

REVISED TRUCKEE MEADOWS WATER AUTHORITY Board of Directors AGENDA

Wednesday, October 18, 2023 at 10:00 a.m. <u>NEW VENUE:</u> Independence Room, TMWA, 1355 Capital Blvd., Reno, NV

1	Board Members
Chair Kristopher Dahir	Vice Chair Naomi Duerr
Paul Anderson	Alexis Hill
Clara Andriola	Devon Reese

Jenny Brekhus

NOTES:

1. The announcement of this meeting has been posted at the following locations: Truckee Meadows Water Authority (1355 Capital Blvd., Reno), at <u>http://www.tmwa.com, and</u> State of Nevada Public Notice Website, <u>https://notice.nv.gov/</u>.

2. TMWA meetings are streamed online at <u>https://www.youtube.com/@tmwaboardmeetings6598</u>.

3. In accordance with NRS 241.020, this agenda closes three working days prior to the meeting. We are pleased to make reasonable accommodations for persons who are disabled and wish to attend meetings. If you require special arrangements for the meeting, please call (775) 834-8002 at least 24 hours before the meeting date.

4. Staff reports and supporting material for the meeting are available at TMWA and on the TMWA website at http://www.tmwa.com/meeting/. Supporting material is made available to the general public in accordance with NRS 241.020(6).

5. 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.

6. Asterisks (*) denote non-action items.

7. Public comment during the meeting is limited to three minutes and is allowed during the two public comment periods rather than each action item. The public may sign-up to speak during the public comment period or on a specific agenda item by completing a "Request to Speak" card and submitting it to the clerk. In addition to the public comment periods, the Chair has the discretion to allow public comment on any individual agenda item, including any item on which action is to be taken.

8. Written public comment may be provided by submitting written comments online on TMWA's Public Comment Form (<u>tmwa.com/PublicComment</u>) or by email sent to <u>boardclerk@tmwa.com</u> 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.

9. In the event the Chair and Vice-Chair are absent, the remaining Board members may elect a temporary presiding officer to preside over the meeting until the Chair or Vice-Chair are present (**Standing Item of Possible Action**).

10. Notice of possible quorum of Western Regional Water Commission: Because several members of the Truckee Meadows Water Authority Board of Directors are also Trustees of the Western Regional Water Commission, it is possible that a quorum of the Western Regional Water Commission may be present, however, such members will not deliberate or take action at this meeting in their capacity as Trustees of the Western Regional Water Commission.

- 1. Roll call*
- 2. Pledge of allegiance*
- 3. Public comment limited to no more than three minutes per speaker*
- 4. Possible Board comments or acknowledgements*

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.

- 5. Approval of the agenda (For Possible Action)
- 6. Approval of the minutes of the September 20, 2023 meeting of the TMWA Board of Directors (**For Possible Action**)
- 7. Discussion and action regarding General Manager performance review for contract year 2022-2023 Jessica Atkinson (For Possible Action)
- 8. Water supply update Bill Hauck*
- 9. Required communication from Eide Bailly in regards to TMWA's annual financial audit Sophie Cardinal*
- 10. Presentation of TMWA's Fiscal Year 2023 Customer Satisfaction Study Robert Charpentier*
- 11. Discussion and possible approval of the 2040 Water Facility Plan and direction to staff on updating the Water System Facility fees Danny Rotter and David Kershaw (For Possible Action)
- 12. Presentation of TMWA Goals and Objectives results for fiscal year 2023 John Zimmerman and Sonia Folsom*
- 13. Discussion and action, and possible direction to staff on the proposed TMWA Goals and Objectives for fiscal year 2024 John Zimmerman and Sonia Folsom (For Possible Action)
- 14. Discussion and possible action regarding need and strategy for additional staff facilities Danny Rotter and Levi Kleiber (For Possible Action)
- 15. General Manager's Report*
- 16. Public comment limited to no more than three minutes per speaker*
- 17. Board comments and requests for future agenda items*
- 18. Adjournment (For Possible Action)

TRUCKEE MEADOWS WATER AUTHORITY **DRAFT** MINUTES OF THE SEPTEMBER 20, 2023 MEETING OF THE BOARD OF DIRECTORS

The Board of Directors met on Wednesday, September 20, 2023 at Sparks Council Chambers. Chair Dahir called the meeting to order at 10:01 a.m.

1. ROLL CALL

Directors Present: Paul Anderson, Clara Andriola, Kristopher Dahir, Naomi Duerr, **Alexis Hill, and Alternates *Megan Ebert and Kathleen Taylor.

Directors Absent: Jenny Brekhus and Devon Reese.

A quorum was present.

*Alternate Ebert arrived at 10:13 a.m.

**Director Hill arrived at 10:38 a.m. and left the meeting at 12:12 p.m.

Chair Dahir held a moment of silence for Pat Quigley, TMWA Heavy Foreman, who suddenly passed away the previous evening.

2. PLEDGE OF ALLEGIANCE

The pledge of allegiance was led by Alternate Taylor.

3. PUBLIC COMMENT

Ken McNeil, Reno resident, provided public comment in regards to item #10, proposed rate adjustments, and noted that the rates currently favor commercial customers, and the rate study should take that into consideration as part of the rate adjustments. Mr. McNeil is also a member of TMWA's Standing Advisory Committee, but his comments are not a reflection of his membership.

4. POSSIBLE BOARD COMMENTS OR ACKNOWLEDGEMENTS

There were no board comments or acknowledgements.

5. APPROVAL OF THE AGENDA

Upon motion by Director Duerr, second by Director Andriola, which motion duly carried by unanimous consent of the Directors present, the Board approved the agenda.

6. APPROVAL OF THE MINUTES OF THE AUGUST 16, 2023 MEETING

Upon motion by Director Anderson, second by Director Duerr, which motion duly carried by unanimous consent of the Directors present, the Board approved the August 16, 2023 minutes.

7. PRESENTATION OF FISCAL YEAR 2023 UNAUDITED FINANCIAL PERFORMANCE

Matt Bowman, TMWA Chief Financial Officer, presented the staff report.

Members of the Board inquired about TMWA reserves and whether developer connection fees are impacted by the American Flat project. Regarding reserves, Mr. Bowman replied TMWA has reserves in place of unrestricted cash that can be used during the rate adjustment, and regarding American Flat, the American Flat project is separate from developer connection fees.

Chair Dahir requested staff to look at the cost of maintenance to be better prepared.

8. DISCUSSION AND ACTION ON RESOLUTION NO. 318: A RESOLUTION AUTHORIZING THE DEPOSIT OF LEGALLY AVAILABLE MONEYS INTO AN ESCROW ACCOUNT IN AN AMOUNT NOT TO EXCEED \$75,000,000.00 FOR THE DEFEASANCE AND CALL FOR PRIOR REDEMPTION OF CERTAIN OF THE AUTHORITY'S OUTSTANDING BONDS; AUTHORIZING THE EXECUTION OF AN ESCROW AGREEMENT IN CONNECTION THEREWITH; AND PROVIDING THE EFFECTIVE DATE HEREOF

Mr. Bowman introduced Thomas Toepfer, PFM Financial Advisors Managing Director, and Ryan Henry, Sherman & Howard Bond Counsel, who have worked with Mr. Bowman on the cash optimization strategy which would issue new debt at a lower rate which will yield savings between 5% - 7%.

Upon motion by Director Duerr, second by Director Andriola, which motion duly carried by unanimous consent of the Directors present, the Board adopted Resolution No. 318: A resolution authorizing the deposit of legally available moneys into an escrow account in an amount not to exceed \$75,000,000.00 for the defeasance and call for prior redemption of certain of the authority's outstanding bonds; authorizing the execution of an escrow agreement in connection therewith; and providing the effective date hereof.

9. DISCUSSION AND ACTION ON RESOLUTION NO. 319: A RESOLUTION DESIGNATED BY THE SHORT TITLE "2023 BOND RESOLUTION" AUTHORIZING THE ISSUANCE BY THE TRUCKEE MEADOWS WATER AUTHORITY OF ITS "TRUCKEE MEADOWS WATER AUTHORITY, WATER REVENUE BONDS, SERIES 2023," IN THE MAXIMUM AGGREGATE PRINCIPAL AMOUNT OF \$76,000,000.00 FOR THE PURPOSE OF DEFRAYING WHOLLY OR IN PART THE COST OF ACQUIRING, CONSTRUCTING, IMPROVING AND EQUIPPING WATER FACILITIES; PROVIDING THE FORM, TERMS AND CONDITIONS OF THE BONDS, AND THE SECURITY THEREFOR; PROVIDING FOR THE COLLECTION AND DISPOSITION OF REVENUES DERIVED FROM THE OPERATION OF THE AUTHORITY'S WATER SYSTEM; PLEDGING SUCH REVENUES TO THE PAYMENT OF THE BONDS; AND PROVIDING OTHER COVENANTS, AGREEMENTS AND DETAILS RELATING THERETO

Mr. Bowman explained this resolution was the second part of the cash optimization transaction.

Mr. Toepfer explained the monetary difference between the two resolutions is to allow for more flexibility and may get an investor, market bonds, which would be more advantageous to TMWA.

John Zimmerman, TMWA General Manager, noted that this approval requires a two-thirds majority vote.

Upon motion by Director Andriola, second by Director Duerr, which motion duly carried by unanimous consent of the Directors present, the Board adopted Resolution No. 319: A resolution designated by the short title "2023 bond resolution" authorizing the issuance by the Truckee Meadows Water Authority of its "Truckee Meadows Water Authority, water revenue bonds, series 2023," in the maximum aggregate principal amount of \$76,000,000.00 for the purpose of defraying wholly or in part the cost of acquiring, constructing, improving and equipping water facilities; providing the form, terms and conditions of the bonds, and the security therefor; providing for the collection and disposition of revenues derived from the operation of the authority's water system; pledging such revenues to the payment of the bonds; and providing other covenants, agreements and details relating thereto.

10. DISCUSSION AND ACTION, AND POSSIBLE DIRECTION TO STAFF REGARDING FUNDING PLAN AND PROPOSED RATE ADJUSTMENTS

Mr. Bowman presented the staff report with two additional scenarios, one requested by Director Reese, which shows a higher percentage increase and the second which shows a delayed implementation; staff is still recommending Scenario B. He also referenced the low-income program for customers. This topic has been brought up over the years, most recently in 2015, and he included that staff report today which was upheld, per Board policy, that there can be no cross-subsidization. There is currently a state program available to customers with information on TMWA's website to notify customers and the call center is aware of the program and relays information for any customers who call that are in financial distress.

Alternate Taylor inquired about the public comment regarding the different tiers for commercial and residential customers. Mr. Bowman replied that both he and Shawn Stoddard, TMWA Senior Resource Economist, have met with Mr. McNeil to explain the rate structure study; the rate structure (which has not been changed since TMWA's inception) and cost of service is a complicated matter, but, ultimately, the intent of the studies is to ensure the rates are as fair and equitable as possible.

Members of the Board thanked staff for all their work and due diligence.

Upon motion by Director Andriola, second by Director Anderson, which motion duly carried by unanimous consent of the Directors present, the Board approved staff recommendation to move forward with Scenario B, 4.5%, 4.0% and 3.5% increase in FYs 2024, 2025, and 2026.

<u>11. PRESENTATION ON RESULTS OF EMPLOYEE DEVELOPMENT AND</u> ENGAGEMENT EFFORTS

Mr. Zimmerman informed the Board of the employee career map survey that was conducted which provided the foundation for the presentation.

Jessica Atkinson, TMWA Human Resources Director, and Cammy Elquist LoRé, GoodStanding, presented the employee development and engagement efforts.

Mr. Zimmerman outlined the next steps which will continue with lunch and learns, mentorship program, increased level of certifications with incentives for all employees, and increased communication across TMWA departments.

Members of the Board expressed their appreciation on the in-depth analysis, and positive feedback from employees via the survey, which speaks to the culture of the organization and being valued.

12. PRESENTATION OF GENERAL MANAGER GOAL RESULTS FOR CONTRACT YEAR 2022-2023

Mr. Zimmerman presented his 2022 – 2023 goal results.

Vice Chair Duerr noted receiving his evaluation prior to the Board's review process is helpful.

<u>13. DISCUSSION AND ACTION ON REQUEST FOR BOARD INPUT AND</u> <u>ACCEPTANCE OF GENERAL MANAGER PERFORMANCE OBJECTIVES FOR</u> <u>CONTRACT YEAR 2023-2024</u>

Mr. Zimmerman presented the proposed goals for contract year 2023-2024 noting that were no changes, but will negotiate with NV Energy regarding the Purchase Power Agreement (PPA) before it expires.

Vice Chair Duerr recommended adding some language to call out customer service protocol and processes.

Upon motion by Director Anderson, second by Director Andriola, which motion duly carried by unanimous consent of the Directors present, the Board approved the General Manager performance objectives for contract year 2023 – 2024 with the addition of customer services processes.

14. DISCUSSION AND POSSIBLE DIRECTION FROM BOARD REGARDING THE EVALUATION PROCESS FOR CONDUCTING THE GENERAL MANAGER'S PERFORMANCE EVALUATION

Ms. Atkinson presented the proposed survey, which is the same as the one they submitted in 2021, except for changes to the 'Management of Staff' section which incorporates Mr. Zimmerman's goals and Board comments during the hiring process.

Upon motion by Director Andriola, second by Director Duerr, which motion duly carried by unanimous consent of the Directors present, the Board approved the evaluation process for conducting the General Manager's performance evaluation.

15. DISCUSSION AND ACTION ON RESOLUTION NO. 320: A RESOLUTION TO APPROVE FUNDING FOR THE PROJECTS RECOMMENDED BY THE TRUCKEE RIVER FUND ADVISORY COMMITTEE AND AN AUTHORIZATION FOR THE COMMUNITY FOUNDATION TO FUND SUCH PROJECTS FROM FUND PROCEEDS (RESOLUTION MAY REFLECT ACTION TAKEN IN ONE OR MORE VOTES ON RECOMMENDED PROJECTS)

Sonia Folsom, TMWA Executive Assistant, and Kara Steeland, TMWA Senior Hydrologist and Watershed Coordinator, presented the staff report.

Upon motion by Director Andriola, second by Director Anderson, which motion duly carried by unanimous consent of the Directors present, the Board adopted Resolution No. 320: A resolution to approve funding for the projects recommended by the Truckee River Fund Advisory Committee and an authorization for the Community Foundation to fund such projects from Fund proceeds.

16. GENERAL MANAGER'S REPORT

Mr. Zimmerman informed the Board that TMWA's hydro facilities generated a monthly revenue record of \$382k last month, Dr. Lydia Teel gave an interview on NPR's Science Friday, and Dave Williams, HVAC Specialist, provided lifesaving CPR to an individual who had passed out on his driveway. Mr. Zimmerman also noted that staff participated in the Dragonboat races, where everyone had a great time and TMWA came in first in their category. He also thanked Chair Dahir for the moment of silence for Pat Quigley, who worked for TMWA for over 20 years, who was a great mentor and employee, and will be missed by many.

17. PUBLIC COMMENT

There was no public comment.

18. BOARD COMMENTS AND REQUESTS FOR FUTURE AGENDA ITEMS

There were no Board comments.

<u>19. ADJOURNMENT</u>

With no further discussion, Chair Dahir adjourned the meeting at 12:33 p.m.

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

Sonia Folsom, Board Clerk.

*Alternate Ebert was present for agenda items 7 thru 19 only.

******Director Hill was present for agenda items 10 thru 13 only, but left before the vote on #13.



STAFF REPORT

TO:Board of DirectorsTHRU:John R. Zimmerman, General ManagerFROM:Jessica Atkinson, Human Resources DirectorDATE:October 10, 2023SUBJECT:Discussion and action regarding General Manager performance review for
contract year 2022-2023

Recommendation

The TMWA Board review General Manager John Zimmerman's performance for the past contract year (October 15, 2022 – October 15, 2023).

Discussion

In October 2022, the Board adopted the specific objectives that the General Manager would be working to accomplish during the contract year and that the Board would use to evaluate the performance of the General Manager. The General Manager's report of accomplishments related to the goals set by the Board last year was presented during the September 2023 Board meeting and is shown in **Attachment 1**.

The results of the GM evaluation survey completed by 1) Board members and 2) Division/Department Heads (direct reports to GM) are shown in **Attachment 2.**

The GM contract between the Board and Zimmerman states Zimmerman's base salary shall adjust in incrementing steps on July 1, 2023, and each July 1 thereafter until he reaches the "Market" step of the General Manager wage band. Consistent with this direction, on July 1, 2023, Zimmerman's base salary was adjusted from \$223,297 annually to \$245,923 annually. This adjustment included a 4.88% increase for moving up one step in the General Manager wage band and a 5% increase consistent with the general wage increase provided to all TMWA employees.

Zimmerman's employment agreement (**Attachment 3**) limits the annual compensation adjustment (base salary adjustment plus any lump sum award) to 10% of base annual salary.



Attachment 1

STAFF REPORT

TO: Chair and Board Members FROM: John R. Zimmerman, General Manager **DATE:** September 11, 2023 General Manager's report related to performance on goals adopted by the **SUBJECT:** Board for contract year 2022-2023

RECOMMENDATION

The TMWA Board review the General Manager's performance results for the past contract year.

DISCUSSION

In October 2022, the Board adopted the following specific objectives that the General Manager would be working to accomplish during the contract year and that the Board would use to evaluate the performance of the General Manager. The following is a summary of the results.

	GENERAL OBJECTIVES	RESULTS
Α	Direct the preparation of and propose financial plans, investment strategies, funding plans and adjustments to rates and charges that will continue to keep TMWA in long term financial stability; including preparation of budgets and Capital Improvement Plans and financial reporting that comply with Nevada Revised Statutes and the Securities and Exchange Commission (SEC).	Staff prepared and presented fiscal budgets, including the Capital Improvement Plan, to the Board for preliminary and final approval. Staff also regularly presented updates regarding TMWA's financial status and investments. In June 2023 TMWA implemented the last of five scheduled rate increases, which were approved in 2017 and postponed in 2019 and 2020. Lastly, staff prepared the annual funding plan and recommended the necessary rate adjustments to keep TMWA on solid financial ground over the long-term while balancing water affordability.
В	Develop proactive communications plans to address upcoming issues (e.g., topics affecting water supply, drought planning, regional water issues, utility water system consolidation and rate changes) and to keep all stakeholders including the Board, the employees, and the customers informed through a variety of mediums. Respond to media inquiries and provide informational interviews.	Communications were delivered through multiple media including newsprint, a myriad of broadcast interviews, various presentations before local groups and legislative sub-committees, bill print messages, bill inserts, TMWA's e-newsletter, workshops and special events booths. Focus this year was on water supply, conservation, and water quality. TMWA maintained communications around its operations, water quality, community outreach and employee safety.

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G	ENERAL OBJECTIVES (continued)	RESULTS
С	Continue having and improve on a community presence for TMWA through the Water Leadership program and participation in community committees, boards, and networking organizations and by providing presentations and information to these groups; offer Truckee River, Chalk Bluff Plant and/or other informational tours to the community.	TMWA staff continues to participate in a multitude of organizations including Rotary, Reno-Sparks Chamber of Commerce, WaterStart, EDAWN, WIN, Nevada Water Innovation Institute (NWII), Desert Research Institute (DRI), and participated in multiple community events. Staff continued with both virtual and in person presentations to schools and organizations like Rotary, the Builders Association of Northern Nevada (BANN), Reno-Sparks Chamber of Commerce, and homeowner's associations (HOA's) and have touched on many topics including water supply and resources, drought planning, conservation, development/growth and more. TMWA held another successful Smart About Water (SAW) Day .
D	Continue to create a highly productive work environment and a highly motivated employee team by developing, training, retaining and recruiting the highest quality employees.	TMWA achieved a favorable rating of 84% in our annual third party administered Customer Satisfaction Survey – this outstanding result is a tribute to TMWA's talented and highly motivated employees. This is lower than our average 90% rating due to switching to an online portal. TMWA continues to maintain high certification levels for staff and provides and incentivizes both internal and external training opportunities.
Е	Strive for continuous improvements in processes and operations targeting initiatives that will enhance revenues and/or reduce operating costs thus keeping customer rates as low as possible.	TMWA's Operating Margin (Operating Revenue minus Expenses) ended up \$4.9m lower than budget, while capital spend was approximately \$35.9m (43%) under budget (these numbers may change slightly following year-end adjustments for ACFR presentation). TMWA's leadership regularly reviews operating costs compared to budget to help develop cost-saving measures. During FY 2023, TMWA augmented the operating expense budget by approximately \$5.0m to account for higher electric power and water treatment chemical costs. Additionally, the cold and wet spring weather led to lower water consumption by TMWA customers resulting in an approximate \$6.0m revenue shortfall from budget during Q4 FY2023. Staff has developed a rate adjustment plan, which will allow for stable financial operations going forward. Despite inflation, TMWA staff continue to manage operating expenses to a level that provides excellent service.

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	ONGOING OPERATIONAL OBJECTIVES	RESULTS
a	Monitor federal legislation for opportunities to obtain funding for a variety of TMWA projects.	Staff worked with our federal lobbyists to meet with federal legislative staff to describe TMWA's priorities and to seek federal funding. TMWA was successful in receiving an earmark for \$3m dollars for the American Flat Project. Staff has also submitted several applications for various federal funding. Staff met with Senator Cortez Masto and members of her federal legislative staff along with staff from Senator Rosen and Congressman Amodei's offices during the American Water Works Association's water week on Capitol Hill. Staff also participated in the Western Urban Water Coalition meetings regarding federal legislation and funding.
b	Carefully analyze opportunities to acquire strategic water rights and resources in the market in consideration of current inventory and financial constraints. Ensure adequate resources are available through TMWA's Rule 7 as directed by the Board.	Staff had the opportunity to increase Rule 7 inventory by approximately 582 acre-feet. Staff has worked diligently and in collaboration with the Pyramid Lake Paiute Tribe on obtaining changes to water rights to satisfy the return flow requirements for current TMWRF treated effluent reuse and TRIGID reuse. Additionally, TMWA staff continue to aggressively pursuing water rights purchases.
c	Provide staff support to the SAC, the Truckee River Fund (TRF) Advisors, and One Truckee River and ensure communications regarding TRF projects.	This was done.
d	Manage and direct activities relative to legal issues, keeping the Board informed on all such matters.	This was done.
e	Update TMWA Administrative Instructions as required to ensure they are compliant with applicable laws and current practices. Deliver updates to the Board and employees, and implement the changes.	Complete. The Board approved revised Administrative Instructions (AIs) in January 2023.
f	Minimize cost impacts to customers by maximizing investment and hydroelectric income, pursuing revenue enhancement and collection opportunities, pursuing process improvements and projects that drive savings in TMWA expenses, and actively pursuing grant/low- interest loan funding for projects.	TMWA generated over \$2.9 million in hydroelectric revenue this fiscal year and plant availability was at 100%. TMWA meets regularly with investment managers to optimize investment returns while ensuring compliance with TMWA's investment policy. These items along with operating cost reviews by management will keep TMWA's rates as low as possible. In late fiscal year 2023, Staff began working with TMWA's Financial Advisor, PFM, on a potential debt restructuring strategy which could result in savings of more than \$5m. Staff continues to implement a program to increase the number of customers signing up for paperless billing. To date there are 41,805 customers signed up for paperless billing, which equates to an annual savings of \$ 326,079.

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	SPECIFIC OBJECTIVES	RESULTS
1	Develop customer communications plan for FY2023, including conservation communication, water supply planning, and detailed public/customer communications/outreach plan - present to the SAC for their recommendation and Board for approval no later than the April Board Meeting.	The communication plan was developed prior to the irrigation season and presented to the Board at their April meeting. After the epic snowpack year in 2023, the messaging for this summer was focused on standard water conservation protocols, as normal river flows are projected for the next two to three years. Drought reserves will not be necessary for the foreseeable future. Standard water conservation protocols were enforced this summer, the most important of which is assigned day watering. Through a variety of public outreach methods, this summer's campaign reinforced the importance of only taking what you need, watering responsibly, not wasting water, and following your assigned day schedule. The region will go into this upcoming winter with as much upstream reservoir storage as legally allowed, as well as a healthy amount of drought reserves.
2	Continue working with city and county staff and WRWC regarding regional water issues (including wastewater, effluent management, stormwater, etc.), regional economic development initiatives, etc. including the OneWater Nevada initiative that includes advancing the American Flat Project, continued pilot testing and analysis related to infiltrating or injecting highly treated wastewater into the ground for later use, assistance with TMWRF return flow obligations, etc.	TMWA staff has continued to work extensively with the cities and Tahoe Reno Industrial General Improvement District (TRIGID), regarding the planned delivery of reclaimed water to the TRIGID system for industrial use, with a focus on water rights and the return flow management agreement. Staff has entered into a settlement agreement with the Pyramid Lake Paiute Tribe regarding the necessary water rights to make up instream flows from treated effluent reuse in the Truckee Meadows and has begun discussions with the Tribe on the necessary water rights to make up instream flows from treated effluent reuse in the Truckee Meadows and has begun discussions with the Tribe on the necessary water rights to make up instream flows from treated effluent reused at TRIGID. TMWA continues in a leadership role along with OneWater Nevada and UNR to advance the design, funding and permitting of groundwater augmentation using Category A+ advanced purified water at American Flat. Assessments of the hydrogeologic feasibility and cost effectiveness of irrigating with recycled water and recharging potable water in Palomino Valley continues. TMWA staff continues to provide technical support to the Regional Effluent Management Team (made up of staff from Reno, Sparks, Washoe County, UNR and WRWC) in evaluating various effluent management strategies.
3	Continue analyzing water supply options related to fringe area development where private systems exist, make recommendations to Board and follow Board direction regarding same.	Staff engaged in ongoing coordination with Great Basin Water Company (GBWC) in Cold Springs and Spanish Springs Valley, including potential GBWC participation in a nitrate groundwater treatment facility in Spanish Springs. Staff continues to analyze water supply options related to fringe area development where private systems exist and will bring any recommendations to the Board when they arise.

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	SPECIFIC ODJECTIVES (conum	ueu) KESOLIS
4	Monitor and participate in Legislative activities during the 2023 Legislative Session, prepare and deliver presentations to Legislative Committees as requested, schedule meetings with staff, Board legislative committee members, lobbyists and legislators, keep the Board updated and informed regarding legislative matters, and pursue Board direction regarding Legislative issues. Facilitate open communications between legislators and the TMWA Board.	Staff monitored legislative activities and worked closely with TMWA legal counsel and lobbyists, to update TMWA's Legislative Subcommittee. TMWA staff and lobbyist met with legislators regarding TMWA's priorities, infrastructure funding, water supply, and watershed protection. Staff also was involved in the State Engineer proposed regulation regarding consideration of the best available science in making decisions and revising provisions in appropriating underground water and SNWA's conservation bill. TMWA continues to monitor regulatory actions and continues to meet with NDEP to address analyzing improvements to the Central Truckee Meadows Remediation District program and the review process with Washoe County Health District for water projects. Staff is working closely with the Nevada Division of Environmental Protection regarding the EPA's national lead and copper service line inventory rule and monitoring the proposed PFAS rule and assessing its impact to TMWA operations.
5	Update the 5-year Funding Plan and present to the SAC and the Board. Propose Board actions based on the results of the planning cycle updates. Implement Board direction with regard to funding plan outcomes.	This was done at the Board Strategic Planning Workshop in October 2022.
6	Analyze the need for any necessary rule changes, rate adjustments, water facility charge adjustments, etc. and report results of analysis to the SAC and Board of Directors and follow Board direction regarding same.	Phase 5 rate adjustment of 2.5% went into effect June 2023. During the fiscal year, Staff began work on a rate plan for fiscal years beyond FY 2023 and presented the recommended adjustments to the SAC and Board. The first of the proposed rate adjustments is recommended to occur in FY 2024.
7	Continue to develop/refine strategies to optimize conjunctive use of surface water and groundwater resources; further develop/refine drought supply operational strategies; and implement plans.	TMWA continues to recharge groundwater to support water quality and pumping goals. TMWA is continuously working on increasing active and passive recharge efforts through existing wells and the development of new wells as necessary and economically appropriate. Long-term ASR goals are to recharge up to 9,000 AFY where 3,000 AFY is recharged in the South Truckee Meadows, 2,000 AFY in the Central Truckee Meadows, 2,000 AFY in the Spanish Springs Valley, and 2,200 AFY in Lemmon Valley with American Flat Advanced Purified Water (APW). One additional production well in the Spanish Springs Valley was equipped and began recharging last year. Through conjunctive use, groundwater pumping was reduced by about 3,400 acre-feet between the Mt. Rose, Spanish Springs, Lemmon Valley and former STMGID areas, and 1,464 acre-feet was recharged system-wide during FY 2023.

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	SPECIFIC OBJECTIVES (contin	ued) RESULTS
8	Continue to develop, refine and implement strategies to mitigate pre-merger groundwater conditions on the Mt. Rose fan including integrating operation of the Mt. Rose Water Treatment Plant and expanding aquifer storage and recovery (ASR) in that area.	TMWA has continued to rest groundwater wells on the Mt. Rose fan in areas where other resources are available TMWA recharged three existing production wells on the Mt. Rose Fan, and water levels are continuing to respond favorably to these passive and active recharge efforts. This passive and active groundwater recharge will assist in the sustainable groundwater management for the Mt. Rose fan area. Natural Resources, Engineering, and Operations have been working very diligently to restart operations at the Mt. Rose Water Treatment plant after sedimentation from flood damage in the upper Whites Creek watershed made operation unfeasible. The plant was brought back online in September.
9	Update succession plan and continue to implement the succession/staffing plan to address and fill vacancies created by retirements. Continue staff development in support of TMWA's succession plan with a focus on leadership and critical position succession. Increase employee communication and input regarding succession planning, workforce development requirements and foster more collaboration.	TMWA has continued to spend time focusing on succession planning efforts. The management team has spent considerable time and effort increasing two-way communication with employees regarding succession planning, employee growth and development, and collaboration. TMWA management first spent time considering and describing the key operational objectives and issues TMWA faces in the short and long-term. These drivers were discussed with TMWA supervisors and presented to all employees. The management team presented to employees at three different locations to ensure that as many employees as possible were able to see the presentation. Those presentations described the drivers and informed employees of the reason for increased communication and collaboration and next steps with succession planning and employee development. Each department also presented an overview of their core business functions and roles within TMWA to all employees so that employees. TMWA management also requested employees complete a career map survey to better inform management about employees' career aspirations and needs. The results of the above process will be described at the September Board meeting along with the next steps in the process.
10	Continue working under the terms of the MOU with Carson City and Storey County, to determine surplus water availability to TMWA from the Marlette Lake Water System (MLWS).	Both Carson City and Storey County have updated their future water demand needs and are working towards their long-term wholesale agreements with the MLWS based on those demands. TMWA and the State are discussing options of purchasing water to be released from Marlette Lake to facilitate a planned dam rehabilitation project in 2025.
11	Begin the CMAR design phase for the Advanced Purified Water Project at American Flat. Continue working on operations plan and seeking grant monies to offset costs. Provide periodic updates to the Board at appropriate milestones.	TMWA hired RSCI as the CMAR in October 2022. AECOM completed the 30% design in July 2023. TMWA approved the final design PO with AECOM in May 2023. TMWA anticipates applying for the Bureau of Reclamation Title XVI grant in Fall 2023.

	SPECIFIC OBJECTIVES (contin	ued) RESULTS
12	Continue working on collecting additional information based on the results from the feasibility study of Palomino Farms, and recommend whether or not to move forward with an option agreement involving Palomino Farms, Reno, Sparks and Washoe County.	The feasibility study was completed and presented to the Board. The feasibility study noted that additional work is required to address issues such as, return flow, interbasin transfer, permitting and cost sharing opportunities. Additional work has been completed on hydrogeologic water quality assessments and return flow. The Board directed staff to continue pursuing the additional required information.
13	Continue analyzing opportunities to increase water conservation for drought resiliency and mitigate impacts to the upstream watershed to protect water quality and reservoirs, use best available science to evaluate global climate change models applicable to this region, and advise the Board.	Staff is routinely monitoring for any changes in hydrological trends in the Truckee River Basin and stays current with the latest publications and peer-reviewed journal articles related to climate science, as well as any new developments in climate change modeling and/or ways to improve upon the scenario based methods utilized in the 2020-2040 water resource plan. In fiscal year 2024 staff will begin working to update the 2020- 2040 water resources plan and incorporate any new data or developments that have occurred since the last revision. Staff has continued to work with stakeholders in the upper Truckee River watershed on fire mitigation strategies such as the Ladybug fuels reduction project near Stampede reservoir and will provide an update to the Board in December 2023. Staff has also continued to work with the Bureau of Reclamation and Federal Water Master's office regarding reservoir re-operation and presented an update to the Board in August 2023.
14	NEW: Complete negotiations on a labor contract with the International Brotherhood of Electrical Workers (IBEW) Local 1245 and present to Board for approval.	Contract was completed and approved by the Board in May 2023.
15	NEW: Work with Nevada Division of Environmental Protection and Central Truckee Meadows Remediation District to explore ways to optimize PCE remediation.	TMWA continues to work with the CTMRD and NDEP regarding an update to Plan of Remediation during 2023-2024. TMWA completed a basin scale PCE contaminant transport model for use in the Plan update.
16	NEW: Update Water Facility Plan and analyze the need for any necessary water facility charge adjustments, report results of analysis to the SAC and Board of Directors and follow Board direction regarding same.	Draft water facility plan will be presented to the Board at the October strategic planning meeting and staff will seek approval of its proposed public outreach process and implementation schedule.



Introduction

The General Manager's performance evaluation consists of an annual appraisal by the Board of Directors, as provided for in the General Manager's employment agreement.

The purpose of the evaluation process is to maintain a strong Board/Manager team by ensuring open and productive communication on an annual basis. During this formal review process, there is an opportunity to identify areas of satisfaction and areas for growth or needing change as identified by the Board.

The evaluation will be completed by each member of the Board.

The Executive Team and Department Heads reporting to the General Manager have been invited to participate in this performance review process.

The Human Resources Director is the facilitator for this process, and will gather input from the confidential survey completed by each of the above-referenced individuals. A staff report and the summary results from the evaluation survey will be provided as supporting materials for the public meeting at which the TMWA Board reviews the annual performance of the General Manager.

Rating Criteria:

For each performance criteria, please use the following rating scale:

- E Exceeds your expectations
- M Meets your expectations
- AG Areas for growth
- NA Not applicable

Truckee Meadows Water Authority - General Manager FY2023 Performance Evaluation Survey Data Summary Sheet

				Rating Scale	
E-Exc	eeds	your e	xpecta	ations AG-Areas for growth	
M-Me	M-Meets your expectations NA-Not Applicable				
# c	of Res	ponse	es	Criteria	
E	Μ	AG	NA	Organizational Leadership	
7	4	0	0	 Anticipates and clearly communicates risks and changes in market conditions and other factors affecting TMWA's fulfillment of its Vision and Business objectives; Participates with Board and Staff in strategic planning; Clearly articulates and advances the strategic priorities to be addressed over the next 3-5 years; Sets and communicates clear operational priorities for the organization; Implements new programs and services growing out of the strategic planning process; Creates and maintains a high performing culture in the organization including strong employee morale, accountability, and cohesiveness; Performs as the leading role model, setting high professional work standards and pursues goals with honesty, respect, determination, and initiative; Handles emergencies and crisis situations in an effective, efficient, and professional manner; Directs the utilization of TMWA resources effectively. 	
Organ	izatior	hal Lea	adersh	nip – Additional Comments	
1.Johr suffi the som orga 2.I ap	is an cient i ast TM e time nizatio	outsta nfo to MWA s in hig on ma te Joh	anding compl strateg h leve nagen n's ap	person and is clearly committed to leading TMWA well. At this point, I do not believe I have etely rate the General Manager on the characteristic of Organizational Leadership. I do not recall ic planning session clearly – although we have a new one coming up. I do recommend John invest I management training to become more familiar with the principles and practices of public nent. proach to Organizational Leadership by leading by example, listening to the staff and setting a high	
bar	for TM	WA's	collab	orative culture.	
3.Johr 4.Mr. TMV 5.I bel	n has o Zimme VA me ieve J	done v erman eetings ohn is	vell at is incr s, diffic well-v	demonstrating his leadership abilities within TMWA. redibly responsive to the board's requests. I have been very impressed by his management of the cult policy discussions, and requested board changes. versed in the necessary regional water planning vision and communicates effectively with all	
emp	loyees		it what	t we re investigating.	
o.As a plan	ning a	ind sta	onn na aff care	er development. He has helped maintain TMWA's high performing culture, is open and	
tran 7.He i	sparer s resp	nt, and ected	in our	community and among the staff. I appreciate his attentiveness and willingness to follow the boards	
	M	10	NIA	Polations with Poard/Governance	
E	IVI	AG	NA	Relations with board/Governance	
8	3	0	0	 Communicates necessary information openly and nonestry in a timely and organized fashion, Establishes and maintains positive and effective working relationships with each member of the Board; Has been consistently available to individual Board members whenever necessary; Conforms to Board policies and directives; Demonstrates a respectful understanding of the Board's governance role and has supported the Board in its oversight of the organization; Contributes significant information and important agenda topics for discussion at Board level; Synthesizes information and frames issues and questions in a manner for the Board to make appropriate decisions; Makes periodic reports to the Board regarding important aspects of TMWA's functions and operations, highlighting both achievements and areas of concern. 	
Relation	ons wi	th Boa	ard/Go	vernance – Additional Comments	
1.Johi	has :	sough	t out B	oard input on issues and worked to develop good relationships with individual Board Members. He	
is st Johr	ill feeli a's will	ing his	way i	n terms of which issues to handle internally and which to elevate to the Board. I really appreciate commit to process improvement at TMWA.	
2.I doi effe	n't see ctivelv	all of	John's	s interactions with the Board but I see his intentions to communicate with the Board clearly and	
2.I doi effe 3.Johi	n't see ctively	all of . munica	John's	ell with the Board, providing us with important information in a timely manner.	
2.I doi effec 3.Johr 4.Mr. 5.I bel	n't see ctively n com Zimme ieve J	e all of munica erman ohn na	John's ates w treats avigate	s interactions with the Board but I see his intentions to communicate with the Board clearly and rell with the Board, providing us with important information in a timely manner. all board members with respect and supports our concerns and requests for information. es and presents options to the Board in an effective manner and is collaborative in disseminating	
2.1 doi effe 3.Johr 4.Mr. 5.1 bel infor	n't see ctively n com Zimme ieve J matio	e all of munica erman ohn na n to th	John's ates w treats avigate e Boa	s interactions with the Board but I see his intentions to communicate with the Board clearly and rell with the Board, providing us with important information in a timely manner. all board members with respect and supports our concerns and requests for information. es and presents options to the Board in an effective manner and is collaborative in disseminating rd.	

7.He v	vorks	hard a	t inclu	ding all regional partners.
E	Μ	AG	NA	Communication Skills
				 Negotiates effectively and is able to handle difficult situations;
				 Is concise and persuasive orally and in writing;
				 Listens to what is said and is sensitive to the impact on others;
7	4	0	0	•Demonstrates empathy regarding others and exhibits concern for everyone as individuals;
1	4	0	0	•Exercises good judgement in dealing with sensitive issues between individuals or between
				groups;
				•Effectively delivers presentations and engages with the media;
				•Communicates effectively with Board leadership and Board members.
Comn	nunica	tions -	- Addi	tional Comments
1.Johr	n is so	ft-spol	ken bu	t generally a good communicator. He is articulate and thoughtful and demonstrated empathy
towa	ard oth	ers. If	anyth	ing, John is a bit understated and tends to downplay issues. I do recommend a course in active
liste	ning a	nd cor	nmuni	cation to enhance his skills as a manager.
2.Johr	n is a s	smart,	levelh	eaded leader. His communication matches that description, and he is self-aware of making sure he
liste	ns and	d comr	nunica	ates effectively.
3.Our	Gene	ral Ma	nager	communicates in a clear and concise manner. He is an active listener and uses skill in
com	munic	ating v	with th	e Board and others.
4.Mr. 2	Zimme	erman	has a	lways been incredibly respectful and responsive to my requests.
5.Johi	n comr	nunica	ates w	ell with the average employee, has a welcoming disposition, and values the insight of those who
have	e alteri	native	viewp	oints to address an issue.
6.1 hav	vealw	ays be	en im	pressed by John taking a personal interest in ALL TMWA employees. He has maintained this
_ inclu	isive a	pproa	ch as	GM and is commended for his efforts.
7.Her	nas cre	eated a	a stror	ng team around him and the future is bright
E	M	AG	NA	Relations with Community and Stakeholders
				•Ability to relate well to others and to make people feel at ease, even in difficult situations;
				•Ability to gain the trust and confidence of the public;
				•Fosters contact and cooperation among citizens, community organizations and other government
•		0		agencies;
8	1	0	1	•Understand and embraces the concept of inter-local cooperation when appropriate;
				•Fosters cooperative communications and working relationships within the community to ensure
				that I MWA remains a significant partner within the community;
				•Maintains affiliation with professional associations relevant and beneficial to the successful
Dalati		41- 0		operation of TMVVA.
Relati	ons wi		nmun	ity and State Holders – Additional Comments
		n nas	a grea	A ability to relate well to others and is the kind of person who inspires confidence in the public. He is
intor	anu :		acing	ne stands up for stan, but openny accepts childisin as well. John has always excelled at
	ayenc	,y cool adias (oll the	listed qualities
2.30m	n bas (done v	vill in h	nsieu qualities.
4 Mr	7 imme	rman	has m	and areat efforts to ensure that TMWA is in the fabric of our community. He has none to community
mee	tinas t	o expl	ain TN	IWA and is also plaving al leadership role on the EDAWN board
5 Johr	n does	a are	at iob	navigating and collaborating with the community and stakeholders
6.Johr	has o	done a	in exc	eptional job at reaching out and engaging with stakeholders, especially community organizations
and	other	aoverr	nment	agencies.
7.I see	e him i	n the o	comm	unity working hard to be involved and relevant
8.1'm i	not sur	e I ca	n ansv	ver this question because I'm to new and gave been given the opportunity to review this area yet.
Ε	Μ	AG	NA	Management of Staff
				•Sets organizational tone that attracts, retains, motivates and develops highly skilled employees;
				•Establishes and maintains open and collaborative relationships throughout the organization;
				•Models behaviors and attitudes which promote individual responsibility, programmatic and
				professional excellence and creative initiative;
				•Ensures the development and implementation of succession plans and professional development
				programs;
-	0	~	4	•Encourages innovative thinking and solutions and effectively incorporates the ideas and
1	3	U	- T	contributions of others;
				•Nurtures a culture of engagement and collaboration that focuses on fulfilling TMWA's vision and
				business objectives;
				 Appropriately delegates authority, granting proper authority at proper times;
				•Encourages and rewards initiative;
				•Recruits and develops a cohesive leadership team to implement organizational goals and
				objectives.
•				

Mana 1.The Esp	gemer staff a ecially	nt of St t TMV appre	taff – / VA see ciate t	Additional Comments om happy. The recent survey showed a very positive environment with satisfied employees. the concept of active employee development. This is sure to engender positive, engaged	
emp 2 Joh	ployees over the long term. nn's leadership through this succession planning effort and continued strategic planning meetings has been fantastic.				
l'm	n very thankful for his vision and guidance as our leader.				
atm	3. The culture at TMWA has long been envied by other agencies and John is doing well to maintain that positive atmosphere.				
4.1 am	n very i so belie n value	mpres eve oth	sed o ner dir opinio	n how Mr. Zimmerman is working with HR to map out employee careers, expectations, and growth. ectors should take his lead on getting to know every employee in the organization.	
peo	ple rea	lize.	opinio	ins of the employees and has A LOT of meetings with employees, i believe moor more than most	
6.Joh dev	n has o elopme	done a ent pro	n exc gram	eptional job at ensuring the development and implementation of succession plans and career s throughout TMWA. He encourages innovative thinking and continues to foster a culture of	
eng 7.This	ageme s is an	nt and area tl	l colla nat rec	boration. quired extra attention as we came out of the pandemic issues and with the transition of leadership. I	
am	please	d with	his w	ork in these areas	
E	M	AG	NA	Personal Effectiveness	
				•Maintains a professional image that reflects positively on the organization and builds trust and	
				•Demonstrates empathy regarding others and exhibits concern for everyone as individuals;	
				•Skillfully analyzes and addresses problems, challenges and conflicts while comfortably navigating	
8	3	0	0	 Adapts quickly and is flexible to new demands and changes; 	
				•Performs at a very high standard of ethics and integrity;	
				•Ensures that the organization, its staff and its programs operate in compliance will all applicable local, state, and federal law and regulations;	
Perso	nal Eff	ective	ness -	 Pursues profession development resulting in increased capabilities and potential. Additional Comments 	
1.lt is	clear t	o me t	hat Jo	when is a kind, skilled professional. As a lawyer, he is focused on operating within the law. But, he	
also	mana	ges as	s a hu	man being. I'm impressed with his personal effectiveness.	
2. Aga 3. Mr.	Zimme	erman	is ver	y thoughtful in his approach to challenges. He is also willing to look at things in a new way and is	
willi 4 L be	ng to ta lieve in	ake a (differe 's style	nt approach. He's really enjoyable to work with.	
5.Joh	n is a t	rusted	partn	er throughout the community, operates with the utmost integrity and fosters a culture of safety and	
com	plianc	e with	laws a	and regulations.	
E	М	AG	NA	manager has achieved the goals and business objectives outlined for this appraisal period.	
10	1	0	0	Total number of recompass by rating all estagories combined	
33 72%	19 25%	0%	2 3%	Total % rating all categories combined	
Overa	all Cor	nmen	ts		
1	John arow	contir ing as	iues to a mai	o impress. He is thoughtful and open to constructive criticism – essential if one is to continue nager. A first year will done! Kudos!	
2	Personally, I hope to work for John a long time.				
3	John I'm th	has a	chieve	ed the vast majority of the goals and business objectives that were set the time period.	
4	changes, and PFAS. He's a great leader for TMWA.				
5	I believe John has done a great job transitioning to his new role. I trust his vision, I trust his integrity and I believe the employees truly feel that John cares about them.				
6	John	has e	xceed	ed my expectations as GM. He fosters an environment of collaboration among his team and IWA. Employee morale was on shaky ground over the last few years, but it has improved	
Ľ	signif	icantly	, and	much of that is due to John's leadership.	
	John	has p	erform	ned at a commendable level in taking over the GM role this past year. He continues to develop and	
7	retire	ments	, but h	his emphasis on succession planning, recruitment and career development has been effective at	
	main	taining	a ver	y high caliber pool of employees.	
8	Ihan	K YOU	tor yo	ur dedication and professionalism you bring to the table.	
8	empl	oyees			

Pleas	se identify future performance objective you may have for the general manager
1	Management training Communication training
2	Make succession planning and staff development a key priority and habit for TMWA for years to come.
3	I do not have any additional performance objectives.
4	I believe it should be a priority to continue to try to diversify our hiring and those we promote to leadership in the
	organization.
8	N/A
	With experience, John will gain more confidence in evaluating the best course of action when difficult situations
6	arise. TMWA faces many opportunities and challenges in the future. TMWA needs to focus its efforts on the highest
	priority objectives and remember its core purpose, deliver high quality water safely and reliably.

Answered: 11 Skipped: 0 Exceeds your expectations Meets your expectations Area for growth Not Applicable 0% 10% 70% 80% 90% 100% 20% 30% 40% 50% 60%

Q1 Organizational Leadership - Evaluation Rating:

ANSWER CHOICES	RESPONSES	
Exceeds your expectations	63.64%	7
Meets your expectations	36.36%	4
Area for growth	0.00%	0
Not Applicable	0.00%	0
TOTAL	1	.1

#	USE THE SPACE BELOW TO PROVIDE ANY ADDITIONAL COMMENTS YOU MAY HAVE FOR THIS RATING CATEGORY.	DATE
1	John is an outstanding person and is clearly committed to leading TMWA well. At this point, I do not believe I have sufficient info to completely rate him on the characteristic of Organizational Leadership. I do not recall the last TMWA strategic planning session clearly - although we have a new one coming up. I do recommend John invest some time in high level management training to become more familiar with the principles and practices of public organization management.	10/12/2023 9:23 AM
2	I appreciate John's approach to Organizational Leadership by leading by example, listening to the staff and setting a high bar for TMWA's collaborative culture.	10/11/2023 10:16 AM
3	John has done well at demonstrating his leadership abilities within TMWA.	10/11/2023 9:15 AM
4	Mr. Zimmerman is incredibly responsive to the board's requests. I have been very impressed by his management of the TMWA meetings, difficult policy discussions, and requested board changes.	10/11/2023 8:59 AM
5	I believe John is well-versed in the necessary regional water planning vision and communicates effectively with all employees about what we're investigating.	10/10/2023 4:18 PM

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6	As a new GM, John has done a very good job engaging the management team on strategic issues such as succession planning and staff career development. He has helped maintain TMWA's high performing culture, is open and transparent, and leads by example.	10/9/2023 3:06 PM
7	He is respected in our community and among the staff. I appreciate his attentiveness and willingness to follow the boards lead.	10/6/2023 5:34 PM

Q2 Relations with Board/Governance- Evaluation Rating:



ANSWER CHOICES	RESPONSES	
Exceeds your expectations	72.73%	8
Meets your expectations	27.27%	3
Area for growth	0.00%	0
Not Applicable	0.00%	0
TOTAL		11

#	USE THE SPACE BELOW TO PROVIDE ANY ADDITIONAL COMMENTS YOU MAY HAVE FOR THIS RATING CATEGORY.	DATE
1	John has sought out Board input on issues and worked to develop good relationships with individual Board Members. He is still feeling his way in terms of which issues to handle internally and which to elevate to the Board. I really appreciate John's willingness to commit to process improvement at TMWA.	10/12/2023 9:23 AM
2	I don't see all of John's interactions with the Board but I see his intentions to communicate with the Board clearly and effectively.	10/11/2023 10:17 AM
3	John communicates well with the Board, providing us with important information in a timely manner.	10/11/2023 9:21 AM
4	Mr. Zimmerman treats all board members with respect and supports our concerns and requests for information.	10/11/2023 9:00 AM

5	I believe John navigates and presents options to the Board in an effective manner and is collaborative in disseminating information to the Board.	10/10/2023 4:20 PM
6	From my perspective, John appears to communicate openly with all board members on a fairly regular basis and keeps them abreast of important topics.	10/9/2023 3:09 PM
7	He works hard at including all regional partners	10/6/2023 5:35 PM

Q3 Communication Skills- Evaluation Rating:



ANSWER CHOICES	RESPONSES	
Exceeds your expectations	63.64%	7
Meets your expectations	36.36%	4
Area for growth	0.00%	0
Not Applicable	0.00%	0
TOTAL		11

#	USE THE SPACE BELOW TO PROVIDE ANY ADDITIONAL COMMENTS YOU MAY HAVE FOR THIS RATING CATEGORY.	DATE
1	John is soft-spoken but generally a good communicator. He is articulate and thoughtful and demonstrated empathy toward others. If anything, John is a bit understated and tends to downplay issues. I do recommend a course in active listening and communication to enhance his skills as a Manager.	10/12/2023 9:23 AM
2	John is a smart, levelheaded leader. His communication matches that description, and he is self-aware of making sure he listens and communicates effectively.	10/11/2023 10:19 AM
3	Our General Manager communicates in a clear and concise manner. He is an active listener and uses skill in communicating with the Board and others.	10/11/2023 9:24 AM
4	Mr. Zimmerman has always been incredibly respectful and responsive to my requests.	10/11/2023 9:01 AM

5	John communicates well with the average employee, has a welcoming disposition, and values the insight of those who have alternative viewpoints to address an issue.	10/10/2023 4:22 PM
6	I have always been impressed by John taking a personal interest in ALL TMWA employees. He has maintained this inclusive approach as GM and is commended for his efforts.	10/9/2023 3:10 PM
7	He has created a strong team around him and the future is bright	10/6/2023 5:35 PM

Q4 Relations with Community/Stakeholders- Evaluation Rating:



ANSWER CHOICES	RESPONSES	
Exceeds your expectations	80.00%	8
Meets your expectations	10.00%	1
Area for growth	0.00%	0
Not Applicable	10.00%	1
TOTAL	2	LO

#	USE THE SPACE BELOW TO PROVIDE ANY ADDITIONAL COMMENTS YOU MAY HAVE FOR THIS RATING CATEGORY.	DATE
1	I think John has a great ability to relate well to others and is the kind of person who inspires confidence in the public. He is open and self effacing. He stands up for staff, but openly accepts criticism as well. John has always excelled at interagency cooperation. Great work!	10/12/2023 9:23 AM
2	John embodies all the listed qualities.	10/11/2023 10:22 AM
3	John has done well in building relationships with the community and various stakeholders throughout the region.	10/11/2023 9:25 AM
4	Mr. Zimmerman has made great efforts to ensure that TMWA is in the fabric of our community. He has gone to community meetings to explain TMWA and is also playing a leadership role on the EDAWN board.	10/11/2023 9:02 AM

5	John does a great job navigating and collaborating with the community and stakeholders.	10/10/2023 4:24 PM
6	John has done an exceptional job at reaching out and engaging with stakeholders, especially community organizations and other government agencies.	10/9/2023 3:12 PM
7	I see him in the community working hard to be involved and relevant	10/6/2023 5:36 PM
8	I'm not sure I can answer this question because I'm to new and gave been given the opportunity to review this area yet.	9/26/2023 1:06 PM

Q5 Management of Staff- Evaluation Rating:



ANSWER CHOICES	RESPONSES	
Exceeds your expectations	63.64%	7
Meets your expectations	27.27%	3
Area for growth	0.00%	0
Not Applicable	9.09%	1
TOTAL	1	.1

#	USE THE SPACE BELOW TO PROVIDE ANY ADDITIONAL COMMENTS YOU MAY HAVE FOR THIS RATING CATEGORY.	DATE
1	The staff at TMWA seem happy. The recent survey showed a very positive environment with satisfied employees. Especially appreciate the concept of active employee development. This is sure to engender positive, engaged employees over the long term.	10/12/2023 9:23 AM
2	John's leadership through this succession planning effort and continued strategic planning meetings has been fantastic. I'm very thankful for his vision and guidance as our leader.	10/11/2023 10:25 AM
3	The culture at TMWA has long been envied by other agencies and John is doing well to maintain that positive atmosphere.	10/11/2023 9:49 AM

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	General Manager Performance Evaluation for FY2023	Attachment 2
4	I am very impressed on how Mr. Zimmerman is working with HR to map out employee careers, expectations, and growth. I also believe other directors should take his lead on getting to know every employee in the organization.	10/11/2023 9:03 AM
5	John values the opinions of the employees and has A LOT of meetings with employees, I believe MUCH more than most people realize.	10/10/2023 4:26 PM
6	John has done an exceptional job at ensuring the development and implementation of succession plans and career development programs throughout TMWA. He encourages innovative thinking and continues to foster a culture of engagement and collaboration.	10/9/2023 3:16 PM
7	This is an area that required extra attention as we came out of the pandemic issues and with the transition of leadership. I am pleased with his work in these areas	10/6/2023 5:37 PM
8	Too new to observe.	9/26/2023 1:06 PM

Q6 Personal Effectiveness - Evaluation Rating:



Answered: 11 Skipped: 0

ANSWER CI	HOICES	RESPONSES		
Exceeds you	ur expectations	72.73%		8
Meets your e	expectations	27.27%		3
Area for grov	vth	0.00%		0
Not Applicab	le	0.00%		0
TOTAL				11
#	USE THE SPACE BELOW TO PROVIDE ANY ADDITIONAL COMMENT	S YOU MAY HAVE	DATE	

 FOR THIS RATING CATEGORY.

 1

 It is clear to me that John is a kind, skilled professional. As a lawyer, he is focused on operating within the law. But, he also manages as a human being. I'm impressed with his personal effectiveness.

General Manager Performance Evaluation for FY2023 Attachment 2 2 Again, all these listed attributes are embodied by John. 10/11/2023 10:26 AM 3 Mr. Zimmerman is very thoughtful in his approach to challenges. He is also willing to look at 10/11/2023 9:08 AM things in a new way and is willing to take a different approach. He's really enjoyable to work with. 4 I believe in John's style, he's a team-builder and brings people together. 10/10/2023 4:27 PM 5 John is a trusted partner throughout the community, operates with the utmost integrity and 10/9/2023 3:19 PM fosters a culture of safety and compliance with laws and regulations.

Q7 Overall, and keeping unanticipated challenges and timeframes in mind, the General Manager has achieved the goals and business objectives outlined for this appraisal period.



ANSWER CHOICES	RESPONSES	
Exceeds your expectations	90.91%	10
Meets your expectations	9.09%	1
Area for growth	0.00%	0
Not Applicable	0.00%	0
τοται		11

#	ANY ADDITIONAL COMMENTS?	DATE
1	John continues to impress. He is thoughtful and open to constructive criticism - essential if one is to continue growing as a manager. A first year will done! Kudos!	10/12/2023 9:24 AM
2	Personally, I hope to work for John a long time.	10/11/2023 10:28 AM
3	John has achieved the vast majority of the goals and business objectives that were set the time period.	10/11/2023 10:00 AM

10-18-23 BOARD Agenda Item 7

4	I'm thankful to have Mr. Zimmerman at the helm while we are dealing with A+ water, economic challenges, rate changes, and PFAS. He's a great leader for TMWA.	10/11/2023 9:11 AM
5	I believe John has done a great job transitioning to his new role. I trust his vision, I trust his integrity and I believe the employees truly feel that John cares about them.	10/10/2023 4:30 PM
6	John has exceeded my expectations as GM. He fosters an environment of collaboration among his team and employees at TMWA. Employee morale was on shaky ground over the last few years, but it has improved significantly, and much of that is due to John's leadership.	10/10/2023 10:31 AM
7	John has performed at a commendable level in taking over the GM role this past year. He continues to develop and foster a collaborative team approach in all things TMWA. TMWA is facing a big challenge with past and upcoming retirements, but his emphasis on succession planning, recruitment and career development has been effective at maintaining a very high caliber pool of employees.	10/9/2023 3:31 PM
8	Thank you for your dedication and professionalism you bring to the table.	10/6/2023 5:38 PM
9	I appreciate the opportunity to work for John. He is a great leader and truly cares about the organization and our employees.	9/26/2023 10:06 AM

Q8 Please identify any future performance objectives you may have for the General Manager.

Answered: 6 Skipped: 5

#	RESPONSES	DATE
1	Management training Communication training	10/12/2023 9:24 AM
2	Make succession planning and staff development a key priority and habit for TMWA for years to come.	10/11/2023 10:28 AM
3	I do not have any additional performance objectives.	10/11/2023 10:00 AM
4	I believe it should be a priority to continue to try to diversify our hiring and those we promote to leadership in the organization.	10/11/2023 9:11 AM
5	N/A	10/10/2023 4:30 PM
6	With experience, John will gain more confidence in evaluating the best course of action when difficult situations arise. TMWA faces many opportunities and challenges in the future. TMWA needs to focus its efforts on the highest priority objectives and remember its core purpose, deliver high quality water safely and reliably.	10/9/2023 3:31 PM

10-18-23 BOARD Agenda Item 7 JBrechus 10-16-23



General Manager Performance Evaluation for FY2023

Introduction

The General Manager's performance evaluation consists of an annual appraisal by the Board of Directors, as provided for in the General Manager's employment agreement.

The purpose of the evaluation process is to maintain a strong Board/Manager team by ensuring open and productive communication on an annual basis. During this formal review process, there is an opportunity to identify areas of satisfaction and areas for growth or needing change as identified by the Board

The evaluation will be completed by each member of the Board

The Executive Team and Department Heads reporting to the General Manager have been invited to participate in this performance review process

The Human Resources Director is the facilitator for this process, and will gather input from the confidential survey completed by each of the above-referenced individuals. A staff report and the summary results from the evaluation survey will be provided as supporting materials for the public meeting at which the TMWA Board reviews the annual performance of the General Manager.

Rating Criteria:

For each performance criteria, please use the following rating scale

- E Exceeds your expectations
- M ~ Meets your expectations
- AG Areas for growth
- NA Not applicable

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General Manager Performance Evaluation for FY2023

Organizational Leadership

Consider the following when assessing the General Manager's organizational leadership performance:

- Anticipates and clearly communicates risks and changes in market conditions and other factors affecting TMWA's fulfillment of its Vision and Business Objectives;
- Participates with Board and Staff in strategic planning;
- Clearly articulates and advances the strategic priorities to be addressed over the next 3-5 years;
- Sets and communicates clear operational priorities for the organization,
- Implements new programs and services growing out of the strategic planning process;
- Creates and maintains a high performing culture in the organization including strong employee morale, accountability, and cohesiveness;
- Performs as the leading role model, setting high professional work standards and pursues goals with honesty, respect, determination, and initiative,
- Handles emergencies and crisis situations in an effective, efficient, and professional manner;
- Directs the utilization of TMWA resources effectively.

1. Organizational Leadership - Evaluation Rating:



Area for growth

Meets your expectations C Not Applicable



Relations with Board/Governance

Consider the following when assessing the General Manager's relations with the Board:

- Communicates necessary information openly and honestly in a timely and organized fashion;
- Establishes and maintains positive and effective working relationships with each member of the Board;
- Has been consistently available to individual Board members whenever necessary;
- Conforms to Board polices and directives;
- Demonstrates a respectful understanding of the Board's governance role and has supported the Board in its oversight of the organization;
- Contributes significant information and important agenda topics for discussion at Board level;
- Synthesizes information and frames issues and questions in a manner for the Board to make appropriate decisions;
- Makes periodic reports to the Board regarding important aspects of TMWA's functions and operations, highlighting both achievements and areas of concern;

2. Relations with Board/Governance- Evaluation Rating:



O Area for growth

O Not Applicable



Communication Skills

Consider the following when assessing the General Manager's Communication skills:

- Negotiates effectively and is able to handle difficult situations;
- Is concise and persuasive orally and in writing;
- Listens to what is said and is sensitive to the impact on others;
- Demonstrates empathy regarding others and exhibits concern for everyone as individuals;
- Exercises good judgement in dealing with sensitive issues between individuals or between groups;
- Effectively delivers presentations and engages with the media;
- Communicates effectively with Board Leadership and Board Members;

3. Communication Skills- Evaluation Rating:

Exceeds your expectations

C Area for growth

🔘 Not Applicable

 Meets your expectations

Use the space below to provide any additional comments you may have for this rating category.

I think that GM is thoughtful and considerate of different points of view and perspectives. Be these of Board Members, othere agencies, member of the public or interest groups.



Relations with Community and Stakeholders

Consider the following when assessing the General Manager's relations within the community and with stakeholders:

- Ability to relate well to others and to make people feel at ease, even in difficult situations;
- Ability to gain the trust and confidence of the public;
- Fosters contact and cooperation among citizens, community organizations and other government agencies;
- Understands and embraces the concept of inter-local cooperation when appropriate;
- Fosters cooperative communications and working relationships within the community to ensure that TMWA remains a significant partner within the community;
- Maintains affiliation with professional associations relevant and beneficial to the successful operation of TMWA

4. Relations with Community/Stakeholders- Evaluation Rating:

O Exceeds your

Meets your expectations C Area for growth

expectations

O Not Applicable



Management of Staff

Consider the following when assessing the General Manager's performance in management of staff:

- Sets organizational tone that attracts, retains, motivates and develops highly skilled employees;
- Establishes and maintains open and collaborative relationships throughout the organization;
- Models behaviors and attitudes which promote individual responsibility, programmatic and professional excellence and creative initiative;
- Ensures the development and implementation of succession plans and professional development programs;
- Encourages innovative thinking and solutions and effectively incorporates the ideas and contributions of others;
- Nurtures a culture of engagement and collaboration that focuses on fulfilling TMWA's vision and business objectives;
- Appropriately delegates authority, granting proper authority at proper times;
- Is open and responsive to employee feedback;
- Encourages and rewards initiative;
- Recruits and develops a cohesive leadership team to implement organizational goals and objectives.

5. Management of Staff- Evaluation Rating:

Exceeds your expectations

O Area for growth



🔘 Not Applicable



Personal Effectiveness

Consider the following when assessing the General Manager's personal effectiveness:

- Maintains a professional image that reflects positively on the organization and builds trust and support from all stakeholders;
- Demonstrates empathy regarding others and exhibits concern for everyone as individuals;
- Skillfully analyzes and addresses problems, challenges and conflicts while comfortably navigating ambiguity and complexity;
- Adapts quickly and is flexible to new demands and changes;
- Performs at a very high standard of ethics and integrity;
- Ensures that the organization, its staff and its programs operate in compliance will all applicable local, state, and federal laws and regulations;
- Pursued professional development resulting in increased capabilities and potential;

6. Personal Effectiveness - Evaluation Rating:

Exceeds your expectations

O Area for growth

🔿 Not Applicable

Heets your expectations
TRUCKEE MEADOWS WATE A U T H O R 1 T Quality. Delivered,	General Manager Performance Evaluation for FY2023					
Overall Rating and General Co	Overall Rating and General Comments					
 7. Overall, and keeping unantic Manager has achieved the goal Exceeds your expectations Meets your expectations 	ipated challenges and timeframes in mind, the General is and business objectives outlined for this appraisal period O Area for growth O Not Applicable					
Any additional comments?						

8. Please identify any future performance objectives you may have for the General Manager

I think that the future of recylced effluent into drinking water as "fast tracked" by the now completed expansion to the RSWRF poses an issue for the agency and GM needs to tackle the uncertainty that exists around this issue.

I am also concerned that the Palamino Farm feasibility recharge program is not being vetted as carefully as should be or that communication about the project's progrss is being shared.

Finally, I think GM needs to keep the Agency, Board Members and our customer base aware of the changing water resources environment in northern Nevada as competition for those resources escalates. The Board should have a policy about our role vis a vis other interests in this arena.

Overall, I am pleased with GM's performance and am confident in his ability to lead

the organization for another year.

EMPLOYMENT AGREEMENT

1. PARTIES AND RECITALS

This Employment Agreement ("<u>Agreement</u>") is entered into on July_, 2022 ("<u>Effective</u> <u>Date</u>") by and between the Truckee Meadows Water Authority, by and through its duly constituted Board of Directors ("<u>TMWA</u>"), a political subdivision of the State of Nevada and a public entity organized pursuant to NRS 277.110, et. seq., and John Zimmerman ("<u>Zimmerman</u>"), collectively the "<u>Parties</u>".

1.1 TMWA was formed to exercise powers, privileges and authorities to develop and maintain supplies of water for the benefit of the Truckee Meadows community;

1.2 TMWA desires to retain the services of Zimmerman as General Manager;

1.3 Zimmerman desires employment as General Manager of TMWA;

1.4 The parties desire to enter into an agreement reflecting the terms and conditions under which Zimmerman will be employed by TMWA as its General Manager; and

1.5 TMWA desires that Zimmerman overlap with the existing General Manager for business continuity purposes and that during the overlap Mr. Mark Foree will retain his authority unless Mr. Foree designates Zimmerman as Acting General Manager through October 15, 2022.

1.6 For purposes of this Agreement October 15th of each year will be deemed the "Anniversary Date."

NOW, THEREFORE, in consideration of their mutual covenants contained herein, TMWA and Zimmerman agree as follows:

2. EMPLOYMENT

TMWA hereby employs Zimmerman and Zimmerman agrees to serve as the General Manager of TMWA to perform the functions and duties specified in Section 3 for the term specified in Section 5.

3. DUTIES/ESSENTIAL JOB FUNCTIONS

3.1 Zimmerman agrees that during the Term of Employment (as defined in Section 5.1) he will hold the office of General Manager of TMWA reporting to TMWA's Board of Directors (the "<u>Board</u>"). Zimmerman agrees to perform faithfully and to the best of his ability such duties and assignments relating to the business of TMWA as the Board of Directors of TMWA shall direct.

3.2 During the Term of Employment Zimmerman shall, except during customary vacation periods and periods of illness, devote his business time and attention to the performance of his duties hereunder and to the business and affairs of TMWA and to promoting the best interests of TMWA. Zimmerman shall not, either during or outside of normal business hours, engage in any activity inimical to the best interests of TMWA. Notwithstanding the foregoing, Zimmerman may engage in charitable or civic pursuits provided that such service or pursuits do not interfere with Zimmerman's obligations under the Agreement.

4. SALARY

TMWA agrees to pay Zimmerman for his services an annual base salary of (\$223,297.00) ("<u>Base Salary</u>") beginning on the Effective Date. Zimmerman's Base Salary shall automatically adjust in incrementing steps on July 1, 2023 and each July 1 thereafter until he reaches the "Market" step of the General Manager wage band. Zimmerman will have an opportunity to earn a Base Salary increase and a lump sum award based upon Zimmerman's specific job performance in meeting the mutually agreed upon goals for the previous year. The Board and Zimmerman will meet by December 1, 2022 to set initial performance goals for the 2022-23 fiscal year. The Board shall evaluate Zimmerman's performance pursuant to Section 6 and in its sole discretion may determine a performance lump sum award or any salary adjustment in accordance with Section 6 of this Agreement. This adjustment may be made either to the Base Salary or in the form of a lump sum award or as a combination of the two at the sole discretion of TMWA. The total award (addition to Base Salary plus lump sum award) may be up to 10% of Base Salary. Any portion of a salary adjustment granted as a lump sum award shall not become part of Zimmerman's Base Salary for future years.

5. TERM AND TERMINATION

- **5.1** <u>**Term.**</u> The term of this Agreement ("Initial <u>Term</u>") is two (2) years beginning on the first Anniversary Date of this Agreement (October 15, 2022); subject, however, to prior termination as provided herein. The Term of Employment shall automatically be extended, with the same terms to the extent they comply with applicable Nevada law, for an additional two years from the third Anniversary Date (October 15, 2024) ("<u>Extension Term</u>"), unless either party provides written notice to the other party no later than May 31, 2024 of its election not to extend the Initial Term. The Initial Term and Extension Term, as applicable, are referred to as the "<u>Term of Employment.</u>"
- **5.2** <u>**Renewal of Contract.**</u> If the Extension Term is exercised, the Parties agree to meet and confer no later than May 31, 2026, to decide if the Parties will negotiate an amendment to this contract.

5.3 <u>Events of Termination</u>. The Term of Employment, Zimmerman's Base Salary, and any and all other rights of Zimmerman under this Agreement or otherwise as an employee of TMWA shall terminate (except as otherwise provided in this Section) for the reasons and at the times set forth below:

- (a) Immediately upon the expiration of the Term of Employment;
- (b) Immediately upon the death of Zimmerman;

(c) Upon the disability of Zimmerman (as defined in Section 5.4) immediately upon written notice from either party to the other;

(d) For Cause (as defined in Section 5.5) immediately upon notice from TMWA to Zimmerman, or at such later time as such notice may specify;

(e) For convenience by Zimmerman following no less than 120 days written notice, unless the parties subsequently agree to a different notice period; or

(f) For convenience by TMWA following no less than thirty (30) days written notice; provided Zimmerman shall be entitled to severance pay as set forth in Section 5.5.

5.4 Definition of Disability. For purposes of Section 5.3(c), Zimmerman will be deemed to have a "disability" if, Zimmerman is unable to perform the essential functions of his duties under this Agreement, with or without a reasonable accommodation, including granting Zimmerman some finite amount of leave, due to disability caused by sickness, accident, injury, mental or physical incapacity. The disability of Zimmerman will be determined by a medical doctor selected by written agreement of TMWA and Zimmerman upon the request of either party by notice to the other. If TMWA and Zimmerman cannot agree on the selection of a medical doctor, each of them will select a medical doctor and the two medical doctors will select a third medical doctor who will determine whether Zimmerman has a disability. The determination of the medical doctor selected under this Section 5.4 will be binding on both parties. Zimmerman must submit to a reasonable number of examinations by the medical doctor making the determination of disability under this Section 5.4, and Zimmerman hereby authorizes the disclosure and release to TMWA of such determination and all supporting medical records. If Zimmerman is not legally competent, Zimmerman's legal guardian or duly authorized attorneyin-fact will act in Zimmerman's stead, under this Section 5.4, for the purposes of submitting Zimmerman to the examinations, and providing the authorization of disclosure, required under this Section 5.4.

For the sake of clarity, any leave granted to Zimmerman as a reasonable accommodation, during which he is unable to perform his duties under this Agreement, will be paid for up to 90 days. Any additional leave that may become necessary as a reasonable accommodation beyond the 90-day period—and during which Zimmerman is not performing any duties under this Agreement—will be unpaid. Nothing in this Agreement affects the parties' ability to discuss and implement alternative accommodations, if needed, such as reassignment of Zimmerman to another position for which he is qualified and the duties of which he can perform.

5.5 <u>Definition of "For Cause"</u>. For purposes of Section 5.3(d), the phrase "For <u>Cause</u>" means: (a) Zimmerman's material breach of this Agreement or gross negligence in the performance of his required duties as TMWA General Manager; (b) Zimmerman's failure to adhere to any written policy of TMWA or lawful direction of the TMWA Board if Zimmerman

has been given a reasonable opportunity to comply with such policy or direction or cure his failure to comply; (c) the appropriation or attempted appropriation of a material business opportunity of TMWA, including attempting to secure or securing any personal profit in connection with any transaction entered into on behalf of TMWA; (d) any act of dishonesty, fraud, embezzlement, theft, or misappropriation or attempted misappropriation of any of TMWA's funds or property; (e) the conviction of, the indictment for or its procedural equivalent, or the entering of a guilty plea or plea of no contest with respect to, a felony, the equivalent thereof, or any other crime with respect to which imprisonment is a possible punishment; (f) Zimmerman's material violations of TMWA employment policies; (g) Zimmerman's willful or material violation of the Code of Ethical Standards set forth in NRS Chapter 281A; or (i) for any other reason constituting cause as that term may otherwise be defined under Nevada law.

5.6 <u>**Termination Pay**</u>. Effective upon the termination of this Agreement, TMWA will be obligated to pay Zimmerman (or, in the event of his death, his designated beneficiary as defined below) only such compensation as is provided in this Section 5.6, and in lieu of all other amounts and in settlement and complete release of all claims Zimmerman may have against TMWA. For purposes of this Section 5.6, Zimmerman's designated beneficiary will be such individual beneficiary or trust, located at such address, as Zimmerman may designate by notice to TMWA from time to time or, if Zimmerman fails to give notice to TMWA of such a beneficiary, Zimmerman's estate. Notwithstanding the preceding sentence, TMWA will have no duty, in any circumstances, to attempt to open an estate on behalf of Zimmerman, but will act reasonably in ascertaining the whereabouts of Zimmerman's beneficiaries and seeing to it that such beneficiaries are properly paid.

(a) If this Agreement is terminated by either party as a result of Zimmerman's death or disability as determined under Section 5.4, by TMWA "For Cause" pursuant to Section 5.3(d) or by Zimmerman for convenience pursuant to Section 5.3(e), TMWA shall pay Zimmerman his Base Salary accrued through the date of termination plus any accrued unused PTO as set forth in section 8 below.

(b) If TMWA terminates this Agreement for convenience pursuant to Section 5.3(f), TMWA agrees to pay Zimmerman severance pay equal to Zimmerman's sixmonth Base Salary and a lump sum payment equal to the six month's of the employer's share of health insurance premiums, calculated using Zimmerman's enrollment tier at the time of separation upon the effective date of such termination plus any accrued unused PTO as set forth in section 8 below. This payment shall be made 60 days after separation and will be contingent upon Zimmerman signing a release of all claims.

5.7 <u>Non-Renewal of Agreement</u>. In the event TMWA elects not to renew or extend this Agreement beyond the Initial Term by providing written notice pursuant to Section 5.1, all compensation, benefits and requirements of the Agreement shall remain in effect until the expiration of the Initial Term, unless the Agreement is terminated sooner as provided herein, and

Zimmerman will receive severance pay as set forth in Section 5.6(b) above upon the expiration of the Initial Term.

6. **PERFORMANCE EVALUATION**

TMWA's Board of Directors will review and evaluate Zimmerman's performance at least once annually on or within four months after the end of the fiscal year. Zimmerman's annual salary review and any adjustment to compensation will coincide with the annual performance evaluation timeframes established for all TMWA employees.

7. **RETIREMENT**

7.1 Subject to applicable laws, TMWA will contribute an amount equal to 8% of Zimmerman's base salary to a deferred compensation plan on Zimmerman's behalf.

7.2 TMWA agrees that Zimmerman will be a member of the Nevada Public Employees Retirement System at TMWA's expense.

8. PAID TIME OFF

8.1 Zimmerman will be granted 40 days of compensated paid time off ("<u>PTO</u>") each year for personal use, including vacation and illness. Accrued but unused PTO may be taken as pay in accordance with TMWA's PTO Cash Out Policy or carried over to the next calendar year as set forth in Section 8.2.

8.2 Accrued but unused PTO will be carried over from year to year. A maximum of 320 PTO hours can be carried over each calendar year. Upon termination of Zimmerman's employment, Zimmerman will be entitled to full compensation for his accrued, unused PTO.

9. DUES, SUBSCRIPTIONS AND PROFESSIONAL DEVELOPMENT

9.1 TMWA agrees to pay the professional dues, certifications and subscriptions of Zimmerman necessary for his continuation and participation in national, regional, state and local associations and organizations necessary and desirable for his continued professional participation, growth and advancement, and for the good of TMWA.

9.2 TMWA agrees to pay the travel and subsistence expenses of Zimmerman for professional and official travel and meetings adequate to continue the professional development of Zimmerman as the general manager of a water utility and to adequately pursue necessary official functions for TMWA. Such travel and subsistence expenses must be approved by TMWA's Chief Financial Officer and cannot exceed \$20,000.00 dollars annually. If the costs will exceed \$20,000.00 they must be submitted to and approved by the Chair of the TMWA

Board. TMWA will also pay for Zimmerman's attendance at conferences, seminars and short courses which are deemed to be of value to TMWA.

10. EXPENSES, ALLOWANCES AND OTHER BENEFITS

10.1 Zimmerman will be paid a fixed sum of \$750 per month for the use of his personal vehicle for TMWA business, with future increases to be determined by TMWA as a part of the budget cycle.

10.2 TMWA agrees to pay Zimmerman a fixed sum of \$150 per month as a cell phone/personal digital assistance (PDA) allowance.

10.3 TMWA will pay all costs of any fidelity or other bonds required of Zimmerman by virtue of his employment with TMWA.

10.4 Zimmerman will receive all other benefits provided to management employees, and nothing in this contract affects Zimmerman's ability to receive any benefit provided to management employees. In the event there is a conflict between the benefits provided to management employees and the terms of this contract, the greater benefit will prevail.

11. TEAM BUILDING, GOALS AND RETREATS

TMWA agrees that annually TMWA's Board of Directors will schedule and participate in the following:

- (a) A goals-setting session to develop objectives for TMWA; and
- (b) A session to develop specific criteria to serve as the basis for Zimmerman's pay-for-performance clause set forth in Section 6 of this agreement. This session will be held within four months after the end of each fiscal year of the Term of Employment.

12. MISCELLANEOUS

12.1 The captions in this agreement are not part of the provisions hereof, are merely for the purpose of reference and shall have no force or effect for any purpose whatsoever, including the construction of the provisions of this Agreement, and if any caption is inconsistent with any provisions of this Agreement, such provisions shall govern. The Recitals are part of this Agreement.

12.2 This Agreement is made in and shall be governed by and construed in accordance with the internal laws of the State of Nevada.

This Agreement contains a complete statement of all of the arrangements between 12.3 the parties with respect to the subject matter hereof. There are no representations, agreements, arrangements or understandings, oral or written between the parties relating to the subject matter of this Agreement, which are not fully expressed in this Agreement.

This Agreement may not be waived, changed, modified or discharged orally, but 12.4 only by an agreement in writing signed by the party against whom any waiver, change, modification or discharge is sought.

12.5 All notices given hereunder shall be in writing and shall be sent by registered or certified mail, return receipt requested as such other address as TMWA and Zimmerman designate. Each such notice shall be deemed to be given on the date received at the address of the addressee.

12.6 If litigation over this Agreement is initiated in any court, the Parties agree the proper venue is Washoe County, Nevada. Zimmerman irrevocably (i) waives and agrees not to assert in any such action, suit or other proceeding that he is not personally subject to the jurisdiction of such courts, that the action, suit or other proceeding is brought in an inconvenient forum or that the venue of the action, suit or other proceeding is improper, (ii) waives personal service of any summons, complaint or other process and (iii) agrees that the service thereof may be made by certified or registered mail directed to Zimmerman at his address for purposes of notices hereunder. Should Zimmerman fail to appear or answer within the time prescribed by law, he shall be deemed in default and judgment may be entered by TMWA against him for the amount or other relief as demanded in any summons, complaint or other process so served.

IN WITNESS WHEREOF, the parties have executed this Agreement the day and year first hereinabove written.

TMWA

Dated this 26 day of July , 2022

af Harting

By:

Vaughn Hartung, Chairman

Approved as to form:

ptitt

Lucas Foletta, Esq. General Counsel

GENERAL MANAGER

Dated this _____ day of _____, 2022

By: ______ John R. Zimmerman

12.3 This Agreement contains a complete statement of all of the arrangements between the parties with respect to the subject matter hereof. There are no representations, agreements, arrangements or understandings, oral or written between the parties relating to the subject matter of this Agreement, which are not fully expressed in this Agreement.

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IN WITNESS WHEREOF, the parties have executed this Agreement the day and year first hereinabove written.

TMWA

Dated this day of , 2022

By:

Vaughn Hartung, Chairman

Approved as to form:

GENERAL MANAGER

Dated this 26 day of J_{uly} , 2022

By: John R. Zimmerman

Lucas Foletta, Esq. General Counsel



October 10, 2023

Mr. John Zimmerman General Manager, Truckee Meadows Water Authority PO Box 30013 Reno, NV 89520-3013

Re: Notice of meeting of the TMWA Board of Directors meeting to evaluate your performance, discuss your employment contract and consider your professional competence

Mr. Zimmerman,

The TMWA Board, at its meeting scheduled for Wednesday, October 18, 2023, at 10:00 AM, will conduct an annual evaluation of your performance as General Manager. In addition, the TMWA Board may also discuss your employment contract. In the process of these discussions, the Board may consider your professional competence and make take administrative action related to your compensation.

This public meeting will take place at TMWA's Corporate office located at 1355 Capital Blvd, Reno, NV, 89502.

By signing below, you acknowledge personal receipt of this notice.

This notice is being provided to you in accordance with NRS 241.033.

Sincerely,

Eristophur Dalur Kristopher Dahir, Chair Truckee Meadows Water Authority Board of Directors

RECEIPT

John Zimmerman acknowledges personal receipt of written notice of the foregoing as of 10/10/2023 + 8:48 AM PDT.

John Einmerman John Zimmerman



Water Supply Update

Board of Directors Meeting

October 18, 2023



Lake Tahoe Elevation (2011-2023)





U.S. Drought Monitor

10-18-23 BOARD Agenda Item 8



Data valid: October 10, 2023 at 8 a.m. EDT

Intensity



Authors

United States and Puerto Rico Author(s): Brad Pugh, NOAA/CPC

Pacific Islands and Virgin Islands Author(s): Anthony Artusa, NOAA/NWS/NCEP/CPC





West

TMWA System Storage (Oct 10, 2023)



MAX SYSTEM CAPACITY 1,068,270 AF

CURRENT STORAGE 819,639 (77% Capacity)

Page 4 of 7 TRUCKE MEADOWS WATER ORI Quality. Delivered.

10-18-23 BOARD Agenda Item 8 Normal Source of Supply Operations Once Again in 2024



Surface Water Production (MGD) 🔲 Ground Water Production (MGD) 🚺 🗖 🗔 Reservoir Storage (MGD)



Key Points

- o 2023 April 01 snowpack in the Lake Tahoe Basin was largest ever recorded
- This monster snowpack year in effect ended the 3-drought on the Truckee System
- Record streamflow runoff also occurred along with all reservoirs filling and even spilling (Tahoe came close to filling reaching 87% capacity)
- Lake Tahoe physically rose ~5.80 feet from a low on 12/1/22 until it peaked in mid-July (6222.50'- 6228.30')
- As a result, a tremendous amount of upstream storage will be carried-over into the winter months setting the region up for the following year
- An average winter this year 2023/2024 would mean that Lake Tahoe fills or comes close to filling again next summer
- Normal river flows are projected at least through the end of next year (2024) regardless of what happens this winter
- The region is extremely well positioned from a water supply perspective



Thank you! Questions?

Bill Hauck, Water Supply Supervisor Email: bhauck@tmwa.com O: (775) 834-8111 M: (775) 250-1333





STAFF REPORT

TO:Board of DirectorsTHRU:John R. Zimmerman, General ManagerFROM:Sophia Cardinal, Financial ControllerDATE:September 29, 2023SUBJECT:Required Communication from Eide Bailly regarding TMWA's Annual
Financial Audit

Summary

The attached written communication from TMWA's external auditors, Eide Bailly, sets forth expectations for conducting and completing the audit of TMWA's financial statements and related disclosures for the fiscal year ended June 30, 2023. The Eide Bailly communication also defines the roles and responsibilities of TMWA's management, Eide Bailly, and the TMWA Board of Directors.



CPAs & BUSINESS ADVISORS

July 24, 2023

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

This letter is provided in connection with our engagement to audit the financial statements of Truckee Meadows Water Authority ("TMWA") as of and for the year ended June 30, 2023. Professional standards require that we communicate with you certain items including our responsibilities with regard to the financial statement audit and the planned scope and timing of our audit, including significant risks we have identified.

Our Responsibilities

As stated in our engagement letter dated March 13, 2023, we are responsible for conducting our audit in accordance with auditing standards generally accepted in the United States of America and in accordance with *Government Auditing Standards* for the purpose of forming and expressing an opinion about whether the financial statements that have been prepared by management, with your oversight, are prepared, in all material respects, in accordance with accounting principles generally accepted in the United States of America. Our audit does not relieve you or management of your respective responsibilities.

Planned Scope of the Audit

Our audit will include examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements; therefore, our audit will involve judgment about the number of transactions to be examined and the areas to be tested. Our audit is designed to provide reasonable, but not absolute, assurance about whether the financial statements as a whole are free of material misstatement, whether due to error, fraudulent financial reporting, misappropriation of assets, or violations of laws or governmental regulations. Because of this concept of reasonable assurance and because we will not examine all transactions, there is a risk that material misstatements may exist and not be detected by us.

Our audit will include obtaining an understanding of the entity and its environment, including its internal control, sufficient to assess the risks of material misstatement of the financial statements and as a basis for designing the nature, timing, and extent of further audit procedures, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control over financial reporting. However, we will communicate to you at the conclusion of our audit, any material weaknesses or significant deficiencies identified. We will also communicate to you:

- Any violation of laws or regulations that come to our attention;
- Our views relating to qualitative aspects of the entity's significant accounting practices, including accounting policies, accounting estimates, and financial statement disclosures;
- Significant difficulties, if any, encountered during the audit;
- Disagreements with management, if any, encountered during the audit;
- Significant unusual transactions, if any;

- The potential effects of uncorrected misstatements on future-period financial statements; and
- Other significant matters that are relevant to your responsibilities in overseeing the financial reporting process.

Professional standards require us to design our audit to provide reasonable assurance that the financial statements are free of material misstatement whether caused by fraud or error. In designing our audit procedures, professional standards require us to evaluate the financial statements and assess the risk that a material misstatement could occur. Areas that are potentially more susceptible to misstatements, and thereby require special audit considerations, are designated as "significant risks." Although we are currently in the planning stage of our audit, we have preliminarily identified the following significant risks that require special audit consideration.

- Management Override of Controls Professional standards require auditors to address the possibility of management overriding controls. Accordingly, we identified as a significant risk that management of the organization may have the ability to override controls that the organization has implemented. Management may override the organization's controls in order to modify the financial records with the intent of manipulating the financial statements to overstate the organization's financial performance or with the intent of concealing fraudulent transactions.
- Improper Revenue Recognition Professional standards include a presumptive risk of revenue recognition. Accordingly, we identified revenue recognition related to certain revenues primarily related to operating revenues, as a significant risk due to financial and operational incentives for the organization to overstate revenues.
- Unbilled Receivables We identified unbilled receivables as a significant risk due to the risk that delivered but unbilled water is not recorded as operating revenue.
- Improper Allocation of Indirect Administrative Costs to Capital Assets We identified this as a significant risk as the amounts allocated are subject to significant estimation.
- Valuation of Developer Dedicated Infrastructure and Other Donated Capital Assets We identified this as a significant risk as the valuation of these assets is subject to significant estimation.
- OPEB and Pension Estimates We identified OPEB and pension estimates as a significant risk due to the risk that the assumptions used to estimate OPEB and pension amount are incorrect due to management's judgement.
- Completeness of Subscription Based Information Technology Agreements We identified completeness of these agreements as a significant risk to ensure that all agreements that fall under the scope of GASB 96, *Subscription Based Information Technology Agreements*, are properly identified and accounted for.

We expect to begin our audit on approximately October 9, 2023 and issue our report by November 30, 2023.

This information is intended solely for the information and use of management and those charged with governance and is not intended to be and should not be used by anyone other than these specified parties.

Respectfully,

Erde Bailly LLP

Reno, Nevada

10-18-23 BOARD Agenda Item 10



Online Customer Satisfaction Study Wave 3 – June 2023

TMWA Satisfaction Study: Methodology

- Truckee Meadows Water Authority (TMWA) created a new, bi-annual, online Customer Satisfaction Study in 2022.
- This presentation summarizes the results of the Wave 3, conducted in June 2023, in comparison to Wave 2 in September 2022 and Wave 1 in June 2022.
- Overall, Wave 3 had 814 respondents for a 3.7% response rate, while Wave 2 had 640 respondents (4.2%) and Wave 1 had 810 respondents (3.4%).
- The primary objectives of the Satisfaction Study were to obtain TMWA Customers' feedback regarding their:
 - (1) Overall satisfaction with TMWA,
 - (2) Confidence in TMWA's water quality, stewardship, and infrastructure,
 - (3) Usage of the online account platform, and
 - (4) Views about water conservation and the water supply.
- All statistically significant differences are noted; the absence of a notation means that the differences were not statistically significant.

TMWA Satisfaction Study: Overall Satisfaction with TMWA



TMWA Satisfaction Study: Mean Level of Agreement – Wave 3

Strongly Agree Agree Neut	tral Disagree	or Strongly Disagree	5-Star
			Mean:
My water bill is easy to read and understand.	62%	25% 9%	4.43
I receive high quality drinking water from TMWA.	54%	26% 14%	6% 4.25
I trust TMWA to effectively manage our water supplies.	51%	28% 14% 7	% 4.21
TMWA's water management approach is based on sound science and information.	49%	27% 17% 7	% 4.16
TMWA's bill inserts, electronic newsletters, and webpages are informative.	49%	28% 16% 7	% 4.14
The water I receive is reasonably priced.	43%	30% 18% 9	% 4.03
00	% 20% 40	% 60% 80%	100%

TMWA Satisfaction Study: Mean Level of Agreement – Wave 1, 2, & 3



TMWA Satisfaction Study: Online TMWA Account





*The source was predominantly based on customers with online accounts.

TMWA Satisfaction Study:

Level of Interest in How TMWA Will Manage the Region's Water – Waves 1, 2, & 3

(Percentage of Total with Up to Two Selections Allowed; Y-Axis = 0-60%)



LinfoSearch^{*} *Exa

*Excludes the 1% each who selected "No Interest," "Other," or "No Answer."

TMWA Satisfaction Study: Assigned Day Watering



TMWA Satisfaction Study: Percent <u>Not</u> Aware of Assigned Day Watering by Years as a TMWA Customer



TMWA Satisfaction Study: Main Motivations to Conserve Water

(Percentage of Total with Up to Two Selections Allowed*)



EInfoSearch[®]

*Excludes the 1% who selected "Other" in each wave.

TMWA Satisfaction Study: Regression Analysis of Key Predictors of Overall Satisfaction

(Based on and Limited to Ratings Asked on Questionnaire)

	Variables Entered in Waves 1 & 2 (Combined)	Adjusted R ²		Variables Entered in Wave 3	Adjusted R ²
1	Scientific Management: I believe TMWA's water management approach is based on sound science and information.	.665	1	Effective Management: I trust TMWA to effectively manage our water supplies.	.708
2	Price: The water I receive is reasonably priced.	.732	2	Price: The water I receive is reasonably priced.	.774
3	Water Quality: I receive high quality drinking water from TMWA.	.755	3	Water Quality: I receive high quality drinking water from TMWA.	.795



STAFF REPORT

	direction to staff on updating the Water System Facility fees	
SUBJECT:	Discussion and possible approval of the 2040 Water Facility Plan and	
DATE:	October 12, 2023	
	Danny Rotter, Director of Engineering	
FROM:	David Kershaw, Engineering Manager	
THRU:	John R. Zimmerman, General Manager	
TO:	Board of Directors	

SUMMARY

- TMWA has completed an update of its Water System Facility Plan (WFP) for the 2020-2040 planning period (2040 WFP).
- The 2040 WFP establishes maximum day demands for growth projections based on the previously approved TMWA 2020-2040 Water Resource Plan (Board approval 10/21/2020) and estimates where the growth will occur.
- The primary product of the 2040 WFP is a 20-year Capital Improvement Plan (CIP) which feeds into the Funding Plan, the annually updated 5-year CIP Plan and provides the basis for updating Water System Facility Charges (developer connection fees).
- The 2040 WFP examines service levels and the ability of the water system to meet the requirements in Nevada Administrative Code (NAC) 445A both now and in the future.
- Water System Facility Charges (connection fees) should be updated to reflect increased construction cost estimates.

RECOMMENDATION

Staff is requesting Board approval of the 2020-2040 Water System Facility Plan Update, dated October 2023.

DISCUSSION

The objectives of the 2040 WFP were to:

- 1. Analyze existing and future system demands using recent consumption data.
- 2. Determine the water facilities required to serve projected demands and meet NAC water service requirements and TMWA design criteria.
- 3. Determine if modifications are necessary to water facility recommendations in the previous WFP.

- 4. Identify revised in-service dates and update cost estimates for recommended water system facilities to provide the basis for updating TMWA's funding plan and developer Water System Facility (WSF) charges (new business connection fees).
- 5. Identify facility improvements to mitigate legacy low fire flows.
- 6. Analyze the ability of the water system to continue operating with the loss of supply from the Truckee River.

Major findings and conclusions presented in the 2040 WFP include:

- Compared to the previous WFP, the Maximum Day Demand (MDD) rate of growth has decreased, resulting in future MDD that is less than previous predictions. Therefore, major surface water supply and treatment projects (like Chalk Bluff Phase 4) will be delayed – possibly out to around 2060.
- Areas of growth have not changed significantly from previous WFP, so many of the facilities recommended in previous WFP's will still be required, but the timing of projects will be delayed.
- New or expanded facility improvements include increased supply to the South Truckee Meadows and Verdi areas, treatment of groundwater in Spanish Springs, consolidation of pump stations into "Super" pump stations in west Reno, construction of Advanced Purified Water Treatment (APWT) facility in Stead, Orr Ditch Pump Station & Hydroelectric facility replacement, and transmission main replacements.
- Supply capacity improvements that include Chalk Bluff, Sparks Groundwater Treatment Facility, and Longley treatment facility are not required prior to 2040.
- Prioritized fire flow improvements should be pursued as a long-term project. Other fire flow capacity improvements (main replacements) should be constructed during major road reconstruction projects.

Regarding the improvements recommended in the 2040 WFP, total expenditures for the 20-year period are estimated as follows:

Facility Category	Total Cost	Cost Allocated To Growth
Supply	\$ 178,600,000	\$ 99,100,000
Storage	\$ 37,200,000	\$ 18,500,000
Distribution	\$201,800,000	\$ 76,500,000
Totals	\$417,600,000	\$194,100,000

Water Facility Expenditures 2020-2040

Regarding NAC Compliance, the 2040 WFP found that:

- Identified treatment and production capacity is adequate through at least 2040 (NAC 445A.6672, adequate to meet MDD & PHD).
- Identified total capacity is adequate through at least 2040 (NAC 445A.66725, adequate to meet MDD w/Alternative Pumping Capacity + Storage).
- Overall, a system-wide storage surplus will exist through 2040; however, there are some minor deficiencies within specific tank/pressure zones. The available Alternative Pumping

Capacity and/or capacity available through system interties satisfies these deficiencies (NAC 445A.6674 adequate pressure and fire flow, .66745 operating storage, .6675 emergency reserve, .66755 alternative pumping capacity).

• There are some legacy pressure and fire flow deficiencies (especially in former Washoe County systems) that will need further analysis to determine the most efficient and cost-effective remedy.

RECOMMENDED MOTION

Move to approve the TMWA 2020-2040 Water System Facility Plan Update dated October 2023.

10-18-23 BOARD Agenda Item 11

2020-2040

WATER SYSTEM FACILITY PLAN

UPDATE

OCTOBER 2023





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- Peaking Factors & New Business MDD Calculations Memos
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SECTION 1

INTRODUCTION

BACKGROUND:

The 2020-2040 Water System Facility Plan (WFP) update is the fourth WFP prepared since the inception of TMWA in June 2001. The initial facility plan (2025) WFP) was approved in 2004 at a time when the rate of new development was nearing its peak. The second facility plan (2030 WFP) was published in 2010 in the midst of a recession caused by the fallout from the subprime mortgage financial crisis which produced a virtual halt to new development activity in the Truckee Meadows. The economic slowdown: loss of jobs and subsequent increase in residential vacancies; and to a lesser extent the effects of price elasticity resulting from conversion to an essentially fully metered system combined to produce a significant reduction in peak day water use, or maximum day demand (MDD). Other factors contributing to the decrease in peak day use include conversion from a 2-day per week outdoor watering schedule to a 3-day per week irrigation schedule in 2010 and a certain amount of demand hardening (a permanent decrease in water use) when TMWA asked its customers to conserve near the end of the drought period in the summer/fall of 2014 and 2015. Water demand growth projections in the third (2035 WFP) update were adjusted upward based on increased growth occurring at the time of the update but demand hardening continued to impact demands. Comparisons of actual MDD to the projections presented in the previous three WFP's are summarized below:

Year	2025 WFP MDD (MGD)*	2030 WFP MDD (MGD)	2035 WFP MDD (MGD)	Actual MDD (MGD)
2005	153.1			148.3
2006	154.2			140.8
2007	155.4			136.7
2008	156.6			133.2
2009	158.1			128.8
2010	159.6	136.8		123.2
2011	161.1	138.9		119.9
2012	163.9	141.0		125.6
2013	166.5	143.3		121.4
2014	168.8	145.2		119.7
2015	171.0	146.9	159.7	125.0
2016	172.9	148.6	162.7	139.6
2017	174.9	150.4	165.6	139.8
2018	176.8	152.7	168.6	145.4

2005-2022 Actual MDD vs WFP Projections

2019	178.7	155.0	171.5	145.7
2020	180.5	157.2	174.5	141.6
2021	182.4	159.5	176.7	149.3
2022	184.2	161.4	178.8	147.6

* MGD = million gallons per day

Even though the Truckee Meadows entered robust building period since 2010, the growth in peak day water use currently remains subdued. Per review of existing meter data, a combination of reduced peak demands by existing and new customers and growth rates not as high as anticipated by previous WFP updates, the growth in peak demands is generally slower than previous predictions. The slight uptick in peak day demand after 2015, shown above, can be attributed to the consolidation of former Washoe County water systems (17.9 MGD added in 2015) with the TMWA system on December 31, 2014. The reduction in peak demands in 2020 was generally due to covid pandemic restrictions that are not representative of normal operating conditions and subsequent peak demands have returned to a more normal pattern in later years.

Based on current projections, the maximum day demand on TMWA's supply and distribution facilities is anticipated to increase to about 177 MGD in 2040. The current demand growth projections in this WFP update have been developed using the regional growth projection that was developed in the TMWA 2040 Water Resources Plan and applying the percentage growth per year to the 2021 maximum day demand based on historic consumption data. A comparison of the previous WFP maximum day demands and current demand projections is presented as follows:

Year	2025 WFP MDD (MGD)	2030 WFP MDD (MGD)	2035 WFP MDD (MGD)	2040 WFP MDD (MGD)
2010	159.6	136.8		
2015	171.0	146.9	159.7	
2020	180.5	157.2	174.5	152.6
2025	189.5	166.8	185.3	160.3
2030		171.9	193.1	166.6
2035			197.3	171.9
2040				176.8

2010-2040 MDD Projections

The 2035 WFP update included a comprehensive engineering analysis that thoroughly examined both the state of the legacy TMWA system and integrated (post 2015) Washoe County water system, updated unit demand and peaking factors for each rate class, and provided a blueprint for future expansion to meet

a future MDD of approximately 197 MGD. Therefore, based on current demand projections that are significantly lower than previous projections and spatial allocation of growth that is not significantly different from the previous WFP update, the current WFP update focuses on verifying or modifying recommended capacities and facility sizing, re-establishing priorities and updating the timing of recommended improvements.

Figure 1 presents the current retail TMWA service territory that includes five "satellite" systems that are not connected to the core TMWA water system.



FIGURE 1

The primary objectives of the 2040 WFP are:

- Update existing demands in TMWA hydraulic computer model for all TMWA water systems and perform model calibration. Updated hydraulic models will be used for daily operational support and identification of future improvements required to meet TMWA and NAC design requirements as additional growth demands are added to the water system.
- 2. Determine if modifications are necessary to facility improvement recommendations made in the previous WFP.
- 3. Identify revised in-service dates and update cost estimates for recommended water system facilities. This information will provide the basis for updating TMWA's funding plan and developer Water Service Facilities (WSF) charges.
- 4. Determine if modifications are necessary to facility improvement recommendations made in the previous WFP to meet current fire flow requirements.
- 5. Analyze the ability of the water system to continue operating with the loss of supply from the Truckee River.

THE WATER FACILITY PLAN IN REVIEW:

An impressive amount of water system infrastructure has been constructed in the past 18 years. Major accomplishments include:

- Replacement of the North Virginia pumping system and the Stead-Silver Lake pumping system with a \$30 million combined supply system meeting the needs of growth and existing customers.
- Replacement of the rock and rubble diversion structure for the Glendale WTP with a new, modern fish and boater friendly concrete diversion structure to insure the ability to capture and treat privately owned stored water during drought conditions and to take advantage of the full treatment capacity of the Glendale facility.
- Construction of a new effluent pumping station at the Glendale WTP along with the first four phases of the NE Sparks Feeder Main to supply the growing area of Spanish Springs Valley.
- Acquisition and permitting of a site for the future Sparks GWTP which will diversify the overall water supply and provide additional drought supply.
- Completion of the Highland Ditch Improvement Plan which allows 100% of the raw water supply to the Chalk Bluff WTP to be provided via gravity-flow and significantly increases the reliability of the raw water supply to our most important treatment facility.
- Integration of the Washoe County water facilities into the TMWA system
- Integration of the Fish Springs groundwater supply into the TMWA system providing additional operational flexibility and drought protection.

- Construction of the Mt. Rose Water Treatment Plant that will be used to offset annual groundwater pumping volumes on the Mt Rose Fan when surface water is available (Up to 4 MGD capacity).
- Construction of the Disc Drive Pump Station. This pump station increases the reliable capacity of the Spanish Springs 2 Pump Station.
- Construction of the Kinglet Pump Station for expansion of the TMWA water system.
- Improved fire flow to at least a half dozen sites that had legacy low fire flows that were below current TMWA preferred design fire flows.
- Washoe Flume Reconstruction to repair storm damage and allow Washoe Hydroelectric facility to continue to operate, offsetting water system power costs.
- As part of the asset management and reliability program, TMWA has continued to replace and rehabilitate a multitude of tanks, pressure reducing stations, water mains, telemetry and data system, and other supporting infrastructure.

Major facility challenges facing TMWA in the future include expanding conjunctive surface and groundwater use in the region; potential treatment of poor quality groundwater (primarily nitrate removal) in Spanish Springs; expanding supply capacity to the South Truckee Meadows; replacement of backbone transmission mains in the gravity zones; consolidation of multiple pump systems into "super" pump stations; assisting with the development and permitting of Nevada's first Advanced Purified Water Treatment Facility; construction of Orr Ditch Pump Station Rehabilitation and Hydroelectric Facility; and continued expansion of the water system into the Verdi area.

Based on the planning and analysis presented herein, staff is recommending improvements summarized in Appendix D. The following table presents estimated costs for projects anticipated to occur in the 2020 to 2040 planning period and it includes projects that do not have an assigned completion dates ("TBD").

Facility Category	Total Cost	Cost Allocated To Growth
Supply	\$ 178,600,000	\$ 99,100,000
Storage	\$ 37,200,000	\$ 18,500,000
Distribution	\$201,800,000	\$ 76,500,000
Totals	\$417,600,000	\$194,100,000

Water Facility Expenditures 2020-2040

The types of project costs not allocated to growth include improvements to fire hydrants with historically low fire flows, existing system reliability improvements, replacement of existing wells, storage for existing customers, zone conversions, and major main replacements. Other supply project costs not allocated to growth include the proposed Spanish Springs Nitrate Treatment Plant that will treat existing groundwater supplies. Not included in these costs are smaller rehabilitation projects, replacement in kind activities, developer specific facility construction, nor projects that occur beyond the year 2040.

SECTION 2

WATER USE AND DEMANDS

BASE CASE DEMAND

Before future demands can be considered in the planning process, a base case condition needs to be established which accurately quantifies and distributes existing demands by geographic location. For this WFP, the billing data for 2021 has been established as the base case condition of average daily usage. Since the completion of the previous WFP, the 2021 billing data was the most recent complete data set that represented an average year that had reasonable weather and minimal post COVID-19 pandemic shutdown impacts.

To be conservative, this WFP assumes a 10 percent non-revenue water (or unaccounted for water) use factor even though previously completed mass balance analysis indicated a lower value.

Future maximum day demand projections were based on TMWA's 2020-2040 Water Resource Plan (WRP) estimated regional growth curve with an estimated cumulative growth of 14.4% by 2040. Distribution of the estimated cumulative regional growth within TMWA's service territory is not uniform since older neighborhood will grow less than newer areas. The following sources of information were used to help spatially distribute the predicted growth: (1) Truckee Meadows Regional Planning 2020 Growth Forecast; and (2) TMWA New Business Inquiries that remain unbuilt consisting of 129 projects. Using these sources of information, and engineering judgement, the estimated maximum day demand growth in each planning period was spatially allocated within TMWA's service territory. Additional details of the maximum day demand projections and methodology used for the 20-year planning period of the 2020-2040 WFP is included in Appendix A.

UNIT DEMANDS & PEAKING FACTORS

With system-wide billing data linked to the Geographic Information System (GIS) mapping system it is possible to establish average unit demand factors for each service/parcel and to compile the average monthly demand for each rate class within specific pressure zones. In the past, daily meter reads obtained during the peak summer months provided data for establishing average day to maximum day peaking factors; however, daily meter read studies have not been performed in recent years. As a result, water production data and changes in storage volumes acquired by the Supervisory Control and Data Acquisition (SCADA) system for the South Truckee Meadows and the pre-merger TMWA system were analyzed to establish peak day consumption values. These peak day values and average monthly metered use data were then utilized to generate a peak day to maximum month peaking factor. The average value produced by this analysis was a peaking factor of 1.15. Application of this peaking factor to average day of max month metered use data allows the establishment of the maximum day demand. The average day to maximum day peaking factor for each rate class as shown in Table 1 below.

TABLE 1

Rate Code	Description	Avg Day Demand (gpm)	Max Day Demand (gpm)	Max Day Peaking Factor
GMWS	Commercial	1.42	2.24	1.58
MIS	Metered Irrigation	2.16	5.48	2.54
MMWS	Metered Multi-Unit Residential	0.10	0.14	1.37
RMWS	Metered Residential	0.38	0.74	2.13

AVERAGE USE & PEAKING FACTORS BY RATE CLASS

Notes:

- 1. Average Day Demands are 2012 metered use data plus 10% non-revenue loss factor.
- 2. Max Day Demands are Average Day of Max Month x 1.15 Peaking Factor.
- 3. Max Day to Average Day peaking factors are the average for 2010-2013.
- 4. Residential demands are based on the system wide median value. Residential MDD is calculated on a lot-size basis to account for domestic + irrigation.

Historically, the system wide maximum to average day peaking factor has been in the range of 1.9-2.0, but in recent years there appears to be a trend that is slightly reducing this peaking factor. The system wide usage data has indicated increased annual average usage that would correlate with continued regional development and water service growth, but system maximum day demands have generally shown slower growth than what would be expected. Table 2 shows the maximum day of water production for the last 18 years.

Year	Peak Day	Demand (MGD)
2005	Wednesday, July 20	148 ⁽¹⁾
2006	Wednesday, July 26	141
2007	Wednesday, August 1	137
2008	Wednesday, July 9	133
2009	Sunday, July 26	129
2010	Tuesday, July 20	123 ⁽²⁾
2011	Tuesday, August 9	120
2012	Thursday, July 12	126
2013	Sunday, July 21	121
2014	Thursday, July 3	120 ⁽³⁾
2015	Tuesday, August 18	126 ⁽³⁾⁽⁴⁾
2016	Tuesday, August 2	140
2017	Tuesday, July 18	140
2018	Tuesday, July 17	145
2019	Tuesday, July 23	145
2020	Wednesday, Aug 5	142 ⁽⁵⁾
2021	Tuesday, July 13	149
2022	Friday, July 28	148
2023	Tuesday, July 25	145

TABLE 2 - HISTORICAL PEAK DAYS

- (1) Highest peak day demand recorded prior to adding Washoe County system (back to back 107 degree days).
- (2) 3-days per week irrigation schedule implemented in 2010
- (3) Drought year water conservation requested
- (4) Merger completed County demands (17.9 MGD) included
- (5) Decrease in peak demands likely due to impacts from Covid restrictions

Utilizing rate class specific peaking factors improves the accuracy of maximum day estimates by pressure zone since each zone has a specific mix of various use categories. Peak hour demands are estimated by multiplying the maximum day demand by a peaking factor. Experience has shown that the peak hour factor will range from about 1.3 to 2.0 depending upon the level of mixed use in the zone. Analysis of metered use data from zones with reasonably accurate flow metering and either mixed use or 100 percent residential use suggests that a zone with 100 percent single family residential will have a peak hour multiplier of about 1.8 to 2.0, while a 50 percent single-family residential allocation will be closer to 1.3. Without zone specific hourly demand information, it is necessary to validate the assumed hourly peaking factors by calibration of the hydraulic model against available historical SCADA data. TMWA is in the process of upgrading water customer meters with Advanced Metering Infrastructure meters that will provide hourly usage data that will allow for additional system wide verification of peaking factors. This meter upgrade process is still several years from completion.

UNACCOUNTED FOR LOSSES

Unaccounted for water is typically reported or estimated as 7-15 percent for the water utility industry, with 10 percent being a commonly reported value. Unaccounted for water includes demand from hydrant testing, unauthorized use, leakage and meter inaccuracy or failure. The selected 10 percent unaccounted for value used in this WFP is considered conservative since mass balance calculations indicate the actual losses are less. However, the mass balance method is only as good as the accuracy of metered source pumping or water production flow values as compared to metered consumption data. Water meters have a range of anticipated accuracy which can be impacted by meter age and service conditions. Compounding inaccuracies in older meters operating under predominately low flow conditions can reach a level of 10-20 percent degradation in accuracy. TMWA does have an active asset management program that includes a street repaying main replacement program and critical/prioritized main replacement program to maintain system reliability and minimize potential system leaks and failure. Also, TMWA aggressively pursues repairing leaks and sources of leakage when reported or discovered. The current smart meter replacement program should also help reduce water losses by identifying potential leaks on the customer side much more quickly.

SECTION 3

TREATED WATER STORAGE

Treated water storage serves several purposes. Storage is provided to equalize the demand on the water supply over a daily period. Storage is also relied upon to provide water to meet fire suppression requirements, provide a degree of operational flexibility when maintenance and repair of treatment and supply facilities are necessary and provide system reliability in emergency situations. Total Storage requirements consist of Operating, Emergency and Fire Storage components.

There are several sections of the NAC 445A regulations that are directly applicable to operating, fire and emergency storage components; however, there are also sections pertaining to "capacity" that include combinations of treatment, storage and pumping capacities under various demand conditions. The sections that apply to storage only will be referenced below and the general or combined capacity sections will be referenced in a later section of this WFP.

OPERATING STORAGE

NAC 445A.6672, .6674 and .66745 address operating storage. Operating storage is necessary to supply peak water demands that exceed system production capacity from treatment plants, wells and pump stations. Constructing supply and treatment facilities with sufficient capacity to meet instantaneous peak water demands is inefficient and uneconomical since a significant amount of plant capacity will remain idle for a majority of the time. In addition, most treatment processes are not amenable to rapid and constant changes in flow rate. TMWA supply, treatment and pumping facilities are designed to meet maximum day demands. Therefore, operating storage requirements are based on the volume of water needed to supply peak demands that exceed the average demand on the maximum day of use.

Selection of the desired operating storage volume is highly dependent upon production or pumping capacity, the time of pumping for pumped storage systems and the magnitude of the hourly variation in water use. With a metered supply source and accurate tank levels, a demand curve showing the hourly variation in demand over a 24-hour period can be plotted for any pressure zone as presented in Figure 2 below. For the maximum day scenario, the y-value of 1.00 (100 percent) represents the average demand on the maximum day and, for TMWA, also represents the "design" production and/or pumping rate. The area under the curve above the y-value of 1.00 (see hatched area) represents the volume of operational storage that should be provided to meet the hourly demands that exceed the available production or pumping capacity. Analysis of the diurnal demand curve for TMWA's gravity zones in 2010 (Figure 2) indicates a need for

only about seven percent (7%) of the average demand as operational storage assuming a steady supply equal to the maximum day demand. It should be noted that the seven percent value is somewhat conservative since it does not reflect the areas under the y-value of 1.00 (but above the curve) where operational storage is being replenished. To provide some flexibility for equipment outages and supply disruptions, TMWA provides 15% of the maximum day demand of the tank zone as the operating storage component.



Figure 2

A decision to provide more than 15 percent of the maximum day demand as operational storage depends on several factors including the estimated peak hour demand, the physical ability to pump at rates greater than the max day, the economic benefits of employing off-peak pumping, the incremental cost of the larger tank, and whether redundant capacity is unavailable making it necessary to rely on a 100 percent equipment utilization factor during the peak use period. In any zone, if the steady supply is compressed into a 12-hour period (or less), as for off-peak pumping, the required operating storage volume can easily reach between 30 and 50 percent of the maximum daily use. The trend in electric rates over the last 15 years has been to shift more costs from the old demand charge component to a new facility charge component. The facility charge is based on connected kW load and is applicable when any of the equipment is operated during the month. If the trend continues, there will be less and less incentive to perform off-peak pumping. Since development within a new tank zone normally takes a

significant period of time to reach buildout, the lower turnover rate of the large volume of stored water can create taste, odor and other water quality problems such as disinfection byproducts. Therefore, there is less motivation to provide excess storage beyond what is absolutely required to operate the system in a safe and reliable manner in compliance with regulations. The incremental first cost of additional operational storage primarily depends on excavation and grading requirements for the site, which is normally relatively small. However, due to the previously discussed factors, it is concluded that a minimum operational storage component equal to 15 percent of the max day demand is appropriate in most cases. Operational storage is provided for all demand classes, including wholesale demands, unless positive flow control can limit or cap the wholesale maximum day demand.

FIRE STORAGE

Subsection 2 of NAC 445A.6674 states that fire storage requirements must be calculated according to the requirements of the fire authority and that the health authority shall evaluate the design of a public water system based upon appropriate documentation of those requirements.

Fire storage is provided for the welfare of the general public so that water for fire suppression is available at all times. Required fire flows are assigned to new development projects by the local fire protection agency having jurisdiction in the area based on the International Fire Code (IFC). The evaluation process takes into account several factors including type of construction, flammability of construction materials and square footage of the structure. Storage for fire protection is calculated by multiplying the required fire flow by the required time necessary to control or extinguish the fire. Since water storage facilities generally serve widespread areas containing mixes of commercial and residential uses, the required fire storage volume for a particular area or pressure zone must be based on the largest fire flow demand within that area. All three local fire agencies (City of Reno, City of Sparks, Truckee Meadows Fire Protection District) have adopted a version of the International Fire Code (IFC) to set required fire flow. Typical fire flow requirements in the Reno-Sparks area are 1,500-2,750 gallons per minute (gpm) for residential, 3,000-3,750 gpm for commercial, and 4,000+ gpm for large industrial developments. These fire flow demands are inclusive of internal fire sprinkler system supply which may reduce the required hydrant flow, but usually not the overall fire flow demand. The required fire flow duration is a function of the required flow and can vary from two hours for flows up to 2,750 gpm, up to four hours for a fire flow of 4,000 gpm.

Fire storage requirements for existing pumped storage systems must be addressed on a zone-by-zone basis and are based on the largest fire flow requirement in that zone. In each of TMWA's major gravity zones, a fire flow demand of 4,000 gpm for four hours is provided. In continuous pumping zones without storage facilities, it is assumed that fire storage is provided from the zone providing suction supply to the area, which may be a tank or a gravity zone reservoir. Fire storage for multiple simultaneous fire flow demands in the same zone are not explicitly provided or planned for; however, this level of redundancy could be accommodated through use of emergency storage reserves. In zones with multiple storage tanks, fire storage can be distributed as long as the total requirement is met and the storage is accessible. Fire storage does not necessarily have to be provided for wholesale customers that maintain their own storage facilities.

Historically, going back to the 1970's when significant growth began to occur in the region, required fire flow for residential development in the unincorporated areas was on the order of 500 gpm. Even into the early 2000's, region-wide residential fire flow was no larger than 1,200-1,500 gpm. The larger fire flow requirements for in-fill projects located in fully developed areas can be very problematic – especially when storage tanks were sized to meet much smaller fire flows and space for an additional tank is non-existent. Even if it is possible to continuously reallocate excess storage to the fire storage component, the physical limitations (hydraulic constraints, hydrant and water service elevations, etc.) of the distribution system may not provide enough capacity to deliver the higher fire flow.

EMERGENCY STORAGE

NAC 445A.6675 and NAC 445A.66755 apply to emergency storage requirements. Emergency storage provides water for domestic use when equipment fails, distribution or treatment facilities are inoperable, or when natural disasters or emergency conditions curtail normal water supplies. The magnitude of this storage component depends on the susceptibility of system components to failure, the time needed to obtain replacement parts and make repairs, the reliability and diversity of supply sources, system operational constraints which could affect the availability of alternate supplies, and the physical configuration of the system which could affect the ability to transfer supply from zone to zone.

TMWA's current design standard is to provide an emergency storage reserve equal to at least one average day of use. Based on the estimated 2040 maximum day demand and an overall 1.9:1 max day to average day peaking factor, the 2040 average day demand should be on the order of 93 MGD. As for the other storage components, it is necessary to evaluate emergency storage requirements for existing pumping zones and pumped storage systems on a zone-by-zone basis since it is necessary to determine whether there is a physical means to deliver additional supply from, or transfer surplus to, adjacent areas.

Curtailment or unavailability of surface water supplies due to a non-persistent contaminant spill in the Truckee River is a realistic, but low probability threat. TMWA is fortunate to have a diverse water supply consisting of both surface water and groundwater. The minimum water supply necessary to meet the essential sanitary and culinary needs of the community is approximately equal to the total

system demand on a typical winter day (indoor use only). Based on historical records, this demand level is about 50 percent of the average day demand for the year. Given the difficulty of reducing demands during the summer to indoor water use only in a very short period of time, TMWA plans on supplying the system wide average day demand that is approximately 53% of system wide maximum day demands. Under this scenario, the 2025 groundwater production capacity of about 103 MGD (contiguous Truckee Meadows area) is adequate to supply the essential water needs of the community during an emergency situation where the surface water supply is temporarily unavailable. The 103 MGD of groundwater capacity could theoretically provide a minimum emergency supply to a system with a maximum day demand of about 194 MGD. In 2040, it is estimated that TMWA will have a groundwater production capacity on the order of 114 MGD during this operational scenario.

Another reliability concern is the ability to treat highly turbid river water. Historically, summer thunderstorms in the Gray Creek and/or Bronco Creek drainages of the Truckee River have produced extreme raw water turbidities during times of very high water use. This issue was originally addressed and evaluated during the planning phase for conversion of the Hunter Creek and Highland treatment plant sites to treated water storage facilities. The decision to implement solids handling processes at the Glendale WTP resulted in a reduction in recommended emergency storage volume at Hunter Creek and Highland, but significantly increased the reliability of the surface water treatment plants. Based on the available record, the worst turbidity event on the river occurred during the period of 7/15/92 to 7/21/92, producing average 3-, 5- and 7-day raw water turbidities of 1051, 874 and 543 Nephelometric Turbidity Units (NTU's, a measure of water clarity), respectively. Both surface water treatment facilities are capable of treating and handling an average total suspended solids (TSS) loading of about 1300 mg/L $(1 \text{ TSS} \approx 1 \text{ NTU})$ in this range) for four days. If raw water and water recovery basins are expanded (planned in conjunction with construction of Chalk Bluff Phase 4), the average solids handling capability of the Chalk Bluff WTP would be increased slightly to a level of about 1750 mg/L for the four-day design period. It is noted that during the initial 8-12 hours of a significant (i.e. magnitude and duration) turbidity event, it is anticipated that surface water production will be reduced appropriately to allow process refinement and necessary adjustments to be made. Under these assumptions, a significant amount of system wide emergency storage would be required along with all available groundwater capacity.

EVALUATING EXISTING STORAGE VOLUMES

Because storage design/sizing criteria and required fire flows change over time, TMWA's storage requirements for existing pumped storage systems must be addressed on a zone-by-zone basis. Fifty percent of TMWA's storage tanks were designed and constructed more than 28 years ago under criteria (fire flow, development projections, zone boundaries, unit demands, tank sizing philosophy, etc.) which were undoubtedly different than those in use today. For these reasons, some systems may not have the storage volume desired under <u>current</u> design criteria.

Due to the critical nature of the emergency and fire storage components, it may be reasonable to assume that the operating storage component would provide some flexibility when faced with a storage deficit. Based on the previously discussed sizing criteria, some flexibility is provided with an operating storage component equal to at least 15 percent of the average maximum day demand. For existing zones, one possible methodology to establish whether adequate storage exists consists of subtracting the required emergency storage volume and the required fire storage volume from the total storage available to yield the available operating storage component. Under this methodology, if the available operating storage volume is less than 15 percent of the maximum day demand, it may be necessary to increase alternative pumping capacity, add storage, or construct interties with adjacent zones having excess capacity. Unless the original tank site can accommodate a second tank, it is usually very difficult and sometimes impossible, to acquire suitable property (due to zoning and elevation constraints, permitting issues, etc.) to construct additional storage tanks in areas of existing development. If an accurate daily demand curve has been developed for the zone from meter and tank data, the necessary incremental volume between the max day and peak hour demands can be determined; however, this bare minimum operating volume would not provide any buffer should there be a disruption in supply.

Alternatively, if total storage required exceeds the storage provided under normal sizing criteria, the deficiency can be assigned to excess storage capacity in an adjacent tank zone, or at one of the large gravity zone reservoirs depending on whether alternative pumping capacity is provided.

CURRENT STORAGE REQUIREMENTS

As previously discussed, overall system storage values do not reflect the requirements within specific pressure zones. A storage surplus in a particular tank zone may not provide any benefit if it is not possible to transfer that surplus to areas with deficiencies. In general, TMWA pressure zones are backed up by at least one regulated intertie supplied by gravity flow from higher elevation tank zones. The following presents an analysis of 2025 storage requirements for the major gravity and pumping systems.

2025 SYSTEM WIDE STORAGE

From a system-wide standpoint, in 2025, approximately 136 million gallons (MG) of storage will be required and about 174 MG of storage will be provided, producing an apparent storage surplus of about 38 MG. The available storage does not include treatment plant tanks used as chlorine contact chambers. Surplus storage in one tank zone is not necessarily available to other tank zones with storage

deficiencies; however, surplus storage in the Hunter Creek and Highland reservoirs is physically available to other "downstream" zones. A macro-level analysis of the 2025 storage requirements for the major gravity zones and geographical areas is summarized in Table 3.

	Total Storage	Minimum Storage	Storage Surplus or
Zone or	Provided	Required	(Deficit)
Geographical Area	(MG)	(MG)	(MG)
Hunter Creek Gravity	34.0	3.4	30.6
Highland Gravity	25.5	20.6	4.9
Sparks Gravity	6.0	20.3	(14.3) ⁽¹⁾
Southwest Reno	11.4	10.2	1.2
North Reno	29.3	20.9	8.4
Northwest Reno	22.1	17.2	4.9
South Truckee Meadows	23.8	24.6	(0.8) (2)
NE Sparks/Spanish Springs	21.7	18.9	2.8
TOTALS	173.8	136.1	37.7

 Table 3 - 2025 SYSTEM-WIDE STORAGE REQUIREMENTS

Notes:

- 1. Surplus storage in the Hunter Creek Reservoir is readily available to the Sparks Gravity zone via gravity flow primarily through the Urban, Nixon and Prater Regulating Stations and several other smaller pressure regulating stations.
- 2. Alternative pumping capacity from wells and pump stations supplied from Gravity Zones with excess storage volume satisfy deficient storage volumes in this region.

2025 INDIVIDUAL TANK ZONE STORAGE

Major pumped storage systems that take suction directly or indirectly off the gravity zones were congregated into the geographical areas listed in Table 3. The 2025 storage tables in Appendix C present the results for each major pumping system located in these geographical areas. The storage tables break down the required storage volume for each system into operating, fire and emergency components. Well production, alternative pumping capacity and interties to adjacent systems are identified. Surplus storage and storage deficits are discussed below along with a high-level description of water supply to the area.

Southwest Reno

The Southwest Reno area includes Caughlin Ranch, Skyline, pumping systems south of West Plumb Lane and Lakeridge/Ridgeview. Although the Highland Gravity zone provides suction supply to the Lakeridge/Ridgeview System, the supply comes from the Hunter Creek Reservoir through the Nixon/Monroe and Urban/Plumas regulators. The remainder of the Southwest area is supplied directly from the Hunter Creek Reservoir. Due to its elevation, the 3.0 MG Caughlin Ranch Tank is capable of supplying water to the entire area under emergency

conditions. Under a normal service scenario that now includes most of the old continuous pumping zones in the Southwest Reno area, the Caughlin Ranch Tank contains a small surplus. However, under an area-wide power outage, the tank is also required to supply the Daniel Webster continuous pumping system and the Markridge 2 continuous pumping zone. In addition, there is a storage deficiency in the Ridgeview/Lakeridge Tank Zone that needs to be addressed.

By 2025, the Southwest area shows an overall storage surplus of 1.2 MG. Depending on the extent of a power outage in the area, the Ridgeview/Lakeridge deficit can be greatly reduced by excess storage in the Skyline 1 & 2 tanks, but a normally closed valve on Dant would need to be manually opened. In addition, the Lakeside Well (0.9 MGD) discharges directly into the Lakeside/Plumas Zone. There are several options available to correct or modify the future storage deficiencies in the area. One option would be to add standby power to the proposed Southwest pumping system which would ultimately deliver water to both the Lakeridge and Ridgeview tanks. Another recommended alternative is to add a 1.4 MG storage tank to the existing Caughlin 5 continuous pumping zone when the upper part of the zone develops. Another option to reduce the deficit will become available with future phases of The Ridges development above Plateau Road, which will complete an emergency intertie to the Caughlin 3 zone from The Ridges Tank.

North Reno

The North Reno area includes the area surrounding the Highland Reservoir (UNR to Keystone Ave.), Sun Valley, Valley Road, Socrates, North Virginia, Stead, Silver Lake, Horizon Hills and Lemmon Valley. There are two major pumping systems that provide redundancy and operational flexibility to the area. One is the North Virginia/Stead pumping system which takes suction from the Highland Reservoir and discharges into the Raleigh Heights storage tanks (8 MG total) through about six miles of high pressure 36" and 30" transmission main. From the hydraulic hub of the Raleigh Heights tanks, water can be delivered by gravity flow to Stead/Silver Lake, Lemmon Valley, Sun Valley, Socrates/Valley Road and the entire North Virginia corridor. The other major pumping system is the Fish Springs groundwater importation system which can currently deliver up to 8,000 acre-feet per year (AFA) to the 2.5 MG Terminal Tank located in the north end of Lemmon Valley. The Terminal Tank discharges through about ten miles of 30" and 24" high pressure transmission pipe in Lemmon Drive. This pipeline can serve the entire Lemmon Valley area via pressure regulated interties and ultimately connects to the North Virginia system via a SCADA controlled valve station at North Virginia Street and Lemon Drive. This station allows Fish Springs water to be supplied by gravity flow to Stead/Silver Lake and the entire North Virginia corridor. The intertie also allows Raleigh Heights storage to back up the Fish Springs supply and may also supply Fish Springs water to future growth in Cold Springs.

With current facilities and no new improvements, the storage deficit in the Sun Valley system will be about 0.7 MG by 2025 (existing alternative pumping capacity

exceeds deficit). This deficit will be erased through construction of the proposed Sun Valley #2 tank (scheduled to be in service in 2027). An apparent deficit of 0.4 MG in the Stead/Silver Lake system is resolved by allocating a portion of the Raleigh Heights Tanks storage surplus to the deficit through a regulated intertie. In addition, the Stead/Silver Lake system has about 5 MGD of groundwater capacity backed up by standby generators and Lemmon Valley has about 2.4 MGD of groundwater capacity (dual electric circuits). Ultimately, when the Fish Springs resource is fully dedicated, about 1.5 MG of operating storage will be required at the Terminal Tank to meet peak demands on the system. A second 2.5 MG Terminal tank is proposed for 2029 depending on the rate of actual growth.

Northwest Reno

This area includes West Seventh St, Kings Row, Northgate, Somersett, Mogul, Verdi and Boomtown. The primary supply for the area comes from the Hunter Creek Reservoir and the Chalk Bluff WTP effluent pumps. The Northwest mostly consists of two pump trains providing supply to the region: (1) the west side consisting of the US 40 and Mae Anne pump train; and (2) the east side consisting of the Chalk Bluff and Mae Anne/McCarran pump train. The Northwest system is highly interconnected and has a large amount of alternative pumping capacity with standby generators at Chalk Bluff, Mae Anne/McCarran, Beaumont and Somersett pumping systems. An overall storage surplus of about 4.9 MG is anticipated for 2025 in the Northwest Reno area and all tank zones have adequate emergency supply. New storage is planned for the Verdi, Boomtown and US 40 areas when the area west of Somersett and south of Boomtown develops. The Boomtown system also has about 1.3 MGD of groundwater capacity.

South Truckee Meadows

The South Truckee Meadows (STM) area consists of a lower area that includes Hidden Valley, Longley/South Virginia, Double Diamond and STMGID East and an upper area which includes STMGID West and the Arrowcreek/Mt Rose/St James systems. From the Double Diamond area, the service area rises over 2000 feet in elevation, topping out at the Mt. Rose 3 tank which has an overflow elevation of about 6680 feet. Except for the Longley/South Virginia system, all STM water systems were formerly owned and operated by Washoe County. Historically, the Hidden Valley system was supplied with TMWA surface water; however, in 2007 a groundwater treatment plant was constructed by the County that became the primary source of supply to the area. After the merger of TMWA and County water systems in 2015, the treatment process was deactivated and the facility's effluent pumps are used to deliver surface water to Hidden Valley. Historically, the Double Diamond and STMGID East systems were supplied with TMWA wholesale surface water, but the systems located on the upper Mt. Rose fan relied 100 percent on local groundwater supply.

By 2025, the lower area shows an overall storage surplus of about 0.5 MG. An apparent storage deficit in the Zolezzi tank is satisfied with alternative pumping

capacity (generator) at the South Hills pump station. The lower area also has about 6.7 MGD of groundwater capacity.

The upper area shows an overall storage surplus of about 1 MG in 2025. The upper zones are highly interconnected, but generally in a one-way direction via gravity flow through pressure regulating stations. Without considering alternative pumping capacity, there are minor storage deficits in the Arrowcreek 1 tank zone and in the Mt. Rose 1/4 tank zone depending on the fire storage requirements. A more significant storage deficit of about 0.6 MG will exist in the STMGID 4/5 zone. However, this deficit is satisfied with alternative pumping capacity from the STMGID 6 Well (with a standby generator).

Northeast Sparks & Spanish Springs Valley

Northeast Sparks (NES) is made up of D'Andrea, The Vistas, Wingfield Springs and Kiley Ranch. The Spanish Springs Valley (SSV) area consists of the Spring Creek and Desert Springs areas. The primary supply to the NES systems comes from the Glendale WTP. All NES systems have alternative pumping capacity backed up by standby generators. The SSV systems receive a baseload supply of surface water through interties at Lazy 5 and Campello. Groundwater peaking supply to both NES and SSV areas consists of about 10.1 MGD of local groundwater production wells.

In 2025, an overall storage surplus of about 2.0 MG is forecast for the NES systems. There are no single zone deficiencies to address; however, there are three continuous pumping zones in the area.

The SSV area also shows an overall storage surplus in 2025. There is a minor storage deficiency in the Spring Creek 3/4 tank zone, but there is also 3.7 MGD of alternative pumping capacity (dual circuits) from wells within the zone. Surplus storage can also be moved from the upper zones to Spring Creek 3 & 4 Tank Zone by regulated bypass.

Satellite Systems

Five satellite (non-contiguous to PWS190) water systems were acquired as a result of the merger. Three of them (Sunrise, Old Washoe Estates, Lightning W) are located in the Pleasant Valley and Washoe Valley areas south of Reno. The Truckee Canyon system is located at Mustang just east of Sparks and the Stampmill system is located near Wadsworth. There are minor storage deficiencies at Sunrise and Lightning W, but the deficiencies are mitigated by alternative pumping capacity (standby generators) at the wells.

Continuous Pumping Zones

The Wingfield Hills, Satellite Hills, Point View, Queen, Longley and Huffaker pump zones operate as continuous pumping zones. Future development in the Vistas is anticipated that will allow for a main tie between the Vista 3 Tank and the Wingfield Hills Pump Zone. The Vista 3 Tank was oversized for the Wingfield Hills demand

when the tank was constructed in 2008. Currently, several check connections allow backup from the Spanish Springs 2 Tank and Pump System. The Satellite Hills Zone has several interties and emergency storage for the zone is contained in the Vista System Tanks. The Point View pump zone receives some emergency protection from a check valve intertie to the discharge side of the Pyramid Pump Station, but pressure at the top of the zone is less than 10 psi. The Queen Zone is provided backup from the Wedekind 1 Regulated Zone intertie and by a check connection to the Sparks Gravity Zone. The Longley pump station has a 288 kW standby generator and the zone is also backed up by interties to the Double Diamond system at South Meadows Parkway and at The Alexander Apartments. The Huffaker pump station is equipped with a 150 kW standby generator.

FUTURE STORAGE REQUIREMENTS

2040 SYSTEM WIDE STORAGE

From 2025 to 2040, the total maximum day demand (MDD) is anticipated to increase by 22.3 MGD. From a system-wide standpoint, in 2040, approximately 147 MG of storage will be required and about 192 MG of storage will be provided, producing an apparent storage surplus of about 45 MG. As noted in the previous section, surplus storage in one tank zone is not necessarily available to other tank zones with storage deficiencies; however, surplus storage in the Hunter Creek and Highland reservoirs is physically available to other "downstream" zones. A macro-level analysis of the 2040 storage requirements for the major gravity zones and geographical areas is summarized in Table 4.

	Total Storage	Minimum Storage	Storage Surplus or
Zone or	Provided	Required	(Deficit)
Geographical Area	(MG)	(MG)	(MG)
Hunter Creek Gravity	34.0	3.4	30.6
Highland Gravity	29.5	20.9	8.6
Sparks Gravity	6.0	21.1	(15.1) ⁽¹⁾
Southwest Reno	12.8	10.7	2.1
North Reno	34.3	24.6	9.7
Northwest Reno	22.6	18.1	4.5
South Truckee Meadows	32.1	28.7	3.4
NE Sparks/Spanish Springs	24.4	22.5	1.5
TOTALS	195.7	150.0	45.7

Table 4 - 2040 SYSTEM-WIDE STORAGE REQUIREMENTS

Notes:

 Surplus storage in the Hunter Creek Reservoir is readily available to the Sparks Gravity zone via gravity flow primarily through the Urban, Nixon and Prater Regulating Stations and several other smaller pressure regulating stations. The system-wide storage surplus forecast for 2040 is very similar to the surplus indicated in Table 4 for 2025. This is because most of the growth is anticipated to occur in the foothills surrounding the Truckee Meadows and each project will be required to construct and dedicate storage facilities. The 2040 storage table includes 14 new storage tanks in the areas where this growth is expected to occur. In addition, 4 MG of storage will be added to the Highland Gravity zone to increase reliability (Highland Reservoir maintenance outage backup).

2040 INDIVIDUAL TANK ZONE STORAGE

The 2040 storage tables in Appendix C present the results for each tank zone located in the geographical areas listed above. The storage tables break down the required storage volume for each system into operating, fire and emergency components. Well production, alternative pumping capacity and interties to adjacent systems are identified. The discussions below will not repeat the information already presented in the 2025 storage section, but will focus on changes and modifications to system storage in each area.

Southwest Reno

By 2040, without additional storage facilities or improvements, the Southwest area will have an overall storage surplus of about 0.7 MG. Storage will be increased by providing alternative pumping capacity at the proposed Southwest pump station (standby generator) and the addition of a storage tank in the Caughlin 5 pump zone. The proposed Southwest pump station is included in the current 5-year CIP with construction beginning in FY 2027 and having an in-service date of FY 2029. The proposed tank in the Caughlin 5 zone is included in the storage table and is subject to the schedule of new development in the area; however, it is very likely that this growth will have occurred by 2040. The proposed emergency intertie to the Caughlin 3 zone from The Ridges tank is also likely to be in place by 2040, but the primary purpose of the tie is to provide fire flow and emergency support.

North Reno

With the addition of the Sun Valley 2 tank and a new tank with a location to be determined (potentially in Silver Hills Development, west of Stead Airport), there will be a storage surplus of about 8 MG in the North Reno area by 2040. A second Terminal Tank will probably be added by this time, but the volume will be required as operating storage to meet peak demands on the constant baseline flow from the Fish Springs system, so it is not included in the total.

Northwest Reno

An overall storage surplus of about 4.5 MG is anticipated by 2040 in the Northwest Reno area and all tank zones will have adequate emergency supply. The storage surplus will eventually decrease as new demand is added in the Verdi area. By 2040, new storage tanks are anticipated within Santerra Quilici (south of Boomtown), Mortensen Ranch (west of Somersett), and US 40 areas.

South Truckee Meadows

By 2040, the lower area shows an overall storage surplus of about 2 MG. It is likely that additional storage will be required in the Double Diamond area to satisfy an apparent deficit there, but an intertie to a slightly oversized tank in an area above (Toll Tank) would also work. The upper area shows an overall storage surplus of about 1.2 MG in 2040. The minor storage deficits in Arrowcreek 1 tank zone and in the Mt. Rose 1/4 tank zone may require additional storage depending on the fire storage requirements. Interties to other tank zones may also eliminate the deficits.

Northeast Sparks & Spanish Springs Valley

In 2040, an overall storage surplus of about 1.58 MG is forecast for the NES/SSV systems. Additional storage is proposed for the Desert Springs 3/Spring Creek 6 zone of SSV.

Satellite Systems

Minor storage deficiencies in the Satellite Systems can be mitigated by alternative pumping capacity (standby generators) at the wells, but it may be prudent to add smaller second tanks at these locations to provide storage for extended maintenance events such as when the primary tank requires recoating.

SECTION 4

GROUNDWATER RESOURCES

TMWA utilizes groundwater as a seasonal peaking supply and as a drought reserve. Groundwater use is subject to annual withdrawal limits set by the State Engineer. Under a conjunctive use approach, the State Engineer, under Order 1161, has authorized TMWA to pump (original TMWA wells) up to 16,000 acrefeet per year (AFA) during non-drought years and up to 22,000 AFA for three consecutive years during drought periods. The allowance for 22,000 AFA during drought periods is predicated upon TMWA having "banked" sufficient volumes of water either through ASR, or by using less than 16,000 acrefeet per year during non-drought periods. These totals have since been added to with additional wells and water rights joining TMWA's system since the issuance of Order 1161.

As a result of the 2015 merger with Washoe County, TMWA inherited an additional 34 active production wells contiguous to the original TMWA water system. The resulting groundwater rights associated with both the original TMWA wells and the Washoe County inherited wells in the contiguous main TMWA water system is on the order of 43,527 acre-feet. TMWA has consistently been able to manage its groundwater pumping to meet this requirement. In the extremely dry drought year of 2015, TMWA pumped 24,510 AFA (combined/merged system) and recharged 3,873 AFA.

A number of the County wells were the sole source of supply for systems located on the upper Mt. Rose fan (Basin 88). Due to the required continuous operation to meet system demands, water level declines in some of these wells approached 80 feet over the previous ten years. Because of the magnitude of the declines and the number of domestic wells in the area, Washoe County established a domestic well mitigation program in the area where municipal pumping was concentrated. Post-merger, TMWA inherited the mitigation program and has prioritized efforts to implement a conjunctive use management plan for the Mt. Rose fan that includes the recently completed Mt. Rose Water Treatment Facility.

Groundwater use is also subject to water quality related constraints and controls such as the running annual average (RAA) method of compliance with arsenic concentration standards; and pumping required by the groundwater remediation district to remove and control the spread of perchloroethylene (PCE), in the groundwater supply. Some production wells are also subject to water quality issues including arsenic and nitrate. A very good summary of groundwater resource issues is presented in Chapter 2 of the 2020-2040 TMWA Water Resource Plan. Issues associated with water quality and quantity that impact facility requirements are discussed in greater detail below.

GROUNDWATER QUALITY ISSUES

TMWA has directly or indirectly dealt with groundwater quality issues for a number of years. Historically TMWA attempted to locate and design its wells such that aquifer areas and water bearing strata with inferior quality water (i.e. high in iron, manganese, arsenic) were avoided. This was accomplished by implementing detailed exploration techniques and performing discrete sampling and testing of water bearing formations so that only those strata with higher water quality are screened for production. Even so, as drinking water standards became more stringent, a number of groundwater wells had to be abandoned, treated or converted to non-potable use. At the same time, it has become extremely difficult to develop new groundwater sources with sufficient productivity and water quality in the Truckee Meadows region.

TMWA's groundwater resource is extremely important to the community in terms of its value as a peaking, emergency and drought resource. To maintain the viability of the groundwater resource, TMWA's general approach relative to groundwater includes the following elements.

- Preservation of existing groundwater wells. This is being performed by closely monitoring water quality, developing and implementing a wellhead protection program, rehabilitating wells to prevent losses of capacity, and adding treatment facilities when necessary and deemed feasible.
- Development of future wells where treatment can be avoided. This is becoming increasingly difficult to accomplish as water quality regulations become more stringent and as areas of high quality groundwater become harder to find.
- Implementing treatment for new groundwater wells. Based on the need to develop additional peak and off-river capacity, it is anticipated that treatment for the removal of arsenic, iron and manganese will be required.

<u>Arsenic</u>

Naturally occurring arsenic is present in many groundwater supplies in northern Nevada. The original US Environmental Protection Agency (EPA) arsenic standard of 50 parts per billion (ppb) was placed into effect in 1975. Three TMWA wells (Pezzi, Poplar #1 and Terminal) were impacted by the original standard. These wells were isolated from the distribution system and piped to the Glendale Treatment Plant where arsenic could be removed utilizing conventional surface water treatment processes, or blended with treated surface water prior to discharge to the system. In 2006, the EPA reduced the arsenic standard from 50 ppb to 10 ppb. The new lower standard impacted nine additional TMWA wells. The basic elements of TMWA's arsenic compliance plan (approved by the Nevada Department of Environmental Protection, NDEP) are as follows:

- Piping of the Mill Street, Greg Street, and Corbett Wells to the Glendale Plant where the water can be treated via conventional surface water techniques, or blended with treated surface water.
- Six other wells (Keitzke, Morrill, High, Silver Lake, Poplar #2 and Sparks Avenue) are pumped seasonally, recharged and/or blended with treated surface water in the distribution system to achieve compliance.

Several former Washoe County production wells located in Spanish Springs Valley and Double Diamond have also been impacted by arsenic and have been taken out of production. Nitrate contamination from septic systems and mobilization of naturally occurring nitrates in the soil by domestic irrigation, has also impacted wells in Spanish Springs and has become a major water quality issue.

<u> PCE</u>

Perchloroethylene (PCE), has impacted some wells near the urban center of Reno. PCE is a volatile organic chemical that has been historically used as a solvent in industrial and dry-cleaning operations. For many years PCE waste was indiscriminately dumped and it percolated and infiltrated the groundwater aquifer. Five existing wells impacted by PCE above the drinking water standard of 5 ppb are being treated for PCE removal with an air stripping process. Three stripping towers are used: one at the Mill Street location for the Mill Street and Corbett wells; one at Kietzke Lane for the Kietzke Lane well; and one at the Morrill well location for the High Street and Morrill Avenue wells. The operation of these wells is coordinated with the PCE Remediation District (administered by Washoe County), since the treatment also serves to "clean up" the aquifer. It is expected that the treatment of these wells will continue for PCE removal.

Aquifer Storage and Recovery (Recharge)

Since the early 1990's, TMWA has actively participated in an Aquifer Storage and Recovery (ASR) program. Approximately 2,500 to 3,000 acre-feet per year (814-977 MG) of treated surface water can be injected and stored in the aquifer during the off-peak demand months. This "stored water" can then be extracted during the peak demand months or during periods of drought. Through ASR, TMWA has recharged approximately 38,000 AF of water since the program began in 1993.

The implementation of the ASR program provides several benefits to the community. First, it has helped to mitigate minor water quality issues in selected wells. The treated surface water has been shown to provide a "bubble" of high quality water at the wellhead which significantly reduces total concentrations of regulated constituents such as iron, manganese and arsenic when the well is pumped to the distribution system. The second benefit is that withdrawals from ASR storage do not count against the annual groundwater cap as set by the State Water Engineer. This provides for some banking of groundwater which can subsequently be used during drought periods.

GROUNDWATER CAPACITY

The current TMWA well production capacity in the contiguous main water system (78 wells) is approximately 103 MGD but given water system hydraulic limitations and water quality issues, available supply capacity from these wells is on the order of 87 MGD. Satellite systems have a current well production capacity of approximately 1.4 MGD from 10 wells. See Table 5 for details on individual and area specific groundwater capacity. TMWA's goal is to increase groundwater production capacity by 2 MGD every five years. This additional well capacity will increase peak day capacity and increase off-river reliability; however, it is highly likely that development of new groundwater sources will require expensive treatment facilities. Therefore, the timing of expanding groundwater capacity will depend on when additional peak capacity is required and also on how resilient existing storage and groundwater facilities are in response to an off-river supply scenario.

Prior to implementation of TROA, groundwater played a vital part in meeting demand during drought conditions. This was due, in large part, to the need to minimize the use of Privately Owned Stored Water (POSW) in case drought conditions persisted. Under TROA, modeling efforts performed as part of the previous WFP update indicated that even during an extreme 12-year long drought occurring in 2039-2050 when peak day were estimated to exceed 190 MGD, there will be sufficient surface water available that groundwater production can be limited to 60 MGD. A summary of the analysis is included in the appendix. Therefore, there is significant excess groundwater production capacity (87–103 MGD) for the contiguous system for the foreseeable future based on current demand growth trends in this WFP. Current projections indicate that peak day demands will not exceed 190 MGD until sometime after 2055.

Of course, adequate groundwater production is a highly desirable thing, especially from a reliability perspective. One of the emergency scenarios that was previously discussed consists of the temporary loss of the Truckee River water due to a nonpersistent water quality issue. During this period TMWA will need to have sufficient groundwater production capacity to be able to supply at a minimum to meet the essential sanitary and culinary needs of the community. Given the difficulty of reducing demands during the summer to indoor water use only in a very short period of time, TMWA plans on supplying the system wide average day demand that is approximately 53% of system wide peak day demands. Under this criterion, the 2025 groundwater production capacity of about 103 MGD (contiguous Truckee Meadows area) is adequate to supply the essential water needs of the community during an emergency situation where the surface water supply is temporarily unavailable. The 103 MGD of groundwater capacity could theoretically provide a minimum emergency supply to a system with a maximum day demand of about 194 MGD. In 2040, the contiguous system groundwater production capacity is planned to increase to 114 MGD. An off-river supply scenario under 2040 average day demand is discussed in the Gravity Zone report contained in this WFP. The Gravity Zone report also identifies other water infrastructure projects needed to help meet demands in these scenarios and regional stranded groundwater production capacities.

TMWA has also identified other future supply improvements to help meet growth beyond the current 2040 planning period and improve system reliability. These proposed facilities include the construction of the Sparks Groundwater Treatment Plant (11.9 MGD), the rehabilitation of the Longley Groundwater Treatment Plant (4 MGD), and treatment/blending of poor-quality groundwater at the Glendale WTP (11.1 MGD), Spanish Springs Groundwater Treatment Plant (4 MGD) and American Flat Advance Purified Water Treatment Plant (2 MGD). It should be noted that these future facilities can continue to supply the essential community water needs during an emergency situation where the surface water supply from the Truckee River is not available.

Groundwater production can decrease with time due to chemical deposition on well screens and from mechanical wear of pumping equipment. In addition, hydrologic limitations (i.e. well interference) and drought cycles that decrease groundwater levels and thus lower pump discharge can also impact the instantaneous and daily production from the wells. TMWA constantly evaluates well production to determine if well rehabilitation or pump replacement is warranted. TMWA has an ongoing program of well maintenance/rehabilitation that requires the outage of multiple production wells every year. Due to these possible constraints, it may be necessary to develop more than the "design" well capacity to obtain the desired net groundwater production capacity.

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TABLE 5 – GROUNDWATER WELL PRODUCTION CAPACITY SUMMARY Well Capacity in Million Gallons per Day (MGD)

Name	2021 MGD	2025 MGD	2030- 2040 MGD	Notes/Status/Treatment/Schedule
PEZZI	2.2	2.2	2.2	Arsenic, to Glendale, treatment/blending, drought usage
POPLAR #1	2.2	2.2	2.2	Arsenic, to Glendale, treatment/blending, drought usage
TERMINAL	2.6	2.6	2.6	Arsenic, to Glendale, treatment/blending, drought usage
MILL	2.6	2.6	2.6	PCE Treatment, Arsenic, to Glendale, treatment / blending / drought
CORBETT	1.7	1.7	1.7	PCE Treatment, Arsenic, to Glendale, treatment / blending / drought
GREG	1.5	1.5	1.5	Arsenic, blending discharge to system
HIGH	2.1	2.1	2.1	PCE Treatment, discharge to system
MORRILL	1.8	1.8	1.8	PCE Treatment, discharge to system
KIETZKE	2.9	2.9	2.9	PCE Treatment, discharge to system
DELUCCHI	0.8	0.8	0.8	
EL RANCHO	1.4	1.4	1.4	
FOURTH	1.5	1.5	1.5	
GLEN HARE	1.4	1.4	1.4	
PATRIOT	1.9	1.9	1.9	
SIERRA PLAZA	2.0	2.0	2.0	
S. VIRGINIA	1.2	1.2	1.2	
VIEW	2.5	2.5	2.5	
HUFFAKER PL.	0.9	0.9	0.9	
INNOVATION	1.2	1.2	1.2	
HUNTER LK	3.1	3.1	3.1	
RENO HIGH	3.5	3.5	3.5	
SWOPE	0.8	0.8	0.8	
21st	2.0	2.0	2.0	
GALLETTI	2.3	2.3	2.3	
POPLAR #2	2.2	2.2	2.2	
NUGGET	0.8	0.8	0.8	
	37.8	37.8	37.8	
Southwest - Reno	Wells			
Name	2021	2025	2030- 2040	Notes/Status/Treatment/Schedule
	MGD	MGD	MGD	
Lakeside	11	11	1 1	

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North - Reno Wells					
Name	2021	2025	2030- 2040	Notes/Status/Treatment/Schedule	
	MGD	MGD	MGD		
Air Guard	0.0	0.0	3.6		
Silver Knolls	1.6	1.6	1.6		
Silver Lake	3.4	3.4	3.4		
Lem. Valley Well 5	1.2	1.2	1.2		
Lem. Valley Well 6	0.0	0.0	0.0	Out of Production, likely to abandon	
Lem. Valley Well 7	0.6	0.6	0.6		
Lem. Valley Well 8	0.0	0.0	0.9		
Lem. Valley Well 9	0.6	0.6	0.6		
Fish Springs Well A	4.3	4.3	4.3		
Fish Springs Well B	2.9	2.9	2.9		
Fish Springs Well C	2.2	2.2	2.2	Fish Springs Wells combined capacity limited by BPS. Normal	
Fish Springs Well D	2.2	2.2	2.2	MDD 9.4 MGD, Emergency 12.2 MGD	
Fish Springs Well E	3.2	3.2	3.2		
Fish Springs Well F	0.0	0.0	0.0		
	16.8	16.8	21.3		
Northwest - Reno / V	/erdi Wells	;			
Name	2021	2025	2030- 2040	Notes/Status/Treatment/Schedule	
	MGD	MGD	MGD		
Boomtown 7	0.4	0.4	0.4		
Boomtown 8	0.1	0.0	0.0		
Boomtown 10	0.4	0.4	0.4		
Boomtown 12	0.4	0.4	0.4		
Boomtown 13		0.5	0.5		
	1.3	1.7	1.7		
South Truckee Mead	lows / Mt F	Rose Wells	I		
Name	2021	2025	2030- 2040	Notes/Status/Treatment/Schedule	
	2 1	2 1			
	2.1	2.1	1.0		
			1 1 U		
HOLCOWB	1.0	0.7	0.0		
Dbl Diamond Well 1	1.0 0.7	0.7	0.0		

Dbl Diamond Well 4	0.0	0.0	1.8	Arsenic, capacity limited by blending requirement. Therefore,
Dbl Diamond Well 5	0.0	0.0	1.8	simultaneous operation of wells not allowed
Hidden Valley Well 5	0.6	0.6	0.6	
STMGID Well 1	1.1	1.1	1.1	
STMGID Well 2	0.4	0.4	0.4	
STMGID Well 3	0.6	0.6	0.6	
STMGID Well 11	0.7	0.7	0.7	
Arrowcreek Well 1	0.3	0.3	0.3	
Arrowcreek Well 2	0.6	0.6	0.6	
Arrowcreek Well 3	0.7	0.7	0.7	
Callamont South	0.0	0.0	0.9	
Callamont North	0.0	0.0	0.7	
Tessa East	0.9	0.9	0.9	Well derated due to declining groundwater levels
Tessa West	0.6	0.6	0.6	Well derated due to declining groundwater levels
Mt Rose Well 3	0.4	0.4	0.4	
Mt Rose Well 5	0.9	0.9	0.9	
Mt Rose Well 6	0.8	0.8	0.8	
St James Well 1	0.3	0.3	0.3	Well derated due to declining groundwater levels
St James Well 2	0.3	0.3	0.3	Well derated due to declining groundwater levels
STMGID Well 4	0.3	0.3	0.3	
STMGID Well 5	0.6	0.6	0.6	
STMGID Well 6	2.1	2.1	2.1	
STMGID Well 12	0.8	0.8	0.8	
STMGID Well 7	0.2	0.2	0.2	
Thomas Crk Well 1	0.0	1.2	1.2	
	19.6	20.8	23.5	

Northeast - Reno	/ Spanish	Springs	Wells
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Name	2021 MGD	2025 MGD	2030- 2040 MGD	Notes/Status/Treatment/Schedule
HAWKINGS	4.3	4.3	4.3	
Desert Sprgs Well 1	0.5	0.5	0.5	Blending, nit treatment in 2030
Desert Sprgs Well 2	0.6	0.6	0.6	Blending, nit treatment in 2030
Desert Sprgs Well 3	0.0	0.0	1.1	OOS WQ, nit treatment in 2030
Desert Sprgs Well 4	0.0	0.0	0.0	OOS WQ, probably never to be used, maybe recharge
Spring Crk Well 2	0.7	0.7	0.7	nit treatment in 2030
Spring Crk Well 6	0.0	2.6	2.6	
Spring Crk Well 7	2.9	2.9	2.9	
Spring Crk Well 8	1.1	1.1	1.1	
Spring Crk Well 9	0.0	0.0	2.9	

Spring Crk Well 10	0.0	0.7	0.7			
	10.1	13.4	17.4			
Contiguous System Total =	86.7	91.6	102.8			
Satellite Systems Wells						
Name	2021	2025	2030- 2040	Notes/Status/Treatment/Schedule		
	MGD	MGD	MGD			
Lightning W Well 1	0.2	0.2	0.2			
Lightning W Well 2	0.1	0.1	0.1	Wells 2 & 3 limited to the max treatment plant capacity of 180		
Lightning W Well 3	0.3	0.3	0.3	gpm		
Sunrise Well 1	0.2	0.2	0.2			
Stampmill Well 1	0.1	0.1	0.1			
Stampmill Well 2	0.1	0.1	0.1			
Truck. Cany. Well 1	0.1	0.1	0.1	Wells 1 & 3 limited to the max treatment plant capacity of 100 gpm		
Truck. Cany. Well 3	0.1	0.1	0.1			
Old Washoe Well 3	0.2	0.2	0.2			
Old Washoe Well 4	0.2	0.2	0.2			

SECTION 5

SURFACE WATER RESOURCES

The Truckee River and its tributaries provide the surface water supply for operation of TMWA's two surface water plants, the Chalk Bluff Plant in northwest Reno, and the Glendale Plant in west Sparks. During most years TMWA relies on flow from Lake Tahoe which is conveyed by the Truckee River to the raw water intakes of the plants. During extended drought periods, TMWA can call upon drought reserves at Donner Lake, Independence Lake, and "contract storage" within Stampede and Boca Reservoirs. Operation of the Truckee River system is very complex and has been extensively litigated over the years. Implementation of TROA has been shown to be a real game-changer for TMWA in regards to how resilient surface water supplies can be in response to drought conditions.

SURFACE WATER TREATMENT PLANT CAPACITIES

Chalk Bluff Water Treatment Plant

The first phase of the Chalk Bluff Water Treatment Plant (CBWTP) was placed into service in 1994. Plant capacity has since been expanded twice (1996 and 2004) to allow for the retirement of older, non-compliant plants (Highland, Hunter Creek and Idlewild) and to meet increasing demands. The CBWTP now serves as TMWA's base plant and is "first on and last off" from an operations perspective. The plant is located on a 120-acre site at the northwest corner of McCarran Boulevard and W. Fourth Street in northwest Reno. The Phase 3 expansion of the plant along with subsequent approval of increased filter loading rates, resulted in a revised net production capacity of 90 MGD. The treatment plant has been designed for an ultimate net production capacity of 120 MGD.

The CBWTP incorporates the following components and processes:

- Raw water delivery from two different systems, the Orr Ditch pump station and the Highland Canal.
- Pre-settling basins and mechanical screens for the removal of floating debris, heavy grit and sediment.
- Chemical storage and feed systems.
- Coagulation, flocculation, sedimentation and filtration systems.
- Filter backwashing and solids handling/removal systems.
- Disinfection and clearwell storage to provide contact time.
- Treated water pumping into two different major pressure zones.

There are no significant limitations on plant operation. The CBWTP is equipped with treatment systems designed to handle peak turbidity events on the Truckee River system and is capable of operating at its design rate under drought conditions. Raw water to the plant can be delivered via two efficient diversion weirs. The first and oldest diversion weir, the Washoe Dam, diverts water into the Washoe Hydro Canal. The Highland Canal, with a diversion gate off the Washoe Canal, then transports water via gravity flow to the plant. The Highland Canal has existed since the 1880s and has undergone extensive improvements over the last 10-15 years. Up until 2010, several constrictions limited the capacity of the canal to about 55 MGD; however, the April 2008 earthquake that damaged a section of wooden flume in the Mogul area raised significant concerns regarding the vulnerability of the plant's water supply. As a result, completion of the canal master plan improvements was accelerated and the plant's treatment capacity of 90 MGD can now be supplied 100 percent by gravity flow from the Highland Canal. In addition, it is estimated that the cumulative effect of completion of the canal improvements has reduced leakage losses from the canal by several hundred acre feet annually.

From an operational perspective, canal water is considered "cheap and reliable" water as compared to the pumping required from the Chalk Bluff weir facility which is located on the river, about 1000 feet south of the CBWTP. The Orr Ditch Pump Station (ODPS), lifts the raw water diverted from the weir approximately 200 feet in elevation to the plant above the river. Limitations relative to the Chalk Bluff weir include the requirement to pass at least 20 CFS of flow downstream of the weir (only required when actually diverting from the facility), even under low flow conditions where the only water in the river may be releases from TMWA's upstream reservoir storage. Other constraints include capacity (approximately 68 MGD vs the 90 MGD plant capacity) and the cost of pumping. With the expanded gravity flow capacity of the Highland Canal, the ODPS has been relegated to backup duty yielding estimated electrical cost savings of about \$360,000 per year. Modifications of the ODPS are in progress to allow it to operate as a hydroelectric generation facility when excess water is available from the Highland canal.

Glendale Water Treatment Plant

The Glendale Water Treatment Plant (GWTP) was placed into service in 1976 and initially operated as a direct filtration plant with direct pumping from the filters into the distribution system. Over the years, improvements have been made to the GWTP to incorporate the same basic treatment processes found at the CBWTP. The GWTP is currently used as a peaking plant to provide critical peak period supply to Sparks and Southeast Reno. It is normally not operated in the off-peak period (November through April), since system demands do not require its operation and because it is more efficient to consolidate off-peak operations at the CBWTP. Upon completion of the Glendale Diversion project, Phase 4 of the Sparks Feeder Main and the Effluent Pumping Improvements in 2011, the GWTP is now able to deliver approximately 42 MGD (net treatment capacity of 32 MGD plus 10 MGD of "arsenic blend wells") into the distribution system. The current distribution system facilities can convey flows up to approximately 34 MGD from GWTP. Additional distribution system pressures increases near GWTP. Although
the GWTP normally discharges its entire output into the Sparks Gravity Zone where the production is needed to maintain tank levels and service pressures in the peak summer months, the effluent pump station also has a bank of pumps designed to deliver water into the Highland Gravity Zone.

Mt Rose Water Treatment Plant

Construction of the Mt Rose Water Treatment Plant (MRWTP) began in 2020 and the facility went online in the early fall of 2023. The MRWTP is located at the north end of Callahan Road and will treat up to 4 MGD of surface water diverted from Whites Creek. The MRWTP will discharge into the Arrowcreek Tank 3 zone on the upper Mt Rose Fan and will provide a much needed source of peak supply and conjunctive use supply for an area where demands are anticipated to increase almost 20 percent (to about 6.1 MGD) by 2040. By not having to rely 100 percent on local groundwater to meet demands, it is hoped that aquifer water levels in the area will stabilize and possibly even recover somewhat. Several distribution system improvements will be required to firm up the maximum day yield of the creek water rights and to fully integrate the new source into the service area which consists of several tank and pressure zones.

SECTION 6

NAC 445A CAPACITY REQUIREMENTS

This section summarizes the WFP compliance with applicable section of Nevada Administrative Code 445A. The sections of the NAC 445A regulations applicable to Capacity include:

NAC 445A.6554 "Alternative pumping capacity" defined. (<u>NRS 445A.860</u>) "Alternative pumping capacity" means a source of water, including a well, or a facility for pumping from a source of water, which:

1. Can provide a public water system with regular or emergency supplies of water in areas that do not have an adequate storage of water that is accessible by gravity; and

2. Is equipped with an independent, reliable supply of power that is available during periods when the normal supply of power fails, which:

(a) Consists of:

(1) An emergency generator; or

(2) A standby prime mover that operates by internal combustion; or

(b) Is obtained from an electric substation or other source other than the normal supply of power.

(Added to NAC by Bd. of Health, eff. 2-20-97)

NAC 445A.65665 "Capacity for the development and treatment of water" defined. (<u>NRS 445A.860</u>) "Capacity for the development and treatment of water" means the facilities and appurtenances of a public water system that provide finished water, treated if necessary, to the distribution system.

(Added to NAC by Bd. of Health, eff. 2-20-97)

NAC 445A.6588 "Emergency" defined. (<u>NRS 445A.860</u>) "Emergency" means a situation in which an unusual calamity, including a flood, fire, storm, earthquake, drought, civil disturbance, accidental spill of a hazardous material or similar occurrence, disrupts the provision of water by a public water system or endangers the quality of water provided by a public water system.

(Added to NAC by Bd. of Health, eff. 2-20-97)

NAC 445A.6652 "Total capacity" defined. (<u>NRS 445A.860</u>) "Total capacity" means the capacity of a public water system to supply the water demanded by its customers within its area of service during all conditions except emergencies.

(Added to NAC by Bd. of Health, eff. 2-20-97)

NAC 445A.6672 Existing systems: Minimum capacities; minimum pressure and velocity of water; total capacity of groundwater system; timely completion of water projects. (NRS 445A.860) A supplier of water for an existing public water system shall:

1. Ensure that the public water system maintains a sufficient capacity for the development and treatment of water, and a storage capacity of sufficient quantity, to satisfy the requirements of all users of the public water system under the conditions of maximum day demand and peak hour demand.

2. Ensure that the residual pressure in the distribution system is:

(a) At least 20 psi during conditions of fire flow and fire demand experienced during maximum day demand;

(b) At least 30 psi during peak hour demand; and

(c) At least 40 psi during maximum day demand.

Unless otherwise justified by an engineer and approved by the Division or the appropriate district board of health, high head losses must be avoided by maintaining normal water velocities at approximately 8 feet per second during all conditions of flow other than fire flow.

3. If the public water system relies exclusively on water wells as its source of water, ensure that the total capacity of the system is sufficient to meet:

(a) The maximum day demand, fire flow and fire demand when all the facilities of the system are functioning; or

(b) The average day demand, fire flow and fire demand when the most productive well of the system is not functioning,

whichever is greater. When computing total capacity for this purpose, credit must be given for any storage capacity.

4. Ensure that water projects are completed in such a manner as to meet the actual maximum day demand, peak hour demand, fire flow and fire demand for developments of property in the area of service of the public water system.

(Added to NAC by Bd. of Health, eff. 2-20-97; A by Environmental Comm'n by R194-08, 10-27-2009)

NAC 445A.66725 Existing systems: Determination of total capacity preparation, maintenance and dissemination of certain information, analyses, plans and reports. (NRS 445A.860) A supplier of water for an existing public water system shall:

1. Determine the total capacity of the public water system through engineering analyses that use historical data or other guidelines or parameters accepted by the engineering profession and, upon request, submit documentation of that capacity to the Division or the appropriate district board of health. When analyzing the total capacity of the public water system with regard to requirements for maximum day demand, only the alternative pumping capacity and the storage capacity of the public water system may be considered as sources of supply.

2. When assessing the total capacity of the public water system and the need for water projects to meet future commitments, use a network hydraulic analysis of the public water system. The analysis must be prepared by an engineer.

3. Prepare a plan for the timely completion of any water projects required to meet the anticipated needs of developers of property within the area of service of the public water system and, upon request, provide a copy of the plan to the Division or the appropriate district board of health.

4. Maintain:

- (a) A current list of the users of the public water system.
- (b) A copy of each pending acknowledgment of water service it has issued.

5. Provide to the Division or the appropriate district board of health, upon request and at no charge, any data, technical information or engineering analyses or reports necessary to determine the acceptability of any technologies, processes, products, facilities or

materials associated with the design, construction, operation or maintenance of the public water system.

(Added to NAC by Bd. of Health, eff. 2-20-97; A by Environmental Comm'n by R194-08, 10-27-2009)

NAC 445A.6674 Storage capacity. (<u>NRS 445A.860</u>) Except as otherwise provided in <u>NAC 445A.66755</u>:

1. A supplier of water shall ensure that:

(a) An existing public water system maintains a storage capacity that, as determined by an engineer on the basis of historical data, accepted engineering judgment and a network hydraulic analysis, is sufficient to ensure that the total capacity of the public water system will meet current and anticipated demands for water while maintaining the pressures indicated in <u>NAC 445A.6711</u>.

(b) A new public water system maintains a storage capacity that is sufficient to provide the amount of water required for sufficient operating storage, emergency reserve and fire demand.

2. Storage requirements for fire demand must be calculated according to the requirements of the fire authority. The Division or the appropriate district board of health shall evaluate the design of a public water system based upon appropriate documentation of those requirements.

3. A supplier of water for an existing public water system shall ensure that the total storage capacity and capacity of booster pumps for each zone of pressure in the distribution system are sufficient to meet the maximum day demand within that zone. Water stored in a higher zone of pressure may be provided to serve a lower zone of pressure if:

(a) An appropriate pressure regulator is installed between the zones; and

(b) The requirements for the higher zone of pressure are not compromised.

(Added to NAC by Bd. of Health, eff. 2-20-97; A by Environmental Comm'n by R194-08, 10-27-2009)

NAC 445A.66745 Operating storage. (NRS 445A.860) Except as otherwise provided in NAC 445A.66755:

1. An existing public water system must maintain an operating storage in such an amount as an engineer determines, based upon historical data and the system's capacity for the development and treatment of water, to be sufficient for the system to meet requirements for maximum day demand.

2. A new public water system must, except as otherwise justified by an engineer and approved by the Division or the appropriate district board of health, maintain an operating storage equal to 700 gallons for each residential equivalent in the area of service of a metered system and 1,225 gallons for each residential equivalent in the area of service of an unmetered system.

(Added to NAC by Bd. of Health, eff. 2-20-97; A by Environmental Comm'n by R194-08, 10-27-2009)

NAC 445A.6675 Emergency reserve. (NRS 445A.860) Except as otherwise provided in NAC 445A.66755:

1. An existing public water system must maintain an emergency reserve in such an amount as an engineer determines appropriate on the basis of the best available local information.

2. A new public water system must maintain an emergency reserve equal to 75 percent of the amount of operating storage of the system.

(Added to NAC by Bd. of Health, eff. 2-20-97)

NAC 445A.66755 Existing systems: Exemption from storage requirements. (NRS 445A.860) An existing public water system is not required to comply with the requirements of NAC 445A.6674, 445A.66745 and 445A.6675 if the system has a sufficient alternative pumping capacity to meet requirements for maximum day demand, peak hour demand and fire flow.

(Added to NAC by Bd. of Health, eff. 2-20-97)

COMPLIANCE WITH NAC 445A CAPACITY REQUIREMENTS

NAC 445A.6672 states that an existing public water system should maintain sufficient capacity for the development and treatment of water and a storage capacity of sufficient quantity, to satisfy the requirements of all users of the public water system under the conditions of maximum day and peak hour demand. Compliance with this section is demonstrated in previous discussions concerning TMWA's pump and storage sizing criteria and how its production and pumping facilities are designed to meet maximum day demands and its operating storage component provides the incremental capacity to meet peak hour demands. In addition, previous discussions concerning surface water and groundwater production capacities show that for PWS 190, TMWA's capacity for the development and treatment of water is 213.6 MGD, which far exceeds current (154.1 MGD in 2021) and future (176.0 MGD in 2040) maximum day demands.

Existing (2025) Water Production Capacity

TMWA's 2025 capacity for the development and treatment of water is summarized in Table 6. This supply capacity will be used for meeting 2025 estimated demands for NAC compliance determination.

Facility	Capacity (MGD)
Chalk Bluff WTP	90.0
Glendale WTP	32.0
Groundwater	91.6
TOTALS	213.6 MGD

TABLE 6 - 2025 TREATMENT & PRODUCTION CAPACITY

Notes:

- 1. Groundwater capacity includes wells in PWS 190 (Truckee Meadows) and Fish Springs (booster pump capacity), but does not include satellite systems.
- 2. Glendale WTP capacity shown in this table is conservatively low, the WTP has the ability to supply up to 34.5 MGD during MDD.
- 3. The Mt Rose WTP is not included above because it may not be available on MDD. The 4 MGD Longley Groundwater Treatment Plant is not included above.

NAC 445A.66725 further states that for an existing public water system, the total capacity should be determined through engineering analyses that use historical data or other guidelines or parameters accepted by the engineering profession; and when analyzing the total capacity of the system with regard to requirements for maximum day demand, only the alternative pumping capacity and the storage capacity of the public water system may be considered as sources of supply. The definition of "total capacity" in NAC 445A.6652 references the public water system's capacity to meet demands "within its area of service" which indicates this is a system-wide capacity requirement.

Compliance with this section is demonstrated through TMWA's use of actual 2021 metered use data to determine the base maximum day demand, peaking factors, unit demand factors and the following discussions relating to storage and alternative pumping capacity.

Existing Available Operating & Emergency Storage

The diurnal demand curve (hourly demand pattern) for the gravity zones during the peak day was previously introduced in Figure 2. The demand curve shown in Figure 2 includes the effect of all demands on the gravity zones including base booster pump stations and wholesale demands. Analysis of this data indicates that with a steady source of supply equal to the maximum day demand (represented by a y-value of 1.00 on the chart), a storage volume of about seven percent of the maximum day demand is required to meet the peak hour demand.

TMWA's current design standard is to provide an operational storage component of at least 15 percent of the maximum day demand to provide flexibility to accommodate the potential failure of mechanical equipment, or to allow avoidance of peak period electrical charges when possible. This is two times the volume indicated by the diurnal curve analysis.

The requirements of Section 1 of NAC 445A.66725 for determining peak day capacity by considering only alternative pumping capacity and storage capacity of the system does not refer to a particular storage component (operating, fire, emergency) or combination thereof. The fact that "only" alternative pumping and storage capacity should be considered (and not other capacity such as treatment capacity) would imply an issue of reliability under an emergency situation with loss of primary power and thus infers that emergency storage could be utilized to satisfy those requirements.

A detailed accounting of storage requirements is presented and discussed in the Storage sections and the appendices of this report. For the purposes of establishing the storage available to meet overall system capacity requirements, the operating and emergency storage components provided are summarized in Table 7 below.

Zone	Total Storage Provided ⁽¹⁾ (MG)	Less Required Fire Storage (MG)	Available Emergency & Operating Storage (MG)
Hunter Creek Gravity	34.00	0.96	33.04
Highland Gravity	25.50	3.00	22.50
Sparks Gravity	6.00	0.96	5.04
Southwest Reno	11.40	1.80	9.60
North Reno	29.33	8.46	20.87
Northwest Reno	22.11	5.29	16.82
South Truckee Meadows	23.82	7.70	16.12
NE Sparks/Spanish Springs	21.68	3.86	17.82
Totals	173.84	32.03	141.81
Less Emergency Storage (1 Average Day) ⁽²⁾			80.81
Available Operating Storage			61.00

TABLE 7 – EXISTING AVAILABLE OPERATING & EMERGENCY STORAGE

Notes:

1. Storage provided includes tanks that are scheduled to be complete and in-service by 2025, but does not include treatment plant clearwell storage.

2. Emergency storage (one average day) does not include the demand of wholesale customers who have their own storage.

Existing Alternative Pumping Capacity

The Chalk Bluff and Glendale WTP's are provided with two sources of electrical power (there are physically two separate electrical feeds into both facilities) and thus meet the reliability requirements of "alternative pumping capacity". Switching between the primary electrical circuit to the secondary circuit at Chalk Bluff is automatic should the primary circuit fail. With the additional standby generation improvement projects at Glendale (2018) and at Chalk Bluff (2019), the entire treatment and pumping processes at both locations are 100 percent covered with backup power. At Chalk Bluff, this was accomplished in part by completion of the Highland Canal improvements that allow a raw water supply equal to 100 percent of Chalk Bluff's treatment capacity to be delivered to the plant by gravity flow. On the finished water side, the 48-inch main from Chalk Bluff to the Highland zone provides a gravity flow capacity of about 22 MGD, providing additional operational

flexibility during a power outage. Alternative source pumping capacity for the system as a whole is summarized in Table 8.

	Pumping Canacity	Primary Power	Secondary Power
Source	(MGD)	Circuit	Circuit
Chalk Bluff WTP		Reno 204	NW 216
Treatment Plant	90.0		1440 kW Genset
Hunter Creek Pumps	41.0		2000 kW Genset
Highland Pumps	40.0		2000 kW Genset
Northgate Pump	8.6		2000 kW Genset
Glendale WTP		Glendale 211	Valley Rd 246
Low Lift Pumps	35.0		300 kW Genset
Treatment Plant	32.0		500 kW Genset
Highland Pumps	12.5		1600 kW Genset
Sparks Pumps	33.0		1600 kW Genset
ALT. PUMPING CAPACITY	121.6 ⁽¹⁾		

TABLE 8 – EXISTINIG ALTERNATIVE SOURCE PUMPING CAPACITY

Notes:

- 1. Total alternative pumping capacity based on Chalk Bluff pumping to Hunter Creek, Highland and Northgate simultaneously; and Glendale WTP capacity.
- 2. Additional redundancy for the Chalk Bluff Highland pumps is provided by the gravity flow (approx. 22 MGD) capacity of the existing Highland pipelines.
- 3. Additional redundancy for both Hunter Creek and Highland pressure zones is provided by the Idlewild transfer station.
- 4. Additional alternative source pumping capacity from the groundwater wells are not included above.

NAC Total Capacity Compliance - Existing System with 2025 Demands

Having established the available alternative source pumping capacity and the available operating and emergency storage of the existing system, total system capacity requirements are summarized in Table 9 for NAC 445A.6672 and in Table 10 for NAC 445A.66725.

Per **NAC 445A.6674**, an existing public water system shall maintain a storage capacity that, as determined by an engineer on the basis of historical data, accepted engineering judgment and a network hydraulic analysis, is sufficient to ensure that the total capacity of the public water system will meet current and anticipated demands for water while maintaining the pressures indicated in NAC 445A.6711. Having shown compliance with the overall storage requirements,

subsequent reports on specific areas and pressure zones will present compliance with the pressure requirements of NAC 445A.6711.

Component	Capacity (MG)	Demand (MG)	Surplus/ (Deficit)
Surface Water Production	121.6		
Groundwater Production	91.6		
Operating Storage ⁽¹⁾	61.0		
Total Capacity	274.2		
2025 Max Day Demand ⁽²⁾		160.2	114.0
Peak Hour Demand ⁽²⁾		216.3	57.9

TABLE 9 - 2025 TOTAL DAILY CAPACITY CALCULATION PER NAC445A.6672

Notes:

- 1. Available operating storage is a system-wide value and does not indicate deficits within specific tank zones.
- 2. Max Day Demand determined from 2021 metered use, estimated system losses, plus growth. Peak Hour Demand estimated at 1.35xMDD per Figure 2.

TABLE 10 - 2025 TOTAL DAILY CAPACITY CALCULATION PER NAC445A.66725

Component	Capacity (MG)	Demand (MG)	Surplus/ (Deficit)
Alt. Pumping Capacity ⁽¹⁾	121.6		
Operating Storage ⁽²⁾	61.0		
Total NAC Capacity	182.6		
Max Day Demand		160.2	22.4

Notes:

- 1. Does not include groundwater production wells that meet "alternative pumping capacity" definition per NAC 445A.6554.
- 2. See Table 7. Available storage is a system-wide value and does not account for transfers between adjacent zones.

SECTION 7

FUTURE FACILITY REQUIREMENTS

The Truckee Meadows region is subject to periodic droughts; therefore, the water resources must be managed accordingly, and the water system must be designed to deliver water service under both drought and non-drought conditions. The primary water supply operational objectives are to maximize the use of surface water from the Truckee River to meet demands; to supplement that supply with groundwater supplies during the peak summer months; and avoid, or at least delay, the release of any Privately Owned Stored Water (POSW - storage in Donner and Independence Lakes). By maximizing the utilization of available surface water capacity in the early and/or late shoulder months, non-drought year groundwater extraction normally does not exceed 12,000 AF annually. If enough surface water is available, non-drought year groundwater extraction can be compressed into the peak irrigation months (July-September) resulting in a higher peak month yield from the resource without exceeding the normal year groundwater extraction limit, on both quantity and quality.

As discussed in the Groundwater section of this WFP, prior to implementation of TROA. groundwater played a vital part in meeting demand during drought conditions. This was due, in large part, to the need to minimize the use of Privately Owned Stored Water (POSW) in case drought conditions persisted. Under TROA, modeling efforts performed as part of the previous WFP update indicated that even during an extreme 12-year long drought occurring in 2039-2050 when peak day demands were estimated to exceed 190 MGD, there will be sufficient surface water available that groundwater production can be limited to 60 MGD. There is significant excess groundwater production capacity (87-103 MGD) for the contiguous system for the foreseeable future based on current demand growth trends in this WFP. Current projections indicate that peak day demands will not exceed 190 MGD until sometime after 2055. Therefore, additional groundwater (or surface water supplies for that matter) will technically not be required in the Truckee Meadows through the 2040 planning period. This is encouraging when considering the long-term fragile nature of groundwater supplies from both a quantity and quality perspective and with the understanding that additional groundwater supply is very difficult and costly to develop.

On a subsystem basis, it will be necessary to develop additional production wells in the South Truckee Meadows, upper Mt. Rose Fan and Spanish Springs areas to help meet peak use demands and meet system redundancy criteria included in current TMWA Design Criteria found in Appendix A. The Spanish Springs Valley Groundwater Treatment Facility is proposed to increase the reliability of existing production wells that currently require blending due to water quality issues. The conjunctive use of ground and surface water supplies provides many benefits to the TMWA system. An adequate groundwater supply is necessary to maintain water service during periods of drought or other periods when surface supplies are temporarily curtailed. In an emergency where surface water was unavailable and mandatory conservation was imposed, groundwater could satisfy the essential indoor water needs of the community for an extended period. TMWA also utilizes its groundwater as a peaking supply to meet seasonal peak use demands that exceed surface water treatment capacity. Strategically located production wells can also reduce distribution system facility requirements by locating a supply source closer to areas of demand that may be located a great distance away from surface water production facilities. A good example is the Hawkings Court well located in Spanish Springs valley.

TMWA has expanded conjunctive use to the Mt Rose Fan area, with the addition of Mt. Rose Water Treatment Plant. TMWA will continue to expand and implement this conjunctive use operating approach throughout its service area, and especially in areas that historically relied on groundwater.

SUMMARY OF FUTURE CAPACITY IMPROVEMENTS

The results of this 2040 Water Facility Plan Update indicate that existing water demands are not increasing as quickly as the previous facility plan predicated. This is a combination of a significant number of existing customers using less water during maximum day demand periods and actual new demand growth being less than previously predicted. The current update predicts a contiguous system maximum day demand of 176.0 MGD (Year 2040) versus the 197.3 MGD (Year 2035) predicted in the 2035 update. Therefore, many of the major water supply improvements identified in the previous water facility plan can be significantly delayed beyond the 2040 planning period. Table 11 below summarizes the TMWA contiguous system demand and supply capacity for the 20-year planning period.

Year	Estimated Max Day Demand (MGD)	Total Available Capacity (MGD)	Supply Surplus or (Deficit) (MGD)	Surplus or Deficit as a % of MDD
2021	154.1	204.7	50.6	32.8%
2022	155.6	204.7	49.1	31.5%
2023	157.2	204.7	47.5	30.2%
2024	158.7	204.7	46.0	29.0%
2025	160.2	209.6	49.4	30.8%

TABLE 11 - DEMAND vs PRODUCTION CAPACITY BY YEAR

2026	161.5	209.6	48.1	29.8%
2027	162.8	209.6	46.8	28.7%
2028	164.1	209.6	45.5	27.7%
2029	165.4	209.6	44.2	26.7%
2030	166.7	220.8	54.1	32.5%
2031	167.6	220.8	53.2	31.7%
2032	168.6	220.8	52.2	31.0%
2033	169.5	220.8	51.3	30.3%
2034	170.4	220.8	50.4	29.6%
2035	171.4	220.8	49.4	28.8%
2036	172.3	220.8	48.5	28.1%
2037	173.2	220.8	47.6	27.5%
2038	174.2	220.8	46.6	26.8%
2039	175.1	220.8	45.7	26.1%
2040	176.0	220.8	44.8	25.4%

Notes:

- 1. In general, new/additional capacity is recommended when surplus capacity is reduced to approximately 10%.
- 2. The above does not reflect supply surplus or deficit within individual pressure zones or tank zones.
- 3. Does not include Satellite areas.

Regardless of the lower predicted demands there are a significant number of projects that will still need to be completed in the planning period. Appendix D summarizes identified facility improvements to meet future area specific peak demands, storage and reliability design criteria. This is in addition to standard annual maintenance and rehabilitation of existing water facilities. Fire flow improvements to address legacy low fire flows at existing fire hydrants will be scheduled as part of street and main rehabilitation projects and/or as annual budgets allow.

Major facility challenges facing TMWA in the future include expanding conjunctive surface and groundwater use in the region; potential treatment of poor quality groundwater (primarily nitrate removal) in Spanish Springs; expanding supply capacity and reliability to the South Truckee Meadows; replacement of backbone transmission mains in the gravity zones; assisting with the development and permitting of Nevada's first Advanced Purified Water Treatment Facility, construction of Orr Ditch Pump Station Rehabilitation and Hydroelectric Facility, and continued expansion of the water system into the Verdi area.

SECTION 8

ASSET MANAGEMENT SUMMARY

INTRODUCTION TO ASSET MANAGEMENT

As defined by American Water Works Association (AWWA), Asset Management is "the coordinated set of activities within an organization to realize the overall value from all assets through stronger governance and accountability. More specifically in the water industry it is the combination of management, financial, economic, engineering and other practices applied to all assets (infrastructure, people, processes, and systems) with the objective of providing the required Level of Service at an acceptable level of Risk at an optimal Life Cycle Cost." "Asset Management with a focus on physical infrastructure assets is the continual assessment of the condition and usefulness, projected life expectancy, criticality, and operations and maintenance history, with a long-range plan for financing asset rehabilitation or replacement. Results from these assessments prioritize infrastructure assets and are typically incorporated into the organization's annual capital improvement planning and operational budget processes." Asset Management can be realized as a full program separately run alongside the capital improvements and maintenance departments of an organization, or it can be used as a policy that multiple departments must follow.

CURRENT TMWA ASSET MANAGEMENT

TMWA currently has department specific asset management programs in varying stages of progress. Please reference Appendix F regarding some of TMWA's current asset management structure outlines that are organized by the following CIP categories:

- Groundwater Facilities
- Hydroelectric Facilities
- Pump Stations & Pressure Regulation Stations
- Raw Water Supply Facilities
- SCADA and Electrical Facilities
- Storage Facilities
- Vehicles

Each structure outline summarizes the current asset management program associated with the CIP category and is organized by asset inventory, maintenance records, conditions assessment, CIP planning/risk management, maintenance/rehabilitation program, and reporting.

The asset inventory is the centralized location that all records are saved for a particular asset. The ultimate goal is to have one source of information for all

assets and avoid copies of data in the future. Currently, asset inventory is saved in Cityworks database along with many other file structures.

Maintenance records are managed and saved in the Cityworks database for most TMWA assets. There are a select number of products that are managed by third parties through the TMWA maintenance department but are subcomponents of the total asset.

Condition assessments are performed on a regular basis for TMWA assets. Schedules for condition assessments vary by asset. Some programs have a revolving schedule that is followed diligently while other programs only have the opportunity to assess the asset when an event occurs to the system such as a main break, a street & highway maintenance project uncovers a main, etc.

Capital Improvement Planning/Risk Management is tracked differently by department and depends on the level of maintenance that exists for the asset. Wells, pressure regulating stations, booster pump stations, and tanks are tracked for risk in spreadsheets and managed by the program administrator in each department.

Maintenance and rehabilitation programs exist in varying stages of development for each asset. Valve maintenance programs are in the primary stages of development while other programs are fully developed, staffed, and executed. Rehabilitation programs exist for tanks, pressure regulating stations, and booster pump stations.

Reporting is kept at the discretion of each department/ program manager. Maintenance work orders are saved in the Cityworks database, annual reporting for the Board of Directors is provided by various departments including Water Resources Department, and technical memos are published at the completion of various rehabilitation projects to name a few examples.

FUTURE TMWA ASSET MANAGEMENT

As mentioned previously TMWA does have asset management programs in place for most water facilities that is being actively managed by various groups in the organization. TMWA will continue to work on developing standardization of the information management portion of these programs and improve upon the asset management programs such that:

- TMWA continues to provide a reliable high level of service to existing and future customers
- Minimize water service risks
- Maximize value of existing and future infrastructure
- Implement process of continual improvement taking into account updated condition assessment data and changes in technology

• Coordinate with financing and rate setting to maintain the ability to properly implement the asset management program

SECTION 9

SPECIFIC AREA/PRESSURE ZONE FACILITY PLANS

The Truckee Meadows Water Authority's service area currently covers over 170 square miles and serves over 134,000 customers. The distribution system contains over 2,000 miles of water mains; 97 storage tanks; 98 wells, 118 pump stations and 380 pressure regulating stations serving 279 separate pressure zones. The system extends from a valley elevation of about 4,400 feet to almost 6,700 feet in the Mt. Rose system.

The previous sections have concentrated on system-wide demands and capacities while laying the groundwork for TMWA design and planning criteria as they apply to the NAC 445A regulations. The TMWA design and planning criteria is included in Appendix A of this WFP update. The remainder of this document will focus on specific areas of the system generally defined by the extents of pumped storage zones supplied from the major gravity zones.

The improvements that provide capacity to serve growth, or in some cases also benefit existing customers, are identified herein. The estimated cost of improvements that benefit an entire system or area are entered into Area Fee calculation sheets. Area Fees are collected from new development to insure growth pays for growth. Currently there are a total of 17 Areas where connection fees are collected. These Areas are shown on Figure 3 below. Each Area has a different Area Fee reflecting the fact that a separate and distinct set of improvements is required to provide the necessary capacity to each Area. Probably the best example of this is the Sparks Feeder Main Projects (Phases 1-8) which are primarily located in the Sparks gravity zone, but primarily benefit the extreme Northeast Sparks and Spanish Springs areas. In addition to Area Fees, TMWA also collects, where appropriate, a Supply-Treatment Fee as reimbursement for costs to construct new or expanded treatment facilities, wells and other supply-related projects and a Storage Fee for new or expanded storage project costs that provide capacity for growth.



FIGURE 3 – WATER FACILITY FEE AREAS

TMWA Design Criteria for 2040 WFP Update:

(NAC 445A criteria applies unless exceeded by standards expressed below)

Abbreviation Index

- AFA Acre Feet Annually
- ADD Average Day Demand
- MDD Maximum Day Demand
- SFR Single Family Residential Unit
- MFR Domestic Multi-Family Residential Unit
- C&I Commerical & Industrial
- PSI Pounds-per-square-inch
- PF Peaking Factor (MDD / ADD ratio)
- FPS Feet-Per-Second

MDD Unit Demand Estimation Formulas

- SFR MDD = 0.0066 x SQRT(Lot Size in SF); MDD capped at 1.5 GPM
- MFR MDD = 0.14 GPM per unit
- C&I MDD = AFA x 1.08 (result is GPM)
 - AFA x 1.10 x 0.62 x 1.58 = AFA x 1.08 (where 1.1 = unaccounted; 0.62 = AF conversion; 1.58 = PF below)
- Potable Irrigation MDD = AFA x 1.73 (result is GPM)
 - AFA x 1.10 x 0.62 x 2.54 = AFA x 1.73 (where 1.1 = unaccounted; 0.62 = AF conversion; 2.54 = PF below)

Peaking Factors

- SFR MDD PF = 2.13
- C&I MDD PF = 1.58
- Irrigation MDD PF = 2.54
- MFR MDD PF = 1.37

Service Pressure

- ≥ 45 PSI in the main but translated to the highest adjacent building pad elevation under max day demands.
- ≥ 40 PSI in the main but translated to the highest adjacent building pad elevation under peak hour demands.
- \geq 20 PSI in the main at all points in the system under max day demand plus fire flow
- For design of new systems and pressure zones, unregulated distribution system pressures should not exceed 100 PSI anywhere in the system.

Velocity

- Distribution pipeline velocities should not exceed 8 feet per second (FPS) for all flow conditions other than coincident fire flow, unless otherwise justified by an engineer.
- Ideally, transmission main velocities should not exceed 5 FPS for all flow conditions other than coincident fire flow.

 Distribution pipeline velocities should not exceed 18 FPS for MDD+Fire whenever possible.

Water Mains

- Minimum main size of 6-inch diameter applies to water mains in cul-de-sacs, internal streets within subdivisions, and other areas where water mains will not be extended in the future, as long as that size water main meets service pressure and fire flow criteria; otherwise, the minimum main size is 8-inch diameter.
- In compliance with NAC 445A.6712 and published TMWA Design Standards (Section 1.1.06.06), dead-end mains shall be minimized by looping mains whenever practical or where required by the Authority and/or the Health Authority. Preliminary design and layout of subdivision streets and lots should contribute to elimination of dead-end mains. The maximum length of a dead-end main shall be approximately 800 feet.

Pipe Material & Age	C-Value	Comments
PVC & Transite	125	Assume no change w/time
Unlined C.I. or Steel >50 yrs old	80	For pipe >12" use 90
Unlined C.I. <50 yrs old	90	For pipe >12" use 100
Concrete Lined Steel or C.I. <50 yrs old	100	For pipe >12" use 110
Concrete Lined Steel or C.I. >50 yrs old	110	For pipe >12" use 120
Epoxy Lined Steel or D.I.	120	Should be ≤15 yrs old

Pipe Roughness Values for Hydraulic Analyses

Modeling may be used to calibrate pipe C values when necessary

Pump Stations/Systems

- The number and size of pumps in new pump stations will be determined by the planning engineer.
- The system must meet ADD plus fire with a tank out of service for an extended period such as recoating of the tank interior.
- Pump systems will include no more than two pump stations in series without tank/gravity storage. These systems shall include pump station bypass regulators to allow the tank/gravity storage to supply all demands in pump zones when pumps are not in operation.
- Pump systems without tank/gravity storage are not allowed. Exceptions may be considered by the Director of Engineering only as a last resort option. If allowed by TMWA and approved by the Health Authority, fully redundant pump stations that meet MDD + fire flow requirements and standby generation will be required.
- Generators at new pump stations will be evaluated on a case-by-case basis by the engineer. Pump Stations located in NV Energy's Public Safety Outage Management (PSOM) areas are required to include a generator.
- High head pump systems (250 psi max) will be evaluated on a case-by-case basis and may be allowed by the Director of Engineering only if all customer pressures do not exceed 100 psi at the service connection.

- High head pump systems will require dedicated ductile iron transmission main, pressure reducing stations and parallel mains may be required for service and fire hydrant connections.
- Mains with normal operating pressures above 125 psi will be clearly identified in WaterWhere Online to facilitate proper repair and maintenance.

New Pressure Zones & Facility Rebuilds

- All pressure zones shall have at least two sources of supply. Sources of supply include pump stations, wells, tanks, pressure reducing stations, and check valves.
- The combined effect of all sources during normal operations shall be to maintain TMWA pressure criteria at all services when all facilities are operating. See below regarding groundwater production well source outage exception for Regional Water Supply Reliability and Redundancy.
- Fire Flow shall be met during a power outage with storage tanks nearly empty (tank is still providing flow, but tank level is set at 0.5 feet above tank pad).
- Gensets are required for all pumping sources that must be operated to meet required fire flows.
- If available secondary source(s) cannot maintain TMWA pressure criteria, the source may be acceptable as an emergency supply if it is capable of maintaining a minimum MDD pressure of 20 psi at all services during an intermittent outage of the primary source.
- When proposing pressure zone modifications, large changes in customer pressures are discouraged.
- The design should consider service provisions (ADD plus design fire flow) during an extended outage of any single source for routine maintenance (tank recoating, etc.).

Existing Pressure Zones & Facility Rebuilds

- Existing pressure zones shall attempt to meet criteria listed for new pressure zones, and at a minimum meet NAC 445A requirements.
- System Legacy issues that do not meet current TMWA design criteria shall not be made worse by the addition of new development, nor other TMWA improvements.
- Legacy issues will continue to be addressed where practical and based on priority in the latest water facility plan.

Regional Water Supply Reliability/Redundancy

- With single largest source (excludes zones with groundwater sources) of supply out of service (BPS failure, transmission main failure, etc. with relatively short repair times) system shall be able to meet ADD and fire flows with minimum design pressures.
- With single largest groundwater source of supply out of service (well failure, long repair time) system shall be able to meet MDD and fire flows while meeting minimum design service pressures listed previously in this document.

Storage

- Storage should be provided in all pressure zones or pump zones, but in certain situations as approved by the Director of Engineering, including high head pump systems, no more than two pump stations in series without an intermediate storage tank will be allowed. These systems shall include pump station bypass regulators to allow the tank storage to supply all demands in pump zones when pumps are not in operation.
- A minimum of two tanks shall be required for each system that allows for a single tank removal from service (inspection, maintenance, etc.) and still meet ADD + fire flow while meeting minimum service pressure requirements as follows: >20 psi during a fire flow event and >40 psi during ADD.
- A single concrete tank may be allowed with approval by the Director of Engineering. If allowed by TMWA, redundant pumping and standby generation will be required such that system will be able to meet ADD + fire flow while meeting minimum service pressure requirements as follows: >20 psi during a fire flow event and >40 psi during ADD.
- The volume of each tank shall consist of emergency, fire and operating storage components.
- The emergency storage component shall equal one average day demand for the zone(s) that it will supply under emergency conditions.
- The fire storage volume shall be established by the Fire Authority (GPM x duration). Legacy deficits shall be identified and if practical, corrected by the addition of new storage, system interties or alternative pumping capacity.
- The operating storage component shall equal at least 15 percent of the MDD of the zone(s) provided normal supply from the tank. Off peak pumping operational scenarios will require a larger operating volume.
- Tank level for MDD and PKHR hydraulic analyses shall assume operating storage has been exhausted (emergency and fire storage remains).
- Tank level for MDD + Fire hydraulic analyses shall assume at tank water level nearly equal to the pad elevation (tank is still providing flow, but tank level is set at 0.5 feet above tank pad).

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TMWA Planning Efforts^{10-18-23 BOARD Agenda Item 11}



2020-2040 Water **Resource Plan**

2020-2040 Water **Facility Plan**

5-Year Funding Plan Every Year



TMWA WFP Update

- Update completed every 5 years+/-
 - 2005 2025
 - 2010 2030
 - 2015 2035
 - <u>2020 2040 (Current update)</u>
- Provides CIP "Road Map"
- Helps with setting Water System Facility Charges (new business connection fees)



TMWA WFP Steps Summary

- Update existing demand data
- Update/calibrate water distribution computer models
- Setup future planning scenario models (2025, 2030, etc.)
- Develop "Road Map" for Capital Improvements:
 - Identify facilities to meet existing/future demands in compliance NAC requirements
 - Scenarios include Maximum Day Demand (MDD), Off-River emergency operation, redundancy
 - Identify timing of facilities
 - Estimate Costs
 - Update Water System Facility charges



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TMWA WFP Historical Demand Estimates VS Actual Demands

Year	Actual MDD (MGD)	% of Historical WFP Predictions
2005	148.3	97%
2006	140.8	91%
2007	136.7	88%
2008	133.2	85%
2009	128.8	81%
2010	123.2	90%
2011	119.9	86%
2012	125.6	89%
2013	121.4	85%
2014	119.7	82%
2015	125.6	79%
2016	139.6	86%
2017	139.8	84%
2018	145.4	86%
2019	145.7	85%
2020	141.6	81%
2021	149.3	84%
2022	147.6	83%

* MGD = million gallons per day



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TMWA Water Demand Projection Methodology Summary

- Growth Projection Updated in the 2020-2040 Water Resource Plan
- TMWA resource growth model incorporates the following data sources:
 - Washoe County Population
 - Historical Water Use Data
 - TMRPA Consensus Forecast
 - Nevada State Demographer Projections
 - TMWA's logistical growth curve methodology for population projection



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TMWA Water Resource Projection: 2020 to 2040





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TMWA Water Demand Projection Methodology Summary

 Water resource projection converted to GPM maximum day demand growth per 5 year planning period, starting basis is 2021 Billing Data





TMWA Water Demand Projection History







- Significant Effort to Allocate Growth per 5-year Planning Period
- Not All areas grow at the same rate (completely developed areas versus areas currently developing)
- Incorporated data from TMRPA Growth Forecast, TMWA new business data that includes unbuilt Discoveries and staff planning knowledge in each area.
- Allocation of demands into specific planning regions
- Additional sub-allocation of demands within planning regions



Finally – Perform Hydraulic Computer Modeling for Future Scenarios

- Add predicted demands to calibrated water model
- Allocate demands in time and space
- Perform system modeling
- Identify New Facilities
- Identify Timing of New Facilities
- Integrate findings into Capital Improvement Plan to meet NAC requirements



2040 WFP Estimated Expenditures

- The primary product of the WFP is a 20-Year Capital Improvement Plan (CIP).
- The WFP plan also includes consideration for emergency offriver operation, redundancy, power outages, fire events, mitigation of legacy deficiency issues, replacement/rehab of major facilities, etc.

WFP is used to update Water System Facility charges	Facility Category	20-Year Total Cost	20-Year Cost Allocated To Growth
	Supply	\$ 178,600,000	\$ 99,100,000
Average Annual Growth Related Costs \$9,700,000	Storage	\$ 37,200,000	\$ 18,500,000
	Distribution	\$201,800,000	\$ 76,500,000
	Totals	\$417,600,000	\$194,100,000



Major Findings of the 2040 WFP

- The Maximum Day Demand (MDD) growth rate has decreased
- Most CIPs identified in previous WFP will be delayed
- Areas of growth have not changed significantly
- New or expanded facility improvements include:
 - Increased supply to South Truckee Meadows & Verdi areas
 - Treatment of groundwater in Spanish Springs
 - Consolidation of pump stations into Super pump stations in west Reno
 - Construction of APWT facility in Stead
 - Orr Ditch Pump Station & Hydroelectric facility replacement



Major Findings of the 2040 WFP

- Supply capacity improvements that include Chalk Bluff, Sparks Groundwater Treatment Facility, and Longley treatment facility are not required prior to 2040
- Living Document, Updated every 5-years

• WSF Charges Update



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Thank you! Questions?



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TMWA

FY 2023 Goals & Objectives Results



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LEGEND:



GOALS & OBJECTIVES

ORGANIZATION

CUSTOMER SATISFACTION

	OBJECTIVES	AWWA BENCHMARK/ INDUSTRY STANDARD	MEASURE	TARGET	RESULTS
1	Residential Customers Totally or Mostly Satisfied.	71%-81% = Good 82%-86% = Excellent 86% + = Outstanding	% of residential customer's satisfaction	86%	84%
2 Meet the Faneuil contract requirement of calls answered within average of 35 seconds.		average call answered within 35 seconds	35 seconds	24 seconds	
3	Track all efforts and assistance with local ag homeless issue and water quality.	encies related to the	# of projects/programs		2

Notes:

Goals #1: Customer Satisfaction Survey was changed mid-year to an online survey instead of over the phone.

Goal #2: Average calls answered were faster than the target due to the implementation of the new CIS which impacted speed of answer early in the fiscal year.

Goal #3:

- 1. John Champion Portland Loo Grand Opening along the Truckee River corridor One Truckee River.
- 2. Reno City Plaza Portland Loo along the Truckee River corridor One Truckee River.

EFFICIENCY

OBJECTIVES	AWWA BENCHMARK/ INDUSTRY STANDARD	MEASURE	TARGET	RESULTS
1 Track customer accounts per employee and compare to national benchmark.	75 th Percentile = 547 Median = 421 25 th Percentile = 346	# of accounts per employee	Top quartile	560
2 Track average MGD delivered per employee and compare to national benchmark.	75^{th} Percentile = 0.25 Median = 0.17 25^{th} Percentile = 0.14	Average MGD delivered per employee	Top quartile	0.30

Calculations:

Objective 1: 137,110 (# of Customer Accounts)

Objective 2: 74.4 (Average MGD)

245 (# of Employees)

245 (# of Employees)

SAFETY

OBJECTIVES	AWWA BENCHMARK/ INDUSTRY STANDARD	MEASURE	TARGET	RESULTS
Maintain a safety incident rate below the Industry Standard Bureau of Labor Statistics, 2020	3.5 Average Incident Rate for Water & sewer line and related structure construction (NAICS237110) – Local Government	Incident rate	≤ 3.5	2.04
Track Collisions Per Million Miles (CPMM) and compare against Network of Employers for Traffic Safety Fleet Safety Benchmark Report (Reporting for North America Only, All Vehicles), 2021.	5.09 per 1,000,000 miles driven.	# of collisions per 1,000,000 miles driven	≤ 5.09	5.43

Calculations:

Objective 1:	5 (# of accidents) x 200,000 hours	Objective 2 :	8(# of collisions) x 1,000,000 mil
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487,819.00 (Total hours)

1,471,017.9 (Total mileage)

Notes:

Objective 2: The preventable vehicle accidents had a result of 5.43 accidents per 1,000,000 miles driven, which is above the industry average of 5.09; we had 8 minor accidents with little damage and all vehicles were back in service very soon. TMWA's 360° walk-around continues to be a useful tool.

FINANCE

	OBJECTIVES	AWWA BENCHMARK/ INDUSTRY STANDARD	MEASURE	TARGET	RESULTS
1	Meet all bond covenants.		# of bond covenants met	100%	100%
2	Update the 5-year funding plan.		Update completed	100%	100%
3	Preserve or improve TMWA's excellent credi major credit rating bureaus S&P (AA+ stable) and Fitch (AA+)	t ratings by the three), Moody's (Aa2 stable)	Maintain or improve credit ratings of High Grade	AA+ /Aa2 - stable or better	S&P – AA+ Moody's – Aa2 Fitch – AAA
4	Maintain a low debt ratio.	75 th Percentile = 23% Median = 35% 25 th Percentile = 46%	Debt ratio	Median	34%
5	Sustain a minimum of 470 days of cash reserve.	75^{th} Percentile = 470 Median = 315 25^{th} Percentile = 210	# of days of cash reserve	Top quartile	702
6	Maintain a debt-service coverage ratio of 1.5.	75^{th} Percentile = 3.35 Median = 2.50 25^{th} Percentile = 1.85	Debt-service coverage ratio	1.5 or better	1.33
7	Maintain high level of utility's financial effectiveness	75 th Percentile: 3.7% Median: 2.8% 25 th Percentile: 1.8%	% return on assets	Median	2.3%

Calculations:

Objective 4: (\$445m) Total liabilities

(\$1,313m) Total assets

Objective 5:

(\$156m) Undesignated cash reserves

(\$79m) Total annual operations & maintenance costs / 365 days

Objective 6: (\$113m) Total operating revenue – (\$79m) Total O&M costs + (\$4m) investment income

(\$28m) Total debt service

Objective 7: (\$30m) Net income

(\$1,313m) Total assets

Notes:

Objective 6: During FY 2023, several factors led to a lower debt service coverage ratio than 1.5x. Water revenues were lower than budget due to a unusually cold and wet spring, which led to a revenue shortfall of approximately \$6m. Additionally, due to inflation, electric power costs and water treatment chemical costs were higher than originally budgeted, by approximately \$5m. Had these two items been unaffected, DSC would have been 1.7x.

Objective 7: This was lower than the median of 2.8% due to the \$11m impact discussed above. Further, TMWA's connection fee revenue was approximately \$10m lower than the previous year. These two combined for an impact to net income of \$21m.

NATURAL RESOURCES

	OBJECTIVES	MEASURE	TARGET	RESULTS
1	Maximize benefit of the Truckee River Operating Agreement (TROA) implementation.	Maximize upstream storage under TROA within hydrological and operational constraints. Continue to cooperate with TROA stakeholders to develop opportunities to improve reservoir operations and efficient use of water resources.	100%	100%
2	Manage aquifer storage and recovery (ASR) and passive recharge capabilities and operations.	Analyze effectiveness of ASR and passive recharge on a well-by-well basis within each basin. Complete semi- annual report describing ASR and passive recharge goals and results.	100%	100%
3	Work with stakeholders to implement return flow management agreement.	Update Board on progress of implementation.	100%	100%
4	Collaborate with City of Reno on the A+ Advanced Purified Water Demonstration Project at American Flat.	Bring forth local agreement(s) between TMWA and City of Reno.	100%	100%
5	Palomino Valley Feasibility Study: Complete hydrogeologic feasibility investigation, investigate right of way and state engineer permitting issues. Prepare draft option agreement for Board consideration including ILA with City of Reno, City of Sparks and Washoe County.	% complete	100%	80%

Notes:

Objective 1: As of June 30, 2023, total upstream reservoir storage was 88% of capacity after three straight years of drought. The Lake started the month of December almost one half a foot (½') below the natural rim, and rose about 5.8 feet before peaking this summer. As a result of the recovery this year, sufficient upstream storage in the system exists to ensure normal Truckee River for the next 2 to 3 years, regardless of the weather. TMWA still has over 38,000 acrefeet (AF) of water in back-up storage between Donner and Independence lakes and TROA, so we are in fantastic shape from a water supply perspective. In fact, TMWA will go into this upcoming winter with as much carry-over storage on the Truckee River system as is legally possible (the maximum amount allowable according to TROA). Regardless of the water supply situation next year TMWA will continue using the provisions of TROA in order to maximize upstream storage opportunities for our community and make the most efficient use of our water resources.

Objective 2: TMWA continues to recharge groundwater to support water quality and pumping goals. TMWA is continuously working on increasing active and passive recharge efforts through existing wells and the development of new wells, as necessary and economically appropriate. Long-term ASR goals are to recharge up to up to 9,000 acre-feet per year (AFY) where TMWA recharges 3,000 AFY in the South Truckee Meadows, 2,000 AFY in the Central Truckee Meadows, 2,000 AFY in the Spanish Springs Valley, and 2,200 AFY in Lemmon Valley with the advanced purified water project at American Flat. One additional production well in the Spanish Springs Valley was equipped and began recharging last year. Through conjunctive use, groundwater pumping was reduced by about 3,400 AF between the Mt. Rose, Spanish Springs, Lemmon Valley and former STMGID areas, and 1,464 AF was recharged system-wide during FY 2023.

Objective 3: In FY22 TMWA Board of Directors approved the return flow will-serve agreement for Truckee-Reno Industrial General Improvement District (TRIGID). TMWA staff has continued to work extensively with the cities and Tahoe Reno Industrial General Improvement District (TRIGID), regarding the planned delivery of reclaimed water to the TRIGID system for industrial use, with a focus on water rights and the return flow management agreement. At this time (end of FY23), effluent deliveries have not yet begun to TRIGID, but are expected to occur sometime in FY24. Staff has entered into a settlement agreement with the Pyramid Lake Paiute Tribe regarding the necessary water rights to make up instream flows from treated effluent reuse in the Truckee Meadows and has begun discussions with the Tribe on the necessary water rights to make up instream flows from treated effluent reused at TRIGID.

Objective 4: Staff continues to with the City of Reno for the design and cost sharing of a 2 MGD advanced purified water treatment facility at American Flat. TMWA hired RSCI as the CMAR in October 2022. AECOM completed the 30% design in July 2023. TMWA approved the final design purchase order with AECOM in May 2023. TMWA is applying for the Bureau of Reclamation Title XVI grant in Fall 2023.

Objective 5: Additional water quality assessments of the hydrogeologic feasibility of irrigating with recycled water and recharging potable water in Palomino Valley continues. Staff has begun discussions on the necessary water rights to make up instream flows from additional treated effluent uses such as Palomino Farms.

DEPARTMENT

TREATMENT

	GOALS	AWWA BENC	HMARK/ ANDARD	MEASURE	TARGET	RESULTS
1	Meet the treatment costs set according to anticipated production.	If production is at or near: • 28,000 MG • 29,000 MG • 30,000 MG	TMWA cost: • \$605.72/MG • \$584.84/MG • \$565.34/MG	Achieve \$/MG in the respective production category	28kMG=\$605.72/MG 29kMG=\$584.84/MG 30kMG=\$565.34/MG	\$637.87/MG
2	Meet the benchmark of 0 (Zero) MCL violations.	0 (Zero) MCL violations		# of MCL violations	0	0
3	Maintain Chalk Bluff and Glendale finished water turbidity 95% of the time.	At less than: 0.30 NTU = EPA Standard 0.20 NTU = Good; 0.15 NTU = Excellent; 0.10 NTU is Outstanding 		NTU's	≤ 0.10 NTU	100% <0.1 NTU

Calculation:

Goal 1: 27,313 MG produced at a cost of \$17,422,187.39.

NOTE Goal 1: The unseasonal wet weather resulted in lower than expected production and unprecedented increase in power and chemical costs also impacted the result.

DISTRIBUTION

	GOALS	AWWA BENCHMARK/ INDUSTRY STANDARD	MEASURE	TARGET	RESULTS
1	Track system reliability by calculating the number of planned outages per 1,000 customers and compare to national benchmarks. < 4 hours	75 th Percentile = 0.15 Median = 0.56 25 th Percentile = 1.50	# of planned outages/1,000 customers	Median or better	0.13
2	Track system reliability by calculating the number of planned outages per 1,000 customers and compare to national benchmarks. 4 – 12 hours	75 th Percentile = 0.12 Median = 0.36 25 th Percentile = 0.66	# of planned outages/1,000 customers	Median or better	0.12
3	Track system reliability by calculating the number of unplanned outages per 1,000 customers and compare to national benchmarks. < 4 hours	75 th Percentile = 0.25 Median = 1.03 25 th Percentile = 2.00	# of unplanned outages/1,000 customers	Median or better	0.02
4	Track system reliability by calculating the number of unplanned outages per 1,000 customers and compare to national benchmarks. 4 – 12 hours	75 th Percentile = 0.11 Median = 0.20 25 th Percentile = 0.51	# of unplanned outages/1,000 customers	Median or better	0.12
5	Maintain 95% Hydro Plant Generation availability when r generation (excluding planned maintenance and rehab, v catastrophic failures).	iver flow is available for veather limitations and	% hydro generation availability	95%	99%

Distribution Calculations:

Pre-calculation: 135,185 (estimated # of customers) / 1,000 = 135.2

Goal 1: 18/135.2	Goal 2: 16/135.2
Goal 3: 3/135.2	Goal 4: 16/135.2

Goal 5: Hydro generation was maintained at 99%, and TMWA produced \$2.9 million in revenue during the fiscal year.

OPERATIONS

	GOALS	MEASURE	TARGET	RESULTS
1	Achieve 100% backflow testing compliance for all new construction and TMWA-owned devices, as well as 100% continued notification for backflow testing compliance for all existing customers.	% of backflow testing for new construction, TMWA-owned devices & existing customers	100%	100%
2	Perform 150 backflow retrofits.	# of backflow retrofits	≥ 150	208
3	Convert 8 of the remaining-field sites and stations that contain SCADA control used in a Legacy H.M.I. (Human Machine Interface) platform to operate within a supported and modern OMI (Operations Machine Interface) platform.	# of sites & stations converted to OMI	8	27
4	Maintain a 96% level uptime of the OMI (Operations Machine Interface) platform and underlying infrastructure within TMWA's direct purview within a 24 hour, 7 day a week, 365 day operational period.	Cumulative system uptime is not to fall below target percentage within the operational period	96%	>96%

BUSINESS INFORMATION SYSTEMS

	GOALS	MEASURE	TARGET	RESULTS
1	Complete the mapping of New Business 'as-built' drawings within 7 days or less.	# of days mapping of 'as-built' drawings of 'redline' drawing submittal	≤ 7 days	≤ 2 days
2	Close helpdesk tickets within 48 hours or less.	Average # of hours between the creation and closing of Helpdesk tickets	≤ 48-hrs	57 hours
3	Develop processes and tools necessary to further leverage GIS as TMWA's primary asset database.	% Implementation of processes and tools necessary to track and update "intradoc" assets	100%	100%
4	NEW: Develop processes and tools necessary to further leverage TMWA's financial system.	% implementation of processes and tools	100%	100%
5	NEW: Begin Human Capital Management (HCM) Project to replace TMWA's current payroll and HR applications.	Begin project by 6/30/2023	100%	100%
6	NEW: Make software selection and begin IT HelpDesk replacement project.	Begin project by 6/30/2023	100%	100%

Notes:

Goal 2: 57 hours is impressive given the continual increase in helpdesk tickets (3356 total, Averaging 279 per month). Project is underway to replace the current helpdesk system.

Goal 3: Implemented Backflow tracking May 2023 and asset maintenance history via Waterwhere June 2023.

Goal 4: Implemented digital requisition process by May 2023.

Goal 5: HCM project began December 2022.

Goal 6: Helpdesk replacement project began May 2023.

CUSTOMER SERVICE

	GOALS	AWWA BENCHMARK/ INDUSTRY STANDARD	MEASURE	TARGET	RESULTS
1	Customer Call Center will have an average call handl per call.	e time of 5 minutes, or less	Average handle time per call	≤ 5 min	5 min 11 seconds
2	2 The fiscal year average for disconnect for non-payment service orders to active accounts will be 0.30% or less. 9		% average of disconnects for non-payment	≤ 0.30%	0.04%
3	The write off to revenue will be 0.25% or less at fisca	al year-end.	% of write off to revenue	≤ 0.25%	0.15%
4	Hold a minimum of 30 public workshops, tours and/ primary focus on responsible water use and education Leadership workshops and open houses.	or presentations with a on, including Water	# of public workshops and/or tours	≥ 30	67
5	Maintain a high level of billing accuracy.	75 th Percentile = 0.8 Median = 9.5 25 th Percentile = 26.6	Billing accuracy rate	Median	3.70
6	Track percentage of total accounts delinquent at fiscal year-end.	75 th Percentile: 3.23% Median: 9.0% 25 th Percentile: 17.1%	% of delinquent accounts	Median	11%
7	Maintain high level of stakeholder outreach activities.	75 th Percentile: 83% Median: 67% 25 th Percentile: 50%	Stakeholder outreach engagement	90%	90%
8	Track the number of customer service complaints (complaints/population served).	75 th Percentile: 0.2 Median: 0.4 25 th Percentile: 0.8	# of customer complaints	Median or better	0.14
9	Track the percentage of bills issued that were estimated for both residential and commercial customers.	Residential: 75 th Percentile: 1.0% Median: 0.2% 25 th Percentile: 0.0% Commercial: 75 th Percentile: 0.9% Median: 0.1% 25 th Percentile: 0.0%	% of estimated bills issued	0.1% (Combined total)	0.1% Combined total

Calculations:

Goal 5: 602 (# of error-driven billing adjustments) x 10,000

1,628,175 (# of bills generated)

Goal 8:

64(# of complaints) x 1,000 469k (Estimated population served)

HUMAN RESOURCES

	GOALS	AWWA BENCHMARK/ INDUSTRY STANDARD	MEASURE	TARGET	RESULTS
1	Track continuous training for full-time equivalents (FTEs) employees.	75 th Percentile: 20.0 Median: 8.8 25 th Percentile: 5.8	# of continuous training hours per employee	Median or better	24.9
2	Track the number of annual employee FTEs departures per year.	75 th Percentile: 5.3% Median: 6.9% 25 th Percentile: 9.6%	# of FTEs departed per year	Median or better	6.9%
3	Track the number of FTEs eligible for retirement.	75 th Percentile: 15.2% Median: 20.8% 25 th Percentile: 37.5%	#of FTEs eligible for retirement	Median or better	27.3%

Calculations:

Goal 1: 6099.5 (training hours)		Goal 2: 17 (# of employees departed)	Goal 3:	67 (# of FTEs eligible to retire)
245 (# c	of employees)	245 (# of employees)		245 (# of employees)

FINANCIAL

	GOALS	AWWA BENCHMARK/ INDUSTRY STANDARD	MEASURE	TARGET	RESULTS
1	Meet or underspend Capital Commitments as approv	ved by the Board.	\$ spent	Met or underspent	\$35.9m underspent
2	2 Meet or underspend O&M Budget Commitments.		\$ spent	Met or underspent	\$1.5m underspent
3	Maintain a lean operating ratio.	75 th Percentile: 42% Median: 52% 25 th Percentile: 65%	% operating ratio	Median	70%
4	Reduce TMWA's debt per capita based on industry standards.	Benchmark: \$500-\$550	TMWA's debt per capita	Work toward industry standards	\$712
5	Maintain ratio of capital cost to total budgeted costs based on industry standards.	Benchmark: 25% - 50%	% of capital cost to total budgeted costs	25%	26%

Calculations:

Goal 3:	\$80m (Total O&M costs)	Goal 4:	\$334m (Total debt)
ļ	5113m (Total operating revenue)	_	469k (Population served)

Goal 5: \$39m (CIP)

\$151m (Cost of service)

Goal 3 Note: As discussed previously, TMWA's operating expenses were impacted by inflation and operating revenues were impacted by a cool, wet spring which led to this ratio being much higher than expected. This ratio is expected to be within the median in FY 2024.

Goal 4 Note: Improved from \$766 in prior year. Trending toward benchmark as expected.

NATURAL RESOURCES

	GOALS	MEASURE	TARGET	RESULTS
1	Increase community awareness and understanding of TROA and its benefit to our area's municipal water supply.	Continue giving presentations to customer/industry groups on TMWA's overall water resource management strategies, including the benefits of TROA, ASR, conservation, and A+ Reclaimed Water feasibility to the area's municipal water supply.	≥ 5 presentations	21
2	Review, monitor, and advise the Board regarding issues and activities of the 2023 legislative session that may affect TMWA. Continue monitoring and stay updated on statewide water law issues.	As necessary, advise the Board regarding issues or activities that may affect TMWA.	100%	100%
3	Continue an active role in maintaining sufficient water rights inventory, analyze purchase opportunities.	Maintain sufficient water rights inventory.	Monthly Board reports	100%
4	Turn around new business application water rights work within 5 business days.	# of days turnaround new business application.	≤ 5 days	≤ 3 days
5	Remain actively involved with UNR's Nevada Water Innovation Institute projects.	Report activities to the Board	100%	100%
6	Respond to customer water usage audit requests within 3-5 business days and provide monthly conservation report to the Board.	# of days between receiving request and completing a water audit	≤ 5 days	1 day
7	Analyze opportunities to increase water conservation for drought resiliency, use best available science to evaluate global climate change models applicable to this region, and advise the Board.	Complete the analyses and update the Board	100%	100%

Notes:

Goal 1: Staff exceeded this goal with dozens of water resource management strategy presentations given (Re: supply, TROA, Conservation, ASR, and A+ Reclaimed water feasibility).

Goal 2: Actively participate in trade group to track, comment and advocate in federal and state legislative matters. Participate in stakeholder processes regarding water rights and water quality regulatory changes. Update the Board through the legislative subcommittee.

Goal 3: Staff developed a water right purchasing strategy to identify opportunities to purchase water rights. Developed a strategy for pricing to help maintain a stable water market and maintain Rule 7 inventory. Staff entered into leases, options and several water purchases agreements.

Goal 5: Conducting several NWII projects, A+ piloting, ASR, sewer collection system source control. Participated in NWII strategic planning session and 5-year celebration.

Goal 7: Began process to update climate change assumptions for upcoming water resource planning documents. Evaluated and participated in upstream watershed protection for wildfire mitigation considering fire behavior changes from climate change. Reported to the Board on opportunities to reoperate upstream reservoirs given climate change impacts (Truckee Basin Water Management Options Pilot (WMOP) Study Update) and explored increased groundwater banking to account for possible changes in snowpack.

ENGINEERING & NEW BUSINESS

	GOALS	MEASURE		TARGET	RESULTS
1	Continue cooperative coordination with Agencies and complete projects on schedule. Survey agency satisfaction with utility coordination effort.	 1 = Unacceptable 2 = Needs Improvement 3 = Good 4 = Commendable 5 = Outstanding 	Average response rate	≥4 rating	4.75
2	Deliver required in-service dates for major capital projects on/under budget.	 Orr Ditch Hydro May 2023 FY23 spend \$15M in service June 2024. APWF at American Flat FY23 spend \$5M, 30% GMP estimate April 2023, In Service Spring 2025 Arrowcreek BPS (STMGID Conjunctive Use) \$3,450,000 in service June 2023. 	\$23.45 M	Met or underspent	\$9.98M
э	Continue to measure and report new business turnaround times. Project Category	Number of Projects and turnaround times:	% turnaround in ≤ 30 days	75%	A) 95%B) 96%C) 90%
3	 A) Commercial with Main B) Commercial Service C) Subdivision 	75% ≤ 30 days 100% ≤ 60 days i	% turnaround in ≤ 60 days	100%	A) 100%B) 100%C) 100%
4	NEW: With BIS support, identify a digital plan handling platform that will streamline plan intake time and further develop the digital permitting process.		% complete	100%	100%
5	NEW: Update New Business Process Mapping and Identify 3 Process Improvements.			% complete	100%
6	NEW: Update Water Facility Plan.		Complete by 10/1/2023	% complete	75%

Goal 2: Project Highlights

PROJECT	SCHEDULE	BUDGET	EXPENDED
Orr Ditch Hydro	Fall 2024 In Service Date.	\$15,000,000	\$5,492,000
APWF at American Flat	30% Estimate July 2023	\$5,000,000	\$1,662,000
Arrowcreek BPS (STMGID Conjunctive Use)	In Service July 2023	\$3,450,000	\$2,822,000
	TOTAL:	\$23,450,000	\$9,976,000

Goal 3: # of calendar days from application to first red-line review completed.

	Project Category	# Projects	Avg. Days	<=30 days	<=60 days
Α	Comm w/Main	38	17.9	95%	100%
В	Comm Services	85	13.6	96%	100%
С	Subdivision	41	22.7	90%	100%

Goal 4: Engineering/BIS identified a digital plan portal that is an add on to our CMMS System Cityworks (CMMS = Computerized Maintenance Management System).

Goal 5: In December 2022, TMWA held a New Business Improvements workshop over several days including numerous departments. The team mapped the entire process and identified 17 major process improvements. 8 of those improvements have already been implemented and several are underway to be implemented.

Goal 6: Staff anticipates a draft facility plan to be presented at the October Board meeting.

TMWA

FY 2024 Proposed Goals & Objectives



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GOALS & OBJECTIVES

ORGANIZATION

	OBJECTIVES	AWWA BENCHMARK/ INDUSTRY STANDARD	MEASURE	TARGET			
	CUST	OMER SATISFACTION					
1	Residential Customers Totally or Mostly Satisfied.	71%-81% = Good 82%-86% = Excellent 86% + = Outstanding	% of residential customer's satisfaction	86%			
2	Commercial Customers Totally or Mostly Satisfied.	77%-87% = Good 88%-90% = Excellent 90% + = Outstanding	% of commercial customer satisfaction	90%			
3	Meet the Faneuil contract requirement of calls answ seconds.	vered within average of 35	average call answered within 35 seconds	35 seconds			
4	Track all efforts and assistance with local agencies r issue and water quality.	elated to the homeless	# of projects/programs				
	EFFICIENCY						
1	Track customer accounts per employee and compare to national benchmark.	75 th Percentile = 543 Median = 401 25 th Percentile = 316	# of accounts per employee	Top quartile			
2	Track average MGD delivered per employee and compare to national benchmark.	75^{th} Percentile = 0.257 Median = 0.21 25^{th} Percentile = 0.16	Average MGD delivered per employee	Top quartile			
		SAFETY					
1	Maintain a safety incident rate below the Industry Standard Bureau of Labor Statistics, 2022.	5.0 Average Incident Rate for Water & Sewer line and related structure construction (NAICS237110) – Local Government	Incident rate	≤ 5.0			
2	Track Collisions Per Million Miles (CPMM) and compare against Network of Employers for Traffic Safety Fleet Safety Benchmark Report (Reporting for North America Only, All Vehicles), 2022.	4.25 per 1,000,000 miles driven.	# of collisions per 1,000,000 miles driven	≤ 4.25			
		FINANCE					
1	Meet all bond covenants.		# of bond covenants met	100%			
2	2 Update the 5-year funding plan.		Update completed	100%			
3	Preserve or improve TMWA's excellent credit rating rating bureaus S&P (AA+ stable), Moody's (Aa2 stab	Maintain or improve credit ratings of High Grade	AA+/Aa2/AAA – stable or better				

	OBJECTIVES	AWWA BENCHMARK/ INDUSTRY STANDARD	MEASURE	TARGET
	FIN	ANCE (CONTINUED)		
4	Maintain a low debt ratio.	75th Percentile = 22%Median = 35%Debt ratio25th Percentile = 54%		Median
5	Sustain a minimum of 525 days of cash reserve.	75 th Percentile = 525 Median = 370 25 th Percentile = 220	# of days of cash reserve	Top quartile
6	Maintain a debt-service coverage ratio of 1.5.	75 th Percentile = 3.35 Median = 2.57 25 th Percentile = 1.93	Debt-service coverage ratio	1.5 or better
7	Maintain high level of utility's financial effectiveness	75 th Percentile: 4.2% Median: 2.8% 25 th Percentile: 1.5%	% return on assets	Median
	NA	TURAL RESOURCES		
1	Maximize benefit of TROA implementation.	Maximize upstream storage under TROA within hydrological and operational constraints. Continue to cooperate with TROA stakeholders to develop opportunities to improve reservoir operations and efficient use of water resources		100%
2	Manage aquifer storage and recovery (ASR) and passive recharge capabilities and operations.	Analyze effectiveness of ASR and passive recharge on a well-by-well basis within each basin. Complete semi-annual report describing ASR and passive		100%
3	Work with stakeholders to implement return flow management agreement.	Update Board on progress of implementation		100%
4	Collaborate with City of Reno on the A+ Advanced Purified Water Demonstration Project at American Flat.	Bring forth an operating agreement between TMWA and City of Reno.		100%
5	Palomino Valley Feasibility Study: Complete hydrogeologic feasibility investigation, investigate return flow water rights considerations, right of way and state engineer permitting issues.	% complete		100%

DEPARTMENT

	GOALS	AWWA BEN INDUSTRY S	CHMARK/ TANDARD	MEASURE	TARGET	
	TREATMENT					
1	Meet the treatment costs set according to anticipated production.	If production is at or near: • 26,000 MG • 27,000 MG • 28,000 MG • 29,000 MG	TMWA cost: • \$844.84/MG • \$813.55/MG • \$784.50/MG • \$757.45/MG	Achieve \$/MG in each production category	@26kMG=<\$844.84/MG @27kMG=<\$813.55/MG @28kMG=<\$784.50/MG @29kMG=<\$757.45/MG	
2	Meet the benchmark of 0 (Zero) MCL violations.	0 (Zero) MCL violat	ions	# of MCL violations	0	
3	Maintain Chalk Bluff and Glendale finished water turbidity 95% of the time.	At less than: • 0.30 NTU = EPA Standard • 0.20 NTU = Good; NTU's • 0.15 NTU = Excellent; • 0.10 NTU is Outstanding		NTU's	≤ 0.10 NTU	
		DISTRIE	BUTION			
1	Track system reliability by calculating the number of planned outages per 1,000 customers and compare to national benchmarks. < 4 hours	75 th Percentile = 0. Median = 0.62 25 th Percentile = 2.	21 69	# of planned outages/1,000 customers	Median or better	
2	Track system reliability by calculating the number of planned outages per 1,000 customers and compare to national benchmarks. 4 – 12 hours	25^{th} Percentile = 2.69ci 75^{th} Percentile = 0.09#Median = 0.41o 25^{th} Percentile = 0.83ci		# of planned outages/1,000 customers	Median or better	
3	Track system reliability by calculating the number of unplanned outages per 1,000 customers and compare to national benchmarks. < 4 hours	75 th Percentile = 0.30 Median = 0.88 25 th Percentile = 2.31		# of unplanned outages/1,000 customers	Median or better	
4	Track system reliability by calculating the number of unplanned outages per 1,000 customers and compare to national benchmarks. 4 – 12 hours	75 th Percentile = 0. Median = 0.33 25 th Percentile = 0.	10 67	# of unplanned outages/1,000 customers	Median or better	
5	Maintain 95% Hydro Plant Generation av for generation (excluding planned maint limitations and catastrophic failures).	vailability when river enance and rehab, w	flow is available reather	% hydro generation availability	95%	

	GOALS	AWWA BENCHMARK/ INDUSTRY STANDARD	MEASURE	TARGET			
	OPERATIONS						
1	Achieve 100% backflow testing compliance for TMWA-owned devices, as well as 100% continu backflow testing compliance for all existing cus	all new construction and ued notification for tomers.	% of backflow testing for new construction, TMWA- owned devices & existing customers	100%			
2	Perform 150 backflow retrofits.		# of backflow retrofits	≥ 150			
3	Continue converting the remaining-field sites a SCADA control used in a Legacy H.M.I. (Human platform to operate within a supported and mo Machine Interface) platform.	nd stations that contain Machine Interface) odern OMI (Operations	# of sites & stations converted to OMI	8			
4	Maintain a 96% level uptime of the OMI (Opera platform and underlying infrastructure within within a 24 hour, 7 day a week, 365 day operat	ations Machine Interface) rMWA's direct purview ional period.	Cumulative system uptime is not to fall below target percentage within the operational period	96%			
		CUSTOMER SERVICE					
1	Customer Call Center will have an average call handle time of 5 minutes, or less per call.		Average handle time per call	≤ 5 min			
2	The fiscal year average for disconnect for non-pactive accounts will be 0.30% or less.	% average of disconnects for non-payment	≤ 0.30%				
3	The write off to revenue will be 0.25% or less at fiscal year-end.		% of write off to revenue	≤ 0.25%			
4	Hold a minimum of 30 public workshops, tours a primary focus on responsible water use and e Leadership workshops and open houses.	and/or presentations with education, including Water	# of public workshops and/or tours	≥ 30			
5	Maintain a high level of billing accuracy.	75^{th} Percentile = 1.0 Median = 11.0 25^{th} Percentile = 36.1	Billing accuracy rate	Median			
6	Track percentage of total accounts delinquent.	75 th Percentile: 3.2% Median: 8.1% 25 th Percentile: 20.0%	% of delinquent accounts	Median			
7	Maintain high level of stakeholder outreach activities.	75 th Percentile: 92% Median: 75% 25 th Percentile: 42%	Stakeholder outreach engagement	90%			
8	Track the number of customer service complaints (complaints/population served).	75 th Percentile: 0.21 Median: 0.3 25 th Percentile: 1.0	# of customer complaints	Median or better			
9	Track the percentage of bills issued that were estimated for both residential and commercial customers.	Residential: 75 th Percentile: 3.8% Median: 0.8% 25 th Percentile: 0.2% Commercial: 75 th Percentile: 1.0% Median: 0.1% 25 th Percentile: 0.0%	% of estimated bills issued	0.1% (Combined total)			

	GOALS	AWWA BENCHMARK/ INDUSTRY STANDARD	MEASURE	TARGET				
	BUSINESS INFORMATION SYSTEMS							
1	Complete the mapping of New Business 'as-bui or less.	ilt' drawings within 7 days	# of days mapping of 'as- built' drawings of 'redline' drawing submittal	≤ 7 days				
2	Close helpdesk tickets within 48 hours or less.		Average # of hours between the creation and closing of Helpdesk tickets	≤ 48 hours				
3	Develop processes and tools necessary to furth Information System (GIS) as TMWA's primary a	er leverage Geographic sset database.	% implementation of processes and tools	100%				
4	Develop processes and tools necessary to furth financial system.	er leverage TMWA's	% implementation of processes and tools	100%				
5	NEW: Complete Human Capital Management (TMWA's current payroll and HR applications.	HCM) Project to replace	Complete project by 8/2024	100%				
6	NEW: Implement Cityworks Public Access Porta	al.	Complete project by 8/2024	100%				
		HUMAN RESOURCES						
1	Track continuous training for full-time equivalents (FTEs) employees.	75 th Percentile: 17.0 Median: 10.0 25 th Percentile: 6.6	# of continuous training hours per employee	Median or better				
2	Track the number of annual employee FTEs departures per year.	75 th Percentile: 4.6% Median: 7.7% 25 th Percentile: 11.5%	# of FTEs departed per year	Median or better				
3	Track the number of FTEs eligible for retirement.	75 th Percentile: 13.6% Median: 23.0% 25 th Percentile: 34.1%	#of FTEs eligible for retirement	Median or better				
		FINANCIAL						
1	Meet or underspend Capital Commitments as ap	pproved by the Board.	% of budget spent	70-100%				
2	Meet or underspend O&M Budget Commitments.		\$ spent	Met or underspent				
3	Maintain a lean operating ratio.	75 th Percentile: 42% Median: 56% 25 th Percentile: 74%	% operating ratio	Median				
4	Reduce TMWA's debt per capita based on industry standards.	Benchmark: \$500-\$550	TMWA's debt per capita	Work toward industry standards				
5	Maintain ratio of capital cost to total budgeted costs based on industry standards.	Benchmark: 25% - 50%	% of capital cost to total budgeted costs	25%				

	GOALS	MEASURE	TARGET	
NATURAL RESOURCES				
1	Increase community awareness and understanding of TROA and its benefit to our area's municipal water supply.	Continue giving presentations to customer groups on TMWA's overall water resource strategies, including the benefits of TROA, conservation, and A+ Reclaimed Water fea area's municipal water supply.	Continue giving presentations to customer/industry groups on TMWA's overall water resource management strategies, including the benefits of TROA, ASR, conservation, and A+ Reclaimed Water feasibility to the area's municipal water supply	
2	Review, monitor, and advise the Board regarding issues and activities of the interim 2024 legislative session that may affect TMWA. Continue monitoring and stay updated on statewide water law issues.	As necessary, advise the Board regarding is activities that may affect TMWA.	sues or	100%
3	Continue an active role in maintaining sufficient water rights inventory, analyze purchase opportunities.	Maintain sufficient water rights inventory.		Monthly Board reports
4	Turn around new business application water rights work within 5 business days (unless changes arise on the customer's side.)	# of days turnaround new business applica	tion	≤ 5 days
5	Remain actively involved with UNR's Nevada Water Innovation Institute projects.	Report activities to the Board		100%
6	Respond to customer water usage audit requests within 3-5 business days and provide monthly conservation report to the Board.	# of days between receiving request and completing a water audit		≤ 5 days
7	Analyze opportunities to increase water conservation for drought resiliency, use best available science to evaluate global climate change models applicable to this region, and advise the Board.	Complete the analyses and update the Board.		100%
	ENGI	IEERING & NEW BUSINESS		
1	Continue cooperative coordination with Agencies and complete projects on schedule. Survey agency satisfaction with utility coordination effort.	1 = Unacceptable 2 = Needs Improvement 3 = Good 4 = Commendable 5 = Outstanding	Average response rate	≥4 rating
2	Deliver required in-service dates for major capital projects on/under budget.	 APWF GMP 1 Q4 2024 Orr Ditch Hydro / BPS In Service Nov. 2024 7th Street High / Low BPS In Service Dec. 2024 FY24 Tank Rehabilitation In Service May 2024 	\$45M	Met or underspent
2	Continue to measure and report new business turnaround times. Project Category	Number of Projects and turnaround times:	% turnaround in ≤ 30 days	75%
3	 A) Commercial with Main B) Commercial Service C) Subdivision 	75% ≤ 30 days 100% ≤ 60 days	% turnaround in ≤ 60 days	100%

	GOALS	MEASURE		TARGET
	ENGINEERING	G & NEW BUSINESS (CONTINUED)		
4	NEW: With BIS support, implement the Cityworks Public Access Portal.	Complete by August 2024.	% complete	100%
5	NEW: Implement 3 Major New Business Process Improvements.	Complete by 9/1/24.	% complete	100%
6	NEW: Implement Updated Facility Charges.	Complete by 7/1/24.	% complete	100%

TMWA Office Expansion & Improvement Timeline





Office Space, Workshop Space, Storage Space Needs:

Corporate

-Office Space -Storage Space -Conference Space -Shop Space?

Options: Building Expansion Shop/Warehouse Expansion

CIP: \$3.5M Corporate Office Expansion *Parking limits Glendale -Office Space -Storage Space

Options: New Building with Shop/Office Move Metal building for Storage

CIP: \$2.05M Glendale Building Expansion \$1.0M Glendale Storage Building

Chalk Bluff

-Storage Space -Emergency Operations Center

Options: Conditioned Storage Space that Is flexible for EOC

CIP: \$2.5M Emergency Operations Center / Annex *Potential NDEM Grant

\$9M in independent projects next 5 years



10-18-23 BOARD Agenda Item 14







10-18-23 BOARD Agenda Item 14

Thank you! Questions?





STAFF REPORT

TO: Board of Directors
FROM: John R. Zimmerman, General Manager
DATE: October 9, 2023
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*).

Last month we received two thank you emails from customers who were going through some personal hardships and received cards of support from Dawn & Dianna, our Faneuil call center representatives (see attached).

Also, listed below are news clippings from September 12 through October 9, 2023:

- 09/18/23 <u>Fitch Says Water Utilities on Solid Financial Footing Despite Possible Recession</u> Water Finance & Mgmt
- 09/18/23 Two Ways of Knowing that There are PFAs in You Drinking Water Popular Science
- 09/19/21 Numana Dam Fish Passage Project on the Truckee River US Fish & Wildlife
- 09/19/23 Nevada Drought Update for September Nevada drought Update
- 09/21/23 Dam to Open Endangered Fish Spawning at Pyramid Lake Nevada Independent
- 09/11/23 How Much Water Do We Really Need? Real Simple
- 09/24/23 Major Meadow Clean Up at Upper Truckee River Tahoe daily Tribune
- 09/22/23 Invasive New Zealand Mud Snails Found in Lake Tahoe Record Courier
- 09/23/23 <u>Upstream Solutions Lead to Downstream Problems for Tribal Plants and Animals</u> Nevada Current
- 09/24/23 <u>\$27 Million Awarded to Drinking Water System Improvements in Nevada KOLO TV</u>
- 09/30/23 Tahoe and Donner Lake Levels, A Successful Year SLT Daily Tribune
- 10/02/23 Reno Finishes Water Year in Second Place KTVN
- 10/02/23 Forest for the Trees Tahoe Daily Tribune
- 10/04/23 Governor is Expanding Economic Reach (includes water resources) Business Facilities
- 10/05/23 <u>Reno Sees Second Wettest Year</u> KRNV

10-18-23 BOARD Agenda Item 15 Attachment

9/12/2023

Dear Dawn,

You are single handedly restoring my faith in humanity.

Thank you for the caring sympathy card you sent me. It really did mean a lot. I can't believe, but I'm delighted to believe, that someone from the water company would be so kind as to send a card.

If my Mary is up there looking down on us, she will surely bless you.

Thank you, James Cooley

Reno 89511

From: Westlake, Marci <mwestlake@tmwa.com>
Sent: Tuesday, September 26, 2023 7:54 AM
To: Furrey, Dianna <dianna.furrey@faneuil.com>; Schanaman, April
<april.schanaman@faneuil.com>; TMWA SB-Call Center <TMWASB-CallCenter@faneuil.com>
Cc: Zimmerman, John <jzimmerman@tmwa.com>; Bowman, Mat <mbowman@tmwa.com>
Subject: RE: ACCT #15190XXXX

Thank you so much for sending uplifting cards at the time when our customers are in need of a simple gesture! We really do appreciate your kindness Dianna!

Marci Westlake Customer Service Manager Truckee Meadows Water Authority 1355 Capital Blvd. I Reno, NV 89502 O: (775) 834-8074 mwestlake@tmwa.com I www.tmwa.com



From: Dianna Furrey <<u>dianna.furrey@faneuil.com</u>> Sent: Tuesday, September 26, 2023 7:37 AM To: Schanaman, April <<u>april.schanaman@faneuil.com</u>>; TMWA SB-Call Center <<u>TMWASB-CallCenter@faneuil.com</u>> CallCenter@faneuil.com> Cc: Westlake, Marci <<u>mwestlake@tmwa.com</u>> Subject: Re: ACCT #15190XXXX

It's so nice to hear the cards are doing a good job for all of us. I love them!! 🙂 💙

Dianna Furrey Faneuil, Inc TMWA CSR 505 S Broadway Scots bluff,NE 69361 dfurrey@faneuil.com From: April Schanaman <<u>april.schanaman@faneuil.com</u>> Sent: Monday, September 25, 2023 2:57 PM To: TMWA SB-Call Center <<u>TMWASB-CallCenter@faneuil.com</u>> Cc: Westlake, Marci <<u>mwestlake@tmwa.com</u>> Subject: FW: ACCT #15190XXXX

Thank you Dianna for using Hallmark Cards to help lift the customers spirits.

April Schanaman Faneuil, Inc TMWA Team Manager 505 S Broadway Scottsbluff,NE 69361 April.Schanaman@Faneuil.com

From: Janet Mata <janet.mata@faneuil.com> Sent: Friday, September 22, 2023 2:31 PM To: April Schanaman <<u>april.schanaman@faneuil.com</u>> Cc: TMWA Supervisors <<u>TMWASupervisors@faneuil.onmicrosoft.com</u>> Subject: ACCT #15190XXXX

Date	Туре	New Note		Ŵ
		4113 - CS CUSTOMER YEAH		
09/22/2023	4113 - CS YEAH	RENA CLLD TODAY TO ADV THAT SHE WAS VERY THANK FUL FO SHE RECEIVED FROM DIANNA , IT REALLY LIFTED HER SPIRITS. EVERYTHING WE HAVE DONE FOR HER.	OR THE CARD THAT	0
				0
		SA	VE NOTE CAN	ICEL



STAFF REPORT

TO: Board of Directors
THRU: John R. Zimmerman, General Manager
FROM: John Enloe, Director Natural Resources
BY: Bill Hauck, Water Supply Supervisor
DATE: October 10, 2023
SUBJECT: October 2023 Water Operations Report

SUMMARY

- From a water supply perspective TMWA is positioned very well heading into the winter.
- Lake Tahoe storage is solid @ 73% of capacity (-1.5' from maximum elevation).
- Total combined Truckee River reservoir storage is ~76% of capacity.
- TMWA's privately-owned storage reservoirs (Donner and Independence lakes) are at a combined 91% of capacity (@ 24,684 acre-feet (AF)).
- TMWA also has 13,183 AF stored under the terms of TROA for a combined upstream storage total of ~37,867 AF.
- A significant amount of upstream reservoir storage will be carried over into this winter.
- Normal Truckee River flows are likely for the next couple of years because of that amount of carry-over storage, regardless of what type of winter we have.
- Customer demand averaged 96 MGD through the last full week of September.
- Hydroelectric generation for September 2023 was \$300,819 (@ 3,963 MWh).

(A) Water Supply

- **River Flows** Truckee River discharge at the CA/NV state line was about 450 cubic feet per second (CFS) this morning. This is slightly above average, as the 114-year median daily discharge for this day at Farad is 413 CFS.
- **Reservoir Storage** Overall Truckee River reservoir storage is ~76% of capacity. The elevation of Lake Tahoe is 6227.50 feet (~1.60'from full). Storage values for each reservoir as of October 10th are as follows:

	Current Storage	% Capacity
Reservoir	(Acre-Feet)	(Percent)
Tahoe	543,100	73%
Boca	20,174	49%
Stampede	211,986	94%
Prosser	14,218	48%
Donner	8,405	88%
Independence	16,279	93%

In addition to the 24,684 acre-feet of storage between Donner and Independence reservoirs, TMWA also has about 13,183 acre-feet of water stored between Stampede and Boca reservoirs under the terms of TROA. TMWA's total combined upstream reservoir storage as of this writing is 37,867 acre-feet.

• **Outlook** - The region is positioned extremely well from a water supply perspective as a significant amount of upstream reservoir storage will be carried over into the winter of 2023/2024. This helps to provide a level of comfort should a drier year occur this next time around. But regardless of what happens this winter, normal river flows can be anticipated over the course of the next couple of years due to the amount of carry-over storage in place. The water supply outlook is very good.

(B) Water Production

• **Demand** - TMWA customer demand continues to taper off with the cooler fall weather. Demand averaged ninety-six (96) million gallons per day (MGD) through the last full week of September. Surface water made up 88% of the supply, and groundwater pumping the other 12%.

(C) Hydro Production

Generation - The average flow in the Truckee River at Farad (CA/NV state line) during the month of September was 556 CFS. The Verdi and Washoe hydroelectric plants were on-line all month and available 100% of the time, while the Fleish plant had to be taken off-line for 11 days for emergency repairs.

Plant	Generation	%	Generation	Revenue	Revenue
	Days	Availability	(Megawatt Hours)	(Dollars)	(Dollars/Day)
Fleish	19	63%	1,062	\$80,900	\$2,967
Verdi	30	100%	1,675	\$126,411	\$4,214
Washoe	30	100%	1,226	\$93,508	\$3,117
Totals	79	-	3,963	\$300,819	\$10,298

Statistics and generation for the month as follows:



STAFF REPORT

TO:Chairman and Board MembersTHRU:John R. Zimmerman, General ManagerFROM:Eddy Quaglieri, Water Rights ManagerDATE:October 18, 2023SUBJECT:Water Resources and Annexation Activity Report

<u>RULE 7</u>

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

Beginning Balance		3,296.38 AF
Purchases of water rights	12.27 AF	
Refunds	0.00 AF	
Sales	-142.16 AF	
Adjustments	0.00 AF	
Ending Balance		3,166.49 AF

Price per acre foot at report date: \$7,900

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		7,402.79 AF
Committed water rights	- 0.45 AF	
Ending Balance		7,402.34 AF

Price per acre foot at report date: \$45,753.75 (SFR and MFR); \$39,690 (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

Since the date of the last report, there have been 4.59 acres (Exhibit A) annexed into TMWA's service area.

INTERRUPTIBLE LARGE VOLUME NON-POTABLE SERVICE

No new ILVNPS customers have been added during this reporting period.

EXHIBIT "A"




STAFF REPORT

TO: Board of Directors
THRU: John R. Zimmerman, General Manager
FROM: Marci Westlake, Manager Customer Service
DATE: October 9, 2023
SUBJECT: September Customer Service Report

The following is a summary of Customer Service activity for September 2023

Ombudsman -Kim Mazeres

- Customer wants to know when water will be let out of Donner Lake, referred the customer to the responsible staff.
- Customer pays through her online bill pay and wants to return our envelopes to us, told her that we would take them in the office and recycle.
- Customer trying to figure out if leak on the service line was her responsibility or the mobile home park? It was the mobile home park's responsibility.
- Question on TMWA policies, called customer three times and they did not call back.
- Customer misplaced bill that was due, customer paid in the office.
- Questions about programming an irrigation controller, referred to conservation.

Communications- Public Outreach – September

- Kara Steeland had a presentation for the American Public Water Association about Partnering to Reduce Wildfire Risk and Protect Drinking Water and 50 people attended.
- Kara Steeland had a presentation for Water Education Foundation about Watershed Protection and 45 people attended.
- Lydia Teel and John Enloe had a presentation for Water Education Foundation about Advanced Purified Water and 45 people attended.
- Shannon Giolito and Shiryl Mandeville attended the Truckee Meadows Regional Planning Agency at Rancho San Rafael Park for TMRPA One Region Annual Event-Public Outreach and 20 people attended.

Conservation (2023 Calendar year)

- 966 Water Usage Reviews
- 4,964 Water Watcher Contacts

Customer Calls – September

- 7,250 phone calls handled.
- Average handling time 5 minutes 01 seconds per call.
- Average speed of answer :17 seconds per call.

Billing –September

- 136,764 bills issued.
- 42,299 customers (31%) have signed up for paperless billing to date.

<u>Remittance – September</u>

- 14,850 Mailed-in payments.
- 22,665 Electronic payments
- 45,623 Payments via AutoPay (EFT)
- 14,893 One-time bank account payments
- 116 Store payments
- 671 Pay by Text
- 4,216 IVR Payments
- 684 Reno office Payments
- 23 Kiosk Payments

<u>Collections – September</u>

- 12,443 accounts received a late charge.
- 4,135 Mailed delinquent notices, 0.03% of accounts.
- 580 accounts eligible for disconnect.
- 442 accounts were disconnected. (Including accounts that had been disconnected-for-non-payment that presented NSF checks for their reconnection)
- 0.10% write-off to revenue.

Meter Statistics – Fiscal Year to Date

- 1,803 Meter exchanges completed.
- 415 New business meter sets completed.