zoom

Register Today!



Moderated by

Tina Quigley

Chair, DRI Foundation

Former CEO of the Regional Transportation Commission of Southern Nevada

Understanding how microplastics in the environment impact freshwater systems and our air

Dr. Monica Arienzo, Assistant Research Professor
DRI Division of Hydrologic Sciences
National Science Foundation Grant Recipient

Advancing the science of canine odor detection – from criminal trials to accidental drownings

Dr. Mary E. Cablk, Associate Research Professor of Biology
DRI Division of Earth and Ecosystem Sciences
*University of Nevada, Reno Adjunct Professor in Forensic Anthropology
Auxiliary Deputy with several county Sheriff Offices in the State of Nevada*

Using the chemistry of atmospheric river snowfall to improve water resource management in the Western U.S.

Dr. Nathan Chellman, Postdoctoral Fellow
DRI Division of Hydrologic Sciences

Author of dozens of publications in the topic of climate and related studies

Tracking snow droughts in a warmer climate as a tool to help understand the need for changing water resource management strategies

Dr. Daniel McEvoy, Assistant Research Professor of Climatology
DRI Division of Atmospheric Sciences

Researcher with the Western Regional Climate Center and National Weather Service Grant Recipient





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Improving Water Resilience for Cities and Farms with Water Partnerships

ALVAR ESCRIVA-BOU NOVEMBER 2, 2020



The San Joaquin Valley and urban Southern California are worlds apart in many ways. Yet each face growing water challenges and a shared interest in ensuring reliable, affordable water supplies to safeguard their people and economies. Both regions' water futures could be more secure if they take advantage of shared water infrastructure to jointly develop and manage some water supplies.

In a [new report](#), we explore partnership opportunities to boost water resilience in both regions. By creating more flexible supplies, such partnerships can help water agencies adapt to the changing conditions expected under climate change. By coordinating the location of infrastructure investments, partnerships can help bring water to where and when it is most needed, at least cost. Specifically, we look at water co-investments and water sharing agreements that would enhance drought-year supplies in Southern California, while augmenting average water deliveries to the San Joaquin Valley to help address [groundwater sustainability](#). Although we explore some new models for cooperation, the basic idea is not new.

Indeed, water partnerships are [already being used](#) by California's urban and agricultural communities to help manage droughts, growing water scarcity, and the high cost of water infrastructure. These partnerships often take advantage of the state's water grid—a network of surface and underground storage and conveyance facilities. Several examples show the benefits of such collaborations:

Underground storage. Groundwater banks **recharge aquifers** during relatively wet years, so the water is available for use in dry years. The state’s largest banks are located in Kern County; others exist elsewhere in the southern San Joaquin Valley and Southern California. By storing water in these banks, distant water districts can help manage water variability, increasing drought resilience. In return, most of these banks have a “leave-behind” rule—a proportion of the water put in storage that may serve to pay for operating the bank, but that also increases water availability in the local basin.

Long-term transfers of dry-year water. The **2008 Yuba Accord** created an integrated system of surface and groundwater management within the Yuba Water Agency’s service area that provides an array of benefits. During dry years, local farmers switch from surface water to groundwater, enabling higher river flows on the Lower Yuba River to support salmon. This water is subsequently sold to downstream users, generating local revenues for water infrastructure and mitigating shortages south of the Delta.

Interstate and bi-national partnerships to increase flexibility on the Colorado River. Southern California’s Metropolitan Water District has stored water in Arizona aquifers. It has also collaborated with the Southern Nevada Water Authority—which serves the Las Vegas area—to find solutions to water quality challenges and to study alternative supply investments. Most recently, cities across the Colorado basin have partnered with farmers to pilot water trades to alleviate system-wide shortages by increasing the amount of water stored in reservoirs. Mexico is also able to participate in water exchanges tied to efficiency investments. All these options are possible because of shared infrastructure on the Colorado River system.

These and other examples show promising models on which to build. To scale up partnership opportunities, interested parties will need to address a range of legal, financial, environmental, and operational complexities. The state can help by assessing regional needs, making trading rules more flexible, and facilitating funding arrangements.

By diversifying water supplies, building connections to share water more flexibly, and preparing for the extreme events to come, such partnerships would support Governor Newsom’s Water

Resilience Portfolio, and pave the way for a shared effort to make the state’s water system more resilient to a changing climate.

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BODY + BRAIN

Toxic synthetic 'forever chemicals' are in our water and on our plates

What makes PFAS chemicals extremely useful—and extremely hard to get rid of—are the bonds between carbon and fluorine atoms that are almost impossible to break.

BY SHANTAL RILEY MONDAY, NOVEMBER 2, 2020 NOVA NEXT



Aqueous film-forming foam (AFFF), a powerful fire suppressant, is currently being phased out of use by the U.S. military. The foam is a major source of PFAS contamination in drinking water around the country. Image Credit: FEMA/U.S. Fire Administration

It was the start of the 2016 growing season when the farmers were told their water was contaminated. Susan Gordon and her husband had run Venetucci Farm for ten years. It was there, against the backdrop of the majestic Rocky Mountains, they had raised their two children. “I was devastated,” says Gordon.

By mid-summer, the farm trustee had [made the decision](#) to stop selling meat, eggs, and produce. Gordon was forced to let go of employees and cancel food-share orders. And when a hailstorm laid waste to the farm’s pumpkin crop, the fall pumpkin giveaway had to be called off too. “Everything just stopped,” she says. “To have it so abruptly ended was hard. We just felt so helpless.”

It seemed a terrible stroke of fate. But it wasn’t long before the water pollution was traced back to its source.

The farm sits less than 10 miles away from the Peterson Air Force Base, just outside of Colorado Springs, where fire foam was used for decades in [firefighter training](#). The foam contained PFAS, short for perfluoroalkyl and polyfluoroalkyl substances.

The chemicals seeped into the ground and then into the [Widefield Aquifer](#), which supplied water to the farm—and 65,000 people.

PFAS in our food

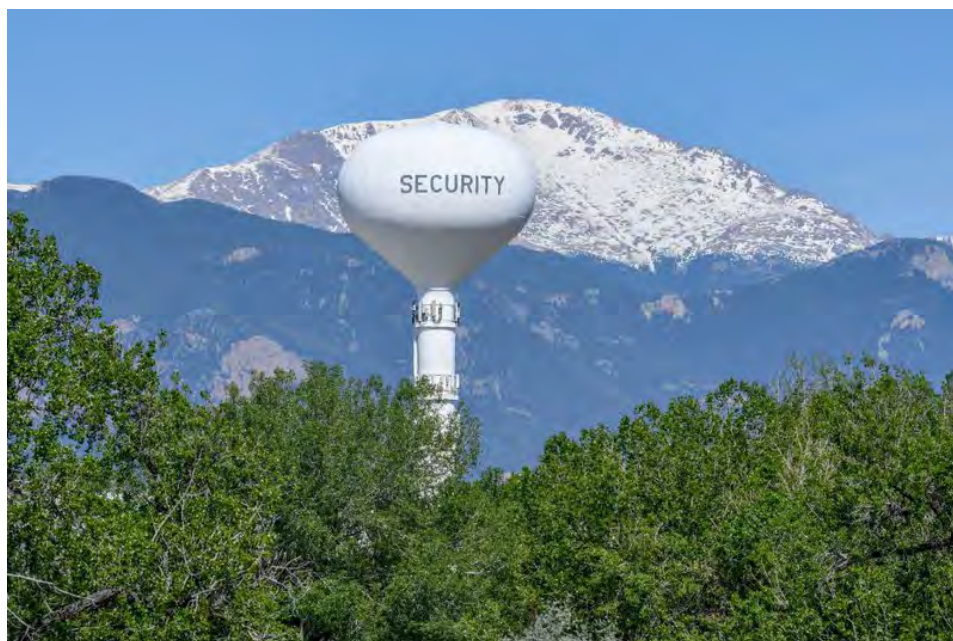
PFAS are found in an array of consumer products, from stain-proof sofas, carpets, and clothing to pizza boxes and microwavable popcorn bags. They slick the pans that make our eggs, waterproof outdoor gear, and make it possible to put out fires in seconds flat. In short, they make our lives easier.

Epidemiological studies have linked PFAS to a range of adverse [health effects](#), including liver problems, increased risk of asthma, reduced response to vaccines, and kidney and testicular cancer. There is also growing evidence on PFAS as [endocrine disruptors](#)—chemicals that interfere with hormone function—linked to obesity, thyroid disease, lower semen quality, and Type 2 diabetes.

Research has also shown that the chemicals [cross the placenta](#) to fetuses in utero and [pass to babies](#) through breast milk.

“At the end of the breast-feeding period, the child may have a serum concentration of PFAS that may be 10 times higher than the mother’s because the mother is essentially eliminating PFAS from her body,” says Philippe Grandjean, an environmental epidemiologist at Harvard University who has authored several papers on PFAS from breast milk. “Her serum concentrations go down, and the child cannot excrete them. So, they just keep on building up in the baby’s body.”

And, according to the Centers for Disease Control and Prevention (CDC), PFAS are found in the blood of [most Americans](#).



A water tower overlooks Security, Colorado, where the public water supply was contaminated with PFAS coming from Peterson Air Force Base. Image Credit: Security Water District

Launched in a post-World War II [chemical boom](#), they’ve slowly made their way into water systems around the country. They flow through reservoirs and faucets and bleed into aquifers and irrigation systems that sustain crops and livestock that end up [on our plates](#).

“There are two main ways that PFAS can be present in food,” says Christopher Higgins, a PFAS researcher and environmental chemist at the Colorado School of Mines. One way is through food packaging, Higgins says, and the other is through contaminated soil and water.

“It gets in through the soil and the water that the plants take up,” he says, “or in the water the fish swim in, and the fish accumulate the chemicals.”

Land animals can also drink contaminated water, and eat feed or grass grown in soil contaminated by PFAS, Higgins says. “If these chemicals are present in their food or water, they will get into their bodies, just like they do us humans,” he says.

At a small dairy farm in Arundel, Maine, the chemicals arrived in the [form of biosolids](#)—sewage sludge that’s treated, dried, and repurposed as fertilizer. “It’s high in phosphorus and nitrogen,” says farmer Fred Stone, who had the state-approved sludge from local sewer districts spread on his fields beginning in the 1980s.

The cows—mostly Holsteins and Brown Swiss—ate grasses and hay that were grown in the sludge-treated fields. They also drank the water from an aquifer under the farm.

Stone was baffled when he received a letter from a local water district in November 2016, stating that the aquifer contained PFAS. “We had no clue what the hell they were talking about,” says Stone, who had spent his whole life on the 100-year-old family farmstead.

Tests soon found PFAS in milk at the dairy farm. The first test measured PFAS at 1,400 parts per trillion—more than six times the state’s current [action level for milk](#). Further testing recorded PFAS at almost a million parts per trillion in field soil. Stone and his family tried to clean it up. “We were under the impression we could solve the problem,” he says.

They installed water filters and purchased new feed. They dumped thousands of gallons of milk and slaughtered dozens of cows. By the summer of 2018, the milk tested free of PFAS, says Stone. But a few months later, the numbers started to go up again.

In early 2019, Stone lost his dairy license. Though he had managed to get the PFAS to below the milk limit, his customers wouldn’t buy it. “Either way, the milk was contaminated,” the farmer says. “You can’t justify selling contaminated food. You just can’t.”



Hay bales dot the fields at Stoneridge Farm in Arundel, Maine. Dairy production was shut down last year after PFAS chemicals were found in the milk and water at the farm. Photo courtesy of Fred Stone

Last year, the Food and Drug Administration (FDA) released results from [market basket surveys](#) in which common supermarket foods were sampled to test for possible contaminants. Elevated levels of PFAS were reported in more than a dozen foods, including fish, seafood, turkey, and even [chocolate cake](#), which contained PFAS at 250 times the [federal guideline](#) for drinking water.

Months later, the FDA [revised the survey results](#), and reported lower levels of PFAS in the meats and fish. The chocolate cake had produced a [false positive](#) result, it said.

By then, cities and states had begun to take action. [Maine started screening](#) biosolids for PFAS and, along with Washington state, passed [a bill to phase out PFAS](#) in food

packaging. The cities of San Francisco and Berkeley, California, banned PFAS in single-use containers.

When asked whether the FDA planned to regulate PFAS in foods, spokesperson Monique Richards wrote in an email: “The FDA handles instances of PFAS contamination in food on a case-by-case basis to ensure that foods that are potential health hazards do not enter the food supply. Our regulatory approach to PFAS in foods from environmental contamination is consistent with how the agency addresses other environmental chemical contaminants.”

The FDA does acknowledge the inherent risk of exposure from food packaging. “The PFAS approved for use on paper or cardboard (to prevent grease from going through them) can potentially migrate to food,” [the FDA explains](#).

In July, the agency [announced an agreement](#) with three large manufacturers to phase out sales of some PFAS grease-proof coatings.

Meanwhile, Stone says his plans to sell the dairy and retire have been postponed indefinitely. “The property is worthless,” he says. “Nobody’s going to buy a piece of property that’s contaminated.”

An unbreakable bond

In the 1940s, [Joseph Simons](#), a professor of chemical engineering at Pennsylvania State University, then Pennsylvania State College, created the first viable process to make fluorocarbons.

Scientists working on the [Manhattan Project](#) used the compounds to help separate uranium for the atomic bomb. The Minnesota Mining and Manufacturing Company—which later became 3M—acquired Simons’ patent and began to commercially manufacture PFAS in the 1950s.

The chemicals were prized for their uncanny ability to resist heat, oil, and water. They were so tough, they were dubbed “forever chemicals.”

“The carbon-fluorine bond is among the strongest bonds in chemistry, so it doesn’t break down in nature.”

Their strength comes from the powerful bond between the carbon and fluorine atoms that make up PFAS molecules. “The carbon-fluorine bond is among the strongest bonds in chemistry, so it doesn’t break down in nature,” says environmental toxicologist Jamie DeWitt of the Brody School of Medicine at East Carolina University.

“The effects of sunlight, heat, and water can help to break the bonds of other types of compounds. To our knowledge, these processes of weathering don’t occur for PFAS,” DeWitt says.

Around the same time that Simons was working on his fluorocarbons, DuPont chemist [Roy Plunkett](#) was trying to develop a new refrigerator coolant when he [accidentally discovered](#) the fluoropolymer that would become Teflon.

Scientists eventually developed thousands of different PFAS, including PFOS and PFOA, the two most-studied PFAS chemicals. Some early applications included nonstick cookware, waterproof coatings, and cable insulation. They were later used in [aqueous film-forming foam](#) (AFFF), a type of fire foam used to extinguish fuel fires at military sites across the U.S.

And, 3M used them to make the fabric protector Scotchgard.

A toxic legacy

The shoemaker Wolverine Worldwide used Scotchgard on its popular Hush Puppies footwear. For years, the company disposed of sludge from its [tannery in Rockford](#), Michigan, in [a waste dump](#) a few miles away, just north of Grand Rapids.

Sandy Wynn-Stelt can see the old dump site from her living room window. The property is blanketed in a thick layer of pine and spruce trees.

“My house is directly across from a Christmas tree farm, which was part of the reason we bought it. It was so idyllic,” says Wynn-Stelt, who purchased the home with her husband in 1992.

Sandy Wynn-Stelt and her husband Joel at Bryce Canyon National Park in 2012. Their well was contaminated with PFAS that were later traced to an old industrial dump site next to their home in Plainfield Township, Michigan. Joel died of liver cancer in 2016. Photo courtesy of Sandy Wynn-Stelt



In 2017, the Michigan Department of Environmental Quality came to test the water. The results showed her well had PFAS levels that were more than 500 times the Environmental Protection Agency (EPA) advisory level for drinking water. Later, her blood was found to contain PFOS at levels about 700 times the national average.

She doesn't know how much PFAS her husband had in his blood by the time he died of liver cancer in 2016. There is no way to say for certain if his death was tied to the water he drank, Wynn-Stelt says.

"I'm not a doctor and I'm not a scientist, so I would never be able to definitively say," she says. "I think common sense and logic would tell you that drinking Scotchgard is not good for you."

In February, a federal judge approved an agreement in which [Wolverine will pay](#) to connect more than 1,000 neighboring properties, including Wynn-Stelt's, to municipal water. In August, Wynn-Stelt was diagnosed with thyroid cancer.

A massive human study

The human body is slow to eliminate certain PFAS. According to the Agency for Toxic Substances and Disease Registry (ATSDR), these unregulated chemicals can have a [half-life of more than eight years](#) in humans. "There is no enzyme in our bodies that can get in there and break apart that carbon-fluorine bond," says DeWitt, whose research focuses on the effects of PFAS on the immune system.

The [largest human study](#) to look at the health effects of PFAS exposure came out of the region of Parkersburg, West Virginia, where DuPont owned a factory that made Teflon. That process included the use of PFOA, also known as "C8" due to its eight-carbon structure. The company [released C8 wastewater](#) into the Ohio River, a source of drinking water for thousands of people in the Mid-Ohio Valley.



DuPont's Washington Works plant in Parkersburg, West Virginia. The plant released PFAS wastewater into the Ohio River, contaminating the drinking water of thousands of people in the Mid-Ohio Valley. The plant is now owned by Chemours. Image Credit: Snoopywv, Wikimedia Commons, CC BY SA 3.0

Sometime in the 1980s, the company began to [dump factory waste](#) into a landfill next to a cattle farm. Animals that drank from a C8-polluted stream on the property began to die off. Locals grew ill with [kidney cancer](#) and ulcerative colitis; mothers who worked at the plant had [babies with birth defects](#).

The Parkersburg saga is told in the movie [Dark Waters](#), which follows the work of [Rob Bilott](#), the lead attorney in a class-action lawsuit filed against DuPont in 2001. Bilott pointed to [internal studies](#), conducted decades earlier by 3M and DuPont, that revealed PFAS could lead to serious health problems.

The lawsuit led to a [multimillion-dollar settlement](#) and the creation of the [C8 Science Panel](#), a group of scientists who looked at blood samples of 69,000 people who lived near the plant. Working from 2005 to 2013, the panel identified probable links between exposure to PFOA and six diseases: ulcerative colitis, thyroid disease, pregnancy-induced hypertension, high cholesterol, testicular cancer, and kidney cancer.

Once inside the body, PFAS can bind to certain protein molecules and interrupt hormone signals. "It can be especially important when these signals are turned on or off during child development," DeWitt says.

Because they are structurally similar, PFAS can also [mimic fatty acids](#). But when they try to fit into cell receptors meant for fatty acids, they're not a perfect fit. This can lead to cell damage, DeWitt says. "Fatty acids are critical sources of energy," she says. "So, when PFAS bind to proteins that manage fatty acids, we think they have the ability to alter our metabolisms."

Scientists are only beginning to understand the biological mechanisms of PFAS in humans, adds DeWitt.



The former Wolverine Worldwide tannery, next to the Rogue River in Rockford, Michigan. The company dumped PFAS-filled waste across the street from Sandy Wynn-Stelt's property a few miles away. Image Credit: Michenv, Wikimedia Commons, CC BY SA 4.0

In 2016, the EPA set a non-binding [health advisory](#) level of 70 parts per trillion for PFOA and PFOS in drinking water. (For context, the [U.S. Navy states](#) that one part per trillion is the equivalent of one drop of impurity in 500,000 barrels of water.)

Two years later, the ATSDR, the federal health agency tasked with protecting communities from hazardous chemicals, contradicted the EPA. Instead, the [agency recommended](#) thresholds that were six to ten times lower than the EPA guideline.

Safer PFAS alternatives?

Their value to humanity may be impossible to measure. PFAS chemicals are found in lifesaving pacemakers and deibrillators. They're used to make fiber-optic cables, cell phones, and semiconductors. Because they resist heat and friction, they improve the function and safety of countless vehicles and machinery. They're used in gear for firefighters and astronauts alike.

Now they're everywhere: in house dust and factory emissions, and in soil and water, from the [Arctic Circle](#) to the depths of the [Pacific Ocean](#).

The health risks posed by "long-chain" PFAS—those with eight or more carbon atoms—have been uncovered almost a [century after their invention](#). 3M stopped making PFOS and PFOA in the early 2000s. DuPont and seven other chemical makers agreed to [voluntarily phase out](#) their use and emission of PFOA as of 2015. Neither chemical is currently manufactured in the U.S. But they're made in other countries, and imported in goods shipped from abroad.

"These are chemicals that can be very, very bioactive and so they can affect just about every organ system in our bodies."

The chemicals now lurk at [hundreds of military sites](#). In 2018, the Air Force laid out a set of measures to address the water contamination around the Peterson Air Force Base in Colorado, agreeing to pay for clean water supplies and filtration systems in communities that drew from the Widefield aquifer.

Provisions in this year's [National Defense Authorization Act](#) (NDAA) expand monitoring in public water systems, end military use of PFAS-based foam in firefighter training, and require the military to phase out AFFF by 2024. In the interim, the military is using foam made with [newer kinds of PFAS](#). Referred to as "short-chain" because they have fewer carbons, the newer PFAS have been shown to have [shorter half-lives](#) in humans and animals.

"It's good to know that the manufacturers are finally admitting that the long-chain PFAS may not be safe," says toxicologist [Linda Birnbaum](#), former director of the National Institute of Environmental Health Sciences. "But I would posit that the shorter-chain PFAS are doing similar things if not exactly the same thing as the long chains. You just require more of it."

In this newer group is GenX, an alternative to PFOA, manufactured by DuPont spinoff Chemours at its Fayetteville Works plant in North Carolina. DuPont transferred ownership of the plant to Chemours in 2015.

In 2017, the detection of GenX in the lower [Cape Fear River](#)—a drinking water source for about 250,000 people in the region—[made headlines](#). The chemical was sourced back to the plant, which, by then, had been discharging wastewater into the river for decades.

Under a [recent agreement](#), Chemours was ordered to remove 99% of PFAS flowing from the plant. The company now says it is developing plans for "[comprehensive remediation](#)" to address groundwater contamination from the site.

The human health effects of exposure to GenX are not yet understood. However, in 2018, the EPA shared findings from [studies](#) reporting liver damage, kidney toxicity, immune suppression, and cancer in lab animals exposed to GenX.

"The more we study these alternatives, we find they're doing similar things as the ones that we have more information about," says Birnbaum, who has authored more than 600 peer-reviewed publications.

PFAS have been shown to affect males and females of multiple species, at multiple life stages, she says.



Former NIEHS director Linda Birnbaum testifies before the U.S. Senate Committee on Environment and Public Works in March 2019. “GenX is eliminated from the human body quite rapidly, but it is essentially never eliminated from the environment,” Birnbaum told the committee. Photo courtesy of the Office of Sen. Kristen Gillibrand

“We’re finding that they don’t impact just the liver, or just the kidneys, or just the testes, or just the reproductive organs, or just the brain, or just the immune system, or just cause cancer. In other words, these are chemicals that can be very, very bioactive and so they can affect just about every organ system in our bodies.”

The road ahead

With stakes so high, states aren’t waiting for the federal government to act. California, Minnesota, [Michigan](#), [Vermont](#), [Massachusetts](#), [New Hampshire](#), [New York](#) and [New Jersey](#) have already passed measures to limit PFAS in drinking water. Other states are in the process of setting their own standards.

Progress on the federal level has been halting. In January, the U.S. House of Representatives approved [a bill package](#) that would classify PFOA and PFOS as hazardous substances. The Trump Administration quickly [threatened to veto](#) it. As part of its [PFAS Action Plan](#) in February, the EPA took a preliminary step toward regulating PFOA and PFOS in drinking water.

By contrast, the European Union intends to limit all PFAS in drinking water and set a [guideline for PFAS in foods](#) earlier this year. Several EU member countries have [proposed a phase-out](#) of non-essential uses of the chemicals.

“We know that there are somewhere in the neighborhood of about 5,000 different PFAS out there,” Birnbaum says. “The amount of time it takes to thoroughly test any one chemical, using standard kinds of testing procedures, we’re talking anywhere from a minimum of five to probably 10 years per chemical and millions of dollars.”

For that reason, they should be regulated as a class of chemicals, she says. “There are just too many chemicals and it takes too long and too much money. In the meantime, they’re just out there and people get exposed,” she says.

Fifty years ago, Birnbaum says, we learned that we shouldn’t make chemicals that will never go away.

“We learned that with DDT, we learned that with PCBs,” she says. “Why are we still making chemicals, especially these, that will essentially never leave our environment?”



STATE WATER BOARD WILL LAUNCH SURVEYS OF COVID-19 FINANCIAL IMPACTS

BY ACWA STAFF NOV 4, 2020 WATER NEWS

The State Water Resources Control Board on Monday will launch two surveys of drinking water systems to obtain more information about the financial impacts of COVID-19.

State Water Board staff will conduct a phone survey of approximately 500 smaller water systems with fewer than 10,000 connections and an emailed survey of 150 larger water systems with 10,000 or more connections.

The intent of both efforts is to help the State Water Board better understand the financial impacts of COVID-19 on drinking water systems, including details about the amount of money that customers owe to water systems with implementation of the Executive Order suspending water service shutoffs. The survey will also seek information about repayment plans. The written survey will include context boxes so that systems can add more information or provide important context with the answers.

ACWA encourages member agencies that are contacted as part of the survey efforts to participate.

The emailed survey responses will be accepted until noon on Nov. 25. The state's goal is to complete both parts of the effort by the end of the year.

ACWA staff will continue to engage in this issue and keep members apprised. ACWA is in frequent conversations with the State Water Board and other stakeholders on this topic and has a working group that is providing feedback to ACWA on issues related to the suspension of shutoffs under the Executive Order. Additionally, the ACWA Board-level DAC Safe Drinking Water Initiative Task Force is focused on the financial impacts issue and discussed it during its Oct. 28 meeting.

This issue will be the topic of a program at ACWA's Fall Virtual Conference & Exhibition on Dec. 2-3.



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2020 U.S. election overview

November 5, 2020

Connections Article, Publications

By Tommy Holmes, AWWA Legislative Director, Government Affairs Office

While we may not know with certainty who the President of the United States will be next Jan. 20, we do have a clearer picture of who might lead key committees that impact the water



sector when the reshaped U.S. Congress convenes. Video comments from Tracy Mehan, AWWA's Government Affairs Executive Director, are available here.

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In the U.S. Senate

Republicans appear on track to keep control of the Senate, but that verdict is not official yet, so we'll assume it remains an open question. Without knowing which party will control that body, we can list the top party members in each committee and subcommittee. If Republicans keep control, their top members on each committee will naturally remain or become the chairs. If the Democrats take the Senate, their top members will be chairs. The leader of the minority party on a committee or subcommittee is called the ranking member. Bear in mind that there could be some surprises in the coming weeks as certain members covet leadership spots on other committees and move over to those panels. Some shuffling occurs after every election.

Senate Environment and Public Works Committee

Indeed, the Senate Committee on Environment and Public Works will likely have a notable leadership change in the next Congress regardless. This committee has jurisdiction over drinking water and wastewater policies. The current chair, Sen. John Barrasso, R-Wyo., is expected to give up that leadership position to take the helm or ranking member post of the Senate Committee on Natural Resources, a natural fit for a senator from Wyoming. The current chair there, Sen. Lisa Murkowski, R-Alaska, is term-limited under party rules. The top Republican on Environment and Public Works will likely be Sen. Shelley Moore Capito of West Virginia who handily won re-election Tuesday. We expect to see Sen. Tom Carper of Delaware remain the top Democrat on that committee, and Sen. Tammy Duckworth of Illinois will likely remain top Democrat of the Subcommittee on Fisheries, Water and Wildlife, the subcommittee with more direct jurisdiction over municipal water issues. Sen. Kevin Cramer of North Dakota will also likely remain as top Republican on that subcommittee.

Senate Appropriations

On the Senate Committee on Appropriations, we do not expect to see major changes. Appropriations committees provide funding for federal programs after other committees authorize or reauthorize programs. Sen. Richard Shelby of Alabama will likely remain the top Republican and Sen. Patrick Leahy of Vermont will probably be the top Democrat. The Appropriations Subcommittee on Interior, Environment and Related Agencies determines funding levels for EPA programs. The new top Republican may be Sen. Roy Blunt of Missouri. The current chair, Murkowski, is also term limited in that position.

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U.S. House Energy and Commerce Committee
Over in the House of Representatives, Democratic control has not really been in question, but



some leadership positions related to drinking water will change on the Republican side. House Democrats will not formally name chairs until the new Congress convenes in January, but not much change is expected on that side of the aisle. We expect to see Rep. Frank Pallone of New Jersey return as chair of the House Committee on Energy and Commerce, the committee with jurisdiction over drinking

water.

Rep. Greg Walden of Oregon, top Republican on Energy and Commerce, is retiring at the end of this Congress. Taking his place on the panel may be Reps. Michael Burgess of Texas, or Cathy McMorris Rodgers of Washington. The Subcommittee on Environment and Climate has direct jurisdiction over drinking water, and Rep. Paul Tonko, D-N.Y., will likely remain chair. The current ranking Republican is Rep. John Shimkus of Illinois, who is also retiring. The ranking Republican could be either Rodgers or Rep. David McKinley of West Virginia.

House Appropriations

Leadership of the House Committee on Appropriations is still not clear on the Democratic side. Current chair, Rep. Nita Lowey, D-N.Y., is retiring. There is a three-way contest for that seat among Reps. Debbie Wasserman Schultz of Florida, Marcy Kaptur of Ohio and Rosa DeLauro of Connecticut. Votes are still being counted in DeLauro's race. On the Subcommittee on Interior, Environment and Related Agencies, we expect to see Rep. Betty McCollum, D-Minn., return as chair and Rep. David Joyce, R-Ohio, return as ranking member.

House Transportation and Infrastructure Committee

The House Committee on Transportation and Infrastructure has jurisdiction over wastewater issues in the House. Chair Rep. Peter DeFazio of Oregon was in a tough re-election race this year, but did win, and he will likely keep that committee leadership position. Rep. Sam Graves of Missouri won re-election and will likely remain ranking Republican on the committee.

Water Policy Trends

The easy assumption is that if Democrats control Congress, there will be more regulations headed to the water sector, but more infrastructure spending, and if the Republicans win, fewer regulations and less spending on infrastructure. However, the differences between the two parties appears to be in degrees of regulation sought, and the amount of infrastructure spending that would be sought by each party may not be far apart. Regarding regulations, there are leading Republicans with PFAS and lead concerns in their states or districts and who have

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voiced support for stricter regulation of these substances. Regarding infrastructure spending and Republicans, there will likely be a tug-of-war between fiscal conservatives in the party and those who see such spending as a way to help the country recover economically.

A number of Democratic leaders in Congress do want to see EPA take a tougher stance on drinking water regulation, and Democrats have indeed been more generous in providing infrastructure funding in the past. Democrats have introduced bills in this Congress to amend the Safe Drinking Water Act to speed up the regulatory determination process. This is mainly a prelude to actions coming in the 117th Congress. Until that act is amended, regulatory processes will continue to follow the current methodical, deliberative path. How far changes to the Safe Drinking Water go will depend on whether such legislation can make it through the Senate and be signed into law by the president.

Coronavirus relief will be another big issue facing the next Congress. In May, the Democratically controlled House passed H.R. 6800, known as the HEROES Act. It contained \$1.5 billion to help low-income customers pay their water and wastewater bills, channeled through utilities. Tied to that would be a moratorium on disconnections of customers for non-payment. A big question lingering over that is the length of time such a moratorium would be in place. The Republican-controlled Senate never took up the bill. However, there is interest on both sides of the aisle in some form of relief for low-income customers. AWWA and the other major water organizations have been advocating for that and for assistance to water utilities that have suffered significant revenue losses. Ë

A part of coronavirus relief – whether in a coronavirus bill or stand-alone legislation – is economic recovery and job creation. However, control of Congress shakes out, we expect some increase in infrastructure spending. In this session of Congress, we have seen some new grant programs enacted and more proposed for addressing lead and PFAS in drinking water, assisting economically distressed communities and the like. The approach taken by Republicans in Congress and the White House has largely been to put some more money into existing programs, such as the state revolving loan program and the Water Infrastructure Finance and Innovation Act program.

The tax code may get another look no matter who controls Congress and the White House. AWWA and organizations representing local governments will be vigilant in protecting tax-exempt municipal bonds. They have been on the table in past rewrites of the tax code. We will continue efforts to regain tax advantages that local governments used to have under advanced refunding of bonds.

What will be interesting to see where water falls in the macro issues Congress considers. Where will water be in Democratic priorities and approaches to them in pandemic relief, health

care, climate change, jobs or firming up other environmental regulation? Where will water fall in Republican priorities and approaches to economic recovery, health care and regulations?

We'll keep you updated on such developments as the final outcomes of the 2020 elections become known.



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Pilot system monitors tweets for drought early warning

Pilot system monitors tweets for drought early warning



Each Monday, National Drought Mitigation Center assistant director Kelly Helm Smith emails a map of the past week’s #drought tweets to a listserv of drought experts and state climatologists.

Lincoln, Neb. —Millions use Twitter to share their rapid-fire opinions, observations and connections to real-time events. And natural disasters are often major conversation starters. With that in mind, National Drought Mitigation Center [<https://drought.unl.edu/>] assistant director Kelly Helm Smith wanted to see what tweets said about the impacts of drought, and whether tweets could contribute to a drought early warning system.

Smith embarked on a pilot study, the results of which were recently published in the *Bulletin of the American Meteorological Society*. She developed a method to monitor the rate of tweets about drought over time, state-by-state, allowing her to detect when #drought tweets unexpectedly surge. Tweets, as a measure of fluctuating attention, could contribute to a drought early warning system. In the process, Smith examined two years’ worth of drought tweets, with conversations ranging from agricultural to cultural, in different parts of the country.

“Barely made it to stubble-high by the 4th of July” one Plains state farmer tweeted in the midst of a fast-moving flash drought in summer 2017.

“CA had a great winter but the drought has left an indelible mark on our water use psyche,” a California agency tweeted, even as the state emerged from a multi-year drought.

The National Drought Mitigation Center, housed in the University of Nebraska–Lincoln’s School of Natural Resources, has monitored news stories for drought impacts since 2005. Smith said monitoring social media for evidence of drought impacts is in some ways an extension of that effort, and that her work came about in response to state climatologists and others asking about ways to search and archive drought tweets.

“A lot of hazard researchers are trying to figure out what we can learn from social media,” Smith said. “Social media has a real role to play in both assessing the extent and impacts of disasters and in warning people about disasters. Seismologists, for example, report that social media sometimes provides faster earthquake notifications than seismographs.”

Along with conducting research on drought impacts and planning, Smith is the drought center’s communications coordinator. Each Thursday, the center tweets the latest U.S. Drought Monitor, a map that shows the latest drought conditions across the U.S. and its territories. It leads to a lot of chatter, and Smith’s study confirmed that the number of drought tweets is highest on Thursdays.

The drought search term, Smith said, is a noisy one. Sports teams endure championship droughts. The lovelorn weather romantic droughts. Smith’s system searched for tweets that featured hashtags such as #drought, #NEdrought or #drought17 to limit results to more relevant conversations. Many Twitter-savvy farmers used hashtags with the year included — #drought17, #drought2018 — to tell the world what they were experiencing. Those tweets often provided original information, such as video shot from the back of a tractor or descriptions of field conditions.

“Just as no single hydrometeorological indicator is considered sufficient to capture all aspects of drought, #drought tweets are one more metric to consider, and represent a real addition to quantifiable drought impact data,” Smith wrote in the study. “Drought tweets reflect needs and interests identified by agencies and organizations involved in water and drought management, as well as on-the-ground experiences of agricultural producers and others whose lives and livelihoods are affected by drought. Tweets are a measurement of drought impact, even when the impact is primarily an awareness of a problem that may require attention.”

One of the original employees when the National Drought Mitigation Center opened in 1995, Smith started her working life as a newspaper reporter and public relations professional. She later earned a degree in community and regional planning and recently completed a doctoral degree in human dimensions of natural resources.

Though the study is published, the work is ongoing and will include exploration of larger Twitter searches. Meanwhile, on Mondays, Smith emails a map of the past week’s #drought tweets to a listserv of drought experts and state climatologists.

Co-authors of the article are Drew Tyre, quantitative ecologist in the School of Natural Resources; Zhenghong Tang, professor and director of the Community and Regional Planning program at Nebraska; Mike Hayes, climatologist in the School of Natural Resources; and Adnan Akyuz, North Dakota state climatologist. Tweet collection has been partially supported by the U.S. Department of Agriculture.

The study is available at the [Bulletin of the American Meteorological Society website](https://journals.ametsoc.org/bams) [https://journals.ametsoc.org/bams].

by [Cory Matteson](https://news.unl.edu/written-by/cory-matteson-ndmc-communication/) | [NDMC Communication](https://news.unl.edu/written-by/cory-matteson-ndmc-communication/) [https://news.unl.edu/written-by/cory-matteson-ndmc-communication/]



Announcement | November 5, 2020

UPDATED LAYPERSON'S GUIDE TO WATER RIGHTS LAW HOT OFF THE PRESS

LATEST EDITION OF THE GUIDE OFFERS A "MINI-TEXTBOOK" TO HISTORY, KEY ISSUES AND CHANGES IN WATER LAW

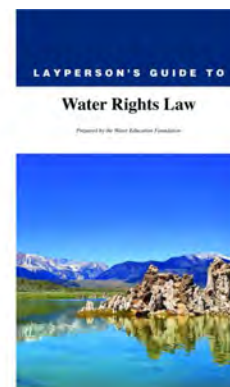
Our popular [Layperson's Guide to Water Rights Law](#) has just been updated with an extensive section on groundwater rights and the 2014 Sustainable Groundwater Management Act as well as the latest significant court cases governing how water is used in California.

This 28-page Layperson's Guide, recognized as the most thorough explanation of California water rights law available to non-lawyers, traces the authority for water flowing in a stream or reservoir, from a faucet or into an irrigation ditch through the complex web of California water rights.

It includes historical information on the development of water rights law, sections on surface water rights and groundwater rights, a description of the different agencies involved in water rights, and a section on the issues not only shaped by water rights decisions but that are also driving changes in water rights. It includes a chronology of landmark cases and legislation and an extensive glossary.

[Click here](#) to order individual copies for \$15. Discounts are available for bulk orders. Contact [Doug Beeman](#) with questions.

The Layperson's Guide to Water Rights Law is part of the Foundation's series of Layperson's Guides that offer readers an easy-to-understand, broad overview and perspective on a variety of important water topics. They are available as a [set](#) or [individually](#).



Return to ASDWA's Newsroom

WQRF RELEASES CONTAMINANT OCCURRENCE MAP

📅 November 5, 2020 👤 Kevin Letterly 💬 0 Comment 🗄️ Drinking Water Headlines

The Water Quality Research Foundation has released its new Contaminant Occurrence Map, which provides data in the United States for regulated drinking water contaminants that have an enforceable level (MCL or Action Level) above the health-based goal level (MCLG) and aesthetic contaminants.



This map pulls data from 46 state regulatory agencies, EPA's Fourth Unregulated Contaminant Monitoring Rule (UCMR4) and the federal Safe Drinking Water Information System (SDWIS). The data was collected over the last 10 years for 57 different drinking water analytes. For more information and to access the interactive map, [click here](#).

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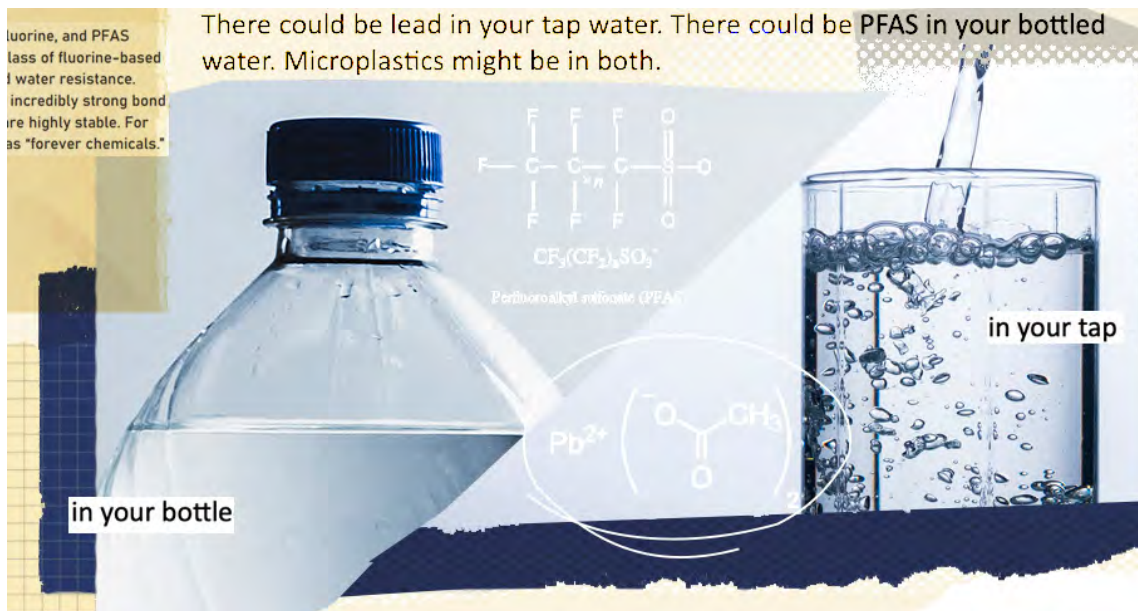


⌵

DRINKING WATER

Experts distrust the tap, but prefer it to bottles

Ariel Wittenberg, E&E News reporter • Published: Friday, November 6, 2020



Experts say there is no perfect way to decide whether tap or bottled water is healthier. Claudine Hellmuth/E&E News (illustration); EPA(text); National Academies Press (PFAS chemical compound); Michał Sobkowski/Wikipedia(lead chemical compound); Freepik(photos)

There could be lead in your tap water. There could be PFAS in your bottled water. Microplastics might be in both. Do you choose neurotoxic heavy metals or carcinogenic "forever chemicals"?

That's the predicament facing Americans every time they take a drink of water.

"You know what, I don't trust our water systems — tap or bottled," says Bruce Lanphear, a scientist whose research underpins EPA regulations on lead and mercury. "It is really hard for any of us to know or trust that our water is free of contaminants, even if we say we have more confidence in some sources for some contaminants."

Part of the problem for consumers trying to decide which risks to take is that water is regulated by different federal agencies depending on whether it comes out of a tap or bottle, but the standards aren't always in sync.

EPA regulates the nation's tap water, while the Food and Drug Administration regulates bottled water, which can come from natural springs or municipal taps. The two agencies have very similar regulations for many contaminants. FDA, for example, has **said** it won't set mandatory standards for per- and polyfluoroalkyl substances, or PFAS, until EPA does.

But regulatory differences do exist, most strikingly for lead, with EPA allowing three times as much of the neurotoxin at the tap as FDA allows in a bottle. EPA's regulations only cover water coming from municipal, public sources — there are no federal regulations from well water, which is less likely to contain lead but can be contaminated with arsenic and other heavy metals naturally found in soil, or nitrates from nearby farming operations.

Drinking water experts who have spent their careers researching and thinking about toxics in water say there is no perfect way to decide which source of water is healthier. In many cases, it comes down to which chemical each individual consumer is most worried about.

"I don't have any good news," said Ronnie Levin, a former EPA staffer who now manages the water and health program at Harvard University's T.H. Chan School of Public Health and is an expert on lead issues.

"Unfortunately, it's like a lot of risks people take, you use your intuitive gut about it, because there's nothing really scientific to tell you which is better."

'It all depends'

Levin lives in an old house in a Boston suburb. She hasn't had her own tap water tested but knows her town has a lot of old lead pipes, so she uses a reverse osmosis filter to mitigate the risk.

A reverse osmosis filter — which can cost thousands of dollars — uses pressure to force water through a semipermeable membrane. Considered by many to be the gold-standard of at-home filtration options, the system

blocks contaminants larger than water molecules, but those that are smaller, like polynuclear aromatic hydrocarbons, can still get through.

"I don't want people to know what filter I use and think that's the safest thing to do," she said. "It all depends on where you live and what you're concerned about."

Consumer Reports senior scientist Michael Hansen agrees. He drinks unfiltered tap water in his New York City home, in part because he knows the aquifer where the city gets its water is pristine.

"If you're in an area where you are concerned about an acute lead problem, I might buy bottled water, but you'd have to be pretty well-off to keep it up," he said.

E&E News asked a half-dozen water experts what they drink, and most rely on tap water, albeit with expensive filters. Many are worried about the waste from bottled water, and the possibility that plastic bottles themselves could be leaching still-more contaminants.

“ Bottled water isn't necessarily any safer or purer than the water coming out of your tap. ”

Erik Olson

"Bottled water isn't necessarily any safer or purer than the water coming out of your tap," said Erik Olson, the Natural Resources Defense Council's senior strategic director for health and food, who drinks tap water in his Virginia home outside of Washington and researches the tap water of places he's traveling to before deciding whether or not to opt for bottled water.

Asked about concerns that bottled water is often repackaged tap water, the International Bottled Water Association said while some of its members "use public water sources for their purified bottled water products," that is "not just tap water in a bottle."

"Once the tap water enters the bottled water plant, several processes are employed to ensure that it meets the standard for purified water in the U.S.," the IBWA said. The group said its members "take consumer health and safety very seriously," which is why the IBWA decided not to wait for FDA and set its own voluntary standards for two per- and polyfluoroalkyl substances, PFOS and PFOA, that are more stringent than state laws and EPA's health advisory level.

Both tap and bottled water have been found to contain [other types](#) of PFAS.

Concerns with water bottles, filters

The organization also pushed back against claims that plastic bottles themselves could be leaching chemicals into water, saying those claims are "inaccurate, misleading and only serve to create unnecessary alarm among consumers" and noting that food packaging materials are scrutinized by FDA.

Yanna Lambrinidou, founder of Parents for Nontoxic Alternatives, was the only drinking water expert E&E News interviewed who does not drink tap water. Her daughter was an infant during Washington's lead in drinking water crisis, and the family only avoided a potential health tragedy because their pediatrician, who had been treating another child with severe lead poisoning from drinking water, warned them to avoid it years before *The Washington Post* uncovered the issue.

The experience shattered Lambrinidou's faith in public water. Her family now uses a reverse osmosis filter on their tap for cooking but buys 5-gallon glass bottled water for drinking — in part because of her concerns about plastic.

"I cannot separate the choices we make in our household from the fact that we lived through the nation's worst lead in water crisis," she said. "It was such a violation, such a crossing of a line. I really admire people who are able to overlook it and then go back and place their children in the hands of the same system, but I am not one of those people."

Lambrinidou acknowledged that there could well be unregulated contaminants in the bottled water her family drinks, saying she knows it comes from an aquifer in the Midwest but hasn't tested it. Still, she said, she has "decided to trust it."

Experts cautioned that not all water filters are created equal — and the cheapest ones can bring in their own contaminants. Pitcher filters, an easy choice for those renting or who don't want to augment their own faucets, can introduce microplastics to water that sits in them over long periods of time. They come in plastic and glass, but the glass ones are often more expensive.

"It's a valid concern," says Judith Enck, who led EPA Region 2 under the Obama administration and now advocates reducing use of plastics. She cautioned that PVC pipes used by many municipalities to replace lead ones could also possibly leach more microplastics into tap water but said the priority should be removing lead pipes.

Enck uses tap water for all of her needs and avoids plastic whenever possible — even using a glass bottle for her soda stream to make seltzer. Still, she notes, microplastics — which can move through the body's stomachs and enter peoples' circulatory system — are present in tap water, too. There are no EPA or FDA standards for microplastics in drinking water, though California in 2018 decided to start monitoring for microplastics in tap water by 2021.

"It's just impossible for consumers to follow every single detail," she said. "The answer is not consumer awareness, but much better government."

BPA-free plastic pitcher with a carbon filter because she's most concerned about disinfection byproducts coming from her tap. Carbon filters remove some lead, but not as much as reverse osmosis filters, which are more expensive.

"If I was planning to have children, or lived with small children, I might look for the most advanced lead filter on the market, but that's not the case for me," she said.

While reverse osmosis filters remove more contaminants than the filter Naidenko has, they waste a lot of water, which can be a concern in the D.C. area where water rates are high, or in drought-ridden areas like California. She says she would only use bottled water if she was worried about a certain contaminant, like PFAS, that a filter could not address. But she's more worried about the environmental waste of disposable bottles than the water contained in them.

"There is no perfect solution," she said. "And so the question is what do you feel most comfortable with and, for me, what in the bigger picture, including any waste, will have the most beneficial impact?"

'An environmental justice issue'

Many of the drinking water experts E&E News spoke with said they were reluctant to share which filters they use on their tap water because most people cannot afford the extra expense. It's not fair, they say, that individual consumers have to navigate these questions on their own, often with no good solutions.

For example, Lanphear's recent research has found that fluoride, which is added to many public drinking water systems in the United States, can have neurotoxic impacts on kids. He now advises pregnant women and mothers of infants not to drink fluoridated water. But he's uncomfortable with the fact that his solution is "you're proposing people spend a lot of money on bottled water over 9 months, or pay hundreds of dollars for a filter."

"It's an environmental justice issue," he said, noting the same is true of many contaminants, like lead, which is disproportionately present in homes of poor people and families of color.

Lambrinidou agreed. While her family was able to protect itself at home from Washington's lead crisis, she knows many families who didn't know enough to do so before the contamination was revealed.

"Everyone is operating a little bit in the dark, and then deciding for ourselves what our priorities are and how to weigh out the uncertainties," she said. "And all of that is happening when you have major disparities in people's abilities to conduct their own research and afford solutions."

Olson agreed. The federal government, across the board, he said should be working to make water safer to drink, be it through stricter regulations from EPA or more funding from Congress.

"Clearly the answer is not every man, woman and child for themselves trying to read fine print about the contaminants in their bottled water versus tap water," he said.

“ The answer is not consumer awareness, but much better government. ”

Judith Enck

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NOVEMBER 9, 2020
BY WFM STAFF

AMWA: Closely divided Congress complicates policy landscape for 2021



The [Association of Metropolitan Water Agencies](#) released an update in its Monday Morning Briefing today n that a thinly divided Congress could result in a complex policy landscape on many issues including water an infrastructure.

Voters across the country delivered somewhat mixed messages on Election Day, sending Joe Biden to the W House but also withholding the decisive victory that some had expected for congressional Democrats. Much remains to be settled in the coming weeks and months, but it is apparent that when lawmakers convene fo 117th Congress in January neither party will have any margin for error when attempting to advance policy priorities.

As of late last week Democrats were positioned to maintain their hold on the House of Representatives, but a weakened majority will fall short of earlier expectations of building on their current 17-vote advantage. W all the votes are counted, it is anticipated that Republicans could end up with a net gain of as many as ten H seats.

The picture is more complicated in the Senate, where Republicans currently hold a three-seat advantage. Democrats fell well short of predictions that they could win upwards of a half-dozen new seats, netting a ga just one seat so far. But by week's end the party still appeared to have a narrow path to gaining control of the

chamber for the first time since 2014. This is because no candidate in either of Georgia's two Senate races has reached the 50 percent threshold the state requires for an outright victory. Now both races are headed to runoffs on January 5, and two Democratic wins could leave the party with precisely 50 Senate seats. Combined (following Joe Biden's victory) with the tie-breaking vote of Vice President Kamala Harris, this would give Democrats a bare majority in the Senate.

The closer-than-expected outcome in the presidential and congressional races muddles what otherwise might have been an aggressive Democratic governing agenda in 2021. Democratic leaders had eyed a suite of legislative priorities including a multi-trillion-dollar COVID-19 package, economic stimulus with an infrastructure component, global climate change, and reform of the Safe Drinking Water Act's contaminant regulatory process. The Democratic House should still be able to advance these initiatives through the lower chamber, but most would face long odds in a Republican Senate. And even if Democrats attain a narrow Senate majority, some of the party's more ambitious proposals might have to be scaled back to gain passage. As a result, some degree of compromise between both parties will probably be necessary in order to advance any significant legislation next year.

With Democrats holding the House, the chamber's Democratic leadership structure is expected to remain in place. Rep. Nancy Pelosi (Calif.) will likely seek to return as speaker, Rep. Frank Pallone (N.J.) will continue to chair the Energy and Commerce Committee, Rep. Peter DeFazio (Ore.) will keep hold of the Transportation and Infrastructure Committee, and Rep. Paul Tonko (N.Y.) will again chair the Environment and Climate Change Subcommittee. Conversely, there will be turnover on the Republican side of the Energy and Commerce panel as current ranking member Greg Walden (Ore.) and top Environment and Climate Change Subcommittee Republican John Shimkus (Ill.) are each retiring.

Though control of the Senate remains up in the air, Sen. Mitch McConnell (R-Ky.) and Sen. Chuck Schumer (N.Y.) are each expected to continue to lead their respective caucuses. Delaware's Tom Carper will return as top Democrat on the Environment and Public Works Committee, while West Virginia's Shelley Moore Capito will line up to take over as the top Republican. But who will chair the panel – or serve as Senate Majority Leader – will not be decided until the results of Georgia's January runoff elections are in.

The Association of Metropolitan Water Agencies (AMWA) will continue to engage with lawmakers on both sides of the aisle. The association is planning outreach to the president-elect and will also develop a suite of water policy recommendations to distribute on Capitol Hill in 2021.

In the near-term, the Senate returns to Washington this week to begin a post-election lame duck session that is expected to focus on approving a stopgap government funding bill and additional COVID-19 response legislation. The House is expected to return next week.

This update originally appeared in the Nov. 9 Monday Morning Briefing from the [Association of Metropolitan Water Agencies](#).

Tags: [infrastructure](#), [Washington Report](#)

REPORT: NEVADA IS NOT ON TRACK TO MEET ITS 2050 CLIMATE TARGET, BUT THERE ARE POLICY PATHWAYS TO GET THERE



DANIEL ROTHBERG

NOVEMBER 9TH, 2020 - 2:00AM

A [new report](#) from environmental groups concludes that Nevada will not meet its 2050 greenhouse gas reduction goals with existing policies, and it urges the state to adopt an ambitious approach, including a transition to roughly 80 percent renewable energy by 2030.

The report comes as Gov. Steve Sisolak's administration evaluates a strategy for reducing emissions to zero or near-zero by 2050. The state's strategy, which is being developed across agencies as part of the [Nevada Climate Initiative](#), is scheduled to be sent to the governor by Dec. 1.

The report, written by GridLab, Evolved Energy, the Natural Resources Defense Council and the Sierra Club, offers an early glimpse into some of the policies around decarbonization that are likely to come up in the Legislature, in regulatory bodies and in local governments over the next several decades as the state — and the world — looks to reduce greenhouse gas emissions.

Last year, the Legislature passed a bill that set the state's first ever emission reduction targets. The legislation, [SB 254](#), recognized the threat of climate change and spelled out benchmarks for reducing greenhouse gas emissions to zero or near-zero within the next three decades. The reduction targets were designed to align with the goals of the Paris Climate Agreement, which the U.S. is expected to rejoin under a Biden administration.

If the state intends to meet the Legislature's goals for reducing emissions, the authors of the new report argue that the state must act swiftly to retire coal-fired

power plants, transition to electric vehicles and begin to move away from natural gas in homes and businesses.

The report concluded that the modeling by Evolved Energy, a research firm, “shows us that the state will fail to meet its greenhouse gas emissions reduction goals without new policies, fast power emissions reductions, and near-complete electrification of building and transportation.”

In addition, the report emphasized the need for decarbonization that considers “inequality and inequity in program design,” stressing that many residents most affected by climate change are those who already bear a high energy burden, the percentage of income spent on energy and fuel.

But the report’s recommendations could face political obstacles. Fully implementing the policies, in many cases, will need the backing of not only the Legislature, but state agencies, regulators, utility providers and local governments from across the state.

Much of the report focuses on the power sector. NV Energy has committed to transitioning to 100 percent renewable energy and has proposed numerous solar projects in recent years.

Still, there remain questions about when and how that transition would occur. Although the report finds that decarbonization can occur without significantly raising fuel costs, some organizations have already started to insert cost as a reason to take a cautious approach.

Proposals to transition away from natural gas in businesses and homes will likely face pushback from Southwest Gas. The utility provides natural gas service across the state, is expanding its service and is seeing continued demand for connections in most newly constructed homes.

“When you are passing significant policies in the Legislature, there are always going to be tough conversations,” said Elspeth DiMarzio, a senior campaign representative with the Sierra Club’s Beyond Coal Campaign. “I think those will happen and I think we welcome those.”

“We’re confident this is not only what Nevada has to do for its environment, but I think the economics also make sense for the state,” added DiMarzio, an author of the report.

Tackling power sector emissions

In the short-term, the new report finds that a lot depends on what happens with Nevada’s two remaining coal-fired power plants: the North Valmy Generating Station and the TS Power Plant.

Both units of the Valmy plant, owned by NV Energy and Idaho Power, are expected to go offline by 2025. The TS Power Plant, owned by Nevada Gold Mines, is being converted to a dual-fuel coal-gas operation. But if all coal units continue operating past 2025, the report finds that other aspects of the economy, like transportation and indoor heating, will have to electrify faster.

“The carbon emissions that coal plants have is so significant,” DiMarzio said.

Continuing to decarbonize the electric sector, the report concludes, is a priority, and efforts are already underway to do so. Nevada has seen an increase in large-scale solar projects. And on Tuesday, voters approved Question 6, a ballot measure that will amend the Nevada Constitution and require energy providers to have a renewable portfolio of at least 50 percent by 2030.

But as [The Nevada Independent has reported in the past](#), the 50 percent standard will likely leave the state shy of its 2030 target: to reduce total greenhouse gas emissions by 45 percent compared to 2005 levels. Under most decarbonization scenarios in the report, doing so would require a roughly 90 percent reduction in power-sector carbon emissions, compared to 2005.

It would also require a renewable portfolio standard of about 80 percent.

There is another reason that is important, the report’s authors said. The report advocates an approach to decarbonization — a similar one being taken elsewhere in the country — that relies on the electrification of other economic sectors: transportation, buildings and industrial activities.

Although the U.S. grid has seen a transition from coal over the past decade, the power sector still heavily relies on natural gas, including in Nevada. A swift transition toward more renewable energy would make it possible to electrify other sectors without relying on emitting fossil fuel.

Here's how the report put it: "A low-emissions power sector allows other sectors, especially transportation and buildings, to rely on electrification as a key decarbonization strategy."

An equitable transportation transition

The report urges policymakers to consider the equity implications of future policy decisions, especially around electrification in the transportation sector. Cars and trucks are responsible for most of the pollution from small particulate matter, in addition to a significant chunk of carbon emissions. Those emissions disproportionately affect frontline communities, the report found.

"Emissions are concentrated in socioeconomically vulnerable census tracts and are also higher along transportation corridors, indicating the importance of addressing pollution from heavy-duty vehicles," the report said, emphasizing the need for emission reductions in heavy-duty fleets.

To meet the state's climate goals, the report said that electric vehicles should comprise at least 25 percent of sales for light-duty vehicles, such as commercial cars and trucks, by 2026. Four years later, more than half of vehicle sales should be electric to stay on track, the report said.

"We have to do a lot to get to 2030," said Dylan Sullivan, who co-authored the report as a senior scientist and clean energy program manager with the Natural Resources Defense Council.

He stressed that it is the direction that the industry is already headed, as projections suggest an increasing supply of commercial electric vehicles in the market.

But Sullivan, echoing the report, said that policymakers need to consider the equity implications of electrifying transportation. The report suggests that one way of doing that would be to prioritize electrification in areas, such as highway corridors, that are disproportionately affected by pollution. Another option, the report says, would be to

create incentive programs that ensure eligibility for lower-income households.

The report offers an array of policy options, emphasizing the need to decrease pollution from emissions-intensive medium and heavy-duty vehicles, like freight trucks. That segment of the transportation sector is so emissions-intensive that cumulative emissions could continue to rise, even as commercial vehicles electrify, the report found.

Policymakers, the report said, could address that segment of the transportation sector with the adoption of new rules as well as by working with the industry to reduce emissions.

For transitioning the transportation sector, the report proposes other policies: require utility investment in electric vehicle infrastructure, adopt a zero-emission vehicle program, invest in more public transportation infrastructure and close smog check exemptions for classic cars.

Sullivan said that the policies in the report are only recommendations. Instead, he said that the report is meant to reflect the ambition of what it will take to meet the state's climate goals, showing “the scale of what the state needs to be aiming for in the next few years.”

Where buildings fit in

Buildings are not often thought of as a climate problem or a climate solution.

The report identifies them as both. Most buildings in Nevada rely on natural gas for cooking, heating water and heating homes. In addition, buildings suck up a lot of power. They need air conditioning in the summertime, a demand that is only increasing as the climate changes. As new homes are built, the report finds that “building sector emissions are expected to increase.”

In the report’s projections of what is necessary to meet the 2050 target, natural gas use must be gradually phased out, especially after 2030. The report also found that new homes should be more energy efficient, and existing homes should be retrofitted to increase their efficiency.

Efficiency can also help reduce bills for customers, the report found, especially in areas where residents have a high energy burden and are expected to experience more heat in the coming decades.

The report projects that about 45 percent of residential appliances and about 25 percent of commercial space and water heating must be electric by 2030 for the state to meet its goals.

To get there, the report recommended adopting appliance standards and ensuring that new buildings move to all-electric appliances. It also said the state should stop expanded investment in fossil fuel infrastructure, which can take about 60 years to pay off.

The report advocates for requiring gas utilities to undergo a planning process, similar to what is required of electric utilities. Such a process could weigh future investments against demand for gas and the state's climate goals. Environmentalists [have argued that](#) natural gas should not be the default option for heating buildings.

Scott Leedom, the utility's director of public affairs, said he was concerned about the cost effects of transitioning from natural gas to electric. And he said transitioning to the grid "feels premature" when the power sector still gets the bulk of its energy from natural gas.

"For us, it's important to consider the efficiency of the grid [an appliance is] plugging into," he said.

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Daniel Rothberg

Daniel Rothberg is a staff reporter covering water, public land and the environment. To read more of his coverage, [you can subscribe](#) to his weekly Indy Environment newsletter.

The **NEVADA INDEPENDENT ELECTION NIGHT LIVESTREAM**

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Firefighters look on as a firefighting helicopter performs a water drop as the Martindale Fire burns in the Angeles National Forest. | Mario Tama/Getty Images

THE TRANSITION

How California will shape U.S. environmental policy under Biden

By **DEBRA KAHN** | 11/10/2020 08:00 AM EST

SAN FRANCISCO — California’s climate titans are ready to come in from the cold.

Donald Trump spent the last four years trying to rein in California’s vast influence on American emissions, energy and environmental policy, given that any rule made by the nation’s biggest state ripples through the national economy. That ends in just over two months, when Joe Biden enters the Oval Office, and has consequences that stretch well beyond the Golden State, as key California officials regain their clout in Washington.

“We’re looking forward to some tailwinds, because all we’ve had is headwinds,” CalEPA Secretary Jared Blumenfeld, the state’s top environmental official, said in an interview. “We’ve spent so much time and energy just defending ourselves. The idea of being able to partner with the federal government and sit down and collaborate is almost foreign.”

Blumenfeld said California officials are eager to help Biden model federal policy in the Golden State’s image. “The really ambitious goals that he has in his plan, a lot of them are modeled on California,” he said. “We really want to work with the administration to show what is possible. Whether it’s his goal of getting 2035 carbon-free energy or how we think about zero-emission vehicles or building standards or all the things we’ve done over the last 30 years, what we want to do is work with him to scale that.”

One positive sign for California: The state's long-serving climate and air pollution chief, Mary Nichols, is considered a top contender to become U.S. EPA administrator. Legal experts see Biden's administration prioritizing a restoration of California's legal ability to tackle greenhouse gas emissions from vehicles, especially if Nichols is named administrator.

"She could do a lot right away," said Ethan Elkind, director of the climate program at UC Berkeley's Center for Law, Energy & the Environment. "She can drop lawsuits right away. She can request courts to drop bad regulations and start over. She can at least stop the bad regulations from an environmental perspective right away and settle lawsuits with environmental groups right away. She can really ramp up enforcement right away. Starting new regulations is what takes time."

Procedurally, the Biden administration could enter into negotiations over the 50-odd lawsuits Attorney General Xavier Becerra has lodged over environmental rules. The new administration will be checking to see whether any suits can be dismissed or settled based on commitments to reverse course.

"That's probably going to be the most time-sensitive in many ways," said Rick Frank, a former California chief deputy attorney general. The strategy is similar to the Bush-to-Obama handover, "but this is pretty much on steroids compared to that, in terms of the number and consequence of cases."

Here are some key areas of California environmental policy where a Biden administration could significantly change direction:

Climate

Reversing the Trump EPA's approach to California climate policies begins here: the agency's withdrawal of permission under the Clean Air Act for California to impose greenhouse gas standards on vehicles and mandate zero-emission car sales.

Under Trump, the agency revoked the state's Clean Air Act waiver — going further than former President George W. Bush, who denied California the waiver. President Barack Obama reversed that move, brokering national emissions standards jointly with California, and Biden is expected to quickly swing the pendulum back toward cooperation with the Golden State.

"Without that waiver in place and the ability to be more aggressive, it just really kneecaps California's whole climate program," Elkind said.

Biden's EPA could immediately grant the waiver, letting California move forward with its own standards for model years 2016-25 and at the same time restoring the rules of 13 other states that had agreed to follow California's lead. The agency may also attempt to withdraw Trump's rule that slashed emission-reduction targets and reinstate the Obama-era regulation on the national level. Both are certain to draw legal challenges.

"Either we'll see a very quick effort by the Biden administration to reimpose the Obama 2016-2025 standards, or we'll see California move forward with a waiver from the EPA," said Ann Carlson, co-director of the Emmett Institute on Climate Change and the Environment at UCLA School of Law. "I imagine there'll be a national effort. What that looks like and whether the car companies cooperate and whether there's a challenge remains to be seen."

The state is also likely to apply for waivers on other climate and clean air policies, having held out for a new administration to receive its petitions. California will look to move its Advanced Clean Trucks rule requiring manufacturers to increase the proportion of electric trucks they sell in the state through 2035 and Newsom's executive order in September to ban new gas Page 18 of 35

Besides climate change, the other California environmental policy arena the Trump administration has sought to rein in has been water. Trump has catered to farmers by seeking to increase pumping from the state's main water hub, the Sacramento-San Joaquin Delta, both through executive order and by revising protections for fish under the Endangered Species Act.

"Probably water allocation and climate change would be the two big pivots and increased opportunity for collaboration between California and the federal government after 4 years of conflicts and really outright warfare," said Frank, the former California chief deputy attorney general. He is now a professor at UC Davis law school.

Biden could choose to stop defending the endangered species rules in court against Becerra and environmentalists, though it would be more complicated than just stopping proceedings. In general, Biden's administration would have to find legal flaws in the Trump rules that would justify the courts handing them back to the agencies.

Under Trump, the U.S. Bureau of Reclamation also jump-started plans to increase water storage on the Sacramento River by raising the height of Shasta Dam, against the state's wishes. That's likely to lose momentum, Frank said.

But federal movement on California water will likely be slower than on climate. If Biden tries to undo Trump's endangered species rules, he could also trigger a revolt from water users who had come to the table to discuss related water quality rules with Gov. Gavin Newsom that could reduce deliveries.

The head of the group representing the 27 water agencies that draw from the state-owned side of the canals and reservoirs said she hoped Biden would cooperate with the state.

"Water is a bipartisan issue. Regardless of where you may fall on the political spectrum, we all rely on clean, affordable water to run our homes, farms and businesses," State Water Contractors general manager Jennifer Pierre said in a statement. "President-elect Joe Biden has indicated a commitment to cooperation, which is exactly what we need as California looks to settle lawsuits collaboratively and work together to achieve Voluntary Agreements that improve habitat and flow in the Delta and its watersheds."

Wildfires

An out-of-control wildfire has no friends in California. So, at the least, a Biden administration promises to put an end to federal attacks on state's forest management policies and Trump's head-scratching calls for raking California's forests. It's not clear Biden will be able to break the logjam that's resulted in overgrown forests that, along with climate change, are fueling the state's record-setting blazes.

Neither the Trump administration nor the Obama administration did much to help California manage its forests — the majority of which are owned by the federal government— either by mechanically thinning out trees or by conducting prescribed burns to clear out underbrush, according to Bill Stewart, a forestry specialist at UC Berkeley.

The U.S. Forest Service signed an agreement with the state in August to try to treat 1 million acres per year. It's a welcome move in need of funding.

"I don't think that's a game changer," Stewart said. "They claim they're going to treat all these acres; neither the feds nor California are really doing that much on that. To make that operational, you really have to bring in more people that have practical experience that were not involved in either the Obama or Trump administration on this kind of stuff."

Still, Biden could push the Forest Service and FEMA to treat forest management as a climate issue, which could lead the agencies to improve risk modeling and spend more on protecting communities in forested areas. Spending on deferred forest maintenance could also create jobs, a wildfire policy expert said.

"Trump would show up and say the problem was raking the forest," said Michael Wara, director of the climate and energy program at Stanford University's Woods Institute for the Environment and chair of a state commission dealing with wildfire cost and liability.

"Biden's Interior Department is much more likely to be constructive on this and work to develop consensus and then fund the actions. Go to Congress and get the money to do things that will keep rural communities safe. That's a big change."

Fossil fuel drilling

The Trump **administration** plans to open hundreds of thousands of acres of public land in California to oil and gas drilling despite legal challenges. The Bureau of Land Management is scheduled to hold its first lease sale in the state since 2012 on Dec. 10.

Environmentalists say Biden could revise two resource management plans that allow oil and gas leasing: one that covers 725,000 acres in the Central Coast and San Francisco Bay Area, and another that covers 1 million acres in the Central Valley and Central Coast. Those groups are planning to challenge next month's sale in Kern County, but they also say Biden's BLM could cancel leases if they find they were improperly issued.

"The lease sale was illegal, therefore the leases should be revoked by the Biden administration, and that's what we're going to be asking for," said Kassie Siegel, director of the Center for Biological Diversity's Climate Law Center.

The upcoming lease sale also provides an indicator of Trump's approach to the waning days of his presidency — and how many more environmental policies Biden will be called to reverse.

"Is the Trump administration in this transition period post-election and pre-inaguration going to stand down?" Frank said. "Or is it going to go pedal to the metal to lock in as many of these plans and grant leases and other things as possible?"

Nevada Today



A meadow that sequestered large amounts of soil carbon in the Sierra Nevada. Photo by C.C. Reed.

Researchers quantify carbon changes in Sierra Nevada meadow soils

Collaborative study indicates meadows hold promise to help control carbon released into the atmosphere

Research & Innovation (<https://www.unr.edu/nevada-today/news/research-innovation>) |

November 10, 2020

Claudene Wharton (<https://www.unr.edu/nevada-today/about/authors/claudene-wharton>)

Meadows in the Sierra Nevada mountains are critical components of watersheds. In addition to supplying water to over 25 million people in California and Nevada, meadows contain large quantities of carbon belowground. While it has been known for some time that meadows have large quantities of soil carbon, whether meadow soils are gaining or losing carbon has remained unclear.

A new study led by researchers in the College of Agriculture, Biotechnology & Natural Resources at the University, has demonstrated for the first time that meadows throughout the region are both gaining and losing carbon at high rates. Capture and storage of carbon in soil is a natural way to reduce carbon dioxide levels in the atmosphere and combat climate change. However, human activities can disrupt natural processes and lead to the loss of soil carbon to the atmosphere. These results suggest that meadow management may either contribute to climate change or mitigate the harmful effects of increasing atmospheric carbon dioxide.

The research was conducted in partnership with the University of California Merced, as well as numerous restoration practitioners and conservation organizations in more than a dozen meadows throughout the Sierra Nevada mountains. The study is aimed at arming restoration practitioners with information to help make good management decisions. “Meadows are known for their lush, diverse vegetation supported by soils that stay wet into the summer,” explained University of Nevada, Reno, doctoral candidate Cody Reed, who led the study. “However, a long history of human activity in many meadows throughout the Sierra Nevada has resulted in drier soils and the replacement of wetland vegetation with sparse grasses and shrubs.”

In **research published this week in the scientific journal Ecosystems**

(<https://link.springer.com/article/10.1007/s10021-020-00572-x>), Reed and her coauthors, including Associate Professors Benjamin Sullivan and Paul Verburg and Professor Emeritus Sherman Swanson from the University, revealed that meadows with wetland plant communities and dense root mats were large net carbon sinks during the year measured, meaning they removed carbon from the atmosphere. In fact, per acre, the amount of carbon captured in these meadows was similar to rates measured in tropical rainforests. On the other hand, meadows with more bare ground and plant communities associated with drier soil released large amounts of carbon from the soil to the atmosphere.

In the long-term, such changes to the large soil carbon stocks in meadows could add up. And unlike in forests, where most carbon is sequestered in wood aboveground, the change in carbon in meadows is belowground. This means meadow soil carbon is less vulnerable to disturbances such as wildfire and may persist in the ecosystem for longer than aboveground carbon. At the same time, soil carbon provides other important benefits besides taking carbon out of the atmosphere.

“Worldwide, soils may contain up to four times as much carbon as the atmosphere,” Reed explained. “Soil carbon in meadows also helps improve water quality and quantity, as well as soil fertility to support diverse plant communities important for wildlife and grazing.”

The research will likely help meadow restoration practitioners identify meadows in need of conservation to maintain soil carbon gains and meadows in need of restoration to prevent additional losses of soil carbon to the atmosphere. The researchers estimate that three acres of surrounding forest are required to offset the amount of carbon lost by one acre of degraded meadow. On the other hand, one acre of meadow may sequester as much carbon as six acres of forest.

“Our research shows meadows may be some of the best bang for the buck in terms of carbon management in the region,” Sullivan said. “My hope is that soil carbon sequestration can be integrated with other objectives to achieve management strategies that improve ecosystem functions in meadows.”

Sullivan said he and his colleagues in the College’s Department of Natural Resources & Environmental Science and Experiment Station plan to conduct future research to quantify the impacts of meadow restoration on soil carbon.

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November 10, 2020

Claudene Wharton (<https://www.unr.edu/nevada-today/about/authors/claudene-wharton>)

COVID cases rise, Renown prepares

By [Ed Pearce](#)

Published: Nov. 11, 2020 at 5:33 PM PST | Updated: Nov. 13, 2020 at 11:12 AM PST

RENO, Nev. (KOLO) - The most visible evidence of the danger the coronavirus is posing in the weeks ahead may be the return of a triage tent outside the emergency care entrance at Renown Regional Medical Center. The tent was set up for a time last spring to screen emergency patients and now with numbers of COVID cases rising at an alarming rate, it's going back up.

But the best indication of the hospital's concern lies elsewhere on the campus.

Last spring looking ahead and anticipating the worst, the hospital considered what it might do if the pandemic threatened to overwhelm its capacity. After considering other sites around town it settled on its own parking garage.

Ten million dollars and barely a week later, it had converted the first floor of the garage to a fully functional 700 bed ward, fully equipped including a medical grade negative pressure air filtration system. With that done, the infrastructure of the second floor was also prepared just in case it would be needed.

At the time, the hospital said it hoped all this would prove unnecessary. Success would be that our community had handled the virus, kept ourselves safe and the area's existing medical facilities able to handle things.

That expectation may prove untrue in the immediate future and the alternate care site could be used in the days ahead.

The number of available beds changes daily, but the numbers are moving in a concerning direction.

"We're seeing an absolute increase in the number of patients presenting with COVID or COVID-like symptoms that require hospitalization," says Dr. Paul Sierzenski, Chief Medical Officer for Renown's acute care unit, "which is why we're preparing this area should we need it."

This former parking garage floor could offer care for 700 hundred of the least critical patients. The floor above, 700 more.

They still hope that won't be necessary, but say that's up to the community they serve and whether we follow recommended guidelines--masks, social distancing, hand washing and, most of all staying home when possible, in the weeks ahead.

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CLIMATE & ENVIRONMENT

Boiling Point: Western voters weighed in on climate change, up and down the ballot



A pumpjack operates at the Inglewood Oil Field in Los Angeles. (Patrick Fallon / Bloomberg)

By SAMMY ROTH | STAFF WRITER

NOV. 12, 2020 | 6 AM



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We've known for five c s already
a cottage industry of experts trying to predict what steps the Biden administration
might take on climate change over the next four years.



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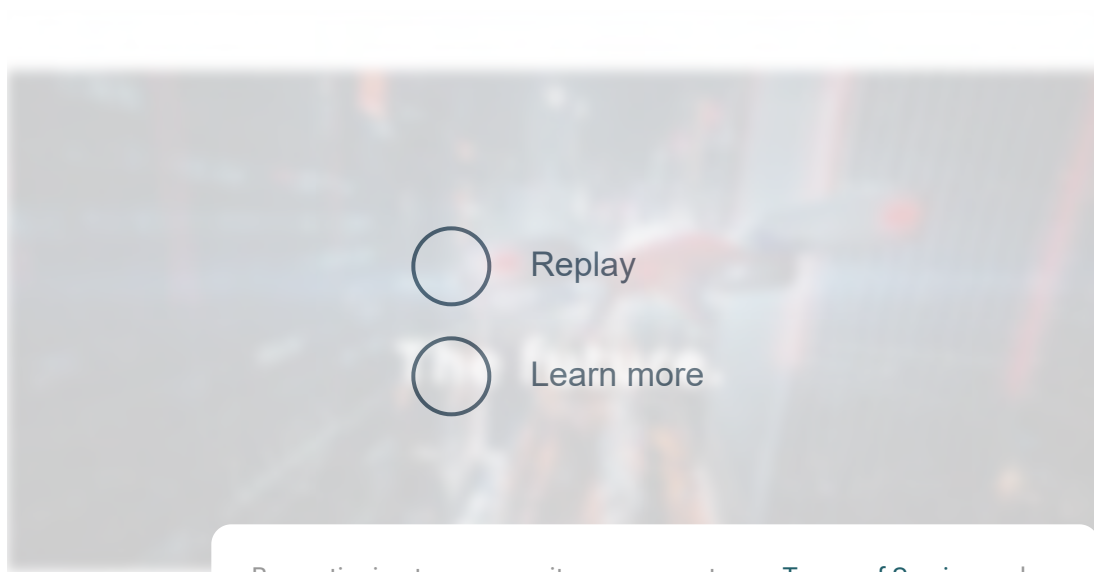
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There will be plenty of time to see how that plays out. At the moment, I'm more interested in the down-ballot races that are getting relatively less attention but could have significant climate and environmental impacts at the local level.

This will not be a comprehensive accounting. But here are some results from across the West that caught my attention:

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California

The Golden State’s second- and third-largest oil-producing counties elected supervisors who have favored strong action to rein in the oil industry. In Los Angeles County, Holly Mitchell — who [swore off](#) fossil fuel campaign contributions and supports [drilling setbacks](#) — won a [landslide victory](#). In Ventura County, Carmen Ramirez overcame [heavy spending](#) by an oil industry trade group, and by the state’s [largest oil and gas producer](#) — a company she called “absolutely shameless and not accountable.”

San Diego’s newly elected mayor says reducing dependence on cars is a top priority. Todd Gloria [helped write the city’s climate action plan](#), which includes a legally binding target to cut climate pollution in half by 2035. It also looks like Democrats will have a majority on the San Diego County Board of Supervisors [for the first time in more than 30 years](#), which could mean more aggressive climate action.

The Imperial Irrigation District, which controls the largest share of Colorado River water in the West, saw two-fifths of its board turn over.

Voters [overwhelmingly elected](#) J.B. Hamby, who has made aggressive calls to protect the Imperial Valley’s water supplies from outsiders, to an open seat; I wrote about the race’s [significance to the wider West](#) earlier this year. Voters also replaced incumbent Erik Ortega with Javier Gonzalez, who like Hamby [received support](#) from a prominent rooftop solar company.

A company trying to build a seawater desalination plant in Orange County spent more than \$400,000 to support water board candidates favorable to its project. Two of the candidates [won their races, and three did not](#).

Several cities approved or rejected tax increases to fund climate programs:

- In Berkeley, voters supported a climate

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- In Albany, Berkeley's neighbor to the north, voters approved a [similarly climate-focused](#) utility tax increase.
- In Long Beach, voters [increased](#) the city's oil production tax, which [could raise money](#) to support sea-level rise adaptation.

And finally, a few city council races:

- In San Luis Obispo, voters [reelected](#) Mayor Heidi Harmon and City Council member Andy Pease, both of whom supported a proposal to limit gas hookups in new buildings. (I wrote about the [intense pushback they faced](#) from gas industry workers.)
- In Los Angeles, Nithya Raman [unseated](#) City Council member David Ryu. Both candidates were Democrats, but Raman supports the Green New Deal and was backed by the Sunrise Movement and Sen. Bernie Sanders.
- In Richmond, voters returned longtime Chevron critic Gayle McLaughlin to the City Council. The former Green Party politician ultimately wants to see the oil giant [decommission its massive refinery](#) on the city's waterfront.
- In Benicia, where Valero Energy runs a refinery on the waterfront, voters rejected a mayoral candidate backed by [a quarter-million dollars](#) in Valero funding. Instead they [elected](#) Steve Young, who has pushed for more regulation of the refinery.

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People watch smoke rise from the Chevron refinery in Richmond, Calif., from a vantage point in the hills of nearby El Cerrito. (Brad Zweerink / Associated Press)

Alaska

There are still lots of votes to count in the Last Frontier, but a proposal to increase oil production taxes on the state's North Slope is losing badly.

Proponents said increased tax revenue would be good for Alaskans, protecting the dividends they receive from the state, while opponents said the higher taxes would drive oil companies away from the North Slope.

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Arizona

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I mentioned last week that Arizona regulators had tentatively approved a 100% clean energy requirement. But that might change. While the Grand Canyon

State appears to have narrowly voted for Joe Biden over Donald Trump, voters also elected two Republicans and one Democrat to the Arizona Corporation Commission. The newly reconstituted board [might have the votes to overturn the 100% clean energy requirement](#), as Ryan Randazzo reports for the Arizona Republic.

Arizonans also elected Mark Kelly to the U.S. Senate, a rare bright spot for activists hoping for more support for climate action in Congress. Kelly is an astronaut who has [talked about his experience seeing Earth from space](#) when discussing the need to tackle the climate crisis. His opponent, Martha McSally, described Obama-era climate programs as federal overreach.

In Phoenix, 28-year-old climate activist Yassamin Ansari is [headed for a runoff](#) in the race for an open City Council seat. She [previously worked on](#) the Global Climate Action Summit, and in the United Nations secretary-general's office.

Colorado

Coloradans elected John Hickenlooper to the Senate, giving Democrats their only pickup outside Arizona. Progressives weren't exactly thrilled; Hickenlooper is a former petroleum geologist [whom climate activists called "Frackenlooper"](#) during his tenure as governor of the Centennial State, due to his support for fracking. His opponent, Cory Gardner, [sponsored the Great American Outdoors Act](#) but also advocated for more drilling and opposed the Obama administration's Clean Power Plan.

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Coloradans also narrowly elected to reintroduce wolves on the state's

Western Slope. The

ranchers who worry th

conservationists who see

driven to extinction by hunters.

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In Denver, voters approved a 0.25 percentage point tax increase to support climate action. The tax is [expected to raise \\$40 million annually](#) for clean energy and sustainable transportation. Meanwhile, in Boulder, residents voted to approve a 20-year franchise agreement with Xcel Energy and pause efforts to form their own city-run electric utility. Xcel Energy is [targeting dramatic emission reductions](#), but it's not enough to satisfy some activists.

Montana

The Treasure State's newly elected governor is Greg Gianforte, who campaigned on a promise to increase logging, coal mining and oil and gas production. Conservationists are worried Gianforte's policies will diminish the world-class trout streams and other natural wonders that give the state its nickname.

Montanans also reelected Steve Daines to the U.S. Senate, choosing the Republican incumbent over Democratic challenger Steve Bullock in a closely watched race. Daines, like Cory Gardner in Colorado, helped shepherd the Great American Outdoors Act through Congress, although he [opposed U.S. participation in the Paris climate agreement](#). Bullock's support for renewable energy and climate action as Montana's governor was a pretty big deal in a conservative state with a powerful fossil fuel industry.

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Nevada

Voters added a 50% renewable energy mandate to the Silver State's constitution. This is the second time voters [approved the measure](#) in Nevada, the

electorate must approve [the measure](#) to be added to the state constitution. Even [with the clean energy 1](#)

[track to meet its long-t](#)

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New Mexico

Democrats maintained their majorities in both houses of the state

Legislature. The Land of Enchantment is a major oil and gas producer, and the industry is worried it will [continue to face stricter regulation](#) under Gov. Michelle Lujan-Grisham. Joining the state Senate will be Carrie Hamblen, who leads the Las Cruces Green Chamber of Commerce and [supports a fracking moratorium](#).

New Mexico voters also approved fundamental changes to the state's Public Regulation Commission, which oversees the utility industry.

Rather than a five-member elected board, the agency will now be led by three political appointees. The restructuring was supported by Lujan-Grisham and environmental groups including the Natural Resources Defense Council, which [said the agency](#) “should be led by experts, not politicians” and would now be better positioned to promote clean energy.

Utah

Beehive State voters overwhelmingly approved a constitutional amendment guaranteeing the right to hunt and fish.

No one is trying to ban hunting and fishing at this time, but supporters said the measure would [help ward off potential future efforts](#) to outlaw those activities. Critics said the constitutional amendment could interfere with science-based wildlife management.

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And now, here's what else is happening around the West:

TOP STORIES

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Gabe McKenna, a state parks safety officer and ranger, stands next to charred trees in Big Basin Redwoods State Park, which was hit by a wildfire in August. (Carolyn Cole / Los Angeles Times)

Two months after fire tore through Big Basin Redwoods State Park, it's still

not clear if the belo

Susanne Rust and Car

[park](#), where a rapidly l

historically adapted to live with fire.

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A consumer watchdog agency says Southern California Gas should be fined \$255 million for fighting energy efficiency rules and local gas bans. [Here's my story on the massive proposed penalty](#), which follows a [whole bunch](#) of [reporting](#) I've done on how the nation's biggest gas company is responding to climate change policy. SoCalGas says it did nothing wrong and only opposed a handful of rules that would raise costs for its customers. The Public Utilities Commission has final say over any fine.

Speaking of gas, San Francisco became the country's second-largest city to limit gas hookups in new buildings. The policy [requires new residential and commercial buildings to be all-electric starting next year](#), with a two-year exception for restaurants that want to have gas stoves, as J.K. Dineen reports for the San Francisco Chronicle. San Jose, which has a larger population than San Francisco, also [limited gas hookups](#) last year, although its policy isn't quite as strict.

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CALIFORNIA BURNING

California experienced its hottest August, hottest September and hottest October on record this year. That's according to UCLA climate scientist Daniel Swain, who [talked with](#) Angeles just ended a [record 20](#) for the best, although I am no

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It doesn't say great things about California's wildfire vulnerability that the state's insurance commissioner has once again barred insurers from dropping coverage for homes in fire-stricken areas. Joseph Serna reports that the one-year moratorium [will protect 2.1 million homes from San Diego to Siskiyou counties](#), although no one is pretending this is a long-term solution.

A retired Southern California Edison employee is [suing the company](#) after losing his home in the Bobcat fire, Hayley Smith reports. Richard Passmore “devoted his entire 36-year career working diligently as a meter reader for Edison, only to have Edison burn down his home,” the lawsuit reads. Edison says its equipment may have ignited the fire, although investigators haven't made a final determination.

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Los Angeles County firefighters Tim Foy, left, and Tommy Davis watched a flare-up as the Bobcat fire burned in the Angeles National Forest near Llano on Sept. 20, 2020. (Allen J. Schaben / Los Angeles Times)

POLITICAL CLIMATE

**Unless Democrats c
be controlled by Re**

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ber will

implement some of the most ambitious pieces of his climate agenda, but there are still

steps he can take without Congress. For a rundown of his options, check out [this piece by my colleague Anna M. Phillips](#). Biden can toughen fuel economy regulations, end new oil drilling on federal land and make climate change a key component of his foreign policy.

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The chief executive of Los Angeles County’s transit agency will lead Biden’s transition team for the Department of Transportation. L.A. Metro [has gone on a rail-building spree under Phil Washington](#), as Laura Nelson reports for The Times, and his selection to help map out the Biden administration’s plans likely reflects the president-elect’s calls for [federal investment](#) in climate-friendly transit. It’s also worth noting that L.A. Mayor Eric Garcetti is rumored to be in the running for Biden’s transportation secretary.

On Catalina Island, there’s a battle between biologists, local residents resistant to change and “the vision that chewing gum magnate William Wrigley Jr. had when he bought up much of the island in 1919.” So says Louis Sahagun, who wrote a [fascinating story about efforts to add more bison to the island’s existing herds](#). Apparently the first 14 bison were left on the island off the Southern California coast by a movie crew in 1924, and now tourism boosters — but not biologists — want more of them.

What do you want to know?

When you think about California’s climate future, what comes to mind? What keeps you up at night, and what gives you hope or gets you excited? What do you want to understand, and

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questions, concerns and ideas. Email me or find me on Twitter.

ONE MORE THING

Like everyone else, I was saddened to hear about [Alex Trebek’s death](#). But I was also surprised to learn that the iconic “Jeopardy!” host bought 62 acres of open land in the Santa Monica Mountains and donated it to the Mountains Recreation and Conservation Authority. It’s called [Trebek Open Space](#), and today it serves as a wildlife corridor and free hiking space [between Runyon Canyon and Nichols Canyon](#), as Anka Radakovich writes for Los Angeles Magazine.

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I’ll take “that’s pretty darn awesome” for \$600, Alex.

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Sammy Roth

Sammy Roth covers energy for the Los Angeles Times and writes the weekly [Boiling Point](#) newsletter. He previously reported for the Desert Sun in Palm Springs. He grew up in Westwood and would very much like to see the Dodgers win the World Series again.

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Nov. 11, 2020

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Weather Alert: High Wind, High Wind, Winter Storm,...

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NEWS

Snow Droughts

Local scientists says our changing climate is leading to snow droughts. This can have an impact on our water supply and tourism.

Updated:

After our first snow storm of the season, fingers are crossed for a good snow pack this year. According to scientists at the Desert Research Institute, our changing climate is leading to snow droughts in our region. Snow droughts can impact anything from water resources to tourism. This photo was taken in 2017, before we got an epic amount of snow in the Sierra. Showing how our snow pack can change rather quickly.

"My cover photo here is from a recent snow drought year, locally here around lake Tahoe in 2017. You can see around the shore of Lake Tahoe right after Christmas there is hardly any snow," said climatologist Dan McEvoy from the Western Regional Climate Center.

December 28, 2017, Lake Tahoe CA/NV...where's the snow?

Development of Real Time Snow Drought Tracking Tools for the Western United States

Dan McEvoy, Ben Hatchett, and Justin Chambers, Division of Atmospheric Science

A snow drought is a period of time when you have less snow on the ground than you should. McEvoy says our climate is changing. In fact, a fairly recent climate change assessment says there is a good chance that one day there will be way less snow below 6000 feet in the Sierra and will be reduced by more than 60 percent across nearly all of the range. So what is exactly changing?





Defining Snow Drought

More of this...



- Midwinter mountain rain (instead of snow)
- Flooding
- Less snowpack accumulation



Less of this...

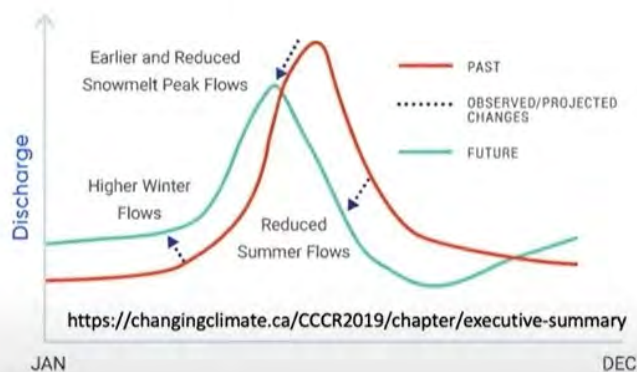
Snow Drought: having less snow than normal which can be caused by a **lack of precipitation** or you can have plenty of precipitation, but it is **too warm to snow**

"Not necessarily the amount of water, so amount of precipitation throughout the year might not actually change that much but it's really the timing of when that precipitation comes off of the mountain and into our streams that then eventually goes into our reservoirs," said McEvoy.

He says our snow pack is starting to reach its peak earlier in the snow season, allowing for a quicker runoff. There are a couple different ways that a snow drought can occur. The obvious way is when we don't get any precipitation. The second way is a bit different.



Implications for Changing Water Resource Management



Shifts in timing of when water reaches reservoir systems

"The reason we've been more interested in is where you actually still have plenty of precipitation coming out of the sky. Plenty of storms but the temperatures are too warm even high up in the mountain," said McEvoy.

In other words, it's too warm to get snow. The image below shows our warming temperatures on the left hand side. While the image to the right shows recent trends in terms of our water supply, or snow water equivalent. The snow water equivalent tells us how much water content we have in the snow or from rain. The red circles on the map to the right means less snow and the blue circles indicates more snow. Notice there are a lot more red circles than blue.

Climate Change Impacts on Snow Drought

Sierra (CA Climate Region)
3-months ending in February

WRCC CA Climate Tracker

Increasing winter temperatures

As a result of projected warming, *Sierra Nevada snowpacks will very likely be eradicated below about 6000 feet elevation* and will be much reduced by more than 60% across nearly all of the range." -CA 4th Climate Change Assessment, 2018

a) April 1 Observed SWE Trends 1955-2016

Less Snow
More Snow

80%
60%
40%
20%

Right now a lot of McEvoy's work is observation based, but there are plans to start forecasting two to four weeks out and see how a major storm could impact a snow drought. He hopes to also broaden his research to throughout the country, and perhaps the world. The problem is places like the northeast that gets lots of snow too, does not have the observation network we have. His work is partially funded by the Desert Research Institute and their Innovative Research Program, but he just got a grant from the National Weather Service as well.

You can check out the zoom presentation from McEvoy as well as other DRI scientists by clicking on the link below. The presentation was called "Conversations with DRI Innovators," and includes a variety of topics.

<https://www.youtube.com/watch?v=V0Sv4XynLWQ&feature=youtu.be>

Indy Environment: Cities need to secure long-term water supplies. A Northern Nevada water treatment program might offer one solution.



Daniel Rothberg

Lydia Peri, the Emerging Resources Program Administrator for the Truckee Meadows Water Authority, takes a sample for the OneWater Nevada Initiative. Samples are taken daily to ensure water treatments are working properly and to check monitoring instruments. (Photo courtesy of the Truckee Meadows Water Authority)

Good morning, and welcome to the Indy Environment newsletter.

To get this newsletter in your inbox, [subscribe here](#).

As always, we want to hear from readers. Let us know what you're seeing on the ground and how policies are affecting you. Email me with any tips or suggestions at daniel@thenvindy.com.

In April 2015, as the state entered the fourth consecutive year of widespread drought, then-Gov. Brian Sandoval empanelled the Nevada Drought Forum to gather recommendations about how to better manage water. The panel spent that year putting together a long list of policies.

But one recommendation, in particular, captured the attention of water managers in and around the growing Reno area. What if treated wastewater could be recycled, stored and reused? It's not a new question. Cities across the country, including Las Vegas, treat and reuse their water.

Still, many cities face unique barriers to reusing water. Where do you store the treated water? And in some instances, geography can limit the use of certain types of treatment methods.

For years, water planners in Northern Nevada have looked to solve those barriers. Now with a feasibility study nearing its completion phase, they believe they might have found one solution for reusing water and treating it to high-quality standards, what regulators refer to as A+ water.

“There’s still a lot to do and a lot to determine, cost being one of the big ones,” said John Enloe, the natural resources director for the Truckee Meadows Water Authority, which serves Washoe County, Reno and Sparks. “But based on the positive results, we’re moving ahead at this point.”

The idea behind the plan: Treat water to A+ standards and inject it into a groundwater aquifer, where it can be used in the future under a [2016 regulation](#) that arose from the Drought Forum. The concept is used elsewhere ([see Orange County](#)). But the big innovation is in how it’s done.

Water purification is often achieved through “reverse osmosis.” While that’s an effective method, reverse osmosis can create its own waste product: brine. In coastal communities, brine waste is often discharged into the ocean. But inland communities like Reno don’t have that option.

So the feasibility study had to turn to an alternative. Starting in October, water planners set up demonstration trailers in an area near a treatment facility north of downtown Reno. Water from the facility was then sent to the trailers for further purification that relied on a multi-step process.

Instead of reverse osmosis, the demonstration looked to a newer method for water treatment: Using ozonation and biologically-activated carbon to weaken or eat up organic compounds. And it seems to be working. Enloe said the treatment method has already produced high-quality water.

For months, the water authority, which partnered with the city of Reno and the Western Regional Water Commission, has been pumping treated water into the ground, removing it, and testing it.

So far, the results have been positive.

“It’s reassuring when you’re seeing concentrations at the front of the treatment train, and they’re not even detectable at the end,” said Lydia Peri, who has helped lead the project, known as the [OneWater Nevada Initiative](#), as the water authority’s emerging resources program administrator.

Peri’s work recently [earned recognition](#) from the Water Environment Federation.

Scaling it up: The next step is less a question of treatment technology than it is of funding and seeking the support of local governments. The goal, Enloe said, is a large-scale demonstration project for the public and state regulators with the Nevada Division of Environmental Protection.

“The technology is there,” he said.

Earlier this month, the Reno City Council gave its unanimous approval for a planning study that would look at the costs and benefits of a larger-scale project. In such a demonstration, the water would initially be used for irrigation and could later serve potable uses, potentially reducing use on the Truckee River and diversifying a water supply made more uncertain by climate change.

Governor's Bowl Park Area



Help us improve the region's homeless shelter and services with your public comment

Reno, Sparks and Washoe County are on the verge of a historic and monumental step to develop the *Nevada Cares Campus*, a new centralized service location for homeless services, transitional housing and wraparound support. The joint government operation proposes to build this campus at Fourth Street and Line Drive, near [Hopes Springs Tiny House Village](#) and [Village on Sage Street](#) apartments. On November 18, the three governments will jointly meet to approve the purchase and development of the new *Nevada Cares Campus* on the Governor's Bowl park area, shown above, using CARES Act and other funding sources.

This new *Nevada Cares Campus* will operate in conjunction with the new *Our Place* shelter to provide a centralized location for housing and support services for this at risk population. This opportunity is the culmination of years of effort and collaboration from state and local government leaders, community partners, nonprofit organizations and our business community and is the most significant step forward in addressing our growing homeless problem.

WE NEED YOU TO VOICE YOUR SUPPORT FOR THIS HISTORIC STEP FORWARD.

Due to COVID-19, public comments can be submitted by leaving a voicemail with the City Clerk. Please call 775 393-4499 before 4 p.m. Tuesday, November 17, and leave a voicemail stating your support for the *Nevada Cares Campus* and appreciation for Reno, Sparks and Washoe County working together. Your message can be as simple as the following:

“THIS IS _____ [insert name] _____ AND I AM CALLING IN SUPPORT OF AGENDA ITEM 11 AND THE PURCHASE AND DEVELOPMENT OF THE NEVADA CARES CAMPUS AND USE OF CARES FUNDS TO ASSIST THIS AT RISK POPULATION. THANK YOU FOR WORKING TOGETHER ON THIS REGIONAL SOLUTION.”

Please feel free to share this email with your respective contacts in Reno.

Thank you for your support,

Downtown Reno Partnership Staff and Board

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Priorities for California's Water

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Summary

“Volatile” doesn’t begin to describe the past year. The monumental impacts of the coronavirus health emergency and resulting economic fallout have affected virtually every aspect of modern life, including how water is managed. And the nation’s much-needed and difficult conversation about racism has illuminated water equity issues—such as how we address climate change, safe drinking water, flood management, and more. Layered on top of these upheavals is California’s regular companion, drought. As in other western states, the pandemic’s effects are compounded by long-term drought—which is being made worse by climate change. California is also experiencing increasing conflict over water solutions, especially in the Sacramento–San Joaquin Delta. In the midst of the pandemic, the Newsom administration finalized its water resilience portfolio—an ambitious, wide-ranging charter for tackling chronic problems and adapting California’s water systems to the changing climate. Dwindling state and local revenues require hard choices on near-term funding priorities for this plan. This brief highlights how events this past year have shifted the state’s water landscape and lays out priorities for local, state, and federal action. Key elements include:

- **Ensure safe and affordable water.** Some California communities did not have safe drinking water before the pandemic, and the recession has made affordability of water and wastewater an urgent crisis. Solutions must ensure access for the most vulnerable, while maintaining the financial health—and safety—of our water systems.
- **Collaborate to reduce uncertainties in agricultural water supplies.** Broad-based partnerships to bring groundwater basins into balance and address environmental water needs can improve the outlook for farm water supplies. The agricultural sector can also do more—in partnership with others—to support workforce communities hit hard by the pandemic.
- **Invest in forest health as a vehicle for economic recovery.** Wildfire risk is growing in California, threatening lives, property, and the quality of our air and water.

Expanding forest management can help reduce extreme wildfire risk and safeguard the many benefits forests provide, while creating good jobs for rural, forest-based communities.

- **Make the most of limited resources for the environment.** Increasing the efficiency and effectiveness of ecosystem investments can help, as can efforts to reduce conflict over water dedicated to the environment. California also needs robust funding and reliable water supplies to improve the health of freshwater ecosystems, which are especially vulnerable to drought.

On the next page you'll find a summary of the major disruptions currently affecting the water sector. These disruptions also bring opportunities to reduce the water system's vulnerability to economic shocks and other "surprises"—because the state's water systems are at risk not just from drought and disease, but also from floods and earthquakes. In this rocky economic period, we must also try to do more with less: boosting resilience to multiple sources of stress, while supporting economic recovery and workforce development. It's been a tough year, and the light at the end of the tunnel remains faint. But there is much work to do to create a more equitable, resilient water system, and delays only make these goals harder to accomplish. We hope this policy brief spurs meaningful conversations that can take us forward and fosters new ways of addressing problems in these uncertain times. – Ellen Hanak

FULL REPORT

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NEWS

Club House Fire Near Nichols Bl. & Victorian Ave

Sparks Fire responded to and is currently on scene of a club house fire at 200 Nichols Blvd. Fire is currently under control and being investigated.

Wednesday, November 18th 2020, 5:36 AM PST by Michael Hanna

Updated:

Wednesday, November 18th 2020, 6:56 AM PST



Sparks Fire responded to and is currently on scene of a club house fire at 200 Nichols Blvd.

Upon arrival they found heavy fire and smoke coming from the single story club house.

The fire was already through the roof upon arrival. An aggressive fire attack was initiated and an aerial device was put up to stop the fire spread.

22 Sparks Fire personnel responded including 4 engines, 1 truck company, 1 ladder company, 1 battalion chief, 1 training/safety officer, and 2 prevention/fire investigators.

Sparks Police assisted with evacuations and traffic control. REMSA responded and stood by for medical.

NV Energy is on scene to secure utilities and TMWA is enroute for a water leak.

Fire is currently under control and being investigated.

Crews are also still on scene completing overhaul.

Skip to main content

MICHIGAN

City of Flint, other defendants agree to settle water lawsuit as total boosted to \$641.2M

Paul Egan Detroit Free Press

Published 8:43 p.m. ET Nov. 17, 2020 | Updated 8:11 a.m. ET Nov. 18, 2020

LANSING — The city of Flint and two other defendants have joined a \$600-million Flint water crisis settlement the state of Michigan announced in August, bringing the total value of the settlement in the lead poisoning case to \$641.2 million, attorneys announced late Tuesday.

In addition to the city, McLaren Regional Medical Center and Rowe Professional Services Co., a city contractor, have agreed to settle the massive class-action lawsuit, attorneys said. The hospital was sued in connection with an outbreak of Legionnaires' disease after the city switched its water source from Lake Huron to the Flint River.

Also Tuesday, parties in the case said they presented 60 pages of settlement details to U.S. District Judge Judith Levy, who will now review the agreement as part of a motion for preliminary approval. But the details were not in the court file as of late Tuesday night.

The settlement is designed so that Flint residents who were children at the time the city's drinking water became contaminated will be eligible for the bulk of the compensation, officials said.

If Levy approves, the registration process will begin, allowing Flint residents to begin the process of obtaining funds provided by the settlement. Levy will set a hearing date to address the preliminary approval of the settlement.

"We hope that this settlement ... can begin the process of closing one of the most difficult chapters in the state's history and believe it will provide some level of relief for the people of Flint who have suffered greatly," said Hunter Shkolnik of New York, one of the attorneys appointed to head up settlement discussions for the various lawsuits.

"This settlement focuses on the children and the future of Flint."

The city of Flint, though no longer under emergency management, remains financially strapped. Its \$20-million share of the settlement will be paid by its insurers, so there will be no cost to taxpayers, the city said in a news release. The tentative settlement still requires City Council approval, the release said.

"While no amount of money will heal the wounds inflicted on this community, we are glad to see more entities step up and take responsibility," Mayor Sheldon Neeley said. "The residents of the City of Flint deserve justice and they deserve a resolution to these lawsuits."

McLaren is contributing \$20 million and Rowe is contributing \$1.25 million, Attorney General Dana Nessel said.

Remaining outside the settlement are the water engineering company Veolia, the engineering firm Lockwood, Andrews & Newman, and the U.S. Environmental Protection Agency.

"Resolving these legal disputes against the State, and now the other defendants who have joined the settlement, is the best possible outcome for Flint's future," Nessel said.

More: How much will attorneys get from proposed Flint water settlement? They still aren't saying

In August, the state announced a preliminary \$600-million settlement of class-action suits brought by Flint residents. But many details were still to be worked out, and the city of Flint and other defendants were not part of the agreement.

"This settlement agreement is just one of the many ways we will continue showing our support for the city and residents of Flint," Michigan Gov. Gretchen Whitmer, a Democrat, said Tuesday.

The city was under the control of a state-appointed emergency manager under former Republican Gov. Rick Snyder when a series of bad decisions and errors, partly driven by efforts to cut costs, resulted in lead contamination of the city's drinking water supply starting in 2014.

The state said in August that Flint residents — especially younger ones — would be eligible for payments from a victim compensation fund under a preliminary global settlement of civil lawsuits arising from the contamination of their drinking water with toxic lead. Snyder, sued in his official duties as governor, was included in the state settlement announced in August.

But the city of Flint, along with the U.S. Environmental Protection Agency and some private sector defendants, were not part of that settlement.

It's not known how many people, and some businesses, could be eligible for payments under the class-action settlement, but it could be in the tens of thousands.

More: Flint water crisis legal settlement totals \$600M, creates victim compensation fund

More: Flint nurse, 59, loses life to COVID-19 complications after tireless fight against virus

Under the proposed state settlement, nearly 80% of payments would go to those who were under 18 at the time of the crisis, which began in April 2014. Children are particularly vulnerable to the toxic effects of lead, which can impact brain development.

Attorney fees and costs, which have not been disclosed, would be deducted from the settlement amount, leaving a lesser amount for distribution. Attorney contingency fees vary, depending on the case, but it is not unusual for them to amount to one-third of a settlement amount.

Flint's water crisis began when a state-appointed emergency manager switched the city's drinking water supply from Lake Huron water treated in Detroit to Flint River water treated at the Flint Water Treatment Plant. It was intended as a temporary, cost-saving measure, but turned out to be a disastrous mistake. The Michigan Department of Environmental Quality has acknowledged it failed to require needed corrosion-control chemicals as part of the water treatment process.

More: How much will attorneys get from proposed Flint water settlement? They still aren't saying

Before the 2014 water switch, the Flint City Council had backed a plan to join the Karegnondi Water Authority pipeline to Lake Huron as a new water source, though members have said they thought the city would stay on Detroit water until the new pipeline was completed.

After Flint River water began flowing, corrosive water caused lead to leach from joints, pipes and fixtures, causing a spike in toxic lead levels in the blood of Flint children and other residents, as well as bringing foul-smelling, discolored water into Flint homes. Residents complained about water conditions for over a year before the state acknowledged the problem.

Flint switched back to Detroit water in October 2015, but the risk remained because of

Royal Oak attorney Michael Pitt said the proposed settlement details represent "months of negotiations, input from qualified experts and members of the community." They were produced with the guidance of neutral mediators and a court-appointed special master, he said.

Ted Leopold of Florida, another co-counsel, said "it is essential that those who are responsible for the reckless behavior that led to this crisis are held accountable," and his firm would "continue to seek justice against the remaining defendants."

Contact Paul Egan: 517-372-8660 or pegan@freepress.com. Follow him on Twitter @paulegan4. Read more on Michigan politics and sign up for our elections newsletter.

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People living in a homeless camp in downtown Reno had to vacate the area early June 3 as RPD moved in to clean the area. Image: Eric Marks

FEATURED

New super shelter for those experiencing homel

By Bob Conrad | November 18, 2020



A complex that includes a new homeless shelter and acreage for social services is getting closer to reality.

Elected officials from Sparks, Reno and Washoe County today voted nearly unanimously to approve the [purchase of the Governor's Bowl as well as an adjacent property](#) to serve the nearly 2,000 individuals experiencing homelessness in Reno-Sparks area.

The complex will comprise 14 acres. A new 46,000 square-foot tent-like structure will be constructed on site starting early next year.

Reno Mayor Hillary Schieve called the complex a very comprehensive approach to addressing Reno's rising homeless population. She called the agreement between the two cities and the county monumental.

"This is huge and it's called a collaboration at its nest," she said.

The complex is expected to provide services that currently prevent people from seeking help, such as serving couples, people with pets and those who simply do not want to be in a shelter. The new site could also host a "safe camp" section, some advocacy organizations are pushing.

Sparks Mayor Ed Lawson called the agreement a home run.



Ed Lawson

"Approving this action today will have deep, deep ramifications for this region," he said.

Purchasing and developing the property will cost more than \$86 million. Reno will pay 54%, Sparks will cover 22%, and Washoe County will cover about 24%.

The funding is coming from federal grants, CARES Act funding, the Reno Housing Authority and a half million in private donations.

Washoe County Commissioner Marsha Berkgigler questioned whether the county could afford to maintain the complex. said citizens had been calling her all day to question the expenses.

Washoe County Manager Eric Brown said the majority of the costs will be covered by traditional funding sources. He said CARES Act funding will make up the difference; after that, additional funding sources will be needed.

Reno Councilmember Jenny Brekhus voted against one of the measures as part of the agreement; she voted in favor of the rest, however.



Bob Conrad is co-founder of This Is Reno, which he manages as publisher and executive editor. He also works part time for the University of Nevada, Reno.



NOVEMBER 18, 2020

Stanford researchers combine Zillow and census data to determine residential water needs

New Stanford research uses Zillow and census data combined with machine learning to identify residential water consumption based on housing characteristics. The approach could help cities better understand water use and design water-efficient communities.

BY MICHELLE HORTON

The gateway to more informed water use and better urban planning in your city could already be bookmarked on your computer. A new Stanford University study identifies residential water use and conservation trends by analyzing housing information available from the prominent real estate website Zillow.

The research (<https://iopscience.iop.org/article/10.1088/1748-9326/abb7ae>), published Nov. 18 in *Environmental Research Letters*, is the first to demonstrate how new real estate data platforms can be used to provide valuable water use insights for city housing and infrastructure planning, drought management and sustainability.

“Evolving development patterns can hold the key to our success in becoming more water-wise and building long-term water security,” said study senior author Newsha Ajami (<https://waterinthewest.stanford.edu/about/people/newsha-ajami>), director of urban water policy at Stanford’s Water in the West (<http://waterinthewest.stanford.edu/>) program. “Creating water-resilient cities under a changing climate is closely tied to how we can become more efficient in the way we use water as our population grows.”



(<https://news-media.stanford.edu/wp-content/uploads/2020/10/21093908/iStock-1146093023.jpg>)

Aerial view of a residential neighborhood in Redwood City, California, with San Francisco Bay visible in the background. (Image credit: iStockphoto/Andrei Stanescu)

It’s estimated that up to 68 percent of the world’s population will reside in urban or suburban areas by 2050. While city growth is a consistent trend, the types of residential dwellings being constructed and neighborhood configurations are less uniform, leading to varying ways in which people use water inside and outside their homes. The people living within these communities also have different water use behaviors based on factors such as age, ethnicity, education and income. However, when planning for infrastructure changes, decision-makers only take population, economic growth and budget into account, resulting in an incomplete picture of future demand. This, in turn, can lead to infrastructure changes, such as replacing old pipes, developing additional water supply sources or building wastewater treatment facilities, that fail to meet community needs.

Harvesting the data

Zillow and other real estate websites gather and publish records collected from different county and municipal agencies. These websites can also be updated by homeowners, making them rich sources of information that can otherwise be difficult and timely to obtain. The Stanford researchers used data from Zillow to gather single-family home information, including lot size, home value and number of rooms in Redwood City, California, a fast-growing, economically diverse city with various styles of houses, lots and neighborhoods. Then, they pulled U.S. Census Bureau demographic information for the city, looking at factors including average household size and income along with the percentage occupied by renters, non-families, college educated and seniors.

Coupling the Zillow and census data and then applying machine learning methods, the researchers were able to identify five community groupings, or clusters. They then compared the different group's billing data from the city's public works department to identify water usage trends and seasonal patterns from 2007 to 2017 and conservation rates during California's historic drought from 2014 to 2017.

"With our methods incorporating Zillow data we were able to develop more accurate community groupings beyond simply clustering customers based on income and other socioeconomic qualities. This more granular view resulted in some unexpected findings and provided better insight into water-efficient communities," said lead author Kim Quesnel (<https://profiles.stanford.edu/kimberly-quesnel>), a postdoctoral scholar at the Bill Lane Center for the American West (<https://west.stanford.edu/>) while performing the research.

Comparing consumption

They found the two lowest income groups scored average on water use despite having a higher number of people living in each household. The middle-income group had high outdoor water use but ranked low in winter water use, signaling efficient indoor water appliances – such as low-flow, high-efficiency faucets and toilets – making them an ideal target for outdoor conservation features such as converting green spaces or upgrading to weather-based or smart irrigation controllers.

The two highest income groups, characterized by highly educated homeowners living in comparatively larger homes, were the most dissimilar. One cluster – younger residents on smaller lots with newer homes in dense, compact developments – had the lowest water use of the entire city. The other high-income cluster consisting of older houses built on larger lots with fewer people turned out to be the biggest water consumer. The finding goes against most previous research linking income and water use, and suggests that changing how communities are built and developed can also change water use patterns, even for the most affluent customers.

All groups showed high rates of water conservation during drought. Groups with the highest amount of savings (up to 37 percent during peak drought awareness) were the two thirstiest consumers (the high-income, large-lot and middle-income groups) demonstrating high potential for outdoor water conservation. Groups with lower normal water usage were also able to cut back, but were more limited in their savings. Understanding these limitations could inform how policymakers and city planners target customers when implementing water restrictions or offering incentives such as rebates during drought.

This research lays the framework for integrating big data into urban planning, providing more accurate water use expectations for different community configurations. Further studies could include examining how data from emerging online real estate platforms can be used to develop neighborhood water use classifications across city, county or even state lines. An additional area of interest for the researchers is examining how water use consumption is linked to development patterns in other kinds of residential areas, for example in dense cities.

"Emerging, accessible data sources are giving us a chance to develop a more informed understanding of water use patterns and behaviors," said Ajami. "If we rethink the way we build future cities and design infrastructure, we have the opportunity for more equitable and affordable access to water across various communities."

Quesnel is now a senior project scientist at Blue Forest Conservation. Additional author Saahil Agrawal was a graduate student at Stanford in the Department of Management Science and Engineering.

Funding for the research was provided by the **Stanford Woods Institute for the Environment** (<https://woods.stanford.edu/>), the U.S. Environmental Protection Agency, ReNUWIIt and the Bill Lane Center for the American West.

To read all stories about Stanford science, subscribe to the biweekly *Stanford Science Digest* (<http://eepurl.com/dLmCng>).

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RENO, NEV. NOV 19, 2020

Climate Change Wild re Drought



Climate change and “atmospheric thirst” to increase fire danger and drought in Nevada and California

The full study, “Projected Changes in Reference Evapotranspiration in California and Nevada: Implications for Drought and Wildland Fire Danger”, is available from Earth’s Future.

New study shows impacts of increased levels of evaporative demand as climate grows warmer and drier
Climate change and a “thirsty atmosphere” will bring more extreme wildfire danger and multi-year droughts to Nevada and California by the end of this century, according to new research from the Desert Research Institute (DRI), the Scripps Institution of Oceanography at the University of California, San Diego, and the University of California, Merced.

In a **new study** published in *Earth’s Future*, scientists looked at future projections of evaporative demand – a measure of how dry the air is – in California and Nevada through the end of the 21st century. They then examined how changes in evaporative demand would impact the frequency of extreme fire danger and three-year droughts, based on metrics from the **Evaporative Demand Drought Index (EDDI)** and the **Standardized Precipitation Evapotranspiration Index (SPEI)**. According to their results, climate change projections show consistent future increases in atmospheric evaporative demand (or the “atmospheric thirst”) over California and Nevada. These changes were largely driven by warmer temperatures, and would likely lead to significant on-the-ground environmental impacts.

Study results show increases of 13 to 18 percent in evaporative demand during all four seasons by the end of the century.

Credit: Dan McEvoy/DRI.

“Higher evaporative demand during summer and autumn—peak fire season in the region—means faster drying of soil moisture and vegetation, and available fuels becoming more flammable, leading to fires that can burn faster and hotter,” explained lead author Dan McEvoy, Ph.D., Assistant Research Professor of Climatology at DRI.

“Increased evaporative demand with warming enables fuels to be drier for longer periods,” added coauthor John Abatzoglou, Ph.D., Associate Professor with the University of California, Merced.

“This is a recipe for more active

The research team found that days with extreme fire danger in summer and autumn are expected to increase four to 10 times by the end of the century. Their results also showed that multi-year droughts, similar to that experienced in California and Nevada during 2012-2016, were projected to increase three to 15 times by the end of the century.

“One major takeaway was that we can expect to see a lot more days in the summer and autumn with extreme fire danger related to increased temperature and evaporative demand,” McEvoy said. “Another takeaway was that even in locations where precipitation may not change that much in future, droughts are going to become more severe due to higher evaporative demand.”

California and Nevada on average experienced a record-setting number of “extreme re danger” days in 2020, as indicated by the line on the graph above. Extreme re danger days were calculated using the Evaporative Demand Drought Index (EDDI), with methods described in McEvoy et al. (2020). Data source:

<http://www.climatologylab.org/gridmet.html>.

Credit: Dan McEvoy/DRI.

Study authors say that the cumulative effects of increases in evaporative demand will stress native ecosystems, increase fire danger, negatively impact agriculture where water demands cannot be met, and exacerbate impacts to society during periods of prolonged dryness. Several members of the research team are part of the California-Nevada Applications Program (CNAP), and will use these study results to provide resource managers with a view of possible future scenarios.

“These results provide information to support science-based, long-term planning for fire management agencies, forest management agencies, and water resource managers,” said coauthor Julie Kalansky, Ph.D., Program Manager for CNAP. “We plan to work with partners to help integrate the findings from this paper to support building climate resilience.”

Additional Information:

This study was funded by the National Oceanic and Atmospheric Administration (NOAA) California-Nevada Climate Applications Program (CNAP) and the NOAA National Integrated Drought Information System (NIDIS) California-Nevada Drought Early Warning System.

The full text of the paper, “Projected Changes in Reference Evapotranspiration in California and Nevada: Implications for Drought and Wildland Fire Danger,” is available from *Earth’s Future*:

<https://agupubs.onlinelibrary.wiley.com/doi/10.1029/2020EF001736>

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The Desert Research Institute (DRI) is a recognized world leader in basic and applied interdisciplinary research. Committed to scientific excellence and integrity, DRI faculty, students, and staff have developed scientific knowledge and innovative technologies in research projects around the globe. Since 1959, DRI’s research has advanced scientific knowledge, supported Nevada’s diversifying economy, provided science-based educational opportunities, and informed policy makers, business leaders, and community members. With campuses in Reno and Las Vegas, DRI

serves as the non-profit research arm of the Nevada System of Higher Education. For more information, please visit www.dri.edu.

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NEWS & MULTIMEDIA

News & Multimedia

Reclamation / News & Multimedia / News Releases / Trump Administration finalizes Shasta Dam raise plan to increase water storage for Californians and the environment

Trump Administration finalizes Shasta Dam raise plan to increase water storage for Californians and the environment

Media Contact: Mary Lee Knecht, 916-978-5100, mknecht@usbr.gov

For Release: November 19, 2020

REDDING, Calif. - The Trump Administration today released the Shasta Lake Water Resources Investigation Final Supplemental Environmental Impact Statement to increase water storage capacity in the Shasta Lake reservoir by 634,000 acre-feet, or more than 200 billion gallons. This is enough water to support more than 6 million Californians annually.

“President Trump has made investing in our existing infrastructure a top priority. Raising Shasta Dam is one of the smartest and most cost-effective opportunities we have before us,” said Commissioner Brenda Burman. “Shasta Dam sits at the head of California’s largest water system—the Central Valley Project. Not only will the project benefit farms, communities and the environment, it will provide ample opportunities for smarter water management.”

For decades, many federal western water infrastructure investments have been undermined by federal inaction and the State of California. In fact, there has not been any major federal water storage infrastructure built since 1979 even as the state’s population has nearly doubled. Today’s actions are yet another example of how the Trump Administration is working to enhance water storage capacity and appropriately protecting species and habitats. This comes after an already long list of water actions from the Trump Administration benefiting Californians, namely including:

- President Trump issuing a Presidential Memorandum on Promoting the Reliable Supply and Delivery of Water in the West on Oct. 19, 2018;
- the completed review of the long-term coordinated operation for the Central Valley Project and California State Water Project and subsequently issuing an updated operation plan and Record of Decision;
- President Trump issuing a Presidential Memorandum on Developing and Delivering More Water Supplies in California while visiting Bakersfield, California on Feb. 19, 2020;
- the completion of repairs to a 33-mile stretch of the Friant-Kern Canal in California’s eastern San Joaquin Valley; and
- the establishment of an interagency Water Subcabinet that is coordinating and streamlining the federal government’s actions on water-related issues.



Shasta Dam releasing 50,000 cubic feet per second

“Raising Shasta Dam is critical to helping improve drought resiliency in the State of California, as it will provide more water for people, fish, and the environment,” said House Republican Leader Kevin McCarthy (CA-23). “This project is a win all around. I want to commend Secretary Bernhardt and Commissioner Burman for continuing to prioritize this project, despite ongoing and misguided opposition from Sacramento bureaucrats and some elected officials from California. The Trump Administration has taken many actions to improve the lives of Californians by pursuing policies to help our communities get the water that we contract and pay for, and we are grateful.”

“President Trump has again delivered on his promise to secure more water for Central Valley families and farmers,” said Congressman Devin Nunes (CA-22). “Increasing water storage is vital to making our communities drought resistant. By cutting red tape and raising the Shasta Dam, the Trump administration has taken crucial steps toward undoing the government-made drought conditions plaguing Valley communities. I want to thank President Trump and Secretary Bernhardt for their unwavering commitment to solving the California water crisis.”

“Northern California is one of the most water-rich regions of the country, and yet is plagued by water shortages because of a chronic lack of water storage,” said Congressman Tom McClintock (CA-04). “After decades of bureaucratic dithering and obstruction, the Shasta Dam raise is finally within sight of actual construction—an important step toward restoring water abundance to our communities.”

“Additional water storage is critical for people, the environment, and agriculture. Raising Shasta Dam provides 634,000 acre-feet of new water,” said Congressman Doug LaMalfa (CA-01).

“This project is a cost-effective solution to a long-term problem plaguing California, and will also create new good paying jobs in Shasta County. I thank the Trump Administration for bringing this long-sought project closer to fruition.”

Shasta Dam is a keystone of Reclamation’s Central Valley Project, which extends over 400 miles through California’s Central Valley providing water for more than three million acres of farmland, nearly six million people, and critical fish and wildlife species. Reliable water is critical to the economic progress of the region – and our nation – as more than 40 % of the country’s fruits, nuts and vegetables are grown in the Central Valley, largely using water from the CVP and its largest reservoir—Shasta Lake.

“We are pleased to achieve this significant milestone for such an important project for the state, said Regional Director Ernest Conant. “California needs a more reliable water supply for agriculture and communities, and modernizing our existing infrastructure is one of the most efficient means to make that happen.”

Background

Congress first directed Reclamation to look at the feasibility of raising Shasta Dam in the 1980s, and then again in 2004. More recently, recognizing the need for increased surface water storage and the need to find funding mechanisms that work in today’s vastly over-stretched federal budget, Congress passed the Water Infrastructure Improvements for the Nation Act in 2016 with broad bipartisan support.

Reclamation and other federal agencies have spent decades carefully evaluating data to ensure an environmentally sound approach to raising Shasta Dam. The dedicated environmental storage from the dam raise would improve water quality in the Sacramento River below the dam by lowering water temperatures for anadromous fish survival, such as Chinook salmon and other fish that migrate from the ocean to rivers to spawn. This includes ensuring that the McCloud River and the important wild trout fishery it supports are protected.

The finalized SEIS comes after considering more than 6,500 public comments on a proposal to raise the 600-foot-tall Shasta Dam by 3%, or an additional 18.5 feet.

A Supplemental EIS is used when new or updated information becomes available after the publication of the Final EIS. Since 2015, Reclamation identified several key areas that required updating and initiated a Draft Supplemental EIS in accordance with the National Environmental Policy Act. The original 45-day comment period for the DSEIS was extended by two weeks and closed October 5. The Final SEIS is available for review at:

https://www.usbr.gov/mp/nepa/nepa_project_details.php?Project_ID=1915.

The supplemental document provides information relevant to Reclamation’s application of Clean Water Act Section 404(r), updates modeling to be reflective of the 2019 Biological Opinions and provides an updated analysis on effects to the McCloud River, and considers public input.

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The Bureau of Reclamation is a federal agency under the U.S. Department of the Interior and is the nation's largest wholesale water supplier and second largest producer of hydroelectric power. Our facilities also provide substantial flood control, recreation opportunities, and environmental benefits. Visit our website at <https://www.usbr.gov> and follow us on Twitter @USBR; Facebook @bureau.of.reclamation; LinkedIn @Bureau of Reclamation; Instagram @bureau_of_reclamation; and YouTube @reclamation.

Relevant Link:

[Shasta Dam and Reservoir Enlargement Project website](#)

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AG JOURNAL

NEWS

Western states wrestle with shrinking water supplies

Candace Krebs Ag Journal

Published 1:52 p.m. MT Nov. 23, 2020

State and local leaders across the West are embracing ambitious water conservation initiatives in an effort to match the magnitude of the solutions to the challenges that lie ahead as droughts worsen and fire seasons become longer and more destructive.

The breadth, scope and interconnectedness of these ongoing projects was outlined during the recent Water in the West Symposium, hosted by Colorado State University's new SPUR campus at the National Western Center in Denver.

According to Colorado Governor Jared Polis, more than 500 innovative water projects are underway across the state, each of which are supported by data and funneled through a series of local basin roundtables to insure they reflect the goals of the statewide water plan. The state's model has earned acclaim for bringing together diverse interests to craft a methodical and comprehensive approach to future water needs.

Governor Polis said the state is looking ahead to updating and potentially revising the plan in 2022.

The state is also putting more emphasis on water and land use training by bringing in an interdisciplinary team of experts to help utilities develop meaningful action plans. In the past year, 17 training programs have been held around the state, Polis said.

Another priority is preserving the vital Colorado River, which he described as "our namesake and the hardest working river in the West," by working with other western states and the federal government to protect Lake Powell reservoir.

Lake Powell and adjacent Lake Meade could encounter severe water shortages as early as 2025, according to symposium keynote Gary Knell, chairman of National Geographic Partners.

On the local level, symposium sponsor Denver Water hosted a virtual tour to share how the state's largest water utility has shifted from reactive to proactive on water supply and quality issues.

Denver Water serves 1.5 million people in the Denver metro and sources water across 2.5 million acres.

Through its Forest to Faucets initiative, the water utility is partnering with the Colorado Forest Restoration Institute to help improve forest management, reduce fire danger and mitigate post-fire impacts, according to watershed scientist Christina Burri.

"The Hayman Fire of 2002 was very costly to Denver Water, and that's what motivated us to make proactive investments in forest health," she explained.

Fire damage causes debris to drain into reservoirs and removing that sediment is costly and difficult. Denver Water spent \$28 million on dredging and other reservoir clean-up following the Hayman Fire, but the recent uptick in new wildfires has brought sediment control efforts back to square one. If upfront measures can reduce sediment deposition by even just 5 percent, it's worth the investment, she said.

Sylvia Bierman, acting regional director with the U.S. Forestry Service, said the agency has a Burned Area Emergency Response plan to address immediate impacts from fire events, with funding for activities such as applying mulch to burn scars. The National Resource Conservation Program has a similar project for private landowners, she added. But the agency is also seeking additional funding for longer term restoration, she said.

Denver Water has partnered with the Forest Service for more than 10 years, expanding the collaboration from large landscape and vegetative management projects to specific problems such as noxious weed control, she said.

Weston Toll, a wildfire mitigation specialist with the Colorado State Forest Service, noted that Denver Water's Forest to Faucets project is no longer unique as more utilities adopt their own programs.

"Most major Front Range water suppliers are also stepping up to the plate with similar programs, so that's really good to see," he said.

Leaders of neighboring states and tribal organizations also offered examples of how they are moving forward on water conservation.

Nevada Lt. Governor Kate Marshall gave a shout-out to Colorado for helping her state organize a new outdoor recreation agency.

"While outdoor recreation is very stable and resilient to recessions or pandemics, you don't want to love (our natural resources) to death," she said. "One of the issues we've seen is that many, many people went to Lake Tahoe to get away from the (viral) threat, but that actually created a strain on the system."

In addition to monitoring and addressing recreational impacts, the agency is expanding into areas not initially anticipated, such as quantifying the health benefits of outdoor recreation and improving outdoor educational offerings for kids from inner cities.

Nevada also created a program called WaterStart, which has since spun off into a free-standing nonprofit, which currently co-funds 31 different innovative water management pilot projects.

While Colorado State is establishing a building on the SPUR campus in Denver devoted solely to water, Nevada has its own Water Innovation Campus within the engineering department at the University of Nevada, which explores engineering solutions, such as using sound technology to find leaks in large municipal water systems. The center has joint international projects underway with Australia and Poland.

"We want to export ideas to other communities, even other countries," she said. "We want to test those ideas here and then be the exporter of innovation."

Wyoming Governor Mark Gordon, who grew up on a ranch and has a college-age daughter currently studying hydrology, and Stephen Roe Lewis, the recently re-elected governor of the Gila River Indian Community in Arizona, talked about the importance of addressing aging water infrastructure and the need for collaboration between tribal, state and federal governments.

"Our irrigation infrastructure is a century old or older," Gordon said. When a tunnel collapsed on an important canal that also flows into Nebraska, the two states worked together to address the issue, he added.

Wyoming has established a new fund, which Gordon described as "kind of an insurance approach," which is being used to fund vital improvements to dam structures, headgates, ditches and canals.

As droughts continue, the state is also drilling down into how to maximize water storage using the latest technology. Governor Gordon said the state is working to improve water supply forecasting and refine research on how the climate is changing and its affect on snow and run-off patterns, as well as modeling and sensing capabilities, reporting automation and stream gauge monitoring.

REID ON HIS ENVIRONMENTAL LEGACY, COMPROMISE AND A BIDEN CLIMATE AGENDA



DANIEL ROTHBERG

NOVEMBER 25TH, 2020 - 2:00AM

When archivists began to sit down and dissect former Sen. Harry Reid’s papers from his time in Congress, they found that more than half of his work dealt, in some form, with the environment.

This was never part of a grand-plan. Reid did not set off on a mission to focus his attention on issues like water and public land – at least that’s what he says now.

He simply did the work of being a U.S. senator in an arid state dealing with the natural resource pressures of rapid growth, a state where the federal government managed nearly 85 percent of the land and often treated it like a wasteland, a proving ground to test atomic bombs.

“I believe that Nevada is a very sensitive state,” Reid said. “Climate change started affecting us some time ago, and I’m glad that I was vigilant and did what I could to protect it.”

A [new documentary](#) explores how Reid used power, as he rose through the ranks of Congress, to forge compromises on longstanding issues harming Native communities and degrading public land. On many issues, Reid built coalitions that worked toward correcting environmental wrongs.

But some of his stances made him a polarizing figure. His decisions to designate wilderness land put him at odds with ranchers and turned him into an unpopular figure with some in rural Nevada.

On other issues, from backing the mining industry to supporting the Las Vegas pipeline, Reid frustrated environmentalists who felt that many of his major

compromises, with carve-outs for economic development and growth, had too many costs. They wanted Reid to go farther.

All of this came against the backdrop of larger trends taking place.

Reid was elected to Congress in 1982 during the final years of the Cold War. For decades, the federal government had used Nevada for atomic testing, sending plumes of radiation downwind.

Jon Christensen, who produced the documentary with UCLA's Institute of the Environment and Sustainability, said there was a perception in the federal government that the Nevada desert was a wasteland and not worthy of protection. Reid, he said, worked to change that image.

In particular, Christensen said Reid's long-standing opposition to the Yucca Mountain waste repository "was an important part of this turn from this last generation — from seeing Nevada as a wasteland where you could put the stuff that nobody else wanted to a very vibrant, beautiful, diverse state in terms of ecosystems and geography and people and cultures."

It was also a period of urbanization. When Reid was a freshman representative in Congress, Las Vegas had a population of about 505,000 residents. When Reid retired from the Senate in 2016, the state's largest metro area had grown about five times larger — to roughly 2.4 million. That growth increased pressure on water and public land, creating tensions that still exist today.

Earlier this month, Reid and Christensen spoke to *The Nevada Independent* about his legacy on environmental issues, from settling disputes on the Truckee and Walker rivers to closing the Reid Gardner Generating Station and cleaning up the Anaconda Copper Mine. Reid also talked about the role of Congress in crafting legislation and climate action in a Biden administration.

Art of compromise

In the West, most issues involving public land inherently affect a range of competing interests.

Federal public land is often managed for multiple uses: habitat conservation, grazing, hunting, mining, and recreation. But Congress can play a role in tilting the scales toward conservation or development. It can establish wilderness areas and place rules around how public land is used.

As a senator, Reid helped craft a number of pieces of legislation that [protected millions of acres as wilderness](#). Those types of environmental wins increased the amount of conserved land in the state, but they came with negotiation and compromises that often allowed for development, whether it was mining in rural Nevada or homebuilding in Las Vegas, to proceed on public land.

“Legislation is the art of compromise,” Reid stressed. “Compromise is not a bad word. It’s a good word. It’s what legislation is all about. And I’ve been fortunate to understand that.”

Reid said he recognized early on that he needed to work with Republican colleagues like former Rep. Barbara Vucanovich and Sen. John Ensign to get what he wanted passed in Congress.

“I was able to give them some stuff that they wanted for the business community, and I got [legislation] for the public community,” Reid said. “So that’s how I got it done.”

This type of deal-making in Congress, Reid said, helped him address water conflicts in Northern Nevada. Reid touted his success in setting the stage to improve the water quality of two desert terminal lakes: Pyramid Lake and Walker Lake. As ranchers had diverted more and more water upstream, the lakes — sacred to Native communities — began to dissipate at an alarming rate.

But coming to a settlement, in the case of Pyramid Lake, took years. And while Reid wanted to compromise, he took a stance: He wanted to see the restoration of the lake and its fisheries, as well as water for wetlands in the Fallon area that are critical for North American bird migration.

“We kept water from the ranchers, and we put water into Pyramid Lake,” he said.

Reid said one of things he learned was how “terribly bad” Native communities had been treated — “decade after decade after decade, they couldn't even fish in their own lake part of the time.”

Compromise is sometimes discussed as finding a win-win. In reality, it often means that many interests walk away without something they want, a common theme in Reid’s approach.

Even compromised solutions made Reid a polarizing figure in many places and among some of his supporters on environmental issues. In rural Nevada, Reid was disliked for establishing large tracts of wilderness and for redirecting water back to tribes who had seen their water taken.

“I think when I started doing my wilderness stuff, I went from being the most popular person in rural Nevada, because I was from rural Nevada, Searchlight, to being the most unpopular,” he said. “Because rural communities, Elko County, they all fought me on wilderness.”

At times, Reid also broke with environmentalists. He supported the General Mining Law of 1872, which exempts miners from paying royalties. He also backed the Las Vegas pipeline, a proposal to siphon groundwater from rural Eastern Nevada to Southern Nevada. The project, opposed in court by a coalition of tribes, ranchers and environmentalists, [was shelved earlier this year](#).

It was not just legislation

Although Reid touted his legislative record, his environmental legacy is characterized perhaps even more by using the power that he accumulated in less traditional ways. When Reid heard four coal plants could come online in Central Nevada, he called financial firms and pressured them to walk away, as [The Nevada Independent reported](#) in an interview with Reid last year.

Reid took a similar approach in pushing to decommission the Reid Gardner Generating Station, a coal plant near Las Vegas that was built next to the Moapa Band of Paiutes reservation. Over nearly half a century, tribal members bore the consequences of air pollution and toxic coal ash.

“For 40 years, they were right under the crap that came out of the Reid Gardner coal-fired generating plant,” Reid said. “By the way, they burned two million tons of coal per year.”

As a senator, Reid pushed for the plant’s closure in 2012, and the next year, the Legislature [passed a bill to transition NV Energy](#) away from coal and toward renewable energy. Reid said that the tribe wanted to build a solar plant but the idea was not getting anywhere with the utility.

That’s when Reid said he decided to make a phone call: “So what I did was I called the mayor of L.A...., and I said, ‘Mayor, we’ve got 750 megawatts of electricity we can manufacture. We know you’re looking for renewable energy. Would you be interested in that?’”

“We did that in a couple of different instances,” Reid said.

In some cases, Reid placed pressure on the state or local governments dragging their feet on environmental issues. For more than a decade, Reid advocated for a federal-led cleanup of the polluted Anaconda Copper mine outside of Yerington. Historic mining at the Anaconda site left a local groundwater aquifer, used by the Yerington Paiute Tribe, tainted with uranium and sulfate.

“That was a big, big operation,” he said. “And they pulled out. And what they left there was a contaminated water source that was as bad as any putrified water in America. It was just the worst of the worst. But what I wanted was for it to be declared a Superfund site.”

Reid pushed for the EPA to oversee the cleanup and place the site on the Superfund list, which would have made the site eligible for federal funding. Lyon County pushed back, fearing a listing would bring stigma to an area dependent on agriculture. In 2018, [a controversial deal](#) made the state — not the EPA — the lead regulator for cleaning up the contaminated groundwater plume.

Reid said he was “absolutely disappointed” by the deal.

“The state can’t do it,” Reid said, when asked why he did not support the 2018 deal.

“They don’t have the tools to do it. No, they don’t have the expertise. They don’t have

the money to do it."

Christensen said Reid's career demonstrates the "different ways power can be used." He used various levers of power to block Yucca Mountain, and he drew on his relationship with President Barack Obama to designate two national monuments at Gold Butte and at Basin and Range.

Biden's climate

Reid, known for pushing legislation for the renewable energy industry in Congress, has turned his attention to climate change in recent years.

President-elect Joe Biden, who Reid worked with in the Senate, ran on an aggressive climate platform that included a large spending package. Such a plan would need Congress' approval.

Reid, with experience serving in the minority and majority, said passing a comprehensive climate bill would be difficult, even if the Democrats regain control of the chamber (two Georgia runoff races will decide who controls the Senate).

"First of all, even if we're fortunate to pick up those two seats in Georgia, where we have a majority in the Senate, or at least a tie, that's still going to be very hard," Reid said on Nov. 9. "Because not all Democratic senators are environmentalists. Most of them are, but there's a handful that aren't. So it's not going to be easy to get a climate bill that covers everything."

Reid said that if states continue pushing climate-focused legislation, including renewable energy standards for utilities, that could send a positive signal to Congress that it needs to act.

"There will be some things that can be done to help," he said. "I think that with state's all around the country passing renewable portfolio standards, it's going to be incumbent upon Congress to help in any way they can to make that possible. And that is something we can do."

In his first few months in office, Reid said that Biden will need to "use the presidential executive power" to address some of the environmental rollbacks that the Trump administration made

administration made.

“Trump has done some very bad things to the country,” Reid said. “He took us out of the Paris Climate Accord. He took us out of the World Health Organization.”

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- *Jon Christensen - \$250.00*



Daniel Rothberg

Daniel Rothberg is a staff reporter covering water, public land and the environment. To read more of his coverage, [you can subscribe](#) to his weekly Indy Environment newsletter.

Unique study in Nevada helping researchers better understand COVID-19

By [Kurt Schroeder](#)

Published: Nov. 28, 2020 at 8:18 PM PST

RENO, Nev. (KOLO) - Helping researchers one flush at a time.

Dr. Ed Oh, a professor at UNLV's school of medicine, is working with researchers from UNR to better understand the impact Coronavirus has on the community, and he is doing so by testing sewage.

"Upon sequencing sewage we can also predict some of the new, emerging strains that were present down here in Clark County and also up in Reno," Dr. Oh said of his study.

Because COVID-19, or as this particular strain is called in medical terms, SARS CoV-2, is breathed in, after the body processes it, human waste then contains the code which will help researchers better understand the virus.

Dr. Oh and his team are learning which communities have which strain of the virus, and how to attack it moving forward.

"We can also determine how much of that virus is present," he said. "We can determine the viral load. How much of it is there? How much of it isn't there, and also what type of strains (exist in each community)."

In a test done with the University of Arizona, a wastewater surveillance program found two positive traces of CoV-2 at a dorm despite students returning to campus with negative test results. That information was then used to inform the students they actually had the virus. The students then quarantined, which quickly put a stop to the spread of the virus on campus.

"We want to put in place a program in which we'll never be caught off guard again," Oh said of the research done to better understand CoV-2. "We will have the tools when, not if, when CoV-2 mutates into a newer strain, presumably CoV-3."

Dr. Oh's program mainly tests strains in Nevada. The next step of the process is getting the testing in as many communities as possible. By better understanding COVID-19 where people live, doctors will have a better idea of how to treat people when vaccines do become available. The less traces of CoV-2 in Nevada communities, the better.

"(By) having a surveillance program in place, we're going to be able to ensure that (those traces are) as close to zero as possible."

Testing wastewater will still have value when a vaccine does become available. Researchers will be able to see if sewage samples still contain the virus, thus proving the vaccine's effectiveness.

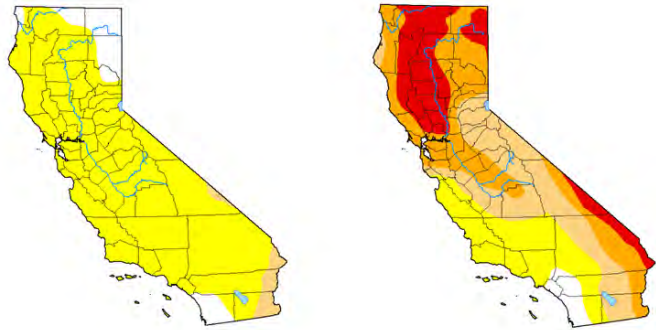
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Environment

Is California Heading For A Multi-Year Drought? The Odds Aren't In Our Favor, Experts Say.

👤 [Ezra David Romero](#)

Monday, November 30, 2020 | Sacramento, CA



The National Drought Mitigation Center

Drought maps of November 26, 2019 versus November 25, 2020.

With no rain in the forecast for the rest of 2020 — thanks to a La Niña weather pattern pushing storms north of the state — the probability of California entering a multi-year drought is increasing.

“We did fortunately get some rain in November,” said Michelle Mead, a warning coordination meteorologist with the National Weather Service in Sacramento. “However, since that time, it has been drying, and we even had some wind events. So we're very quickly back into fire season.”

An autumn with little rain and a forecast for a dry December is reminding weather and climate experts of the patterns that took place before last year's mild winter. That season, much of the state only got about half of what's normal, bringing a majority of Northern California into what could be two years of below average precipitation.

With more than two-thirds of the state experiencing some sort of drought and water supplies just below average, another dry year wouldn't break the bank. But it could point to a trend — multi-year droughts — not too far back in California's memory.

The Climate Prediction Center 6 to 10 day forecast projects a continued tendency for dry weather with above normal temperatures through December 8th. [#CAwx pic.twitter.com/oAkS0gxDn4](https://pic.twitter.com/oAkS0gxDn4)

— NWS Sacramento (@NWSSacramento) [November 29, 2020](#)

But what happens with La Niña heavily determines what the water year will look like, said Stanford climate scientist Noah Diffenbaugh.

"It's not just bad luck. There are configurations that tend to tip the odds towards more dry conditions," he said. "It's very consistent with a climate that gets warmer and is more prone to prolonged warm, dry conditions punctuated by wet conditions."

La Niña historically has meant drier, colder winters in California. The weather pattern occurs in the Pacific Ocean where strong winds blow warm water at the surface of the ocean from South America to Indonesia. As the water moves west, cold water moves to the surface near the coast of South America. This results in storms mostly landing in the Pacific Northwest versus California.

We are forecasting above normal high temps and dry conditions for the first week of December as the storm track is expected to shift well to our north. [#CAwx pic.twitter.com/wt9UXxeq8f](https://twitter.com/wt9UXxeq8f)

— NWS Sacramento (@NWSSacramento) November 29, 2020

Are We Headed Into A Multi-Year Drought?

Climate scientists and meteorologists are mulling this question because it's common for California to go from drought years to wet years. But the past few years have all been very warm, which increases drought severity, says Dan McEvoy, a climatology research professor with the Desert Research Institute in Reno.

"There's not a single storm expected in the next week and if you look out to about two weeks, it's staying quite dry with very, very minimal precipitation," he said. "We're starting to kind of get into overlapping dry seasons, where we had last year ended up being really dry and we're falling into drought this year again."

McEvoy recently co-authored a paper that found warming temperatures mean a 2-fold increase by 2039 in the likelihood of a multi-year drought occurring. That grows to 15-fold by the end of the century.

"As we go into the future we can expect more of those severe multi-year droughts ... even in years or locations where we have precipitation not changing that much in the future because the temperatures are changing," he said.

But when should Californians start to worry about another multi-year drought? California leaders begin to worry once there are two years of drought conditions, because the system is designed to weather three years of drought.

"For the reservoirs, they can sustain California water supply for up to three years without any degradation," said Mead with NWS. "But after three years, if we don't have a good winter, then of course we look to the state to figure out water restrictions and things of that nature."

Michael Anderson, state climatologist with the California Department of Water Resources, says it is too early to worry because of how variable the state's climate can be.

"It's very tricky for California," he said. "We have the largest year to year variability anywhere in the United States. We can go from 2019, that had one of the wettest February's on record, then 2020 comes along and it's the driest February on record and we have a dry year."

That back and forth nature of California's climate, amplified by warming temperature, is what UCLA climate scientist Daniel Swain calls climate whiplash. He says it will most likely get worse as the globe warms and that the state "will likely experience an increase of anywhere from 50% to

150% (highest in the south) in the frequency of very dry November-March periods similar to 1976-1977 (<http://www.latimes.com/local/california/la-me-california-retrospective-20150413-story.html>) (and only slightly drier than 2013-2014), which have historically occurred about once per century."

California reservoirs are just starting to dip below average, Anderson says, and he hopes the ridge of pressure pushing storms to the north weakens as autumn turns into winter.

"What we don't know is as we get into winter, which starts [December] 21st, we might see that pattern shift," he said. "Where the high may move to the west, which would open the door for those cold storms to drop in out of the Gulf of Alaska."

If that happens, California could break the cycle of a potential multi-year drought. But Anderson says there are a lot of unknowns.

"We've had dry starts like this, and I've seen that kind of storm door open and that leads to then a wet December, January, February," he said. "I'm really gonna have to wait and see how things evolve."

But Isn't The West In A Megadrought?

This spring a group of researchers released a paper saying that the southwest portion of North America is dealing with something larger than droughts lasting three to five years. They say a larger trend of warming and drying has resulted in what they call a megadrought that's lasted from 2000 through 2018.

They liken the current megadrought to medieval megadroughts and this one brings up major questions about human-caused climate warming.

"What we're seeing through this 20-year period corresponds with sort of mediocre precipitation," said John Abatzoglou, a UC Merced climate scientist and co-author of the study. "That's taken what would have been in pretty sort of, you know, normal-ish drought into making it the second-worst megadrought in 1,200 years."

He says climate change has played a significant role in creating this megadrought by drawing more water out of the soil and in turn stressing the environment.

"We haven't recovered from the megadrought, that's pretty clear to me," he said. "If you look at groundwater levels in the Central Valley, they're depleted. And we know that during drought years, we tend to pull more from groundwater. That limits our ability to have that buffer in future dry years. So, the last thing we need right now is to have years like this."

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Ezra David Romero

Environment Reporter



WNC and GreenUP! form Nevada Green Business Network to help cut down on pollution

Submitted by Jeff Munson on Mon, 11/30/2020 - 4:29pm



The network has set a goal to certify 75 businesses and manufacturers by 2022.

Donna Walden, greenUP!

Western Nevada College and greenUP! announced Monday the formation of the Nevada Green Business Network, part of a statewide effort to generate a green business certification program.

This collaborative of agencies and organizations are committed to improving the overall environmental performance of the state of Nevada by working directly with businesses to reduce energy usage, solid and hazardous waste disposal, and the amount of water used during business operations. This will help make Nevada a cleaner state, reduce its direct impact on natural resources and achieve its climate action goals.

Partners include greenUP!, WNC, Nevada Division of Environmental Protection, Incline Village General Improvement District, Keep Truckee Meadows Beautiful, Envirolution, GreenACTnv and GRN Vision. Combined, these agencies and organizations support businesses across the state in becoming certified in the Nevada Green Business Program.

The program utilizes the GreenBizTracker database to collect outcomes that measure the impact certified businesses are having toward resource conservation, pollution prevention and environmental protection goals. Through education, networking and collaboration, the Nevada Green Business Network will assist in finding new ways for businesses to be more efficient, healthy and attract new customers.

WNC was recently selected by the Environmental Protection Agency as a national grantee of the 2020-22 Pollution Prevention Grant Program. In addition, greenUP! received a Source Reduction Assistance grant for the same grant period. As part of the grant commitments, WNC and greenUP! will partner to train manufacturers in Pollution Prevention techniques.

The network has set a goal to certify 75 businesses and manufacturers by 2022, providing assistance to a wide range of sectors and creating a comprehensive directory of green businesses on the GreenBizTracker database.

"The Nevada Green Business Program and Network will help assist businesses to improve their bottom lines while reducing the use of hazardous materials, water and energy," said greenUP! Board President Donna Walden. "We are most grateful to EPA for providing continued funding and to our partners who will accelerate this important work and enhance environmental performance in Nevada."

"Western Nevada College looks forward to working with our partners to prevent pollution through implementation of best practices," said Dr. Georgia White, director of Professional and Applied Technology at WNC. "We are also funding internships to provide students with technical knowledge and work-based experience as WNC continues to document businesses and environmental results through GreenBizTracker."

GreenBizTracker is a web-based and mobile tool that motivates businesses to make voluntary behavior and facility changes that net positive and measurable environmental outcomes. Easy-to-use resources and tools, as well as one-on-one assistance from program partners, are provided to the businesses to help them along the way.

As a business moves through an online checklist of verifiable environmental actions, metrics are calculated such as greenhouse gas emissions reduced, energy conserved, gallons of water saved, tons of waste diverted from the landfill and hazardous materials reduced.

Press Clips

Once businesses have completed the checklist, they are green certified and added to an online, searchable directory, which the public can use to find and patronize these businesses. For more information on the Green Business Program and Network, visit NVGreenBusiness.org.

Since the passage of the Pollution Prevention Act 30 years ago, industry, government and the public have been focused on reducing the amount of pollution through cost-effective changes in production, operation and raw materials use. WNC, greenUP! and the program partners of the Nevada Green Business Network are committed to helping Nevada make strides in becoming a leader in green operations.

Partner comments**Envirolution: K-12 Schools, Truckee Meadows & Carson City**

"We became a partner in the Nevada Green Business Network so that we can get our schools recognized for the work they are doing to make their buildings more sustainable," said Vanessa Robertson, Co-Executive Director for Envirolution. "We are getting students involved in the certification process so that they can learn how to do energy audits as part of our Project ReCharge student projects, providing real world job skills to our future workforce."

GreenACTnv: Douglas County, NV

"Already, we have three businesses certified green in Douglas County including North Sails, Katherine Winans, CMP, and d'Terra Law, LLC," said Katherine Winans, President of GreenACTnv.

"We are working with the chamber and other organizations to help spread the word to Douglas businesses and manufacturers. Douglas County is a beautiful region and we will work together to keep it a Nevada treasure."

GRN Vision: Clark County, NV

"We at GRN Vision believe in giving back and actively working to improve the quality of life and environment where we live and work" said Rick Van Diepen, Principal. "As a way to support and to quantify the core-value commitment, GRN Vision is in the process of joining the growing number of socially-conscious businesses nationwide known as Benefit Corporations and we are now part of

the NV Green Business Network to help other businesses across the state improve their environmental operations."

Incline Village General Improvement District: Incline Village and Crystal Bay

"Incline Village GID's Waste Not Program is pleased to serve as a Tahoe regional liaison for the new Nevada Green Business Program. Recognizing sustainable business leaders in our communities complements our community environmental education and outreach efforts. Green Business is good for Tahoe!" – Madonna Dunbar, Resource Conservationist, Incline Village General Improvement District.

Keep Truckee Meadows Beautiful: Reno Sparks Metropolitan Area

"Keep Truckee Meadows Beautiful is dedicated to creating a more sustainable and beautiful region through waste reduction, education and active community involvement," said Christi Cakiroglu, Executive Director for Keep Truckee Meadows Beautiful. "Working with businesses to help them reduce waste, save water and energy helps to create a more environmentally responsible community. All of us at KTMB are excited about this opportunity to promote and support companies that are working towards being more sustainable."

Nevada Division of Environmental Protection: Rural Nevada

"NDEP is committed to protecting the environment of the state and the people who live here," said NDEP Administrator Greg Lovato. "This program will encourage businesses across Nevada to join that effort by conserving resources and limiting the amount of waste that ends up in landfills."

INDY ENVIRONMENT: STATE RELEASES CLIMATE STRATEGY TO MOVE TOWARD NET-ZERO GREENHOUSE GAS EMISSIONS BY 2050



DANIEL ROTHBERG

DECEMBER 3RD, 2020 - 2:00AM

Good morning, and welcome to the Indy Environment newsletter.

As always, we want to hear from readers. Let us know what you're seeing on the ground and how policies are affecting you. Email me with tips or suggestions at daniel@thenvindy.com.

To get this newsletter in your inbox, [subscribe here](#)

On Tuesday evening, the state released a comprehensive strategy for reducing greenhouse gas emissions to net-zero by 2050. It's a big deal, marking a year-long effort among state agencies to develop a coordinated pathway for moving toward defined emission-reduction benchmarks.

Without additional policies, Nevada is not on track to meet its climate goals. On the current path, state officials estimate that Nevada would fall 4 percent short of its goal to decrease greenhouse gas emissions by 28 percent by 2025 and 19 percent short of cutting emissions 45 percent by 2030. The state's long-term goal is to reduce economy-wide emissions to net-zero by 2050.

[The report](#), a product of Gov. [Steve Sisolak's](#) Nevada Climate Initiative, looks at 17 policies that would help move the state toward meeting its goals, which the [Legislature established](#) last year.

I'm working on an in-depth piece about the climate strategy — and what comes next — for this weekend (please send me any thoughts you have about the report). **For now, I've pulled out a few notable highlights from the report and what I've learned in my reporting so far:**

It's a strategy. The report is less of a prescriptive document of exacting recommendations and more of a description of the problems, their complexities and what needs to be done. The first page of the plan's [executive summary](#) makes it clear that the report is intended to be a starting point — a strategy — for the state to achieve net-zero emissions within the next three decades.

Kristen Averyt, the state's climate policy coordinator, said this was intentional. To propose very specific policies would require additional community engagement and data, she said. Instead, the report takes a broad view (an entire section devoted to analyzing "[complex challenges](#)").

Averyt, who helped author the report, emphasized that it "takes a constellation of policies across different levels of governance to really do what needs to be done for deep decarbonization."

The strategy identifies 17 policies and analyzes them in detail. Earlier this year, the Nevada Division of Environmental Protection released a greenhouse gas inventory with a wide-ranging [catalog of policies](#) that could reduce emissions. Many of these policies appear scattered across the report, but the strategy specifically [looks at 17 policies](#) — a fusion of regulations, incentives and planning — focused mainly on three sectors: transportation, electricity and buildings.

Averyt said she expects more policies to be analyzed in the future.

For years, Nevada has worked to develop a clean energy economy, exporting solar power to neighboring states and requiring NV Energy to expand its use of renewables. But the report's policy recommendations are a recognition that action new policies are needed in other sectors as well.

"It's important to now look more broadly across the entire economy when we are trying to figure out our pathways to a 2050 goal of net-zero emissions," said David Bobzien, who directs the Governor's Office of Energy and helped draft the electricity-related sections of the report.

A new focus on transportation and a transition away from natural gas. As a percentage of emissions, transportation is the state's leading emitter (electric generation is a close second). The report analyzes a slate of policies that include low- and zero-emissions vehicle standards, a clean truck program, low-carbon fuel standards, a "cash for clunkers" program and ending emission inspection loopholes. The report's policy section also recognizes the need to transition away from natural gas — and limit new investment in infrastructure — in *both* the [electric sector](#) and in [buildings](#). "While Nevada's electricity sector transitions from fossil fuels to zero-emissions renewables, the state must also transition from fossil-fuel combustion in homes and commercial buildings in the form of burning gas for cooking, hot water, and space heating," [the report said](#).

A climate justice lens: Notably, the report analyzed each policy using a framework with four metrics: the potential for decreasing greenhouse gas emissions, climate justice considerations, economic implications and the legal feasibility of implementation. That climate justice — recognizing that climate impacts or costs should not disproportionately fall on marginalized communities — was a key metric used in the policy framework is significant, Averyt said, because that framework will inform what future actions the state pursues. The report also recognizes early on that “through climate action, there is the opportunity to reconcile the social justice challenges Nevadans face.” But [climate justice advocates on Wednesday](#) said while the report is a start, it still relied heavily on market-mechanisms and did not adequately center aspects of climate justice in its policies.

The scientific assessment. The report includes a scientific analysis, written by top regional climate researchers, of how climate change is affecting Nevada and what models forecast as [future risks in the coming years](#). It might seem small, but having this information in one place is valuable and something that has not existed (at least to my knowledge) for Nevada before now.

Here's what else I'm watching this week:

Climate clues in Great Basin caves: Geochemical data from Great Basin caves paint a scary potential “worst-case scenario” for human-caused climate change.

[InsideClimateNews' Judy Fahys](#) looks at paleoclimate data including research [InsideClimateNews Judy Fahys](#) looks at paleoclimate data, including research conducted at UNLV, that suggest nature is capable of hot, dry periods that could last thousands of years.

Whitebark pine gets protection: The U.S. Fish and Wildlife Service announced this week that it planned to propose the whitebark pine, which lives in mountain ranges across Nevada and the West, as a “threatened” species under the Endangered Species Act. Climate change is one of the threats that the tree faces. [Kurtis Alexander from the San Francisco Chronicle has more.](#)

Three solar projects get PUC approval: The Public Utilities Commission of Nevada approved three large-scale solar projects last week, [Andy Colthorpe reports](#) for Energy Storage News. The projects, slated to come online in 2023, will help the utility meet its 1000 MW storage goal.

- NV Energy [filed a report](#) with the utilities commission on zero-carbon emission goals.

‘Our right to fire:’ The *Arizona Republic* looked at the battle that Northern California tribes face to control their lands when it comes to fire management. After a fire at Happy Camp, the capital of the Karuk Tribe, “community members also grieve for what they say is the failure of federal and state agencies to accept their deep knowledge and experience in stewarding these lands for more than 10,000 years.” This is a [deeply reported, important story from Debra Utacia Krol](#).

The Mt. Charleston blue butterfly: [Bloomberg Law’s Maya Earls reports](#): “Expansion of a ski area an hour from Las Vegas should be stopped because the Trump Administration failed to take a hard look at its impact on sensitive resources in Nevada, including on the endangered Mount Charleston blue butterfly, an environmental group says in a lawsuit filed in federal court.

Opposition to a solar project: [Nevada Current’s Jeniffer Solis looks at](#) opposition to a massive solar project in the Moapa Valley. The Battle Born Solar Project, which has backing from the Sisolak administration, could conflict with land that’s used for recreation and to draw tourists, residents worry. The project also could conflict with Mojave desert tortoise habitat.

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- Kristen Averyt - \$100.00
- Steve Sisolak - \$3,200.00



Daniel Rothberg

Daniel Rothberg is a staff reporter covering water, public land and the environment. To read more of his coverage, [you can subscribe](#) to his weekly Indy Environment newsletter.

Finance

California Water Futures Begin Trading Amid Fear of Scarcity

By [Kim Chipman](#)

December 6, 2020, 5:00 PM EST

Updated on December 7, 2020, 3:58 PM EST

-
- ▶ Futures on California water index launched by CME Group
 - ▶ Contracts seen useful for farmers, cities to hedge water risk
-

Water joined gold, oil and other commodities traded on Wall Street, highlighting worries that the life-sustaining natural resource may become scarce across more of the world.

Farmers, hedge funds and municipalities alike are now able to hedge against -- or bet on -- future water availability in California, the biggest U.S. agriculture market and world's fifth-largest economy. [CME Group Inc.](#)'s January 2021 contract, linked to California's \$1.1 billion spot water market, last traded Monday at 496 index points, equal to \$496 per acre-foot.

The contracts, a first of their kind in the U.S., were announced in September as heat and wildfires ravaged the U.S. West Coast and as California was emerging from an eight-year drought. They are meant to serve both as a hedge for big water consumers, such as almond farmers and electric utilities, against water prices fluctuations as well a scarcity gauge for investors worldwide.

"Climate change, droughts, population growth, and pollution are likely to make water scarcity issues and pricing a hot topic for years to come," said RBC Capital Markets managing director and analyst Deane Dray. "We are definitely going to watch how this new water futures contract develops."

READ MORE: CME's First Water Futures Are Coming as U.S. West Burns

The United Nations has long warned that human-driven climate change is leading to severe droughts and more flooding, making water availability increasingly less predictable. In California, the most recent acute dry spell stretched from December 2011 until March of last year, according to the [U.S. Drought Monitor](#). The most dire effects took hold in July 2014, with 58% of the state's land suffering "exceptional drought," leading to crop and pasture losses and other water emergencies.

The futures are tied to the [Nasdaq Veles California Water Index](#), which was started two years ago and measures the volume-weighted average price of water. The January 2021 water contract that went live Monday had two trades.

"I'm delighted we've had trades," said Clay Landry, managing director at consulting firm WestWater Research, which provides the data used to calculate the water index. "In the physical market, it's so hard to get a deal done. This feels like lightning fast to me."

The index sets a weekly benchmark spot price of water rights in California, underpinned by the volume-weighted average of the transaction prices in the state's five largest and most actively traded markets.

The futures are financially settled, as opposed to requiring the actual physical delivery. Contracts include quarterly ones through 2022, with each representing 10 acre-feet of water, equal to roughly 3.26 million gallons.

According to Chicago-based CME, the futures will help water users manage risk and better align supply and demand.

More from**VW's Battery Bet Reveals Data Showing Tech Could Top Tesla****Wind-Turbine Blades Once Doomed for Landfill Can Now Be Recycled****Atomic Heat in Small Packages Gives Big Industry a Climate Option****A Year of Heat and Fire Accelerated the Arctic's Transformation****Water Shortages**

Two billion people now live in nations plagued by water problems, and almost two-thirds of the world could face water shortages in just four years, Tim McCourt, global head of equity index and alternative investment products at CME, said in an interview. "The idea of managing risks associated to water is certainly increased in importance."

Currently, if a farmer wants to know what water will cost in California six months from now, it's kind of a "best guess," Patrick Wolf, senior manager and head of product development at Nasdaq, said in an interview.

The futures will allow market participants to see "what is everybody's best guess," he said.

Barton "Buzz" Thompson, a professor of natural-resources law at Stanford University, said while he has "no idea" if the futures will be successful, he doesn't see it as a transformation of the water market.

"I don't think the futures contract itself is really changing the water markets," Thompson said. "Nor is it changing the risk that exists out there that water in the future at some point will be in shorter supply, it's simply responding to those things."

CME declined to identify potential market participants, except to note that the exchange has heard from California agriculture producers, public water agencies, utilities as well as institutional investors like asset managers and hedge funds.

Landry of WestWater Research said in addition to the likelihood of a "great deal of interest" from Wall Street, he expects the early water futures adopters to be large and small agriculture businesses.

"Without this tool people have no way of managing water supply risk," Boise, Idaho-based Landry said in an interview. "This may not solve that problem entirely, but it will help soften the financial blow that people will take if their water supply is cut off."

— *With assistance by Elizabeth Elkin*

(Updates with futures price in second paragraph)

OFFICIALS SAY CAMP CLEANUPS NEEDED TO PROTECT HOMELESS AND ENVIRONMENT, BUT ADVOCATES CALL FOR BROADER SOLUTIONS



TABITHA MUELLER

DECEMBER 6TH, 2020 - 2:00AM

On a February morning, after a cold night in downtown Reno, Randolph Pena sits in a wheelchair against a chain-linked fence, wearing a zipped-up hoodie. Behind him, there are rusty old train tracks. In front of him is a row of tents. He says one of them is his.

When it's cold on nights like the last one, Pena says he'll "blanket up."

"[We] go get more blankets," he says. "But it's too cold. It was cold last night."

Pena, 60, was one of more than 150 unsheltered residents living in a narrow strip of land between the back of the Greater Nevada Field and railroad tracks in downtown Reno. Shortly after Pena spoke with *The Nevada Independent* in February, Reno police officers cleared the area as part of a series of regular and controversial cleanups of encampments, telling [KUNR](#) that there were reports of people lighting fires in their tents to keep warm and bags containing human waste.





Randolph lives along the railroad tracks near 4th St in downtown Reno on Tuesday, Feb. 11, 2020.



A stuffed bear seated between two shelters along the Truckee River between Reno and Sparks on Saturday, Nov. 23, 2019.



A row of tents set up beneath "No Camping" signs, most of which have been altered to read "Camping" on Saturday, Nov. 23, 2019.

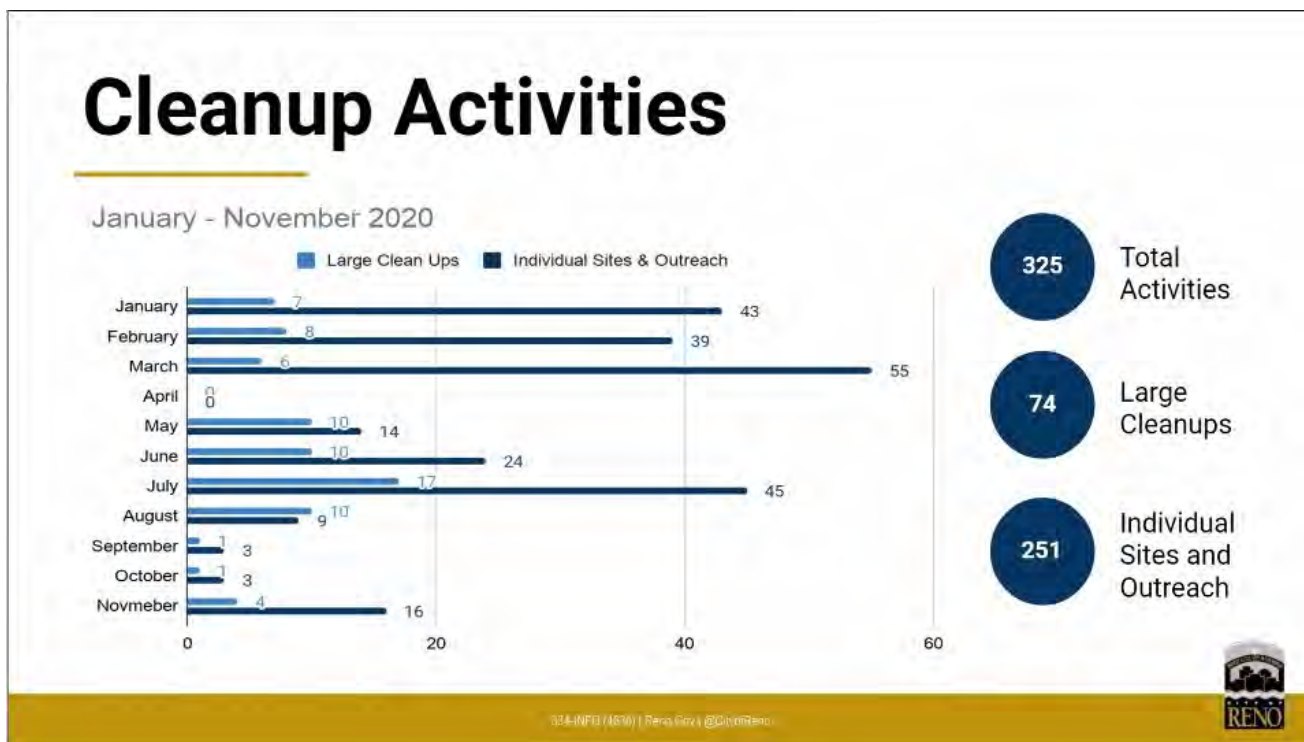
Scenes from homeless encampments in Northern Nevada. (Andrea Laue/The Nevada Independent)

Amid a global pandemic and [an unforgiving job market](#) that's spurring housing insecurity, Nevada's decision makers are grappling with ways to balance concerns that homeless individuals are creating safety and sanitation problems, with the reality that there are not enough resources to protect unsheltered populations from the harsh elements of the environment.

Reno [temporarily suspended](#) homeless camp cleanups at the onset of the pandemic.

But the city soon resumed cleanups, holding its first "clean and safe operation" on May 4 at Evans Park and conducting about 167 more cleanups into November,

according to [a presentation from the city on Nov. 18](#). That does not include cleanups conducted by the Nevada Department of Transportation.



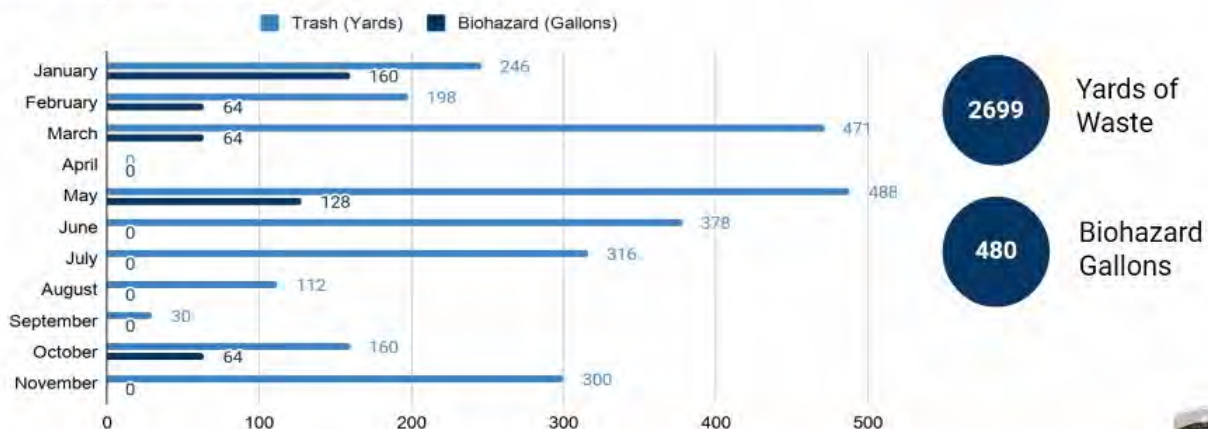
Slide of Cleanup Activities from a presentation given to a joint meeting of the Sparks and Reno city councils and Washoe County commissioners on Nov. 18, 2020.

Citing environmental hazards posed by unsheltered populations living outdoors and Reno residents' complaints, city officials said the cleanups were necessary.

The cleanups, supervised by Reno's "Clean and Safe Team," collected more than 480 biohazard gallons and 2,699 cubic yards of waste since cleanups began in January. The city formed the Clean and Safe Team after receiving a notice of violation from Washoe County public health officials, according to Cynthia Esparza, a senior management analyst for the City of Reno.

Waste Collection

January - November 2020



Slide of Waste Collection from a presentation given to a joint meeting of the Sparks and Reno city councils and Washoe County commissioners on Nov. 18, 2020.

"At the core we're seeking to improve the health and safety of public spaces — that is the underlying mission of everything that we are doing," Esparza said.

Records from city council meetings show that before a cleanup takes place, a sign and other notifications should be posted at camps, providing residents with at least 24 hours notice to vacate and offering storage, resources and services.

The Clean and Safe Team will then identify, tag and store property at the Community Assistance Center for up to 90 days.

Though the minimum time frame is 24 hours notice, John McNamara, the operations chief for the Reno Fire Department, said that the city usually notifies camps a few days before a cleanup takes place, having Reno police and social service workers walk the area to offer assistance and connect homeless individuals with services.

Environmental hazards

In the Reno-Sparks area, about 85 percent of the public's water supply comes from the Truckee River.

During a Community Homelessness Advisory Board (CHAB) meeting in November, representatives from One Truckee River, a group of public and private partners managing the Truckee River, [said](#) that stormwater sampling and analysis of 11 fixed sites on eight tributaries of the Truckee River showed elevated concentrations of contaminants. The group also found higher levels of E. coli in the river.

Though documentation noted that the source of E. coli could not be identified, authorities posited that lack of public restrooms and people living in encampments near the river contributed to the contamination.

Despite the contamination, the water treated by Truckee Meadows Water Authority (TMWA) is safe to drink, according to Andy Gebhardt, the director of operations and water quality for TMWA. He said that two water treatment plants on the river process and treat the water. Workers have had to remove various objects such as colostomy bags, catheters and hypodermic needles as well, Gebhardt added.

"Everything that you put in the Truckee River, we have to take out," Gebhardt's slideshow read during a presentation to CHAB in November. "We can treat pretty much anything ... but we shouldn't have to."

To reduce the waste going into the river, TMWA proposed placing bathrooms in the area for people to use. In August, TMWA, Reno, and other organizations [installed](#) the first of what will be nine to 18 public restrooms as part of the city's River Restroom Project. This type of public restroom, known as a "Portland Loo," debuted in Portland, Oregon and has since been set up in cities around the U.S. and Canada.

The river sweeps and cleanup programs, however, are controversial. Organizations advocating for unsheltered people emphasize that nothing prevents individuals from returning to the banks of a river after a cleanup takes place, especially when people have nowhere else to go.



Scenes from homeless encampments in Northern Nevada. (Andrea Laue/The Nevada Independent)

The blame for environmental and safety issues does not lie on people without resources, argues Aria Overli, a community organizer with progressive-leaning nonprofit Acting in Community Together in Organizing Northern Nevada (ACTIONN).

She said the problem lies in a lack of resources such as accessible public restrooms, trash disposal options and mental health care and addiction services.

The question officials should be thinking about is the environmental effect of people living in houses compared to people using almost no resources, Overli said.

"It's very difficult to believe that unsheltered or houseless folks are using more environmental resources than I am, so I think that's a narrative that we need to change," Overli said. "I would argue that there are structural factors that cause environmental damage to be done in a way that gets scapegoated on unsheltered populations."



Scenes from homeless encampments in Northern Nevada. (Andrea Laue/The Nevada Independent)

As the pandemic devastates the local economy and [an influx of evictions looms on the horizon](#), advocates also question the ethical and legal implications of continuing encampment cleanups. The Ninth Circuit Court upheld a decision in *Martin v. City of Boise* that a municipality cannot arrest or punish people for sleeping on public property when no space is available in shelters or other indoor facilities.

The stress on city shelter space and lack of ability to house the homeless population in the area has not halted cleanup efforts. A city spokesperson said that because there are still beds open at the shelter each night, the city is within its right to continue cleanups.

With a combined shelter capacity of about [797 people in Washoe County](#) and an [estimated 1,778 people experiencing homelessness in Washoe County in September](#), there is not enough space to safely house every unsheltered individual in the county.

Local leaders recently announced an [ambitious shelter project with wraparound care services](#). The shelter will not be completed until sometime in February, and fears remain about what will happen to people living outdoors as temperatures continue to

drop.

A 'vicious cycle'

Before the pandemic, Susan Cameron, a social worker with Catholic Charities of Northern Nevada, visited homeless encampments, offering aid. She said many people feel safer outdoors.

"A lot of individuals have anxiety, PTSD, are dealing with past trauma or abuse or they've had bad experiences with the shelter. Some have reported theft or being assaulted," Cameron said. "A lot of individuals do actually have pets that they're not allowed to take, their significant others, girlfriends, boyfriends or they have friends and they've kind of built up a community sometimes too, where they just don't want to be separated."



Scenes from homeless encampments in Northern Nevada. (Andrea Laue/The Nevada Independent)

Cameron noticed that homeless encampment cleanup efforts had forced populations more toward the suburbs, spreading further away from the centralized services near the downtown area.

"It certainly makes it much more difficult for clients to come in to the resources here at Catholic Charities or other places downtown when they're dispersed," Cameron said. "So that makes it much more difficult for them to access services and probably less inclined to."

After the sweeps along the railroad tracks in February, Cameron said that many new camps sprung up further from Fourth Street and underneath highway overpasses.

Almost 10 months after the cleanup along the railroad tracks, encampments returned to the south side of the river, said McNamara. He described the cleanups and subsequent movements of encampments as a "vicious cycle."

The haphazard setup of the encampments means that tents and other structures can easily catch fire, McNamara said. The highly flammable tents, plastics, trash, and other combustible materials in the encampments can also create toxic smoke and present dangers to both the surrounding landscape and the encampments'

inhabitants, he added.

"I don't have a solution," McNamara said. "I know that the people who work for the city of Reno, they're doing their best to have positive outcomes for everybody, and it's really a no-win situation right now."

*Homeless encampments lining the railroad tracks near downtown Reno on Tuesday, Feb. 11, 2020.
(Andrea Laue/The Nevada Independent)*

A man who uses the nickname "Forest" said he was living at the train tracks for two or three months when *The Nevada Independent* spoke with him in February. Before the tracks, he lived by the river, at the fisherman's pier, along Kietzke Lane and a few other places.

"Usually in less than a month, the officials see fit to roust us. And so once we're roused, we have no choice but to pack it up and roll out and just hope and pray that we can find a place where we can stay a little bit longer to adjust ourselves," Forest said.

He said many people he knows are working on trying to earn money, but housing is expensive and stable work can be challenging to find, especially for someone living in a tent.

"Contrary to popular belief, we're all not derelicts, not wanting to do anything with our lives. Some people ... they work, they have jobs, they have incomes of some sort, and they're just trying to find a way off the streets," Forest said. "The shelters are too full — what can you do?"



Scenes from homeless encampments in Northern Nevada. (Andrea Laue/The Nevada Independent)

Framing the cleanups

Officials worry about the threat unsheltered populations face when living outdoors and dangers responders face when answering calls in the community. As [heat waves, wildfires, flooding and other natural disasters spurred by climate change increase](#), unsheltered individuals [are most at risk of unexpected environmental changes](#).

Since Jan. 1, the Reno Fire Department has responded to more than 290 nuisance fires, McNamara said, including many connected to fires that encampment residents are using to cook and stay warm. Reno municipal code states that individuals cannot have fires on city property, and the fire department has to enforce it, McNamara said.

In the winter, first responders see an uptick in emergency calls about people suffering from hypothermia, and the freezing temperatures during the winter in Reno present the fire department with difficult choices.

"Trying to tell people that they can't have those fires, no one wants to do that, whether it's fire or PD. No one wants to make their lives miserable," McNamara said. "Our goal is public safety."



Scenes from homeless encampments in Northern Nevada. (Andrea Laue/The Nevada Independent)

Reno's winter winds can fan a fire quickly, and McNamara said he worries about unwatched fires that spread along the river, via bushes and within encampments formed from homemade structures that he described as "death traps." Homeless people seeking shelter in abandoned buildings and accidentally starting fires also present dangers to firefighters responding to a blaze because those types of

presented as a good idea because these types of buildings are usually structurally unsound, McNamara added

Biohazards such as knee-deep trash, fecal matter, urine, syringes and other unsanitary conditions he has seen in the encampments necessitate cleanups, McNamara said.

Though the homemade tent shelters are not always up to fire code, Overli said that many people approach them with ingenuity, using duct tape and blankets to rig up tent-like structures to prevent themselves from freezing in the cold winter months. Continually upending camps means that people have to deconstruct the shelters they've built, exposing themselves to temperatures, she said.

Scenes from homeless encampments in Northern Nevada. (Andrea Laue/The Nevada Independent)

Overli said she wouldn't necessarily disagree with the argument that the cleanups are needed to help protect people. Still, she said part of the problem lies in how city officials and others are using the cleanups to hide homelessness from public view.

"I think that the problem is that cleanups are being framed as, 'we need to keep these spaces clean so that wealthier people can come into these spaces and feel safe and appreciate the river rather than, 'this is a human rights issue that we're allowing people to live in these situations because we're refusing to provide the resources,'" Overli said.

Facing a severe housing crisis

Officials in the region hope to reduce the need for homeless encampments and cleanups with a soon-to-be-built, 46,000-square-foot central shelter facility referred to as the Nevada Cares Campus, which will have space for men, couples, pets, a designated campground and health care services.

The campus is the product of a joint agreement between the cities of Reno and Sparks and Washoe County and is supported by about \$16.8 million in congressional coronavirus relief funds. The new facility, approved by an almost unanimous vote on Nov. 18, came after city and county officials [closed a temporary shelter at the Reno Events Center in favor of another shelter along the East Fourth Street corridor](#) and [searched for a more permanent structure that could better meet social distancing needs](#).

"Having a more centralized location, a bit more organized, the hope is that it will reduce the scattered nature of the camps and will, thereby reduce the need for so many cleanups," Reno City Councilwoman and CHAB Chairwoman Neoma Jardon told *The Nevada Independent*.

Though some individuals may prefer a larger shelter environment, others may want more privacy and their own space outdoors, Jardon said. The Nevada Cares Campus will feature a safe campground facility with security, trash cans and the ability for residents to access showers and pitch a tent without having to stay within the congregate shelter.

"We hear a lot about the benefits of [safe campgrounds] and why some choose that and why it's so needed," Jardon said. "We want to see what successes may come of it and what failures."



Scenes from homeless encampments in Northern Nevada. (Andrea Laue/The Nevada Independent)

Overli applauded the Nevada Cares Campus as "an incredible move forward" in addressing unsheltered communities' needs but emphasized that relying on shelters is not a long-term solution.

"As COVID has further worsened an already severe housing crisis, and we are expecting to see record evictions in the new year, we must do more to address the severe shortage of affordable housing, lack of tenant protections, and lack of resources for addiction and mental health, as well as overdependence on police to solve social problems," Overli said.

Reporter Daniel Rothberg contributed to this story.

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- *John McNamara - \$180.00*

Tabitha Mueller

Tabitha Mueller is an intern at *The Nevada Independent*.



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Final WRDA package leaves clean water out

A House-Senate conference committee approved a final version of the Water Resources Development Act, or WRDA, for 2020, late Friday.

Dec 7th, 2020



Photo by Darren Halstead on Unsplash

WASHINGTON -- A House-Senate conference committee approved a final version of the Water Resources Development Act, or WRDA, for 2020, late last week. The final language did not include the clean water sector, drawing criticism from members of the industry.

"Over the past several cycles, this bill has become the vehicle of choice for authorizing essential funding for clean and drinking water infrastructure," a press release from NACWA read. "While both the House and Senate Committee versions of WRDA 2020 included clean water investment, the conferenced language released is limited to the Army Corps of Engineers titles. This bill was a chance for Congress to provide much needed new funding for the public clean water sector. Unfortunately, support for public clean water utilities was left out entirely."

State Revolving Fund; reauthorization of the Sewer Overflow and Stormwater Reuse Municipal Grants of \$250 million per FY; reauthorization and refinement to the Water Infrastructure Finance and Innovation Act in Excess of \$50 million per FY; increased authorized funding for EPA's Water Infrastructure Workforce Investment program; authorization of Clean Water Infrastructure Resilience Grant Funding to help utilities adapt to climate change; the creation of an Advanced Research Projects Agency – Water (ARPA-H2O) to encourage increased technological innovation in the public clean water sector; clear congressional authorization for supplemental environmental projects in Clean Water Act settlement agreements; authorization of a wastewater infrastructure discretionary grant program for the first time; and robust funding for Clean Water Act Section 319 Nonpoint Source Management Grants.

"It is disappointing Congress was unable to provide needed new funding for public clean water utilities in the final WRDA package, especially given the amazing work these utilities have done on the front lines of public health protection since the beginning of the COVID-19 pandemic," Nathan Gardner-Andrews, NACWA's General Counsel and Chief Advocacy Officer, said in a statement.

"While NACWA is appreciative of the additional funding the House and Senate supported in bipartisan fashion this Congress in their individual WRDA bills, the failure to find agreement in the final package is a disservice to public clean water utilities all across the nation. "Public clean water utilities have put their lives and revenue on the line to protect public health and the environment during the crisis. Congress's inability to ultimately authorize clean water investment that already had bipartisan support will present serious challenges as the public clean water sector struggles to go it alone without new support from the federal government. NACWA looks forward to working with Congress to address this issue immediately when it reconvenes in January."

Other groups pointed out the failure to include any legislation that would regulate PFAS in the bill;'s final language.

"The PFAS pollution crisis is a public health emergency," Scott Faber, EWG's senior vice president for government affairs said in a statement. "More than 200 million people are likely drinking water polluted with PFAS. But the Water Resources Development Act of 2020 fails to set deadlines for the EPA to regulate industrial discharges of PFAS and does not even require the Army Corps of Engineers to address PFAS contamination at the Army Corps' own facilities."

Both houses of Congress will vote on the bill before it goes to the White House for President Trump's signature or veto.

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By DAVID BEGNAUD / CBS NEWS / December 7, 2020, 7:25 PM

Nevada hospital treats patients in parking garage amid coronavirus surge



Reno, Nevada — A Nevada hospital is now in crisis mode as coronavirus cases surge across the country. Health care workers at the Renown Regional Medical Center have resorted to treating patients in the hospital's parking garage.

"Our frontline caregivers are seeing things that they never would have imagined," Tony Slonim, the president and CEO of Renown Health, told CBS News.

For Slonim, COVID-19 is personal. "This condition took my father's life," he said. "We couldn't be there for him, but I know as a former ICU doctor that they were there comforting him."

On the day Slonim's father died, the field hospital opened. In just the last three weeks, 265 people have been treated there.

"Nobody who has gone into medicine ever thought they would be providing care in a parking garage," said Jacob Keeperman, an intensive care unit doctor at Renown Health.

Keeperman had just moved to Reno to start working there and manage the field hospital when he tweeted a picture before it opened. In the caption, he said, five people had died in 32 hours and everyone was struggling to keep their head up. Some tweeted it was fake and one of those tweets was retweeted by President Trump.

"Would any hospital want to show that they are operating out of a parking garage if it wasn't real? People's loved ones are dying every day," said Keeperman.

As my 1st clinical week in the COVID ICU at Renown @renownhealth I want to thank all the incredible staff who are Fighting the Good Fight to help all those suffering from COVID-19. With 5 deaths in the last 32 hours, everyone is struggling to keep their head-up. Stay strong.

pic.twitter.com/pHLp4PPzA6

— Jacob Keeperman (@critcare_aires) November 29, 2020

Since March, more than 2,000 people have died from coronavirus in the state, according to the Nevada Department of Health and Human Services.

Janet Baum, the field hospital's nursing manager, said she has not seen anything like this from the time she's worked in health care. "Never in my wildest nightmares would I ever have thought that we would ever see something that would be killing this many people," she said.

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David Begnaud

ON TWITTER »

David Begnaud is the lead national correspondent for "CBS This Morning" based in New York City.

From: [WEBSITE: Comments to the Board](#)
To: [Folsom, Sonia](#)
Subject: New submission from Comments to the Board
Date: Thursday, November 12, 2020 5:25:34 PM

Name
Elise [REDACTED]
Email
[REDACTED]
Account Number
[REDACTED]
Comments
<p>Wow. Great work on the updated Water Resource Plan. The overviews, chapter at a glance, summary, maps, charts, tables, and acronym list are very helpful. The first three give the reader a clear idea of the subject. The summary encapsulates the subject in a meaningful way. The document flows (no pun intended) and has good transitions.</p> <p>Please extend my appreciation for this excellent document to all who labored long and hard to develop it. I know it can be excruciating to have months of review and examination of details and all the evaluations involved. Bravo for an excellent end product.</p>

From: [WEBSITE: Comments to the Board](#)
To: [Folsom, Sonia](#)
Subject: New submission from Comments to the Board
Date: Wednesday, October 21, 2020 5:23:32 PM

Name
Jennifer [REDACTED]
Email
[REDACTED]
Account Number
[REDACTED]
Comments
<p>I am writing in regards to access issues near Hunter Creek Reservoir. Access from a bridle path to the path by ponds was blocked without any public notice. This access has been in place for decades (my family has lived in the area since 1983). I implore you to reinstall access--un-weld the gate!</p> <p>Sincerely, Jennifer [REDACTED]</p>

From: [Zimmerman, John](#)
To: [REDACTED]
Subject: TMWA - Hunter Creek property
Date: Thursday, October 22, 2020 6:17:00 PM

Ms. Oliver,

This is in response to your email regarding the closure of one of the four public access points to TMWA's Hunter Creek reservoir property. As you may be aware, TMWA is required by a Washoe County special use permit to maintain a portion of the property as a landscaped area for aesthetic purposes to provide a buffer between the surrounding neighborhood and TMWA's Hunter Creek reservoir, tank, and water facilities. This summer TMWA staff received complaints from several neighboring homeowners and the Juniper Ridge HOA regarding excessive pedestrian and vehicle traffic around the entrances, littering (including fishhooks), people urinating on the property because there are no restrooms, equestrian use and horse manure on the paved path, and noise. Staff have also received complaints about people trespassing across homeowners' properties while entering and exiting the landscaped area. Staff believe the increase in traffic and fishing activity was largely caused by the ponds being listed on a fishing app that attracted anglers to the area and we have since had the app owner remove the ponds from the app. The complaints also stated that a majority of the equestrian users entered the property from the south access point.

To reduce the above-described issues, staff determined it necessary to install signs to clearly state that: fishing, camping, campfires, and equestrian use are prohibited, access was limited to daylight hours only, access to the ponds was prohibited, and users must stay on the paved path and pick up after their pets. Although the landscaped area has been open to the public, it was not designed or intended to be used as a public park, equestrian trail, or fishing spot. TMWA does not provide parking, have staff monitor, patrol, or clean the area frequently, or provide restrooms. Staff also closed the access point from the south, which closure was intended to better direct people to stay on the paved path, eliminate or at least minimize equestrian use of the path, and keep people away from the more-secluded pond area. The decision was made in the best interest of TMWA's customers and the community in that area and struck a reasonable balance because it still allowed the public to access the property from the other three entrance points nearby. Homeowners in the area have notified TMWA that these actions have significantly reduced the above-described issues. Based on these results, and in an effort to work as cooperatively as possible with neighbors who have voiced concerns with the south access closure, TMWA has decided to re-open it on a trial basis and evaluate whether the above-described issues increase.

I will keep you updated regarding the status of this matter.

Thank you.

John R. Zimmerman, Esq.
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