



TRUCKEE MEADOWS WATER AUTHORITY
Board of Directors

AGENDA

Wednesday, May 17, 2017 at 10:00 a.m.
Sparks Council Chambers, 745 4th Street, Sparks, NV

Board Members

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

Vice Chair Vaughn Hartung
Member Jeanne Herman
Member Naomi Duerr

NOTES:

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

1. Roll call*
2. Pledge of allegiance*
3. Public comment — limited to no more than three minutes per speaker*
4. Approval of the agenda (**For Possible Action**)
5. Approval of the minutes of the April 19, 2017 meeting of the TMWA Board of Directors (**For Possible Action**)

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.

6. Discussion and action, and possible direction to staff regarding 2017 legislative activities and current bills, and TMWA recommended positions on legislative proposals — John Zimmerman and Steve Walker, Walker & Associates **(For Possible Action)**
 7. Presentation, discussion and potential direction to staff regarding an agreement to use reclaimed water from the Truckee Meadows Water Reclamation Facility (TMWRF) as proposed by the Tahoe Reno Industrial General Improvement District (TRI GID) — John Enloe **(For Possible Action)**
 8. Request for Board approval to initiate legal action against Farr Construction Corporation dba Resource Development Company and Quest Inspar, LLC in relation to the TMWA capital improvement project titled Fleish Penstock and Highland Inverted Siphon Structural Lining, PWP # WA-2016-038 — Dane Anderson and Gordon Depaoli, Woodburn Wedge and Pat Nielson **(For Possible Action)**
 9. Presentation of financial performance for third quarter Fiscal Year 2017 — Tabitha Carlisle and Michele Sullivan*
 10. Discussion and action on adoption of Resolution No. 251: A resolution to approve the third budget augmentation and budget revisions for FY 2017 — Michele Sullivan **(For Possible Action)**
 11. PUBLIC HEARING ON ADOPTION OF BUDGET
 - 11.A Discussion and action on request for adoption of Resolution No. 252: A resolution to adopt the final budget for the Fiscal Year ending June 30, 2018 and the 2018-2022 Five-Year Capital Improvement Plan — Michele Sullivan **(For Possible Action)**
 - 11.B Public comment — limited to no more than three minutes per speaker*
- CLOSE PUBLIC HEARING
12. Presentation on proposed Summer 2017 Campaign and Water Leadership Communications Plan, discussion and possible direction to staff — Andy Gebhardt and Marlene Olsen **(For Possible Action)**
 13. General Manager's Report*
 14. Public comment — limited to no more than three minutes per speaker*
 15. Board comments and requests for future agenda items*
 16. Adjournment **(For Possible Action)**

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TRUCKEE MEADOWS WATER AUTHORITY
DRAFT MINUTES OF THE APRIL 19, 2017
MEETING OF THE BOARD OF DIRECTORS

The Board of Directors met on Wednesday, April 19, 2017, at Sparks Council Chambers, 745 4th Street, Sparks, Nevada. Vice Chair Hartung called the meeting to order at 10:01 a.m.

1. ROLL CALL

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

Members Absent: Geno Martini

A quorum was present.

2. PLEDGE OF ALLEGIANCE

The Pledge of Allegiance was led by Garth Elliot, Sun Valley General Improvement District (SVGID) Treasurer.

3. Public Comment

Malachy Horan requested that the March 15 minutes not be approved unless the minutes are changed verbatim to the comments he and Board members made regarding the proposed rate adjustments which he asserted was required by Nevada Revised Statute (NRS) 241, governing open meetings.

4. APPROVAL OF THE AGENDA

Vice Chair Hartung asked if Board members would like to hear agenda items in a different order.

Member Brekhus noted the City of Reno Council was holding a special meeting at 12:00 pm and requested agenda item 7 to be heard after agenda item 10.

Upon motion by Member Smith, second by Member Dahir, which motion duly carried by unanimous consent of the members present, the Board approved the agenda and hearing item #7 after item #10.

5. APPROVAL OF THE MINUTES OF THE MARCH 15, 2017 MEETING

Michael Pagni, TMWA General Counsel, stated that the Open Meeting law requires that the minutes reflect the substance of verbal remarks by general public and that minutes are a summary not a

transcription of comments, and that the Board can approve or modify the minutes in response to Mr. Horan's request as they see fit.

Member Brekhus said she saw no issues with the draft minutes and confirmed the Open Meeting law maintains recordings of meetings be made available to the public. Mr. Pagni replied yes.

Member Jardon inquired if the audio of the meetings were put on the website and how quickly. Mr. Foree replied the video of all meetings are posted on the website and Sonia Folsom, TMWA Board Secretary, replied very quickly.

Upon motion by Member Smith, second by Member Jardon, which motion duly carried by unanimous consent of the members present, the Board approved the March 15, 2017 minutes.

6. DISCUSSION AND POSSIBLE ACTION REGARDING THE APPOINTMENT OF AN ALTERNATE BOARD MEMBER(S) TO THE TMWA LEGISLATIVE SUBCOMMITTEE

Vice Chair Hartung stated Chair Martini has been unable to attend or call-in for the TMWA legislative subcommittee meetings. Since the subcommittee already has representatives from City of Reno and Washoe County, he nominated Member Ron Smith from the City of Sparks.

Upon motion by Member Hartung, second by Member Dahir, which motion duly carried by unanimous consent of the members present, the Board approved to nominate Member Ron Smith as an alternate to the TMWA legislative subcommittee.

8. REPORT AND DISCUSSION ON THE RESULTS OF TMWA'S 2017 REFUNDING BOND ISSUE AND FINANCIAL UPDATE

Michele Sullivan, TMWA Chief Financial Officer, introduced Brian Thomas, PFM Financial Advisor, who facilitated the bond refunding. Mr. Thomas informed the Board that he has had extensive experience in working with water utilities over 25 years, and it has been a privilege to work with TMWA since 2001; it is an outstanding organization.

Mr. Thomas provided an overview of the bond refunding highlighting that TMWA achieved over \$15 million in savings and principal outstanding debt was reduced by over \$55 million, down from \$202 million to \$147 million. He reported that TMWA has was rated AA2 by Moody's and was upgraded from AA to AA+ stable outlook by Standard & Poor's because: TMWA has a very strong liquidity to meet emergency situations and can fund its capital improvement projects without the need for additional debt, while paying down debt; TMWA did a fantastic job in its water supply planning which is a critical component in its ratings as well as looking 5-10-15 years out; TMWA's debt per capita is double the average utility in the American Water Works Association (AWWA) metrics, but the debt will be paid

down quickly with a large percentage being retired within the next 10 years; and TMWA has imposed periodic rate increases as required (TMWA's average bill is 7% lower than the national average.)

Member Dahir confirmed the desire to have high credit ratings is directly correlated to interest rates achieved in the bond refunding, otherwise operating costs would increase significantly. Mr. Thomas replied yes, that is correct, and if TMWA's rating would go down, since it has a line of credit outstanding, a downgrade would immediately cause TMWA to start paying more.

Member Brekhus congratulated TMWA on a successful bond refunding and the work put into it, and the national benchmarks were helpful. She commented that TMWA's capital improvement plan (CIP) was at 26% of its budget, and the national average is 25-50% and inquired if that was because TMWA is leveraged with high debt. Also, some of critiques from constituents is that TMWA has a large cash reserve, but is decreasing. Mr. Foree replied the CIP is a small part of the overall budget because the system is still relatively new and not a 100 year old system, and Mr. Thomas confirmed it is related to debt service coverage.

Member Duerr suggested increasing the debt service coverage ratio to balance the drop in revenues could affect revenue and bonds. Mr. Thomas confirmed it is important to have liquidity to act as a cushion for reduced water sales and to fund CIP.

9. DISCUSSION AND ACTION, AND POSSIBLE DIRECTION TO STAFF ON THE TMWA TENTATIVE BUDGET FOR THE FISCAL YEAR ENDING JUNE 30, 2018

Ms. Sullivan reported on the questions the Board had at the March meeting regarding the Truckee River Fund (TRF) funding at \$850,000 and the Desert Research Institute (DRI) cloud seeding funding at \$210,000, as well as the fire hydrant programs with the Cities of Reno and Sparks. Ms. Sullivan stated the TRF was started by TMWA in 2005 where money has been used to fund projects that protect and enhance Truckee River water quality and the watershed and has since funded approximately \$11.9 million which has been matched by about \$20.5 million in either cash or in-kind funds.

Vice Chair Hartung inquired what were the benefits to TMWA in supporting these efforts. Mr. Foree replied the projects protect water quality and the watershed, for example several projects previously funded have paid for reseeded of large areas impacted by fires to decrease erosion and sediment transport to the Truckee River.

Member Smith stated TMWA has been funding the cloud seeding program for quite some and questioned whether DRI cloud seeded this winter. He noted there was a bill in the legislature which would provide funding by the state and the TMWA budget could be adjusted if the funding was approved, but could remain until that time. Ms. Sullivan replied DRI stopped cloud seeding in early January, but the program also supports drone efforts and research. John Enloe, TMWA Director of Natural Resources, stated \$135,000 of TMWA's \$210,000 budget is unspent. He also stated that the bill did not pass out of committee, which would have provided funding by the state, but there is funding in the Governor's budget, which has yet to pass and Ms. Sullivan added the budget can be adjusted at any time.

Member Brekhus inquired why the CIP budget had increased from \$169.5 million to \$172.8 million from the March meeting. Ms. Sullivan replied there were a few projects that were unable to be completed this fiscal year and a grant was awarded for a project, but it is in line with the funding plan.

Member Brekhus inquired if the 2.5% salary increase applied to all employees except the collective bargaining employees; and noted both the 2.5% salary and step increases were included in the budget and not as a separate resolution, which is different at the City of Reno; and inquired what was the cause of the extreme overtime reported in the newspaper. Ms. Sullivan replied the 2.5% salary increase is the estimated amount for all employees. Andy Gebhardt, TMWA Director of Operations and Water Quality, replied the high overtime for the four TMWA employees, due to turnover in the water treatment/distribution system operator group and the time it takes to train apprentices and get them to journeyman status. Because TMWA is staffed so leanly, it is expected to see an increase in overtime while apprentices, who need supervision, are being trained. The overtime will decrease in the fall when the apprentices progress to journeymen and staff will review whether it is more cost effective to continue with the overtime or add other water operator(s), but also need to ensure the staff are not overworked; the system grew quite significantly with the merger and TMWA's water operators are some of the most highly skilled operators in the nation who manage different distribution control systems and water treatment plants 24 hours day-7 days a week-365 days a year.

Member Jardon noted the extreme overtime was a concern, but also knows there is always a reason, which is compensating for another person/position. Mr. Gebhardt replied, yes that is correct.

Vice Chair Hartung verified the operators are highly skilled trained employees. Mr. Gebhardt replied yes.

Member Dahir inquired if the increase in overtime was due to the storms at the beginning of the year. Mr. Gebhardt replied in part yes, but the increase was predominately due to operator turnover and the apprentices.

Vice Chair Hartung noted the Cities of Reno and Sparks benefit from the fire hydrant agreements, but there was no agreement with Washoe County (the County). Pat Nielson, TMWA Director of Distribution, Maintenance and Generation, replied that while it has been discussed there is currently no formal agreement with the County, but TMWA has continued to maintain the laterals that connect the mains to the hydrants based on a previous arrangement between County Fire and the former Washoe County water utility which benefits the County.

Discussion followed regarding the disbanding of the Western Regional Water Commission (WRWC), which would require legislative action and would most likely occur at the 2019 Legislative Session, and the provision of funding for the WRWC is on the customer bills; the possibility of the funding to the WRWC could potentially fund the TRF program; as well as requesting general counsel to consider the possibility of how to move forward.

Member Brekhus confirmed that the meter retrofit fund decreased from FY16, but still had \$780,000 for FY18, and inquired how many meters were left and at what cost. Mr. Foree replied there were several meters left to be retrofitted, which were mostly multi-family and apartment complexes. Mr. Gebhardt added there were a few that remained, some of which may be too costly to retrofit. TMWA has not been active, but customers have been calling TMWA regarding where meters can be retrofitted.

Member Brekhuis noted there may be a few services that just remain as is, but some have criticized the meter movement has reduced water sales, but has also improved the water supply. She requested that the meter retrofit fund be reviewed in anticipation for the final budget in May, which may assist the Board to understand revenues to budget mid-year.

Mr. Foree suggested staff could reduce the budget by reducing the cloud seeding funding by \$135,000 since that is the amount unused in FY17. Discussion followed with Vice Chair Hartung suggesting not to add additional funds to the cloud seeding program and let the \$135,000 carry over, Member Smith recommending the Board to provide funding to ensure the program is fully funded, and Member Dahir concurring it would be premature to cut funding to the program prior to the Governor's budget being approved, which could potentially fund cloud seeding by \$685,000, but it was unsure what percentage would be allocated in the Tahoe Basin. TMWA has allocated \$850,000 to the TRF and \$210,000 to DRI for cloud seeding, in addition, the WRWC allocates \$100,000 for a total of \$310,000 for the cloud seeding program per year. Suggestions were made that the Board could cut funding to the TRF program, which currently has \$400,000 and to not fund the DRI cloud seeding program in FY18.

Member Duerr inquired if there would be more employees added in addition to the two SCADA technicians and if the salary raises would also occur. Ms. Sullivan replied there is a need to increase staffing now, especially with the current growth, but management has agreed to defer for about one year; and the 2.5% salary increase is reasonable and suggested if the Board decided to reduce the overall budget, consideration could be given to reduce CIP funding.

Member Brekhuis inquired why the funding for the fleet was so large and requested the vehicle replacement policy and schedule. Ms. Sullivan replied the increase was because the two SCADA technicians require vehicles and the policy can be provided.

Member Duerr inquired how the meter retrofit program is funded. Mr. Foree replied it is funded by developer fees and Ms. Sullivan added the funds remain in the reserve fund.

Upon motion by Member Brekhuis, second by Member Jardon, which motion duly carried four to three with Members Dahir, Herman and Smith dissenting, the Board approved to amend the TMWA Tentative Budget for the Fiscal Year ending June 30, 2018 by eliminating the \$210,000 funding to the DRI cloud seeding program and to only fund \$450,000 instead of the full \$850,000 for the Truckee River Fund.

10. PUBLIC HEARING ON RATE AND RULE AMENDMENTS

10.A PUBLIC COMMENT

Malachy Horan, provided public comment in opposition of the rate adjustments and written materials, copies of which are attached.

10.B RATE AMENDMENT, SECOND HEARING, PUBLIC HEARING: DISCUSSION AND POSSIBLE ACTION ON RESOLUTION NO. 250: A RESOLUTION TO ADOPT POTENTIAL WATER RATE ADJUSTMENTS, INCLUDING POSSIBLE MULTI-YEAR ADJUSTMENTS, AND INCLUDING INITIAL IMPLEMENTATION ON OR AFTER THE FIRST BILLING CYCLE IN MAY 2017

Ms. Sullivan presented the staff report and the proposed rate adjustments of 3% in years 2017 and 2018, and 2.5% in years 2019, 2020 and 2021, with the option to lower, defer or cancel the increase for any of the last three years. She presented the examples of customer bills showing the adjustments to sample bills with the 3% rate adjustment; on average customer bills would increase by approximately \$1.42/month or \$17 for the first year and over \$30 monthly the increase in year two. Per Member Brekhus' request, Ms. Sullivan also provided a list to the Board of the largest water users showing what their average water bills would be with the proposed 3% increase.

Member Brekhus confirmed the right of way toll returns to the City of Reno in revenues.

Ms. Sullivan also followed-up on Member Jardon's request to implement a rate stabilization account, or 'non-rainy day' fund to offset future conservation efforts. Currently, TMWA has a rate stabilization fund, which amounts to about \$1.8 million. If water sales increase by more than 2% higher than projected in the original final budget, 75% of the additional revenue could be put into the rate stabilization account.

Member Brekhus appreciated the information provided on the rate stabilization account and noted liquidity also acted as a rate stabilization factor; and perhaps it was hasty to develop an account until it became apparent by how much revenues rebounded. Member Brekhus was not adverse with staff's recommendation, but advised the board should consider when to use the fund if created, and the funds in the meter retrofit program could be a potential resource.

Member Jardon stated her purpose was to ensure customers would not be penalized by putting into place a method by which excess revenues can be banked when TMWA would need to implement extreme conservation efforts; approved of the rate stabilization account to reach the goal of providing comfort to customers and offset future rate increases. Ms. Sullivan agreed and noted that it would be the Board's decision on the definition of a rate stabilization account, what to do with it and to fund it or to use the excess revenue to support cost of service.

Member Jardon supported implementing a non-rainy day fund and the Board could decide how to use it going forward; determining what the triggers would be, the scenarios to use it and proper planning. Ms. Sullivan replied staff could review these suggestions and staff would need to put the document together to show how to fund the rate stabilization account.

Member Smith asked how would the account be funded. Ms. Sullivan clarified 75% of additional revenue over 2% of projected water usage would be put in the rate stabilization account.

Member Duerr commented on the letter received by Senator Heidi Gansert, inquired about the comments made regarding revenue rebound since December 2016, and confirmed the comparisons of December 2015 and 2016 were very different to use for pointing out not to raise rates. Ms. Sullivan replied the revenue rebound experienced in the first half of FY 2017 was a limited time because the region went 90

days without any precipitation, but revenue has been falling behind, beyond drought levels, since January due to the wet weather. She added the projections in the funding plan are based on a multitude of assumptions with demand, growth, etc. based on many years, not just on the last six months.

Member Duerr noted the last rate increase was not implemented in 2015 (and would probably not be in this situation, had that occurred), confirmed the rate increase in year 2 was necessary, and how much would water sales rebound. Ms. Sullivan replied yes, that is correct, staff has projected 3% water sales rebound based on the University of Nevada, Reno's projections, if the rebound was higher than the Board can decide to lower, defer or not to implement the 2.5% in years 3, 4, and 5, and reminded the Board that in 2020, \$10 million in additional debt service would commence after 3 years of deferral from the 2016 bond refunding.

Ms. Sullivan noted the median annual average increase in water rates was 4.5% over the last decade; TMWA has not increased rates since February 2014; cancelled the 2.1% increase in January 2015; and prior to the merger, the County had an annual CPI increase that was terminated at merger that would have accounted for an increase of 5.6% over the last 3 years had it not been terminated. A total of an almost 6% increase was not experienced by the former County customers, since TMWA discontinued that rate plan three years ago.

Member Herman thanked Ms. Sullivan for a valuable report and explanation.

10.A (CONTINUED) PUBLIC COMMENT

Mr. Elliot requested the Board reconsider raising water rates and to consider alternative cost cutting measures.

10.B (CONTINUED) RATE AMENDMENT, SECOND HEARING, PUBLIC HEARING: DISCUSSION AND POSSIBLE ACTION ON RESOLUTION NO. 250: A RESOLUTION TO ADOPT POTENTIAL WATER RATE ADJUSTMENTS, INCLUDING POSSIBLE MULTI-YEAR ADJUSTMENTS, AND INCLUDING INITIAL IMPLEMENTATION ON OR AFTER THE FIRST BILLING CYCLE IN MAY 2017

Member Duerr inquired what impact the \$610,000 budget cut had, suggested a 2.5% rather than 3% rate increase and inquired how to mitigate the high cost to the SVGID. Ms. Sullivan replied the cut had relatively no impact since there was a \$13 million funding gap once principle payments resume in 2020. Mr. Enloe replied TMWA has a unique operating condition in place while a pump station is being rebuilt and is paying SVGID to serve some of TMWA's customers, which would help offset the rate increases to SVGID for about two years until the new pump station is online.

Member Jardon inquired if the Board could vote on the rate stabilization account at this meeting. Mr. Pagni replied no, it would have to be brought back at a future meeting.

Member Brekhus stated past experiences should be an indicator for future experiences; for example, by not increasing rates in 2015 we are in the current situation; believed in employee compensation that ensures people are cared for in future years; and was pleased the rate adjustment was not a CPI.

Member Dahir thanked staff and public, and would not want a rate increase implemented every year, but it was for the betterment for the future.

Member Duerr agreed it would be difficult to cut budget any more, but asked for Mr. Foree to consider the overtime situation. She thanked Senator Gansert for taking time to reach out with her messaging; yes, the rate increase may be untimely, but it is critical to TMWA's bond rating.

Member Hartung stated it is always difficult to raise rates, but reminded the Board has a responsibility to the utility and the community could not survive without a reliable water supply.

Upon motion by Member Smith, second by Member Brekhus, which motion duly carried by unanimous consent of the members present, the Board adopted Resolution No. 250 to implement a 3% rate adjustment in years 2017 and 2018, with implementation on the first billing cycle in May 2017 and May 2018, and 2.5% rate adjustments in 2019, 2020 and 2021 with implementation on the first billing cycle in May 2019, 2020, and 2021, and with the option to lower, defer or cancel the 2019, 2020 or 2021 adjustments prior to implementation.

CLOSE PUBLIC HEARING

**Members Duerr, Jardon and Smith left at 11:46 am.*

7. DISCUSSION AND ACTION AND, POSSIBLE DIRECTION TO STAFF REGARDING 2017 LEGISLATIVE ACTIVITIES AND CURRENT BILLS, AND TMWA RECOMMENDED POSITIONS ON LEGISLATIVE PROPOSALS

John Zimmerman, TMWA Water Resources Manager, informed the Board that the TMWA Legislative Subcommittee has met two times since the last Board meeting. Mr. Zimmerman referred to the staff report and the list of bills stating the ones that passed out of committee on April 14 were highlighted and the rest did not pass out of committee (failed the deadline.)

Steve Walker, TMWA Lobbyist, provided an overview of all bills that passed out of their respective committees on the April 14 deadline date. Mr. Walker noted the position of *oppose* recommended by the legislative subcommittee on AB406, but the amendment was consistent with AB134 which passed onto the Senate and suggested to change it to *watch*.

Member Brekhus inquired if AB193 could be resurrected and recommended to continue monitoring. Mr. Walker replied yes, until the last day of the session, sine die, it could and staff will continue to monitor.

Member Brekhus asked for a summary analysis on the SB134, 3M (management, mitigation and monitoring) bill, at the next legislative subcommittee meeting, inquired about the broadening terms of

health insurance coverage for public employees and asked under whose health insurance plan was TMWA. Mr. Walker replied he can provide more details at the next legislative subcommittee meeting and Mr. Pagni added TMWA was under the City of Reno's health insurance plan.

Mr. Walker informed the Board the next deadline is April 25 and if anything of substance came up the next legislative subcommittee meeting would be held on April 28.

Upon motion by Member Dahir, second by Member Brekhus, which motion duly carried by unanimous consent of the members present, the Board approved to change staff recommendation on AB406 from oppose to watch.

Upon motion by Member Brekhus, second by Member Dahir, which motion duly carried by unanimous consent of the members present, the Board approved the TMWA legislative subcommittee's recommended positions on proposed bills and requested staff provide a summary on SB134 before the next legislative subcommittee meeting.

11. GENERAL MANAGER'S REPORT

Mr. Foree had nothing further to report.

12. PUBLIC COMMENT

There was no public comment.

13. BOARD COMMENTS AND REQUESTS FOR FUTURE AGENDA ITEMS

Vice Chair Hartung confirmed Member Jardon's request for a staff report on the rate stabilization account.

Member Dahir mentioned the growing housing market and expressed his concern for senior citizens on a fixed income, and requested if it was possible to consider subsidization. Mr. Pagni replied the Board has considered deferring for seniors, but it is not allowed by law and raised issues of impermissible discrimination.

Member Brekhus stated the Board would adopt the budget in May; and look at the revenue and 5-year projections necessary to achieve the funding plan, and asked how many budget augmentations are there a year. Mr. Foree replied a couple a year as needed.

Vice Chair added there are possibilities to move projects in outer years in the CIP.

Member Brekhus inquired about the Mt. Rose Water Treatment Plant and what was the general manager's authority to approve contracts and up to what dollar amount; and suggested for Board discussion to possibly retract authority. Mr. Foree replied the general manager has authority to approve and sign

contracts if it is within the approved budget, but Board could change the policy. Mr. Pagni added the Board approved the general manager having delegated authority to award contracts within the budget.

Member Brekhus understood and was not objecting to the concept adopted by the Board, but perhaps to consider deferring projects and would like to see a copy of the delegated authority policy.

14. ADJOURNMENT

With no further discussion, Vice Chair Hartung adjourned the meeting at 12:05 p.m.

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

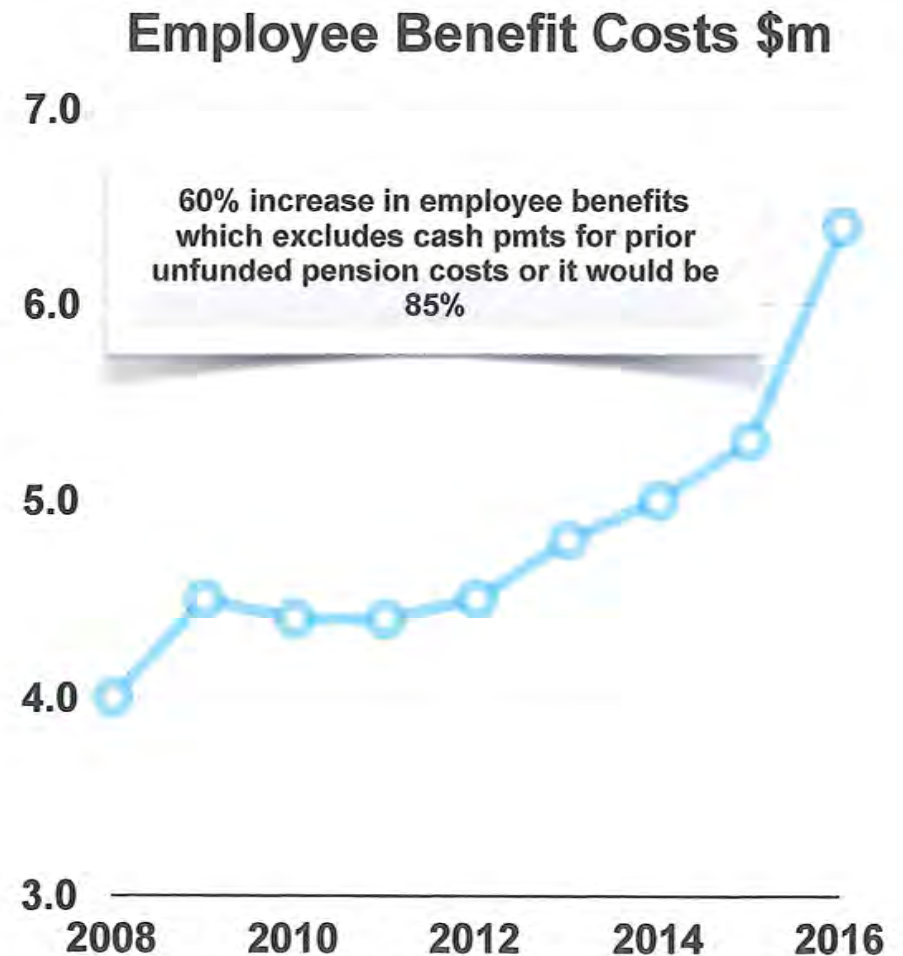
Sonia Folsom, Recording Secretary

**Members Duerr, Jardon and Smith were present for agenda items 1 through 10.B only.*

DRAFT

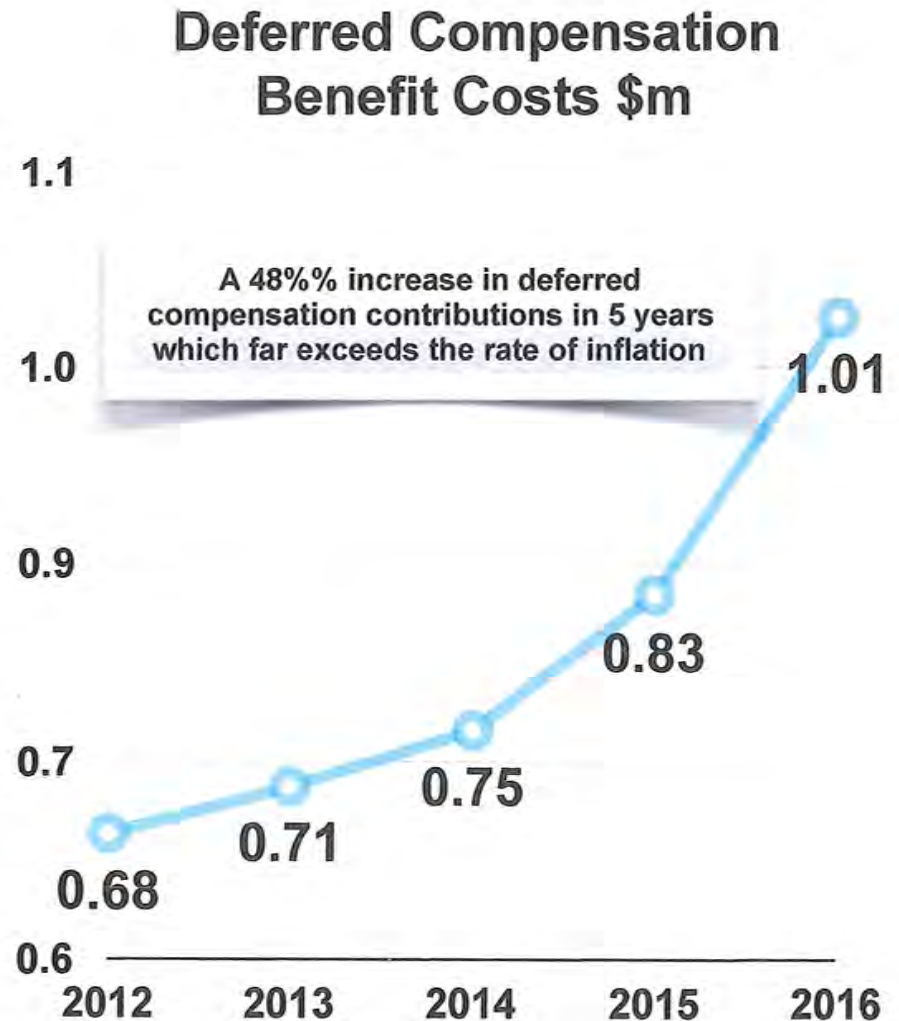
Employee Benefits

- **Employee benefits include pension costs, medical insurance, deferred compensation, etc.**
- **Included in the increase is the merger with Washoe County Water Utilities with circa 25 staff moving to TMWA**
- **Employee benefits does not include the costs for prior unfunded pension costs, a \$26.9m liability and which incremental cash payments were \$1m in 2016**



Deferred Compensation

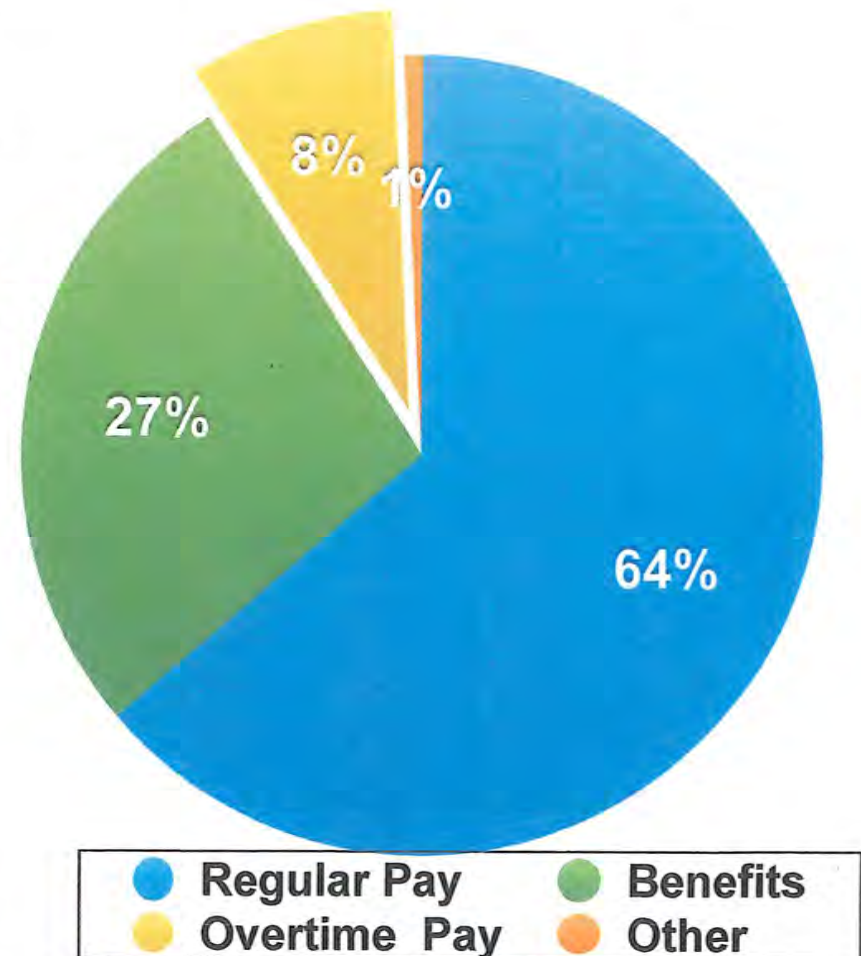
- Over the last 5 years a 48% increase in Deferred Compensation contributions
- The Money Purchase Retirement Plan is assumed to be zero cost to TMWA after discussion with the CFO
- Deferred compensation amounts are per the available CAFR's (audited financial statements)



TMWA Wages and Overtime for 2016

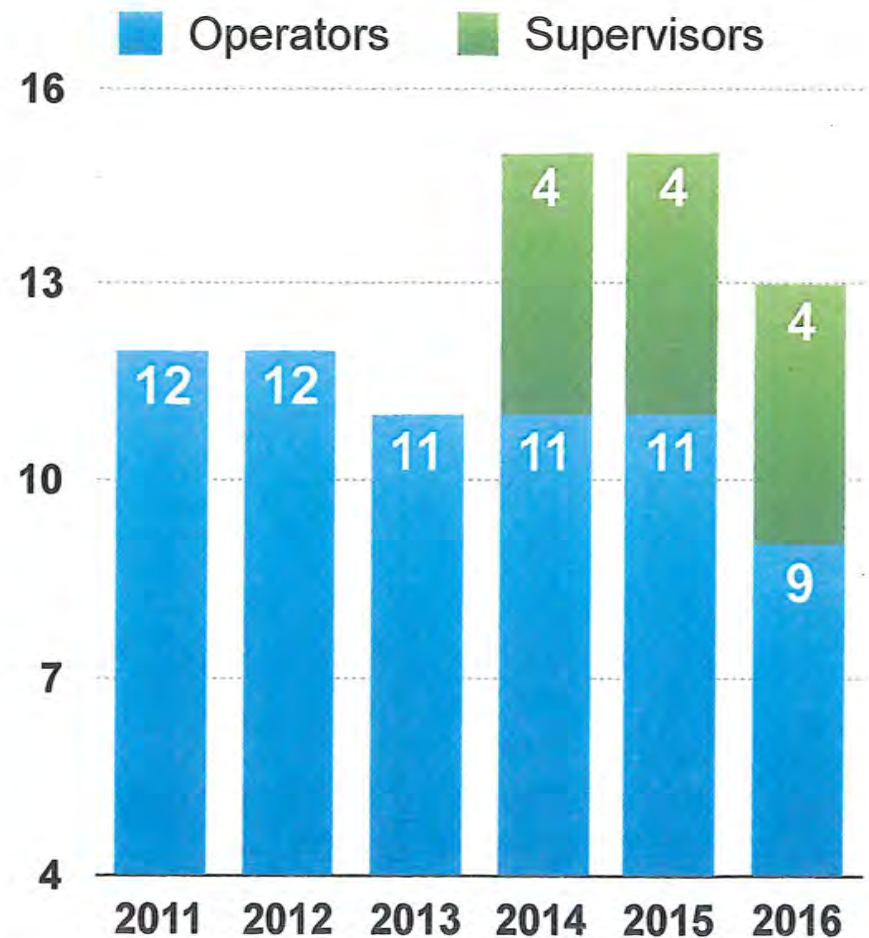
- Source of information was Transparent Nevada (transparentnevada.com) and TMWA 2016 CAFR so there can be minor errors as we do not have access to the data in TMWA's financial systems
- Total wages & benefits are estimated for 2016 to be \$25.6m
- Overtime for 2016 is estimated at \$2.1m or 8% of total wages & benefits or over 12% wages, which is \$1 out of every \$8 dollars of wages is from overtime
- 4 of the Top 10 Northern Nevada Government employees paid O/T came from TMWA. All appear to be associated with Water Plant III
- 41 people From TMWA were paid overtime in 2016
- Of the Top 10 TMWA staff with the highest overtime, 9 came from Water Plant III

Review of 2016 TMWA Wages



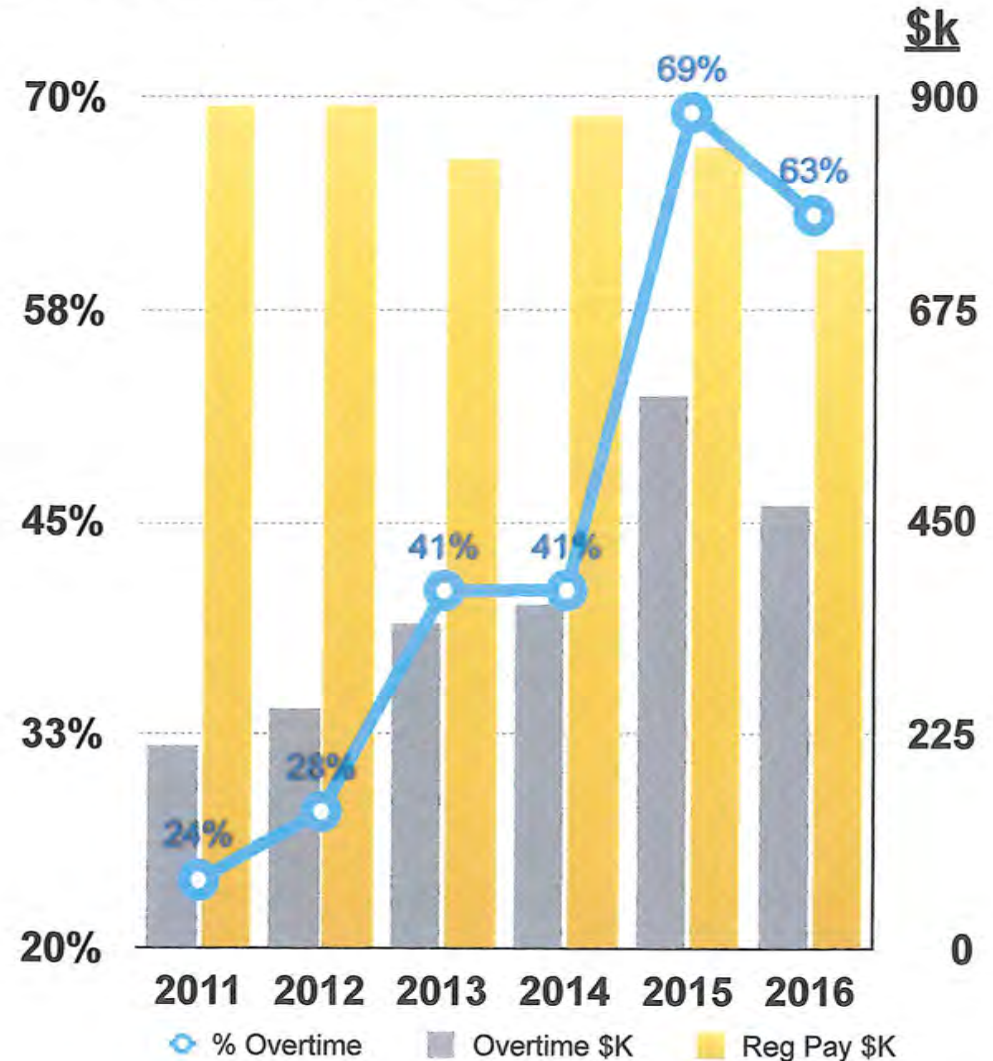
TMWA Staffing for Water Treatment Plant

- Originally 12 Operators worked in the plant in 2011 which decreased over time to 9.
- Supervisors were new positions in 2013 with new employees as they had no prior compensation in prior years



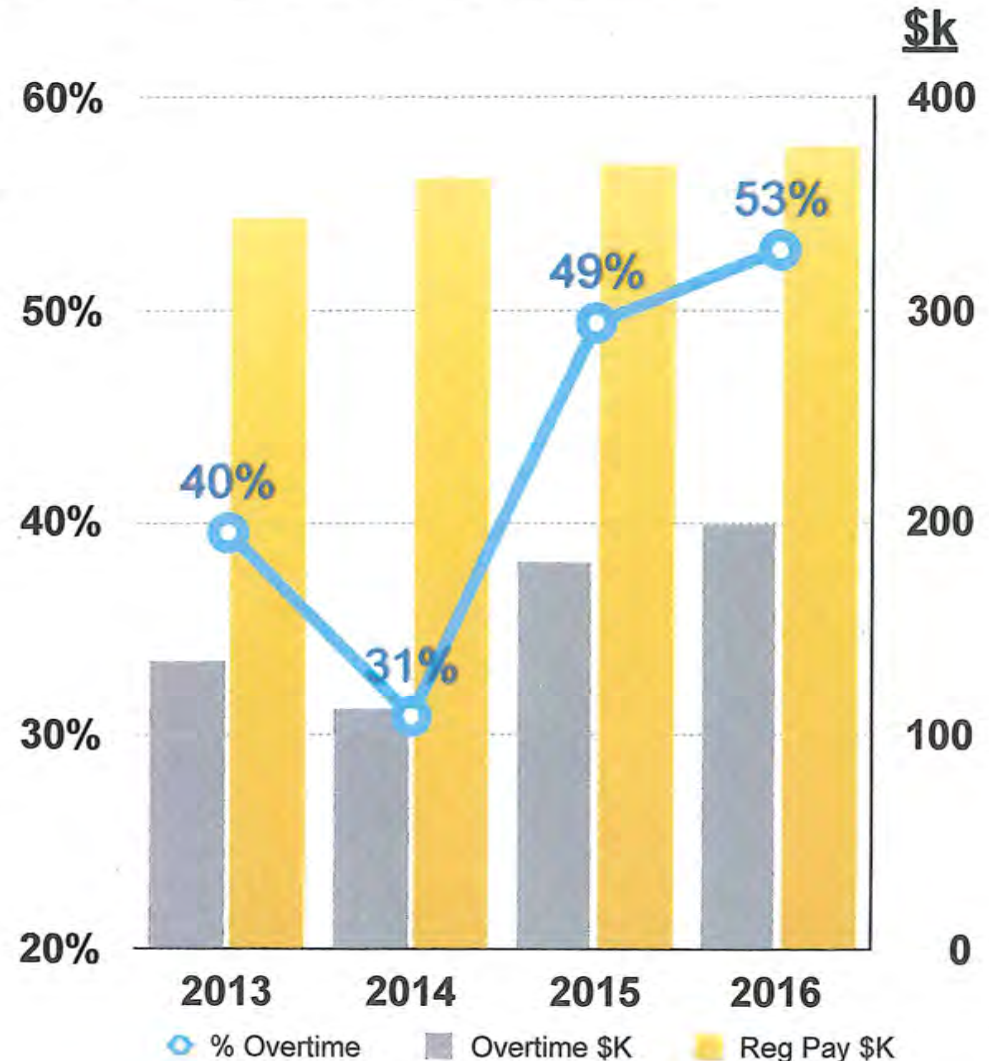
TMWA Operator Water Plant III Overtime

- During the last 6 years over \$2.24m in overtime was paid to 9-12 people per year
- Overtime increased by 39% and \$253k in 6 years for 1 group
- Are options available to reduce overtime in the future?



TMWA Water Plant III Supervisor Overtime

- Supervisor position appears to be new in 2013 and immediately began to have extensive overtime from day one
- During the last 4 years over \$.6m in overtime was paid to 4 supervisors with 3 individuals receiving additional O/T from 50% to 67% of regular pay for 2016
- Overtime increased by 47% over the last 4 years
- Are options available to reduce overtime in the future?



TMWA - Operator Water Plant III Comparison of Staffing Levels to Avg. OT Paid 2011 - 2016

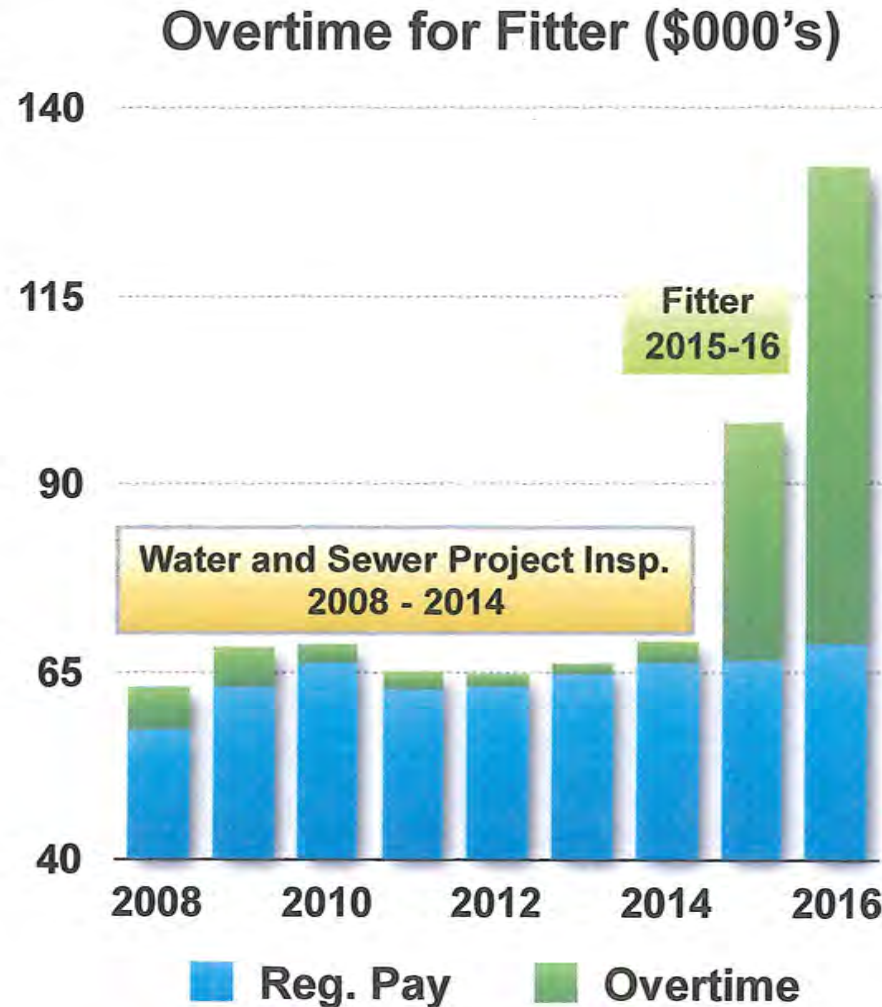
- Decrease in number of Operator Water Plant III staff appears to have resulted in significant overtime per person is one view but during the same time TMWA added 4 new supervisors as well.
- Over \$2.24m paid out in overtime from 2011-16
- Overtime also is subject to benefit add-ons and appears to be included in pensionable wages, either the straight time portion or the entire payment
- What are the reasons for the staff changes and the increase in overtime?
- Was there a change in supervisors over this time?

Comparison of # of Staff to Avg Overtime Paid



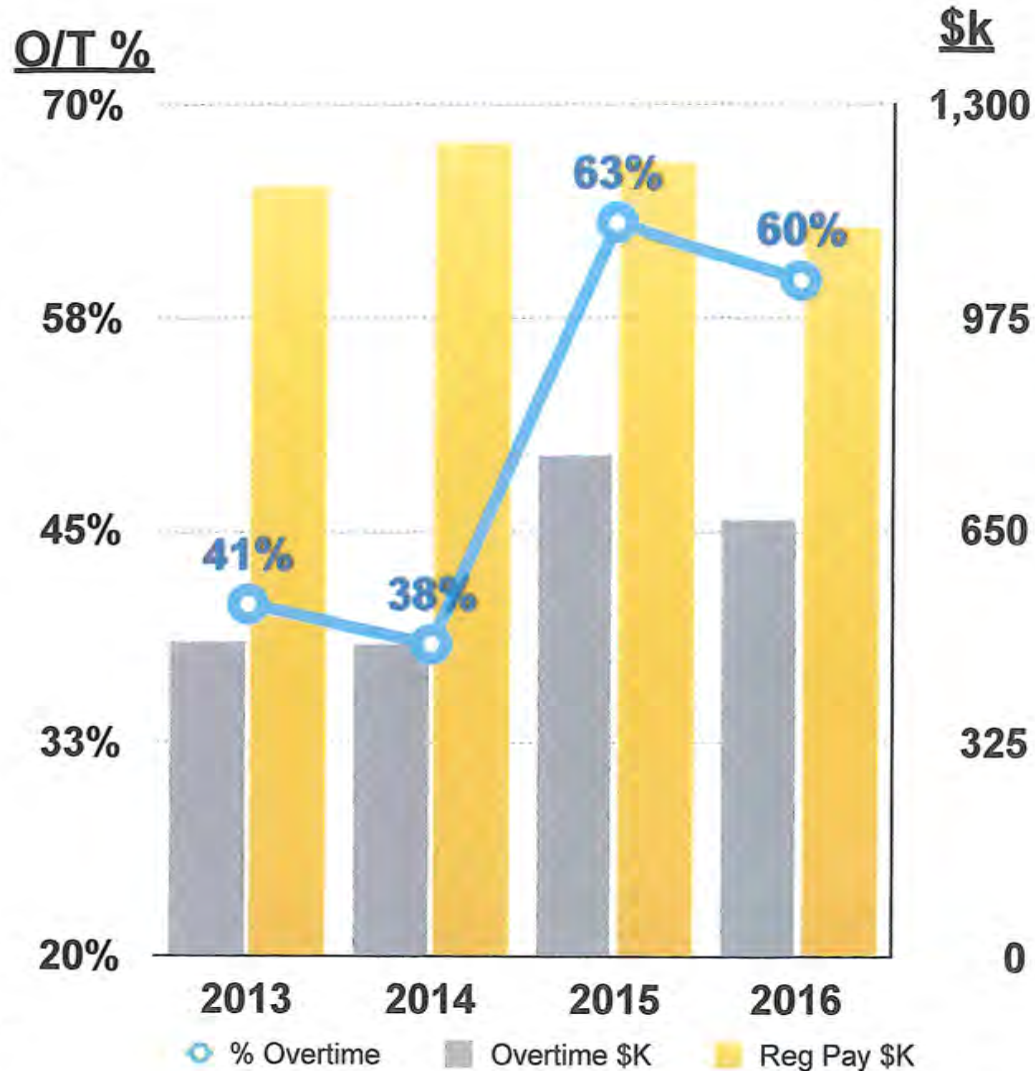
TMWA Fitters Overtime

- Individual worked a minimum of 6 years as an inspector with minimal overtime
- First 2 years as a fitter individual had the highest amount of overtime in 2016 of any team member and was #2 in 2015.
- The #1 Fitter in overtime for 2015 moved over in 2016 to the position of Operator, Equipment III and immediately became the #1 in overtime for that group
- What is the cause of the overtime and how is it budgeted, controlled, and approved?



TMWA Summary - Operator and Supervisor Overtime For Water Plant III

- 9-12 operators and 4 supervisors working in this area over the years
- During the last 6 years the operators were paid over \$2.24m in O/T and for the last 4 years \$1.76m. For 2016, \$467k was paid out in O/T for operators with more than 6 people being paid over \$50k each and 1 individual paid over \$79k. There are others with de minimis O/T
- Over the last 4 years the supervisors were paid over \$.6m in overtime with 3 individual receiving additional O/T from 50% to 67% of regular pay for 2016
- Of the Top 10 Northern Nevada Governmental Employees with the highest overtime, 4 appear to be related to Water Plant III
- Overtime, all or part of the wages, may qualify for pension benefit which increases the long term impact of O/T for the next 30 years. A significant cost for TMWA and the ratepayers
- Are options available to reduce overtime in the future for all groups and how is it budgeted, controlled, reported to senior management, as well as the board as this O/T should not be considered a fixed cost!



TMWA - Transfer and Impact of Washoe County Staff

- **It is our understanding that 25 staff transferred from Washoe County (WC) to TMWA as part of the merger and many statements/issues have been raised around this.**
- **It is always good to do a post project review of actual vs. projected costs to learn from decisions made. This would be an excellent action to take for this area**
- **What is the incremental impact on pensions for this transfer as it is our understanding that:**
 - **Salaries for WC were significantly less than TMWA. How much was both the change in salaries and the pension impact for this event?**
 - **Based on the 2016 CAFR's the WC transfers were placed in a separate medical plan. What is the cost for this change from what TMWA currently offers?**
 - **Did WC provide payment for accrued vacation and sick leave at the time of the merger?**
 - **Are there any other benefits that inured to the WC transfers that are not offered to all TMWA staff?**



STAFF REPORT

TO: Chairman and Board Members
THRU: Mark Foree, General Manager
FROM: John Zimmerman, Manager of Water Resources
DATE: May 10, 2017
SUBJECT: **Discussion and action, and possible direction to staff regarding 2017 legislative activities and current bills, and TMWA recommended positions on legislative proposals**

This is a standing item on the Board's monthly agenda while the 2017 Legislature is in session. Since the April Board meeting, the TMWA legislative subcommittee has met to review the status of all bills being monitored by TMWA. Attached is a list of all pending bills staff, Mr. Walker, and Mr. Pagni are currently monitoring. The list excludes bills previously monitored by TMWA, but which did not meet the April deadlines below, and therefore, cannot be acted on. If the substance of any bills that failed to make the deadlines below is revived as an amendment to an active bill, then TMWA staff and lobbyists will follow the Board's past direction regarding those bills and notify the Board and legislative subcommittee. Staff, Mr. Walker, and Mr. Pagni will update the Board regarding the status of the attached bills and respond to any questions. Additionally, they will advise the Board regarding any relevant new information regarding the session.

Key 2017 Legislative Deadlines:

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

STATUS OF REVIEWED/EXISTING BILLS

Content	Description	Sponsor	Tags	Board/Committee Position	StatusRecentHistory	Status
AB5	Provides for the creation of certain local improvement districts. (BDR 22-233)	Committee on Government Affairs	Energy; Governance	1/3 WATCH, NEUTRAL	Senate Committee on Government Affairs 5/5/2017 Upon Adjournment	Heard, No Action
AB8	Revises provisions governing the collection of delinquent municipal utility charges. (BDR 21-323)	Committee on Government Affairs	Financial, Risk Management; Governance	11/21 WATCH, SUPPORT	Senate Committee on Government Affairs 4/26/2017 1:00 PM	Heard, No Action
AB11	Revises provisions governing the operation of unmanned aerial vehicles. (BDR 44-137)	Committee on Transportation	Emergency Mgmt, Safety, Motor Vehicles; Governance	11/21 WATCH, NEUTRAL	Senate Committee on Transportation 5/2/2017 9:00 AM	Do pass
AB26	Revises provisions governing the dissemination of certain records of criminal history to certain persons by the Central Repository for Nevada Records of Criminal History. (BDR 14-138)	Committee on Corrections, Probation, and Parole	Human Resources	1/4 WATCH, NEUTRAL	Senate Committee on Judiciary 5/4/2017 1:30 PM	Heard, No Action
AB32	Revises provisions governing pest control. (BDR 49-176)	Committee on Natural Resources, Agriculture, and Mining	Governance	1/9 WATCH, NEUTRAL	Senate Committee on Natural Resources 5/2/2017 1:30 PM	Do pass
AB34	Revises provisions relating to state lands. (BDR 26-179)	Committee on Natural Resources, Agriculture, and Mining	Property	12/20 WATCH, NEUTRAL	Senate Committee on Government Affairs 5/8/2017 1:00 PM	Heard, No Action
AB36	Revises the Charter of the City of Reno. (BDR S-448)	Committee on Legislative Operations and Elections	Governance; Open Meeting, Records, Boards and Elections	1/6 WATCH, NEUTRAL	Senate Committee on Government Affairs 4/19/2017 1:00 PM	Heard, No Action
AB50	Revises provisions relating to the imposition of certain fees, civil penalties and administrative fines by the State Environmental Commission. (BDR 40-181)	Committee on Natural Resources, Agriculture, and Mining	Financial, Risk Management; Governance	12/29 WATCH	Senate Committee on Natural Resources 5/4/2017 1:30 PM	Do pass
AB54	Revises provisions relating to reports of certain accidents or motor vehicle crashes by employers. (BDR 53-160)	Committee on Commerce and Labor	Emergency Mgmt, Safety, Motor Vehicles	1/6 WATCH, NEUTRAL	Senate Committee on Commerce, Labor and Energy 4/26/2017 9:00 AM	Do pass
AB79	Revises provisions relating to economic development. (BDR S-404)	Committee on Government Affairs	Financial, Risk Management; Water Rights (Resources, Conservation)	1/6 WATCH, NEUTRAL	Assembly Committee on Government Affairs 5/3/2017 8:30 AM	Mentioned no jurisdiction
AB83	Makes various changes relating to insurance. (BDR 57-159)	Committee on Commerce and Labor	Financial, Risk Management	1/6 WATCH, NEUTRAL	Senate Committee on Commerce, Labor and Energy 5/1/2017 8:00 AM	Heard, No Action
AB100	Revises provisions governing contractors. (BDR 54-194)	Swank	Human Resources	2/7: WATCH	Assembly Committee on Ways and Means 5/1/2017 8:00 AM	Heard
AB106	Revises provisions governing government contracting. (BDR 27-295)	Spiegel	Governance	2/9: WATCH	Assembly Committee on Government Affairs 4/14/2017 Upon Call of Chair	Amend, and do pass as amended
AB107	Provides for the sealing of records relating to eviction under certain circumstances. (BDR 3-689)	Bilbray-Axelrod	Financial, Risk Management; Governance	2/10: WATCH	Senate Committee on Judiciary 5/5/2017 1:00 PM	Do pass
AB109	Revises provisions relating to public utilities. (BDR 58-622)	Assemblyman Ellison; Senator Goicoechea	Water Rights (Resources, Conservation)	2/9: WATCH, NEUTRAL	Assembly Committee on Ways and Means 5/1/2017 8:00 AM	Heard
AB113	Requires an employer to make certain accommodations for a nursing mother. (BDR 40-7)	Spiegel	Human Resources	2/9: WATCH, SUPPORT	Assembly Committee on Health and Human Services 4/5/2017 Upon Adjournment	Amend, and do pass as amended
AB114	Revises provisions governing irrigation districts. (BDR 48-639)	Titus	Water Rights (Resources, Conservation)	2/9: WATCH, SUPPORT	Assembly Committee on Natural Resources, Agriculture, and Mining 5/9/2017 Upon Adjournment	Mentioned no jurisdiction

STATUS OF REVIEWED/EXISTING BILLS

AB138	Authorizes the de minimus collection of precipitation under certain circumstances. (BDR 48-445)	Carlton	Water Rights (Resources, Conservation)	2/10: WATCH, NEUTRAL	Assembly Committee on Natural Resources, Agriculture, and Mining 4/4/2017 1:30 PM	Amend, and do pass as amended
AB154	Revises provisions relating to prevailing wages. (BDR 28-747)	Assemblymen Brooks, Spiegel, Sprinkle, Joiner, Daly, Elliot Anderson, Bilbray-Axelrod, Bustamante Adams, Cohen, Frierson, Fumo, Jauregui, Miller, Monroe-Moreno, Neal, Swank and Thompson; Senator Atkinson	Financial, Risk Management; Human Resources	2/14 WATCH	Assembly Committee on Education 4/26/2017 3:15 PM	Mentioned no jurisdiction
AB159	Prohibits hydraulic fracturing in this State. (BDR 46-593)	Assemblymen Watkins, Swank and Brooks; Senator Ratti	Governance; Water Rights (Resources, Conservation)	2/17 WATCH	Assembly Committee on Ways and Means and Senate Committee on Finance, Subcommittees on General Government 4/19/2017 8:00 AM	Mentioned no jurisdiction
AB169	Revises provisions governing certain fees collected by county recorders. (BDR 20-832)	Jauregui, Brooks and Carrillo	Governance; Open Meeting, Records, Boards and Elections	2/17 WATCH	Assembly Committee on Government Affairs 4/11/2017 8:00 AM	Amend, and do pass as amended
AB193	Requires the fluoridation of water in certain circumstances. (BDR 40-716)	Joiner and Sprinkle	Financial, Risk Management; Water Quality (NDEP); Water Rights (Resources, Conservation)	2/15: OPPOSE	Failed Deadline:4/14/2017	
AB206	Revises provisions relating to the renewable portfolio standard. (BDR 58-746)	Assemblymen Brooks, Frierson, Yeager, McCurdy II, Watkins and Fumo; Senators Cancela, Parks and Spearman	Energy	2/17 WATCH	Assembly Committee on Commerce and Labor 4/12/2017 Upon Adjournment	Not considered
AB209	Revises provisions governing the forfeiture of water rights. (BDR 48-308)	Oscarson	Water Rights (Resources, Conservation)	2/15 WATCH	Assembly Committee on Natural Resources, Agriculture, and Mining 4/13/2017 1:30 PM	Amend, and do pass as amended
AB211	Revises provisions governing compensation and wages. (BDR 53-764)	Jauregui, Fumo and McCurdy II	Financial, Risk Management; Human Resources	2/17 WATCH, NEUTRAL	Assembly Committee on Commerce and Labor 4/14/2017 Upon Call of Chair	Amend, and do pass as amended
AB227	Makes changes relating to domestic partnerships. (BDR 11-784)	Carrillo	Human Resources	2/17 WATCH	Senate Committee on Judiciary 5/5/2017 1:00 PM	Do pass
AB246	Revises provisions relating to the creation of a local improvement district and tax increment area. (BDR 22-705)	Kramer, Benitez-Thompson, Daly, Hansen and Titus	Governance	3/2: WATCH	Senate Committee on Government Affairs 5/5/2017 Upon Adjournment	Heard, No Action
AB249	Requires the State Plan for Medicaid and all health insurance plans to provide certain benefits relating to contraception. (BDR 38-858)	Frierson, Bilbray-Axelrod, Sprinkle, Benitez-Thompson, Yeager, Elliot Anderson, Araujo, Brooks, Bustamante Adams, Carlton, Carrillo, Cohen, Daly, Diaz, Flores, Fumo, Jauregui, Joiner, McCurdy II, Miller, Monroe-Moreno, Neal, Ohrenschall, Spiegel, Swank, Thompson and Watkins	Human Resources	3/2: WATCH	Assembly Committee on Health and Human Services 4/14/2017 Upon Call of Chair	Amend, and do pass as amended
AB271	Revises provisions governing collective bargaining by local government employers. (BDR 23-290)	Carrillo	Human Resources	3/22: OPPOSE	Assembly Committee on Government Affairs 4/12/2017 8:00 AM	Do pass
AB276	Revises provisions relating to employment practices. (BDR 53-289)	Assemblymen Spiegel, Joiner, Diaz, Bilbray-Axelrod, Carlton, Cohen, Miller, Swank and Thompson; Senators Parks and Manendo	Human Resources	3/16: WATCH	Assembly Committee on Judiciary 4/14/2017 Upon Call of Chair	Amend, and do pass as amended

STATUS OF REVIEWED/EXISTING BILLS

AB280	Revises provisions relating to preferences in bidding for certain contracts for businesses based in this State. (BDR 27-1060)	Assemblymen Frierson, Carrillo, Monroe-Moreno, Sprinkle, Neal, Araujo, Benitez-Thompson, Bilbray-Axelrod, Carlton, Cohen, Daly, Fumo, Jauregui, Joiner, McCurdy II, Miller, Ohrenschall, Spiegel, Thompson, Watkins and Yeager; Senators Ford and Cannizzaro	Public Works	3/29: WATCH	Assembly Committee on Government Affairs 4/11/2017 8:00 AM	Mentioned not agendized
AB290	Makes various changes relating to collective bargaining. (BDR 23-35)	Wheeler, Kramer, Hambrick and Ellison	Human Resources	3/16: WATCH		
AB298	Revises provisions relating to water. (BDR 48-735)	Committee on Natural Resources, Agriculture, and Mining	Water Rights (Resources, Conservation)	3/16: WATCH	Assembly Committee on Natural Resources, Agriculture, and Mining 4/13/2017 1:30 PM	Amend, and do pass as amended
AB334	Prohibits a driver from operating a motor vehicle in the extreme left lane of a highway under certain circumstances. (BDR 43-154)	Ellison	Emergency Mgmt, Safety, Motor Vehicles	3/20: WATCH	Senate Committee on Transportation 5/9/2017 8:30 AM	Mentioned Not Agendized
AB375	Allows the imposition of certain taxes in a county to fund flood management projects of a flood management authority based on the recommendations of a flood control project needs committee and voter approval. (BDR S-473)	Sprinkle, Benitez-Thompson, Joiner and Daly	Emergency Mgmt, Safety, Motor Vehicles; Governance; Water Rights (Resources, Conservation)	3/20: WATCH	Senate Committee on Revenue and Economic Development 5/2/2017 3:30 PM	Heard, No Action
AB379	Amends provisions relating to general improvement districts created for the purpose of furnishing recreational facilities. (BDR 25-211)	Joiner	Water Rights (Resources, Conservation)	3/24: SUPPORT	Senate Committee on Government Affairs 5/3/2017 1:00 PM	Heard, No Action
AB380	Revises provisions relating to real property. (BDR 10-340)	Elliot Anderson	Property	3/21: WATCH	Assembly Committee on Judiciary 4/14/2017 Upon Call of Chair	Amend, and do pass as amended
AB384	Revises provisions governing the consideration of the criminal history of an applicant for employment by the State or a county or city. (BDR 23-33)	Assemblymen Thompson, McCurdy II, Flores, Araujo, Carrillo, Bilbray-Axelrod, Brooks, Bustamante Adams, Carlton, Daly, Frierson, Fumo, Miller, Monroe-Moreno, Neal, Ohrenschall, Sprinkle and Yeager; Senators Ford, Atkinson, Spearman, Cancela, Parks, Denis, Segerblom and Woodhouse	Human Resources	3/21: WATCH	Assembly Committee on Government Affairs 4/14/2017 Upon Call of Chair	Amend, and do pass as amended
AB403	Revises various provisions relating to governmental administration. (BDR 17-573)	Daly, Frierson, Diaz, Benitez-Thompson, Araujo, Brooks, Carrillo, McCurdy II and Monroe-Moreno	Governance	3/21: WATCH	Senate Committee on Legislative Operations and Elections 5/8/2017 3:30 PM	Not Heard
AB404	Creates the Nevada Office of the Inspector General. (BDR 18-740)	Miller, McCurdy II, Benitez-Thompson, Brooks and Fumo	Governance	3/21: OPPOSE	Assembly Committee on Government Affairs 4/14/2017 Upon Call of Chair	Amend, and do pass as amended
AB406	Revises provisions relating to certain construction. (BDR 28-781)	Daly, Benitez-Thompson, Brooks, Carrillo, Bilbray-Axelrod, Frierson, Joiner, McCurdy II and Monroe-Moreno	Financial, Risk Management; Human Resources	4/17: WATCH	Assembly Committee on Government Affairs 4/14/2017 Upon Call of Chair	Amend, and do pass as amended
AB458	Revises provisions governing industrial insurance. (BDR 53-489)	Committee on Commerce and Labor	Human Resources	3/29: WATCH	Assembly Committee on Ways and Means 5/8/2017 8:00 AM	Do pass, as amended
AJR4	Requests the National Research Council of the National Academy of Sciences to conduct an independent scientific and economic analysis of the current management practices of the Colorado River, the impact of these practices on water security, flood protection and biodiversity recovery, and alternative management options, including draining Lake Powell and decommissioning and destroying the Glen Canyon Dam. (BDR R-101)	Assemblywoman Swank; Senator Segerblom	Water Rights (Resources, Conservation)	3/2 WATCH	Assembly Committee on Natural Resources, Agriculture, and Mining 4/13/2017 1:30 PM	Do pass
SB10	Revises provisions governing the publication of information concerning unclaimed and abandoned property. (BDR 10-407)	Committee on Judiciary	Property	11/21 WATCH, NEUTRAL	Assembly Committee on Government Affairs 4/28/2017 9:00 AM	Heard

STATUS OF REVIEWED/EXISTING BILLS

SB21	Abolishes the Nye County Water District. (BDR S-478)	Committee on Government Affairs	Water Rights (Resources, Conservation)	11/21 WATCH	Senate Committee on Government Affairs 3/22/2017 1:00 PM	Do pass
SB23	Clarifies requirements relating to a petition for judicial review of a final administrative decision in a contested case. (BDR 18-374)	Committee on Government Affairs	Governance	11/21 WATCH	Senate Committee on Government Affairs 2/17/2017 11:00 AM	Do pass
SB26	Makes certain changes concerning governmental entities that contract with or invest in companies that boycott Israel. (BDR 27-418)	Committee on Government Affairs	Governance	11/21 WATCH, NEUTRAL	Senate Committee on Government Affairs 4/7/2017 1:00 PM	Amend, and do pass as amended
SB47	Makes various changes relating to the appropriation of water. (BDR 48-499)	Committee on Natural Resources	Water Rights (Resources, Conservation)	1/6 WATCH, SUPPORT	Assembly Committee on Natural Resources, Agriculture, and Mining 5/4/2017 Upon Call of Chair	Heard
SB51	Makes various changes relating to the adjudication of vested water rights. (BDR 48-180)	Committee on Natural Resources	Water Rights (Resources, Conservation)	12/29 WATCH, NEUTRAL	Assembly Committee on Natural Resources, Agriculture, and Mining 5/9/2017 Upon Adjournment	Mentioned not agendized
SB52	Revises provisions relating to unemployment compensation. (BDR 53-226)	Committee on Commerce, Labor and Energy	Human Resources	1/4 WATCH, NEUTRAL	Assembly Committee on Commerce and Labor 4/28/2017 Upon Adjournment	Heard
SB53	Revises provisions relating to the installation, operation and maintenance of telecommunications facilities. (BDR 18-234)	Committee on Transportation	Information Tech	1/6 WATCH	Assembly Committee on Government Affairs 4/28/2017 9:00 AM	Heard
SB69	Revises provisions governing state agencies, boards and commissions that regulate occupations and professions. (BDR 54-229)	Committee on Commerce, Labor and Energy	Governance; Human Resources; Open Meeting, Records, Boards and Elections	1/5 WATCH, NEUTRAL	Senate Committee on Commerce, Labor and Energy 4/12/2017 8:30 AM	Amend, and do pass as amended
SB74	Revises provisions relating to water. (BDR 48-178)	Committee on Natural Resources	Water Rights (Resources, Conservation)	12/29 WATCH	Senate Committee on Finance 4/17/2017 8:00 AM	Heard, No Action
SB78	Revises provisions relating to local government financial administration. (BDR 31-403)	Committee on Government Affairs	Financial, Risk Management	1/9 WATCH, NEUTRAL	Assembly Committee on Government Affairs 5/3/2017 8:30 AM	Heard
SB84	Makes various changes relating to ethics in government. (BDR 23-250)	Committee on Legislative Operations and Elections	Governance	1/6 WATCH	Assembly Committee on Legislative Operations and Elections 5/2/2017 1:30 PM	Heard
SB127	Revises provisions relating to the election of members of certain local governing bodies. (BDR 20-786)	Goicoechea	Financial, Risk Management; Governance; Open Meeting, Records, Boards and Elections	2/17 WATCH	Assembly Committee on Government Affairs 4/25/2017 9:00 AM	Heard
SB138	Authorizes the creation of a local improvement district for a waterfront maintenance project. (BDR 22-678)	Hardy	Financial, Risk Management; Property; Water Rights (Resources, Conservation)	2/17 WATCH	Assembly Committee on Government Affairs 5/8/2017 9:00 AM	Heard
SB188	Revises provisions prohibiting certain discriminatory acts. (BDR 18-106)	Parks, Cannizzaro and Ford	Human Resources	2/17 WATCH	Senate Committee on Government Affairs 4/14/2017 11:00 AM	Do pass
SB197	Extends the deadline for issuing certain bonds for certain environmental improvement projects in the Lake Tahoe Basin. (BDR S-493)	Committee on Government Affairs	Governance	3/2 WATCH	Assembly Committee on Ways and Means 4/3/2017 9:00 AM	Do pass
SB198	Extends the deadline for issuing certain bonds relating to the property and natural resources of Nevada approved by the voters in 2002. (BDR S-494)	Committee on Government Affairs	Governance	3/2 WATCH	Assembly Committee on Ways and Means 4/3/2017 9:00 AM	Do pass
SB230	Makes various changes relating to judgments. (BDR 2-512)	Committee on Judiciary	Financial, Risk Management; Human Resources	3/2 WATCH	Assembly Committee on Judiciary 4/26/2017 8:30 AM	Heard
SB233	Requires the State Plan for Medicaid and health insurance plans to provide certain benefits. (BDR 38-817)	Ratti, Cancela, Spearman, Cannizzaro, Woodhouse, Atkinson, Denis, Ford, Manendo, Parks and Segerblom	Human Resources	3/2 WATCH	Senate Committee on Health and Human Services 4/12/2017 3:30 PM	Amend, and do pass as amended

STATUS OF REVIEWED/EXISTING BILLS

SB239	Revises provisions relating to common-interest communities. (BDR 10-471)	Harris	Governance; Water Rights (Resources, Conservation)	3/15: WATCH	Senate Committee on Judiciary 4/3/2017 1:00 PM	Amend, and do pass as amended
SB246	Revises provisions relating to public works. (BDR 28-667)	Manendo	Public Works	3/16: WATCH	Senate Committee on Government Affairs 3/29/2017 1:00 PM	Amend, and do pass as amended
SB253	Establishes the Nevada Pregnant Workers' Fairness Act to provide protections to employees who are affected by any condition relating to pregnancy, childbirth or a related medical condition. (BDR 53-773)	Cannizzaro, Ratti, Woodhouse, Cancela, Ford, Denis, Farley, Manendo, Parks, Segerblom and Spearman	Human Resources	3/24: SUPPORT	Senate Committee on Commerce, Labor and Energy 4/14/2017 8:30 AM	Amend, and do pass as amended
SB270	Revises provisions relating to water. (BDR 48-359)	Committee on Natural Resources	Water Rights (Resources, Conservation)	3/16: WATCH	Assembly Committee on Natural Resources, Agriculture, and Mining 5/9/2017 Upon Adjournment	Heard
SB289	Requires certain policies of health insurance to cover services provided by an out-of-network physician. (BDR 57-675)	Hardy	Human Resources	3/24: SUPPORT	Senate Committee on Commerce, Labor and Energy 4/12/2017 8:30 AM	Re-refer
SB312	Revises provisions relating to driving under certain conditions. (BDR 43-94)	Manendo	Emergency Mgmt, Safety, Motor Vehicles	3/20: WATCH	Assembly Committee on Transportation 4/27/2017 3:15 PM	Heard
SB317	Revises provisions relating to preferences in bidding for certain contracts for businesses based in this State. (BDR 27-936)	Senators Cannizzaro, Ford, Segerblom, Parks, Manendo, Atkinson, Cancela, Denis, Farley, Ratti, Spearman and Woodhouse; Assemblyman Brooks	Public Works	3/29: WATCH	Senate Committee on Government Affairs 4/14/2017 11:00 AM	Amend, and do pass as amended
SB357	Revises provisions governing the use of apprentices on public works. (BDR 53-534)	Atkinson, Segerblom, Spearman, Denis, Parks, Cancela, Cannizzaro, Ford, Manendo and Woodhouse	Public Works	3/21: WATCH	Assembly Committee on Government Affairs 5/9/2017 8:30 AM	Heard
SB384	Provides for the confidentiality of certain information in the records and files of public employers and public employee retirement systems. (BDR 19-506)	Ratti	Human Resources	3/21: SUPPORT	Assembly Committee on Government Affairs 5/3/2017 8:30 AM	Heard
SB397	Revises provisions relating to employment. (BDR 18-14)	Senators Spearman, Segerblom, Ford, Parks, Cancela, Cannizzaro, Denis, Manendo, Ratti and Woodhouse; Assemblymen Diaz, Araujo, Swank and Thompson	Human Resources	3/21: WATCH	Assembly Committee on Government Affairs 5/3/2017 8:30 AM	Heard
SB460	Revises provisions governing the membership of the Local Government Employee-Management Relations Board. (BDR 23-556)	Committee on Government Affairs	Human Resources	3/28: WATCH	Assembly Committee on Government Affairs 4/24/2017 11:00 AM	Heard
SB462	Authorizes a board of county commissioners to create a committee to review general improvement districts. (BDR 20-496)	Committee on Government Affairs	Governance	3/28: WATCH	Assembly Committee on Government Affairs 5/8/2017 9:00 AM	Heard
SB469	Revises provisions relating to collective bargaining between a local government employer and a recognized employee organization. (BDR 23-685)	Committee on Government Affairs	Human Resources	3/28: WATCH	Assembly Committee on Government Affairs 5/10/2017 8:30 AM	Heard
SB502	Makes various changes relating to the Public Employees' Benefits Program and the Public Employees' Deferred Compensation Program. (BDR 18-979)	Committee on Government Affairs	PERS, PEBS	3/28: WATCH	Assembly Committee on Ways and Means and Senate Committee on Finance, Subcommittees on General Government 5/10/2017 8:00 AM	Mentioned no jurisdiction
SB513	Increases the limit on the assessment for water distribution expenses. (BDR 48-905)	Committee on Natural Resources	Financial, Risk Management; Water Rights (Resources, Conservation)	3/28: WATCH	Assembly Committee on Natural Resources, Agriculture, and Mining 4/27/2017 1:30 PM	Heard



STAFF REPORT

TO: Board of Directors
THRU: Mark Foree, General Manager
FROM: John Enloe, Director Natural Resources
DATE: May 17, 2017
SUBJECT: **Presentation, Discussion and Potential Direction to Staff regarding an agreement to use reclaimed water from the Truckee Meadows Water Reclamation Facility (TMWRF) as proposed by the Tahoe Reno Industrial General Improvement District (TRI GID)**

Recommendation

Staff recommends that the Board direct staff to 1) proceed with negotiations with the Tahoe Reno Industrial Center (TRI Center), TRI GID, Sparks, Reno, the State of Nevada and other necessary parties to prepare draft agreements in connection with TMWA participation in proposed reclaimed water delivery to TRI GID; and 2) delineate TMWA's proposed role as the operational administrator of a "Return Flow Management Plan" and designation of up to 1,000 acre-feet of TMWA "community water resources," (described below) all subject to future Board direction and approval.

Summary

TRI GID has approached Reno and Sparks with a proposal to use reclaimed water from TMWRF to serve TRI Center. Staff requests direction from the Board to participate in negotiation of a formal agreement or agreements to use reclaimed water as requested by TRI GID. As proposed, TMWA's role would be to administer the operational aspects of a "Return Flow Management Plan" between the cities, TMWRF, the Federal Water Master and TRI GID, including the management of water rights supplied by TRI GID and NDOT and 300 to 1,000 acre-feet of TMWA community water resources to satisfy the return flow requirement to the Truckee River.

Background

TRI GID is a general improvement district and political subdivision of the State of Nevada created by Storey County pursuant to Nevada Revised Statutes Chapter 318 to provide water and sewer service to TRI Center customers, currently numbering over 160. Tahoe-Reno Industrial Center, LLC (TRI), the master developer of TRI Center, has received numerous inquiries from companies, including Switch and Tesla, needing relatively large amounts of reclaimed water for

business operations and industrial purposes. Using reclaimed water from TMWRF could resolve short and long-term load and capacity issues for TMWRF, improve Truckee River water quality, facilitate regional economic development, and improve efficiency of water rights utilization.

In their respective staff reports (attached), Reno and Sparks address anticipated TMWRF benefits of using reclaimed water for TRI Center, the financial responsibility for improvements to deliver the reclaimed water to TRI Center, and the potential for state bond financing through the Nevada Governor's Office of Economic Development. The purpose of this staff report is to provide additional information on TMWA's proposed responsibilities and describe the potential community water resources obligation.

Discussion

The project would consist of a pipeline and associated facilities, including possible pump stations, to send reclaimed water to TRI Center. TMWRF would reserve and supply up to 4,000 acre-feet of reclaimed water annually. While reclaimed water would be supplied year-round, it would be delivered in varying amounts during the year to maximize benefits for TMWRF, river flows, water quality, and water rights.

To provide the replacement return flow for the annual 4,000 acre-feet of TMWRF reclaimed water with committed water rights, the following resources have been identified/proposed:

- 1,500 acre-feet TRI GID water rights;
- 1,500 to 2,200 acre-feet Nevada Department of Transportation (NDOT) water rights via the State of Nevada; and
- 300 to 1,000 acre-feet Truckee Meadows Water Authority community water resources.

Assuming Reno and Sparks staff are directed to work with TRI GID on this project, a future agreement for return flow management will be required to address the long-term management and operations of the reclaimed water supply to existing TMWRF reclaimed water customers and TRI Center, while simultaneously considering TMWRF discharge permit requirements and water quality, river flows, and water rights. The Federal Water Master also needs to review and approve any use of reclaimed water at TRI Center from TMWRF to ensure that TROA and downstream water rights obligations are satisfied.

In support of Reno and Sparks, TMWA has identified several options that could be used to provide 300 to 1,000 acre-feet of replacement return flow water (community water resources) but will need additional time to flesh out the details on any proposal to use TMWA community water resources. Initial analyses indicate that September through December during a normal water year (i.e. when Floriston Rates are available through the summer) is the period when TMWA would need to provide water to satisfy return flow requirements. By strategically managing TMWA's pool of water resources, there are several ways to provide the required return flow. For instance, since groundwater does not have a return flow requirement, running 3 PCE Remediation District wells (Morrill, High and Kietzke) during this time and designating their capacity for the TRI Center reclaimed water demand is one example of how community water resources can be used to provide the required return flow. Running the 3 PCE wells does not materially change the way TMWA currently operates and has little, if any, financial impact to TMWA customers.

Additionally, in drought years when TMWA uses more of its groundwater, privately-owned stored water, and TROA Credit Water (none of which have return flow requirements) to satisfy customer demands, these water sources can be specifically designated as providing the required return flow of the reclaimed water for TMWRF in quantities generally sufficient to satisfy both the existing reclaimed water customers and the added supply to TRI Center.

As contemplated, assuming Reno and Sparks move forward with supplying TRI GID with reclaimed water, TMWA's role would be to administer the operational aspects of a separate "Return Flow Management Plan" among TMWA, the cities, TMWRF, the Federal Water Master, and TRI GID, including the 1,500 acre-feet TRI GID water rights, 1,500 to 2,200 acre-feet of NDOT water rights, and 300 to 1,000 acre-feet of TMWA community water resources to satisfy the return flow requirement. The Return Flow Management Plan would be brought back to the Board for review and approval, including specific information on TMWA's roles and responsibilities, the substantive issues related to the use of TMWA's community water resources, and TMWA's estimated costs to administer the plan.

STAFF REPORT

Date: May 10, 2017

To: Mayor and City Council

Thru: Sabra Newby, City Manager

Subject: **J.8. Staff Report (For Possible Action): Presentation, discussion and potential direction to staff regarding terms for an agreement to utilize reclaimed water as proposed by Tahoe Reno Industrial General Improvement District (TRI GID) and negotiation of a draft agreement with the respective parties.**

From: John Flansberg, Director of Public Works

Summary: Tahoe Reno Industrial General Improvement District (TRI GID) has approached the City of Reno and City of Sparks with a proposal to utilize reclaimed water from Truckee Meadows Water Reclamation Facility (TMWRF) to serve Tahoe Reno Industrial Center (TRI Center). Staff requests direction from Council regarding negotiation of a formal agreement to utilize reclaimed water as proposed by TRI GID.

Background: TRI GID is a general improvement district and political subdivision of the State of Nevada created by Storey County pursuant to Nevada Revised Statutes Chapter 318 to provide water and sewer service to TRI Center customers, currently numbering over 160. Like similar government entities providing community services, TRI GID does not make a profit, but does cover its expenses with revenues generated from TRI GID customer usage fees.

Tahoe-Reno Industrial Center, LLC (TRI), the master developer of TRI Center, has received numerous inquiries from companies, including Switch and Tesla, needing high amounts of reclaimed water for business operations and energy efficiency. Reclaimed water is used by industrial users, like those at TRI Center, in either cooling or industrial processing applications. Using reclaimed water from TMWRF could resolve short and long term load and capacity issues for TMWRF, improve water quality in the river, and facilitate continued major future regional economic development.

Discussion: TRI GID has approached the City of Reno and City of Sparks with a proposal to utilize reclaimed water generated from the sanitary sewage treatment process employed at TMWRF. This proposed project would consist of a pipeline and associated facilities, constructed, operated and maintained at TRI GID expense to allow the transmission of treated

effluent for approved reuse applications. TMWRF would reserve and supply up to 4,000 acre-feet of treated effluent water annually to be supplied year round for TRI GID customer use, but could be delivered in varying amounts during the year to maximize benefits for TMWRF, river flows, and water quality.

To replace the annual 4,000 acre-feet of TMWRF effluent with committed water rights, TRI GID recommends utilizing:

- 1,500 acre-feet TRI GID water rights;
- 1,500 to 2,200 acre-feet Nevada Department of Transportation water rights via the State of Nevada; and
- 300 to 1,000 acre-feet Truckee Meadows Water Authority (TMWA) “community resources” water.

It has been recommended that benefit of any water rights overage go to TMWA. TRI GID has also engaged the above entities in preliminary concept discussions. If staff is directed to work with TRI GID on this project, TMWA, TRI GID, the City of Reno, and City of Sparks will need to enter into a future agreement for return flow management in an effort to manage the river more holistically. The Federal Water Master will need to review and approve any use of effluent water at TRI Center from TMWRF.

To meet National Pollutant Discharge Elimination System standards, TMWRF must achieve a complex balance between treatment plant processes, effluent reuse, water rights requirements, Truckee River water quality standards, and numerous other interrelated, regional water management objectives. The TN limit for TMWRF is 500 lbs./day. TMWRF violated the limit in 2013 and was fined as a result. Anticipated benefits of reaching an agreement regarding reclaimed water reuse for TMWRF, to the City of Reno, City of Sparks and the public are:

- Deferment of future TMWRF costs resulting in savings to TMWRF customers (\$30M - \$250M);
- Removal of potential competition in the acquisition of Truckee River water rights; and
- Promotion of a more environmentally responsible source of industrial water used in TRI Center.

As TRI GID does not discharge treated effluent water into the Truckee River, this project benefits TMWRF by significantly enhancing TMWRF’s ability to meet total maximum daily loading discharge standards. Concept level cost estimates for improvements are:

- Rights of way - \$5,000,000;
- Pipeline - \$20,000,000;
- TRI Center upgrades - \$31,000,000;
- Improvements in Washoe County - \$500,000; and
- Water rights title work - \$250,000.

The proposal contemplates that TRI and Switch will build and dedicate all necessary improvements for the proposed project to TRI GID. State bond financing may be available for the cost of the project and some on-site infrastructure at TRI Center; however, the Nevada Governor's Office of Economic Development requires submitted applications for these bonds before the end of June 2017. In order to apply for bonds, a preliminary agreement must be reached by all parties. All costs, including bonds, would be the sole responsibility of TRI GID. Additionally, TRI GID will be responsible for planning, permitting, engineering and construction of all improvements within Storey County and Washoe County, including right of way acquisition and system improvements with TRI Center.

It is contemplated that the City of Reno will receive payment, including incremental operation and maintenance cost, for supplying treated effluent to TRI GID at a cost to be determined and agreed to by all parties to an agreement.

Financial Implications: None at this time.

Legal Implications: None at this time.

Recommendation: Staff recommends that the City Council: 1) Direct the City Manager to proceed with negotiation with TRI, TRI GID, City of Sparks, TMWA and the State of Nevada to prepare a draft agreement(s) for Council review and action; and 2) Approve preliminary agreement terms in attached exhibit subject to Council direction on final terms to be determined in draft agreement(s).

Proposed Motion: I move to approve staff recommendation.

Attachments:

- Term Sheet (PDF)

Tahoe Reno Industrial General Improvement District (TRI GID) Proposal Term Sheet

- Parties agree to substitute 4,000 acre-feet of TMWRF effluent with committed water rights as follows:
 - 1,500 acre-feet TRI GID water rights
 - 1,500 to 2,200 acre-feet NDOT water rights via State of Nevada
 - 300 to 1,000 acre-feet TMWA “community resources” water
- TRI GID, Switch, and the State of Nevada to agree to bond and build the effluent pipeline with no cost to the Cities of Reno and Sparks.
- TRI GID is responsible for planning, permitting, engineering and construction of all Effluent Project improvements in Storey County and Washoe County, including right-of-way acquisition and system improvements within TRI Center. Each of the Cities will grant an easement for the pipeline on their property at no charge. The costs of this work shall be responsibility of TRI GID.
- Cities of Reno and Sparks will reserve for TRI GID and commit to deliver from TMWRF a minimum average annual demand of 4,000 acre-feet of treated effluent for duration of agreement. The Cities and TRI GID to enter into a separate agreement for return flow management and timing of delivery of the water based on seasonal conditions.
- All treated effluent delivered to TRI GID shall be beneficially used in an approved manner. No natural discharge of treated effluent shall be permitted. If any occur, they will be sole responsibility of TRI GID.
- Cities may use any unused portion of the 4,000 acre-feet allocation at other disposal sites on a temporary basis if TRI GID is not fully utilizing the allocation.
- Cities shall be responsible for providing, operating and maintaining TMWRF facilities, and for supplying treated effluent in the amount of the allocation which meets or exceeds the Category B effluent requirements as defined in NAC 445A.276 at a cost mutually agreed to by TRI GID.

Sparks City Council Meeting May 8, 2017

Item Number: 4

Title: Consideration, discussion and potential direction regarding a proposal from Tahoe Reno Industrial General Improvement District (TRI GID) for use of reclaimed water from the Truckee Meadows Water Reclamation Facility (TMWRF). (FOR POSSIBLE ACTION)

Petitioner/Presenter: Stephen W. Driscoll, ICMA-CM, City Manager/Neil C. Krutz, ICMA-CM, Assistant City Manager

Recommendation: Staff recommends City Council direct the City Manager to negotiate with the Tahoe Reno Industrial General Improvement District, the State of Nevada, the City of Reno and the Truckee Meadows Water Authority and to prepare a draft agreement for City Council Consideration based on the preliminary agreement terms outlined in this staff report.

Financial Impact: There is no financial impact.

Business Impact (Per NRS 237):

A Business Impact Statement is not required. This is a rule but emergency action is necessary to protect the public health and safety (requires a unanimous vote of the City Council and cannot be in effect for more than six months).

Agenda Item Brief:

The Tahoe Reno Industrial General Improvement District (TRI GID) has approached the City of Sparks and the City of Reno with a proposal to utilize up to 4,000 acre-feet of reclaimed water from the Truckee Meadows Water Reclamation Facility (TMWRF) to serve the Tahoe Reno Industrial Center (TRI Center). Staff requests direction from Council regarding negotiation of a formal agreement to utilize reclaimed water as proposed by TRI GID.

Background:

City staff have routinely updated the Mayor and City Council on operational and uses of reclaimed water (effluent) at TMWRF. At a budget workshop in the spring of 2016 the City Council directed staff to work on alternative uses beyond returning the water to the river system or watering landscaping or crops. City staff has participated in the analysis of two alternative programs for reclaimed water use. The first alternative is the indirect potable reuse which would provide a mechanism to supplement the drinking water supply with properly treated reclaimed water, and the second option analyzed is the potential increase use of reclaimed water by industrial users.

POTABLE REUSE

Staff participated with other local government agencies on a state lead endeavor to develop regulations for the placement of reclaimed water into the ground for future use as domestic supply. The resulting regulations were approved in December 2016 by the Nevada Legislative Commission and codified in the spring of this year as NAC445A. The legislation created a new

highly-treated category of reclaimed water to allow for potential groundwater recharge in the future.

However, prior to actual implementation of an indirect potable reuse program, additional work must be done to evaluate treatment technologies, perform small-scale test projects, and evaluate the water resource impacts and benefits. UNR is currently pursuing a “Water Innovation Campus” to be developed over the next three years which could be the first step in these evaluations. In recognition of the vital role the City of Sparks plays through TMWRF and our effluent reuse system, the City of Sparks has been asked to consider being an initial partner in this effort.

INCREASED INDUSTRIAL USE

Alternatively, staff has received requests from industrial users at TRI Center for reclaimed water for use in either cooling or industrial processing applications. Last month, TRI Center submitted a proposal for the City’s consideration.

The Tahoe Reno Industrial General Improvement District (TRI GID) is a general improvement district and political subdivision of the State of Nevada created by Storey County pursuant to Nevada Revised Statutes Chapter 318 to provide water and sewer service to TRI Center customers, currently numbering over 160. Like similar government entities providing community services, TRI GID does not make a profit, but does cover its expenses with revenues generated from TRI GID customer usage fees.

Tahoe-Reno Industrial Center, LLC (“TRI”), the master developer of TRI Center, has received numerous inquiries from companies, including Switch and Tesla, needing high amounts of reclaimed water for business operations and energy efficiency.

TRI GID presented to the City of Sparks and the City of Reno a proposal to utilize reclaimed water generated from the sanitary sewage treatment process employed at TMWRF. The proposed project would consist of a pipeline and associated facilities, constructed, operated and maintained at TRI GID expense. The project would transmit treated effluent from TMWRF to TRI Center for approved reuse applications. TMWRF would reserve and supply up to 4,000 acre-feet of reclaimed water annually, to be supplied year-round for TRI GID customer use, but could deliver the water in varying amounts during the year to maximize benefits for TMWRF, river flows, and water quality. Industrial use of TMWRF’s reclaimed water could resolve short and long term load and capacity issues for TMWRF, improve water quality in the river, and facilitate continued major future regional economic development.

Analysis:

TRI GID PROPOSAL

While the concept of the agreement is relatively straight forward (i.e. they build, own and maintain a pipeline, we provide reclaimed water on a year-round basis) there are many aspects of the agreement that require negotiation. The following list of conceptual deal points were presented by TRI GID.

1. Parties agree to substitute 4,000 acre-feet of TMWRF effluent with committed water rights from the following sources as follows:
 - a. 1,500 acre-feet TRI GID water rights
 - b. 1,500 to 2,200 acre-feet Nevada Department of Transportation (NDOT) water rights via State of Nevada
 - c. 300 to 1,000 acre-feet TMWA “community resources” water
2. TRI GID, Switch, and the State of Nevada to agree to bond and build the effluent pipeline with no cost to the Cities of Sparks and Reno.
3. TRI GID is responsible for planning, permitting, engineering and constructing all of the Effluent Project improvements in Storey County and Washoe County. TRI GID would also be responsible for right-of-way acquisitions and system improvements within TRI Center. Each of the Cities will grant an easement for the pipeline on their property at no charge. The costs of this work shall be responsibility of TRI GID.
4. Cities of Reno and Sparks will reserve for TRI GID and commit to deliver from TMWRF a minimum average annual demand of 4,000 acre-feet of treated effluent for duration of agreement. The Cities and TRI GID to enter into a separate agreement for return flow management and timing of delivery of the water based on seasonal conditions.
5. All treated effluent delivered to TRI GID shall be beneficially used in an approved manner. Responsibility for the treated water shall pass to TRI GID at the Point of Connection. No natural discharge of treated effluent shall be permitted. If any occur, they will be sole responsibility of TRI GID.
6. Cities may use any unused portion of the 4,000 acre-feet allocation at other disposal sites on a temporary basis if TRI GID is not fully utilizing the allocation.
7. Cities shall be responsible for providing, operating and maintaining TMWRF facilities, and for supplying treated effluent in the amount of the allocation which meets or exceeds the Category B effluent requirements as defined in NAC 445A.276 at a cost mutually agreed to by TRI GID.

Concept level cost estimates for the improvements are:

- Rights of way - \$5,000,000;
- Pipeline - \$20,000,000;
- TRI Center upgrades - \$31,000,000;
- Improvements in Washoe County - \$500,000; and
- Water rights title work - \$250,000.

The proposal contemplates that TRI and Switch will build and dedicate all necessary improvements for the proposed project to TRI GID. State bond financing may be available for

the cost of the project and some on-site infrastructure at TRI Center; however, the Nevada Governor's Office of Economic Development requires submitted applications for these bonds before the end of June 2017. In order to apply for bonds, a preliminary agreement must be reached by all parties. All costs, including bonds, would be the sole responsibility of TRI GID. Additionally, TRI GID will be responsible for planning, permitting, engineering and construction of all improvements within Storey County and Washoe County, including right of way acquisition and system improvements with TRI Center.

It is contemplated that the Cities of Sparks and Reno will receive payment, including incremental operation and maintenance cost, for supplying treated effluent to TRI GID at a cost to be determined and agreed to by the parties.

BENEFIT TO THE CITIES

As TRI GID does not discharge reclaimed water into the Truckee River, this project would benefit TMWRF by significantly enhancing TMWRF's ability to meet total maximum daily loading discharge standards.

To meet National Pollutant Discharge Elimination System standards, TMWRF must achieve a complex balance between treatment plant processes, reclaimed (i.e. effluent) reuse, water rights requirements, Truckee River water quality standards, and numerous other interrelated, regional water management objectives. Chief among those are the total maximum daily loading criteria TMWRF operates under limiting the amounts of Total Nitrogen (TN), Total Phosphorus (TP) and Total Dissolved Solids (TDS) that can be returned to the river system. As the Council is well aware, Total Nitrogen removal is greatest challenge TMWRF faces in meeting these permit criteria. The following table presents the actual TN data for the previous four calendar years as well as what the estimated amount would have been with the proposed pipeline in place and delivering at 4,000 acre-feet.

Year	Actual Total Nitrogen (lbs. per day)	Estimated Total Nitrogen (lbs. per day) assuming an additional 4,000 acre-feet of reuse.
2013	535	453
2014	475	405
2015	408	346
2016	392	336

It's worth noting that our Total Nitrogen limit is 500 lbs./day. TMWRF violated the limit in 2013 and was fined as a result. Had the reuse contemplated in this proposal been in place, no

violation would have occurred. This proposal is equivalent to a no-cost to the public TMWRF plant expansion.

Based on the above the anticipated benefits of reaching an agreement regarding reclaimed water reuse for TMWRF, both cities and the general public are:

- Deferment of future TMWRF expansion costs of \$30 to \$250M resulting in savings to TMWRF customers;
- Removal of potential competition in the acquisition of Truckee River water rights; and
- Promotion of a more environmentally responsible source of industrial water used in TRI Center.
- More environmentally responsible disposal of treated effluent.

It has been recommended that the benefit of any water rights overages go to TMWA.

Due to the nature of this agreement, if staff is directed to work with TRI GID, TMWA, TRI GID, the City of Reno, and City of Sparks will need to enter into a return flow management agreement to manage the River more holistically. The Federal Water Master will need to review and approve any use of effluent water at TRI Center from TMWRF.

Alternatives:

1. The City Council may find staff has not developed sufficient alternative uses for reclaimed water and therefore negotiating with TRI GID is premature;
2. The City Council may have additional questions that were not answered during consideration of this item and direct the City Manager to return at a later date with additional information; or
3. The City Council may decline the proposal.

Recommended Motion:

I move to direct the City Manager to negotiate with the Tahoe Reno Industrial General Improvement District, the State of Nevada, the City of Reno and the Truckee Meadows Water Authority and to prepare a draft agreement for City Council Consideration based on the preliminary agreement terms outlined in this staff report.



Agenda Item #7

Potential agreement to use reclaimed water from the Truckee Meadows Water Reclamation Facility as proposed by the Tahoe Reno Industrial General Improvement District



Regional Effluent Management Team

- *Focus:*
 - Growth readiness
 - Evaluate benefits/cost to construct intertie pipeline connecting TMWRF and STMWRF / Huffaker Reservoir
 - Support TMWRF’s response to NDEP regarding Nitrogen loading
 - Support 2015 Regional Water Plan Update
 - Analysis to potentially supply effluent outside the TMSA
 - Support regional Indirect Potable Reuse task items
 - Develop various water rights strategies in conformance with TROA, WQSA, 6,700 AF obligation, reuse permit requirements, etc



Nitrogen loading to Truckee River (ppd)

	Existing Infrastructure	Intertie	TRIC	Intertie and TRIC
2014 Normal	407	404 (-3)	359-341 (-57)	355-338 (-60)
2014 Upset	491	463 (-28)	434-387 (-81)	403-359 (-110)
2024 Normal	445	459 (+14)	397-379 (-57)	408-392 (-45)
2024 Upset	538	527 (-11)	481-434 (-80)	466-423 (-93)

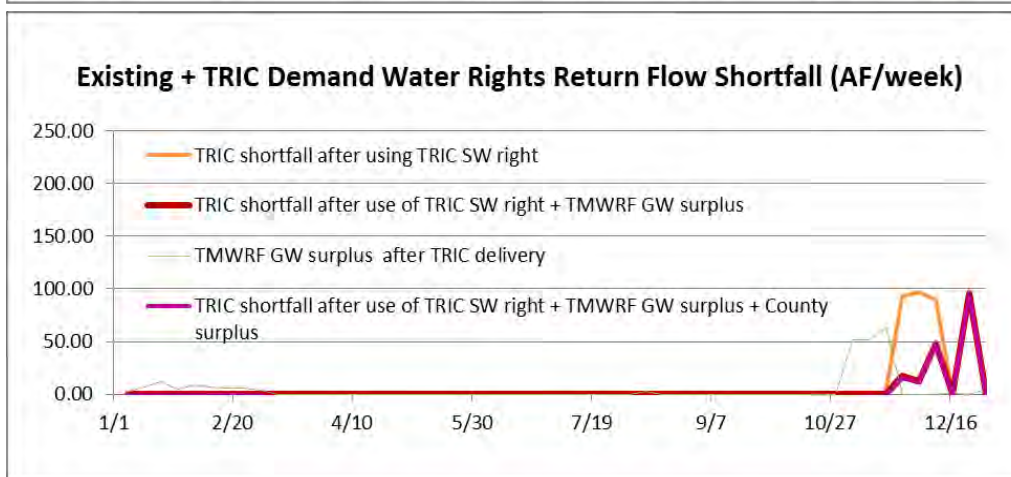
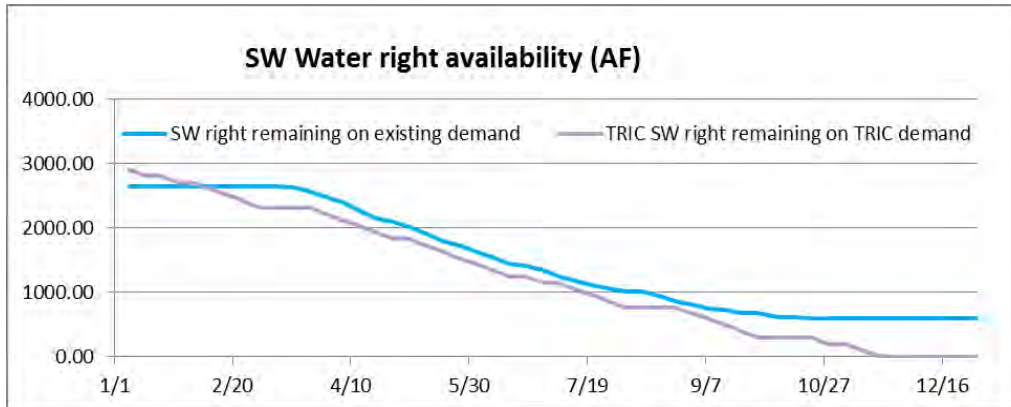
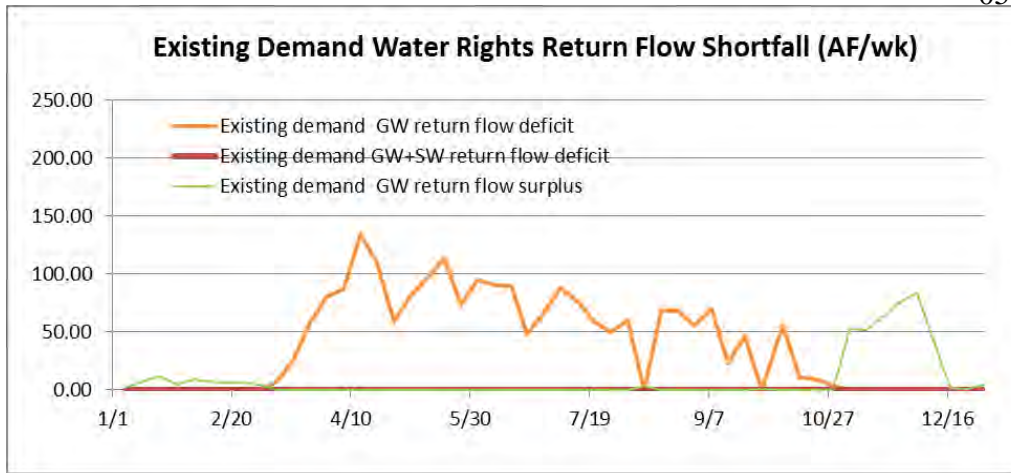
* No water rights constraints



Take-Aways

- Annualized use of effluent is optimal for reducing N loading to river, but there are insufficient return flow water rights under current operations
- TRIC is a potential year round demand, similar to RIBs and potable reuse
- Need to address return flow water rights for future scenario evaluations

2024
No intertie
TRIC high demand
2015 Nitrogen
16" TRIC Pipe
Normal



2024

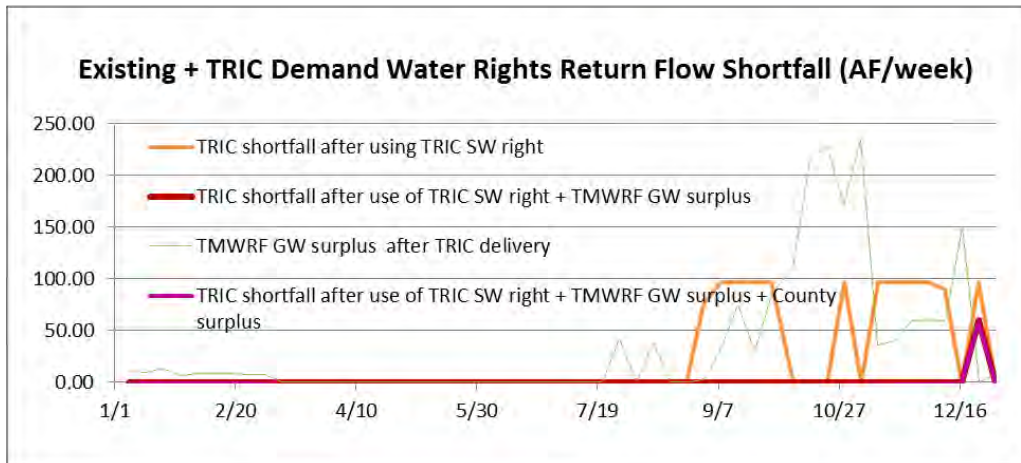
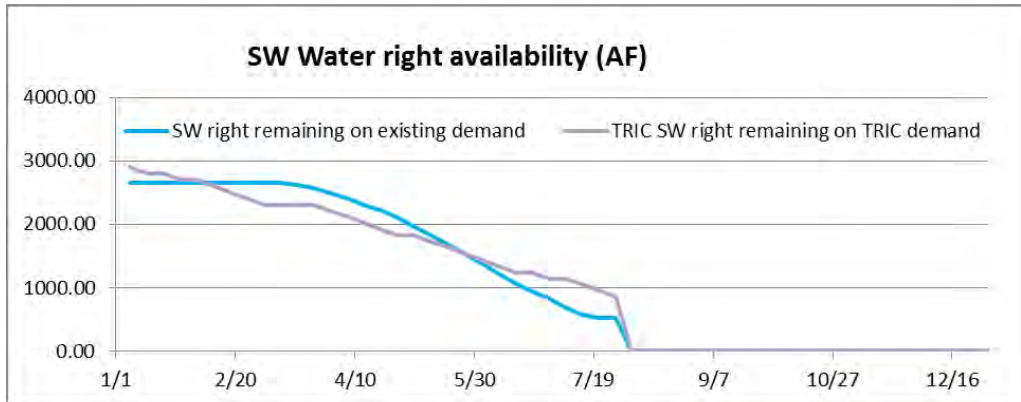
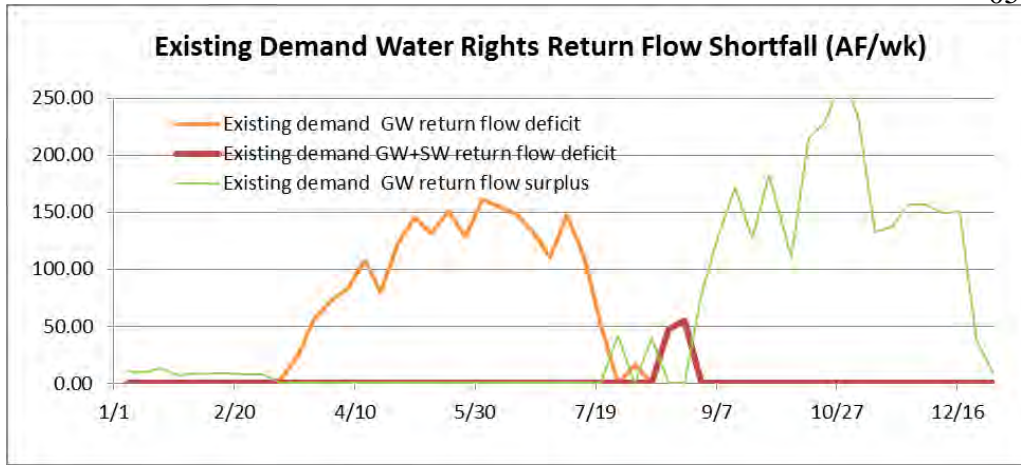
No intertie

TRIC high demand

2015 Nitrogen

16" TRIC Pipe

Drought





TMWA Community Water Resource Options

- 300 to 1,000 acre feet
- Designate a portion of TMWA's pool of water resources to provide the balance of the needed return flows:
 - PCE Remediation District wells / other wells
 - Donner instream flow minimum releases
 - Whites Creek exchange flows
 - Hunter Creek / Dog Creek water rights
 - Other



STAFF REPORT

TO: Chairman and Board Members
THRU: Mark Foree, General Manager
FROM: Pat Nielson, Distribution Maintenance & Generation Director
DATE: May 4, 2017
SUBJECT: **Request for Board approval to initiate legal action against Farr Construction Corporation dba Resource Development Company and Quest Inspar, LLC in relation to the TMWA capital improvement project titled Fleish Penstock and Highland Inverted Siphon Structural Lining, PWP # WA-2016-038**

Recommendation

Staff recommends the Board approve initiation of legal action against Farr Construction Corporation dba Resource Development Company and Quest Inspar, LLC in relation to the TMWA capital improvement project “Fleish Penstock and Highland Inverted Siphon Structural Lining”, PWP # WA-2016-038.

Background

Following a September 2015 assessment of the Fleish Hydroelectric Plant Penstock (360 lineal feet of 8 ft diameter steel pipe), which revealed small leaks and thinning pipe walls/rivets, it was determined that action was needed to ensure the safe operation of the facility. After considering several options, it was decided that an interior monolithic structural liner was the best option because it provided a long-term solution without any loss in generation due to the projected completion of construction in advance of springtime river flows. Additionally, the estimated cost of the liner was significantly lower than the estimated cost of the other option which was complete replacement of the Penstock.

Discussion

The project experienced many setbacks and delays, and once completed, suffered a catastrophic failure of the monolithic structural liner less than two weeks after it was restored to service. TMWA enlisted the services of two independent structural engineering firms to assess the failure and both determined that repairs could not be made to make the liner perform as was represented. This failure ultimately required TMWA to proceed with design and installation of a new Penstock and resulted in many months of lost generation revenue.



TO: Board of Directors
THRU: Mark Foree, General Manager
FROM: Michele Sullivan, Chief Financial Officer
 Tabitha Carlisle, Financial Controller
DATE: May 9, 2017
SUBJECT: **Presentation of financial performance for third quarter Fiscal Year 2017**

Summary

TMWA's financial performance was very positive for the nine months ended March 31, 2017, with total operating revenues \$4.9M million or 7.1% greater than budget and operational spending \$3.2 million or 7.9% less than budget. Developer contributions were \$6.9 million greater than budget. Please refer to **Attachment A-1** for budget to actual financial results comparisons. When referring to the "budget," staff is referring to the augmented budget approved by the TMWA Board in December 2016.

Cash on hand was \$208.8 million, of which \$135.3 million was unrestricted. Please refer to **Attachment A-2** for more detail related to cash and investment balances.

Discussion

Total operating revenues were \$4.9 million or 7.1% greater than the budget. Water sales were \$4.7 million or 7.19% higher than budget. The budget does not reflect the \$1.9 million demand rebound following conservation efforts from the drought. In addition, water sales were higher than expected during the dry summer season which included 90 consecutive days with no precipitation. Of note is that with the wet start to spring April revenues were \$1.5 million less than budget. The positive variance may decrease as the summer season begins depending on weather.

Total spending on operations was \$3.2 million, or 7.9 % below budget. Spending on salaries and wages was \$0.7 million or 5.3% less than budget. Approximately \$.6 million is due to the deferral of adoption of GASB 75 until FY 2018. Services and supplies spending was \$1.6 million or 8.1% less than budget. The largest component of this variance is \$.7 million of power expenses incurred versus budget. Utilizing time-of-use pumping of the distribution system has been a primary consideration over many years in the Water Production department. Significant savings are realized by the efforts to keep power expenses low. However, depending on the energy requirement for pumping ground water, or mandated non-optimized pumping conditions due to emergencies, these savings may not continue. In addition, the budget included \$.3 million for river monitoring, however these costs will not be incurred until FY19.

The water meter retrofit program was \$1 million or 86% under budget due to the sale of groundwater well serve commitments, which do not include a water meter retrofit fee.

In total, developer contributions are significantly ahead of budget by a total of \$6.9 million. Development has been concentrated on residential activity and on small commercial activities. TMWA received \$1.2M from Scannell Properties for their portion of costs related to the Truckee Canyon Water Treatment Plant Expansion and \$.9 million for D'Andrea #3 pump, both of which are included in Developer Contribution -other. Construction activity is improving which is very positive since TMWA was never reliant on developer fees to meet day to day obligations. Contribution from others is comprised solely of the Farad Settlement received from NV Energy this fiscal year. Total received to date is \$21.5 million.

Spending on capital outlays and construction projects was approximately \$17.4 million which is significantly under the budget of \$35.9 million for the first nine months of the fiscal year. This is due to significant weather delays which has resulted in lower spending on main replacements, raw water supply improvements, and pressure improvements.

Referring to TMWA's Statement of Net Assets in **Attachment A-2**, total cash on hand was \$208.8 million as of March 31, 2017 which is \$21.8 million higher than at the beginning of the fiscal year. Of this total, \$135.3 million was unrestricted to be used for future operating/maintenance expenses, principal/interest payments, and for upcoming construction projects.

TRUCKEE MEADOWS WATER AUTHORITY
COMPARATIVE STATEMENTS OF REVENUES, EXPENSES AND CHANGES
IN NET POSITION - BUDGET TO ACTUAL
FOR THE NINE MONTHS ENDED MARCH 31, 2017

	<u>REVISED</u> <u>Budget</u>	<u>UNAUDITED</u> <u>Actual</u>	<u>Variance</u>
OPERATING REVENUES			
Charges for water sales	\$ 65,965,086	\$ 70,708,051	\$ 4,742,965
Hydroelectric sales	1,045,721	1,060,088	14,367
Other operating sales	1,843,000	1,971,047	128,047
Total Operating Revenues	<u>68,853,807</u>	<u>73,739,186</u>	<u>4,885,379</u>
OPERATING EXPENSES			
Salaries and wages	13,746,549	13,016,649	729,900
Employee benefits	6,999,597	6,120,667	878,930
Services and supplies	19,263,482	17,702,781	1,560,701
Total Operating Expenses before Depreciation	<u>40,009,628</u>	<u>36,840,097</u>	<u>3,169,531</u>
Depreciation	<u>24,930,720</u>	<u>24,930,720</u>	<u>-</u>
Total Operating Expenses	<u>64,940,348</u>	<u>61,770,817</u>	<u>3,169,531</u>
Operating Income	<u>3,913,459</u>	<u>11,968,369</u>	<u>8,054,910</u>
NONOPERATING REVENUES (EXPENSES)			
Investment earnings	1,673,478	1,966,545	293,067
Net (decrease) in fair value of investments	-	(260,868)	(260,868)
Gain (Loss) on disposal of assets	-	305	305
Amortization of bond/note issuance costs	(355,833)	(411,341)	(55,508)
Interest expense	(12,697,632)	(12,403,460)	294,172
Other non-operating revenue	-	-	-
Other non operating expense	<u>-</u>	<u>(243,000)</u>	<u>(243,000)</u>
Total Nonoperating Revenues (Expenses)	<u>(11,379,987)</u>	<u>(11,351,819)</u>	<u>28,168</u>
Income (Loss) before Capital Contributions	<u>(7,466,528)</u>	<u>616,550</u>	<u>8,083,078</u>
CAPITAL CONTRIBUTIONS			
Grants	112,500	1,191,168	1,078,668
Water meter retrofit program	1,214,442	171,041	(1,043,401)
Developer infrastructure contributions	-	-	-
Developer will-serve contributions (net of refunds)	3,461,742	7,019,685	3,557,943
Developer capital contributions-other	2,373,858	5,180,851	2,806,993
Developer facility charges (net of refunds)	3,381,858	3,925,841	543,983
Contributions from others	<u>-</u>	<u>11,805,511</u>	<u>11,805,511</u>
Net Capital Contributions	<u>10,544,400</u>	<u>29,294,097</u>	<u>18,749,697</u>
Change in Net Position	<u>3,077,872</u>	<u>29,910,647</u>	<u>26,832,775</u>
NET POSITION , BEGINNING OF YEAR	<u>584,982,314</u>	<u>584,982,314</u>	
NET POSITON , END OF YEAR	<u>\$ 588,060,186</u>	<u>\$ 614,892,961</u>	

TRUCKEE MEADOWS WATER AUTHORITY
STATEMENTS OF NET POSITION
MARCH 31, 2017 AS COMPARED TO JUNE 30, 2016
ASSETS

	UNAUDITED March 31, 2017	AUDITED June 30, 2016
CURRENT ASSETS		
Cash and investments	\$ 135,282,638	\$ 99,764,684
Accounts receivable, net	10,473,121	13,580,981
Due from others	117,455	313,955
Due from other governments	1,550	45,969
Interest receivable	348,914	1,048,498
Prepaid assets	1,055,450	1,243,125
	<u>147,279,128</u>	<u>115,997,212</u>
RESTRICTED CURRENT ASSETS		
Cash and investments:		
Water meter retrofit program	2,084,980	2,084,980
Current bond debt service	5,467,441	19,395,405
	<u>7,552,421</u>	<u>21,480,385</u>
 Total Current Assets	 <u>154,831,549</u>	 <u>137,477,597</u>
RESTRICTED NONCURRENT ASSETS		
Cash and investments:		
Future bond debt service	35,399,903	35,390,010
Operations and maintenance	8,955,188	8,739,954
Renewal and replacement	21,160,870	21,160,870
Water rate stabilization	500,000	500,000
	<u>66,015,961</u>	<u>65,790,834</u>
NONCURRENT ASSETS		
Capital assets, not depreciated	164,566,860	147,064,145
Capital assets ,depreciated	759,148,380	783,728,106
Deferred charges and other assets	965,084	1,013,985
	<u>924,680,324</u>	<u>931,806,236</u>
 Total Noncurrent Assets	 <u>990,696,285</u>	 <u>997,597,070</u>
DEFERRED OUTFLOW OF RESOURCES		
Deferred amount on bond refundings	2,962,358	3,053,052
Deferred amount on net pension liability	7,156,688	7,156,688
 Total Deferred Outflows	 <u>10,119,046</u>	 <u>10,209,740</u>
 Total Assets and Deferred Outflow of Resources	 <u>\$ 1,155,646,880</u>	 <u>\$ 1,145,284,407</u>

ATTACHMENT A-2

LIABILITIES

CURRENT LIABILITIES PAYABLE FROM UNRESTRICTED

CURRENT ASSETS

Accounts payable	\$ 1,665,541	\$ 2,909,126
Contracts and retention payable	2,626,626	2,185,872
Accrued liabilities	3,923,146	4,000,137
Due to other governments	5,033,250	2,137,679
Accrued interest payable	130,995	315,707
Current portion of long term debt	85,170,466	89,414,845
Customer deposits and amounts due to developers	2,650,103	2,757,239
	<u>101,200,127</u>	<u>103,720,605</u>

CURRENT LIABILITIES PAYABLE FROM RESTRICTED

CURRENT ASSETS

Current portion of long term debt	1,355,000	12,620,000
Interest payable	4,112,441	6,775,405
	<u>5,467,441</u>	<u>19,395,405</u>
Total Current Liabilities	<u>106,667,568</u>	<u>123,116,010</u>

NONCURRENT LIABILITIES

Net Pension Liability	26,869,406	26,869,406
Long-term debt, net of current portion	403,601,831	406,696,538
Total Non-Current Liabilities	<u>430,471,237</u>	<u>433,565,944</u>

DEFERRED INFLOW OF RESOURCES

Deferred amount on net pension liability	3,486,191	3,486,191
Deferred amount on bond refundings	128,924	133,948
Total deferred inflows of resources	<u>3,615,115</u>	<u>3,620,139</u>
Total Liabilities	<u>540,753,920</u>	<u>560,302,093</u>

NET POSITION

Net investment in capital assets	489,553,655	478,543,111
Restricted for water meter retrofit program	2,084,980	2,084,980
Restricted for debt service	1,355,000	12,620,000
Restricted for operations and maintenance reserve	4,355,188	4,139,954
Restricted for renewal and replacement reserve	21,160,870	21,160,870
Restricted for water rate stabilization	500,000	500,000
Unrestricted	95,883,267	65,933,399
Total Net Position	<u>614,892,960</u>	<u>584,982,314</u>
Total Liabilities and Net Position	<u>\$ 1,155,646,880</u>	<u>\$ 1,145,284,407</u>

ATTACHMENT A-2



STAFF REPORT

TO: Chairman and Board Members
THRU: Mark Foree, General Manager
FROM: Michele Sullivan, Chief Financial Officer
DATE: May 5, 2017
SUBJECT: Discussion and action on adoption of Resolution No. 251, a resolution to approve the Third Budget Augmentation and budget revisions for FY 2017

RECOMMENDATION

Staff recommends that the Board of Directors of the Truckee Meadows Water Authority (TMWA) approve the resolution adopting the proposed budget augmentation/revisions, and direct staff to forward the approved resolution and attachment to the Department of Taxation for the State of Nevada pursuant to NRS 354.615; and, record these changes in the minutes of the board meeting.

SUMMARY

The Board approved final budget was submitted to the State of Nevada in June, 2016. It was augmented in September, 2016 to increase capital expenditures by \$4.3 million to a total of \$47.8 million. A second budget augmentation was approved in December, 2016 for a net increase in capital expenditures of zero dollars.

This third augmentation relates several one-time items that were not anticipated at the time of the original budget implementation. The major spending augmentations are a decrease in employee benefits expense due to the deferral of adoption of GASB 75 until FY 2018, and a decrease in Services and supplies due to deferral of river monitoring expenses related to TROA until FY 2019. Adjustments to revenue include increases in operating revenues due to an estimated 3% rebound in customer demand, as well as additional operating revenue related to the 3% rate increase effective the first billing cycle in May, 2017. Capital contributions are also augmented to reflect the legal settlement received related to the Farad hydro plant, TROA grant funding received, higher than estimated receipts from will-serve water rights, and receipt of two large payments from developers for developer funded projects. Lower than anticipated contributions from water meter retrofit fees is due to the sale of groundwater rights (versus surface water rights) which do not include the meter retrofit fee. Also included are adjustments related to capital expenditures (CIP) which are well behind budget due to weather and permitting issues.

Cash balances are expected to decrease by \$23.5 million versus \$27.3 million. A lower use of cash is due to the increases in operating revenue, capital contributions, insurance settlement

received, lower capital spending, and reduction in operating expenses, offset by the use of the debt reserve fund in the 2017 bond refunding.

EXPLANATION OF THE AUGMENTATION

A number of budget augmentations and budget revisions can be found in *Attachments A-1* that affect the Statement of Revenues Expenses and Changes in Net Position and in *Attachment A-2* that affect the Statement of Cash Flows. The augmentation and revisions are as follows and are noted in those attachments.

Budget augmentations and revisions relating to the Statement of Revenues, Expenses and Changes in Net Position Attachment A-1:

Item-A) A budget revision to increase water sales for the fiscal year by \$2.4 million. The increase is two pronged, the first one related to a 3% increase in water demands as is reflected in TMWA's funding plan, but not in the 2017 budget. This increase is \$1.9 million and will bring this budget in conformity with the funding plan assumptions. The other component of the increase is \$0.5 million which estimates increased income related to a 3% rate increase implemented the first billing cycle in May, 2017.

Item-B) Employee benefits expense for FY 2017 included a one time expense of \$0.6 million to book a liability related to the unfunded portion of employee retirement health plans. This is required by GASB 75, and the required implementation date has moved to FY 2018.

Item-C) The implementation of TROA requires additional river monitoring by TMWA. Based on current information, TMWA will not incur cash outlays for this expense until FY 2019. Services and Supplies is reduced by \$0.3 million.

Item-D) Budget augmentation of \$1.0 million for final grant funding received related to TROA.

Item-E) Water will serve sales in FY 2017 were groundwater will serve commitments and do not include a water meter retrofit fee. Expected water meter retrofit revenue is decreased by \$1.2 million.

Item-F) Budget augmentation to increase will-serve water right sales by \$3.6 million based on increased sales experienced in FY 2017, and current projections.

Item-G) Budget revision for receipt of two large developer contributions, one for \$1.2 million for the Truckee Canyon Water Treatment Plant, and one for \$0.9 million for D'Andrea # 3 pump station.

Item-H) An additional \$11.8 million was received from insurance as partial settlement for flood damage at the Farad Hydro Plant. The total received in settlements to date is now \$21.5 million.

Budget augmentations and revisions relating to the Statement of Cash Flows Attachment A-2:

Items-A) Cash flow effects of the aforementioned revisions to operating revenues. (A above)

Item-B) Cash flow effect of aforementioned change in implementation of GASB 75. (B above)

Item-C) Cash flow effect of cost reductions for river monitoring. (C above)

Item-D) Cash flow effect of lower CIP spending. Projected lower spending in main replacement is \$8.0 million, in raw water supply improvements \$3.7 million, groundwater supply improvements \$2.0 million, pressure improvements \$1.1 million, all other \$1.1 million.

Item-E) Cash flow effect of applying the debt service reserve fund against debt in the 2017 Bond Refunding.

Item-F) Cash flow effect of aforementioned lower water meter retrofit fees. (E above)

Item-G) Cash flow effect of aforementioned increase in water will-serve sales. (F above)

Item H) Cash flow effect of aforementioned collection of developer contributions. (G above)

Item-I) Cash flow effect of aforementioned collection of insurance settlement. (H above)

Item-J) Cash flow effect of aforementioned collection of TROA grant funding. (D above)

TRUCKEE MEADOWS WATER AUTHORITY
(TMWA)

RESOLUTION NO. 251

A RESOLUTION TO APPROVE THE THIRD BUDGET AUGMENTATION AND BUDGET REVISIONS TO THE FINAL BUDGET FOR FISCAL YEAR ENDING JUNE 30, 2017.

WHEREAS, TMWA prepared, presented and approved the final Budget for Fiscal Year 2017 at a public hearing in May 2016;

WHEREAS, The TMWA Board approved the first budget augmentation and budget revisions to the FY 2017 budget in September 2016 and approved the second budget augmentation and budget revisions to the FY 2017 budget in December 2016;

WHEREAS, Increased revenues are related to a 3% increase in water demands reflected in TMWA’s funding plan and the 3% rate increase effective the first billing cycle in May 2017.

WHEREAS Increased capital contributions are related to Farad hydro plant insurance settlement proceeds received and TROA grant funding received, and receipt from higher than estimated will-serve sales and two large contributions from developers.

WHEREAS, lower operating expenses are related to lower employee benefit expenses and lower TROA implementation costs;

WHEREAS, the TMWA Board has determined the augmentation and revisions described in the staff report attached hereto as Exhibit 1 and incorporated herein by reference are appropriate and justified;

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of the Truckee Meadows Water Authority: that the third budget augmentation and budget revisions to the final annual Budget for Fiscal Year ending June 30, 2017 described in the Staff Report attached as Exhibit 1 is hereby approved and staff is directed to submit such information as necessary and appropriate in connection with the augmentation and revisions to the Nevada Department of Taxation.

Upon motion of _____, seconded by _____, the foregoing Resolution was passed and adopted this 17th day of May, 2017, by the following vote of the Board:

Ayes: _____

Nays: _____

Abstain: _____ Absent: _____

Approved this ____ day of _____, 2017

Geno Martini, Chairman

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

On this 17th day of May, 2017, Geno Martini, Chairman of the Board of Truckee Meadows Water Authority, personally appeared before me, a Notary Public in and for said County and State, and acknowledged that he executed the above instrument freely and voluntarily and for the purposes therein mentioned.

Notary Public

TRUCKEE MEADOWS WATER AUTHORITY
SCHEDULE OF REVENUES, EXPENSES
AND CHANGES IN NET POSITION
FOR THE FISCAL YEAR ENDED JUNE 30, 2017

	Current Budget Fiscal Year 2017 Total	Augmented Budget Fiscal Year 2017 Total	Increase (Decrease)	
OPERATING REVENUES				
Charges for water sales	\$ 88,833,746	\$ 91,196,093	\$ 2,362,347	A
Hydroelectric sales	1,755,890	1,755,890	-	
Other operating sales	2,471,500	2,471,500	-	
Total Operating Revenues	93,061,136	95,423,483	2,362,347	
OPERATING EXPENSES				
Salaries and wages	18,319,615	18,319,615	-	
Employee benefits	9,332,796	8,736,336	596,460	B
Services and supplies	26,078,715	25,730,715	348,000	C
Total Operating Expenses before Depreciation	53,731,126	52,786,666	944,460	
Depreciation	33,247,620	33,247,620	-	
Total Operating Expenses	86,978,746	86,034,286	944,460	
Operating Income	6,082,390	9,389,197	3,306,807	
NONOPERATING REVENUES (EXPENSES)				
Investment Earnings	2,231,304	2,231,304	-	
Unrealized gain on investments	-	-	-	
Gain (Loss) on disposal of assets	-	-	-	
Amortization of bond/note issuance costs	(474,444)	(474,444)	-	
Interest expense	(16,930,176)	(16,930,176)	-	
Other non-operating revenue	-	-	-	
Other non-operating expenses	-	-	-	
Total Nonoperating Revenues (Expenses)	(15,173,316)	(15,173,316)	-	
Income (Loss) before Capital Contributions	(9,090,926)	(5,784,119)	3,306,807	
CAPITAL CONTRIBUTIONS				
Grants	150,000	1,191,168	1,041,168	D
Water meter retrofit program	1,619,256	450,000	(1,169,256)	E
Developer infrastructure contributions	-	-	-	
Developer will-serve contributions (net of refunds)	4,615,656	8,189,633	3,573,977	F
Developer capital contributions-other	3,165,144	5,328,086	2,162,942	G
Developer facility charges (net of refunds)	4,509,144	4,509,144	-	
Contributions from others	-	11,805,511	11,805,511	H
Contributions from other governments	-	-	-	
Net Capital Contributions	14,059,200	31,473,542	17,414,342	
Change in Net Position	4,968,274	25,689,423	20,721,149	
NET POSITION , BEGINNING OF YEAR	\$ 560,575,086	\$ 560,575,086	\$ -	
NET POSITION, END OF YEAR	\$ 565,543,360	\$ 586,264,509	\$ 20,721,149	

**TRUCKEE MEADOWS WATER AUTHORITY
STATEMENTS OF CASH FLOWS
FOR THE YEAR ENDED JUNE 30, 2017**

	Current Budget Fiscal Year 2017 Total	Aumented Budget Fiscal Year 2017 Total	Increase (Decrease)	
INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS				
CASH FLOWS FROM OPERATING ACTIVITIES				
Cash received from customers	\$ 93,061,136	\$ 95,423,482	\$ 2,362,346	A
Cash paid to employees	(27,652,411)	(27,055,951)	596,460	B
Cash paid to suppliers	(26,078,715)	(25,730,715)	348,000	C
Net Cash Provided by Operating Activities	<u>39,330,010</u>	<u>42,636,816</u>	<u>3,306,806</u>	
CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES				
Acquisition and construction of capital assets	(47,820,000)	(31,874,291)	15,945,709	D
Interest paid on financing	(16,154,600)	(16,154,600)	-	
Principal paid on financing	(14,234,845)	(47,100,153)	(32,865,308)	E
Proceeds from capital debt issuance	-	-	-	
Redemptions of commercial paper notes	(4,400,000)	(4,400,000)	-	
Proceeds from refunding bonds	-	-	-	
Proceeds transferred to refunding/redemption escrow	-	-	-	
Proceeds (spending) from (on) capital asset disposal	-	-	-	
Contributions for water meter retrofit program	1,619,256	450,000	(1,169,256)	F
Contributions from developers-will-serve letters	4,615,656	8,189,633	3,573,977	G
Contributions from developers-other	3,165,144	5,328,086	2,162,942	H
Contributions from developers-facility charges	4,509,144	4,509,144	-	
Contributions from (to) others	-	11,805,511	11,805,511	I
Contributions from (to) other governments	-	-	-	
Grants	150,000	1,191,168	1,041,168	J
Bond/Note issuance costs	(440,820)	(440,820)	-	
Net Cash (Used) by Capital and Related Financing Activities	<u>(68,991,065)</u>	<u>(68,496,322)</u>	<u>494,743</u>	
CASH FLOWS FROM INVESTING ACTIVITIES				
Interest received	<u>2,404,344</u>	<u>2,404,344</u>	<u>-</u>	
Net Increase (Decrease) in Cash and Cash Equivalents	<u>(27,256,711)</u>	<u>(23,455,162)</u>	<u>3,801,549</u>	
CASH AND CASH EQUIVALENTS, BEGINNING OF YEAR (ACTUAL)	<u>\$ 187,035,903</u>	<u>187,035,903</u>	<u>\$ -</u>	
CASH AND CASH EQUIVALENTS, END OF YEAR	<u>\$ 159,779,192</u>	<u>163,580,741</u>	<u>\$ 3,801,549</u>	

Attachment A-2



TO: Board of Directors
THRU: Mark Foree, General Manager
FROM: Michele Sullivan, Chief Financial Officer
DATE: May 3, 2017
SUBJECT: **Discussion and action on request for adoption of Resolution No. 252: A Resolution to adopt the final budget for the Fiscal Year Ending June 30, 2018 and the 2018-2022 Five-Year Capital Improvement Plan**

Recommendation

That the TMWA Board approve the revised Tentative Budget as the adopted Final Budget for the fiscal year ending June 30, 2018 and direct staff to file the adopted Final Budget and related 2018-2022 Capital Improvement Plan with the State of Nevada Department of Taxation as required by statute.

Summary

TMWA has prepared the revised Tentative Budget for final consideration and approval by the TMWA Board. Changes to the tentative budget presented originally at the March 15, 2017 board meeting result in a favorable increase in the change in net position of \$0.7M, from \$14.3M to \$15.0M. This is mainly due to reduction in funding related to the Truckee River Fund (TRF) from \$850K to \$450K, elimination of funding for cloud seeding of \$210K, reduction in river monitoring fees paid of \$348K, and additional savings of \$293K in interest expense related to the refunding of TMWA's 2007 Revenue Bonds in April, 2017. Offsetting is an increase in employee benefits of \$596K. This additional expense is related to adoption of GASB 75. Adoption was previously included in the FY 2017 budget, but the standard will be adopted in fiscal year 2018. CIP spending for 2018-2022 increased from \$169.5M to \$172.8M, or \$3.3M due to delays in projects due to be completed in 2017. As discussed at the April 19, 2017 board meeting, total CIP spending funded by customer rates through 2022 is the same as was included in the most recent funding plan. Cash and cash equivalents balances decreased an additional \$2M in FY 2018 due to higher redemptions of commercial paper based on greater 2017 water will serve sales. Cash at the beginning of the fiscal year is higher than the tentative budget estimate due to the receipt of insurance settlement on the Farad Hydro plant.

Discussion

TMWA has prepared the revised Tentative Budget for final consideration and approval by the TMWA Board. A Tentative Budget report was presented at the March 15, 2017 board meeting

and a comparison of the revised Tentative Budget to the original approved Tentative Budget is accompanying this report in *Attachments A and B*. A draft CIP document was presented at the March 15, 2017 board meeting, and an updated draft was presented at the April 19, 2017 board meeting. The final CIP document is accompanying this report in *Attachment C* and spending totals have not changed from the April 19, 2017 CIP document. There are changes to the original presented Tentative Budget as a result of Board member comments, further management evaluation and adjustments to final results from a refunding (refinancing) of TMWA's 2007 Revenue Bonds as follows:

- TRF funding reduced by \$400,000
- Cloud seeding funding eliminated for \$210,000
- River Monitoring expenses reduced by \$348,000 as these expenses related to TROA implementation are not expected to be paid by TMWA until FY 2019.
- Employee benefits increased \$596,460 for implementation of GASB 75 (this item moves out of the FY 2017 budget and into FY 2018)
- Interest expense decreased \$293,256 for actual versus estimated results of the 2017 Bond refunding.
- Additional paydown of commercial paper by \$2 million is based on higher sales of water will serve commitments in FY 2017

Certain members at the April 19, 2017 board meeting also requested information on TMWA's Vehicle and Equipment Replacement Policies. TMWA's vehicle replacement policy is included in this report in *Attachment V*.

TRUCKEE MEADOWS WATER AUTHORITY
(TMWA)

RESOLUTION NO. 252

A RESOLUTION ADOPTING THE FINAL BUDGET FOR THE FISCAL YEAR ENDING
JUNE 30, 2018 AND
THE 2018-2022 CAPITAL IMPROVEMENT PLAN FOR THE
TRUCKEE MEADOWS WATER AUTHORITY AFTER PUBLIC HEARING

WHEREAS, pursuant to NRS 354.596, TMWA is required to hold a public hearing on its tentative budget to allow interested persons to be heard; and

WHEREAS, pursuant to NRS 354.596, TMWA scheduled and held a public hearing on the tentative budget and Capital Improvement Plan as prescribed on May 17, 2017, the third Wednesday in May; and

WHEREAS, the tentative budget and Capital Improvement Plan have been presented to the interested public and the Board; and

WHEREAS, the Board has considered and approved the revisions to the tentative budget and Capital Improvement Plan and has heard and considered comments from the public.

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of the Truckee Meadows Water Authority to adopt the tentative budget as the final budget for the fiscal year ending June 30, 2018 and adopt the 2018-2022 Capital Improvement Plan and to direct staff to submit the final budget and Capital Improvement Plan to the State of Nevada Department of Taxation.

Upon motion of _____, seconded by _____, the foregoing Resolution was passed and adopted on May 17, 2017 by the following vote of the Board:

Ayes: _____

Nays: _____

Abstain: _____ Absent: _____

Approved: _____

Geno Martini, Chairman

Truckee Meadows Water Authority
Resolution 252 (continued)

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

On this 17th day of May, 2017, Geno Martini, Chairman of the Board of Truckee Meadows Water Authority, personally appeared before me, a Notary Public in and for said County and State, and acknowledged that he executed the above instrument freely and voluntarily and for the purposes therein mentioned.

Notary Public

TRUCKEE MEADOWS WATER AUTHORITY
FINAL BUDGET
SCHEDULE OF REVENUES, EXPENSES AND CHANGES IN NET POSITION
FOR THE FISCAL YEAR ENDING JUNE 30, 2018

	Presented Tentative Fiscal Year 2018 Total	Proposed Final Fiscal Year 2018 Total	Increase (Decrease)
OPERATING REVENUES			
Charges for water sales	\$ 94,303,278	\$ 94,303,278	\$ -
Hydroelectric sales	2,990,391	2,990,391	-
Other operating sales	3,131,500	3,131,500	-
Total Operating Revenues	100,425,169	100,425,169	-
OPERATING EXPENSES			
Salaries and wages	19,024,704	19,024,704	-
Employee benefits	8,708,062	9,303,274	(595,212)
Services and supplies	26,662,211	25,704,211	958,000
Total Operating Expenses before Depreciation	54,394,977	54,032,189	362,788
Depreciation	34,061,148	34,061,148	-
Total Operating Expenses	88,456,125	88,093,337	362,788
Operating Income	11,969,044	12,331,832	362,788
NONOPERATING REVENUES (EXPENSES)			
Investment earnings	1,342,692	1,342,692	-
Unrealized gain on investments	-	-	-
Gain (Loss) on disposal of assets	-	-	-
Amortization of bond/note issuance costs	(468,624)	(468,624)	-
Interest expense	(13,687,272)	(13,394,016)	293,256
Other non-operating revenue	-	-	-
Other non-operating expenses	-	-	-
Total Nonoperating Revenues (Expenses)	(12,813,204)	(12,519,948)	293,256
Income (Loss) before Capital Contributions	(844,160)	(188,116)	656,044
CAPITAL CONTRIBUTIONS			
Grants	200,004	200,004	-
Water meter retrofit program	781,488	781,488	-
Developer infrastructure contributions	-	-	-
Developer will-serve contributions (net of refunds)	5,034,744	5,034,744	-
Developer capital contributions-other	4,345,296	4,345,296	-
Developer facility charges (net of refunds)	4,826,436	4,826,436	-
Contributions from others	-	-	-
Contributions from other governments	-	-	-
Net Capital Contributions	15,187,968	15,187,968	-
Change in Net Position	14,343,808	14,999,852	656,044
NET POSITION , BEGINNING OF YEAR	\$ 589,950,588	\$ 589,950,588	\$ -
NET POSITION, END OF YEAR	\$ 604,294,396	\$ 604,950,440	\$ 656,044

**TRUCKEE MEADOWS WATER AUTHORITY
FINAL BUDGET
STATEMENTS OF CASH FLOWS
FOR THE FISCAL YEAR ENDING JUNE 30, 2018**

	Presented Tentative Fiscal Year 2018 Total	Proposed Final Fiscal Year 2018 Total	Change
INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS			
CASH FLOWS FROM OPERATING ACTIVITIES			
Cash received from customers	\$ 100,425,169	\$ 100,425,169	\$ -
Cash paid to employees	(27,732,766)	(28,327,978)	(595,212)
Cash paid to suppliers	(26,662,211)	(25,704,211)	958,000
Net Cash Provided by Operating Activities	<u>46,030,192</u>	<u>46,392,980</u>	<u>362,788</u>
CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES			
Acquisition and construction of capital assets	(42,605,000)	(43,032,000)	(427,000)
Interest paid on financing	(17,225,410)	(17,225,410)	-
Principal paid on financing	(2,739,695)	(2,637,285)	102,410
Redemptions of commercial paper notes	(7,200,000)	(9,200,000)	(2,000,000)
Contributions for water meter retrofit program	781,488	781,488	-
Contributions from developers-will-serve letters	5,034,744	5,034,744	-
Contributions from developers-other	4,345,296	4,345,296	-
Contributions from developers-facility charges	4,826,436	4,826,436	-
Grants	200,000	200,000	-
Commercial Paper issuance costs	(468,624)	(468,624)	-
Net Cash (Used) by Capital and Related Financing Activities	<u>(55,050,765)</u>	<u>(57,375,355)</u>	<u>(2,324,590)</u>
CASH FLOWS FROM INVESTING ACTIVITIES			
Interest received	<u>1,342,692</u>	<u>1,342,692</u>	<u>(1,961,802)</u>
Net Increase (Decrease) in Cash and Cash Equivalents	<u>(7,677,881)</u>	<u>(9,639,683)</u>	<u>(1,961,802)</u>
CASH AND CASH EQUIVALENTS, BEGINNING OF YEAR	<u>\$ 160,000,000</u>	<u>\$ 171,000,000</u>	<u>\$ 11,000,000</u>
CASH AND CASH EQUIVALENTS, END OF YEAR	<u><u>\$ 152,322,119</u></u>	<u><u>\$ 161,360,317</u></u>	<u><u>\$ 9,038,198</u></u>

Attachemnt B



June 2018



Five Year Capital Improvement Plan *Fiscal Year 2018 - 2022*

Truckee Meadows Water Authority is a not-for-profit, community-owned water utility, overseen by elected officials and citizen appointees from Reno, Sparks, and Washoe County

Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

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Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

INTRODUCTION

The Truckee Meadows Water Authority's (TMWA's) Five-Year Capital Improvement Plan 2018 – 2022 (CIP), describes all infrastructure construction and major capital outlays that will take place between July 1, 2017 and June 30, 2022. Guidance for identifying and scheduling projects in the 2018-2022 CIP is provided by TMWA's 2010-2030 Water Facility Plan (WFP) and the 2016-2035 Water Resource Plan (WRP). The WRP Plan was formally updated in calendar year 2016 and the WFP will be updated in calendar year 2017. The updated Plans will reflect a fully consolidated utility including the former Washoe County Water Utility (WCWU) and the former South Truckee Meadows General Improvement District (STMGID) and will be the cornerstone of future CIPs.

The Authority is a joint powers authority formed in November 2000, pursuant to a Cooperative Agreement (as amended and restated as of February 3, 2010, the "Cooperative Agreement") among the City of Reno, Nevada ("Reno"), the City of Sparks, Nevada ("Sparks") and Washoe County, Nevada (the "County"). The Authority owns and operates a water system (the "Water System") and develops, manages and maintains supplies of water for the benefit of the Truckee Meadows communities. On January 1, 2015, TMWA, the WCWU and STMGID consolidated to create a regional water system under TMWA. TMWA has a total of 154 square miles of service area, which includes the cities of Reno and Sparks and other surrounding populated areas of the County (except certain areas in the vicinity of Lake Tahoe and other small areas bordering California). The Authority has no authority to provide water service outside of its Service Area; however, the Authority may provide service in the future to developments that are annexed into its Service Area. The 2018-2022 CIP incorporates a comprehensive compilation of water system improvements for TMWA. A major feature of the 2018-2022 CIP is the construction of a number of projects that will expand the conjunctive use of the region's water resources. The philosophy behind conjunctive use of local water resources is to maximize the use of surface water while preserving the integrity of groundwater resources which are preserved and can be drawn upon during periods of persistently dry weather. Another aspect of the 2018-2022 CIP is to expand the Aquifer Storage and Recovery Program (ASR Program) which is the recharge of groundwater basins with treated surface water. This activity is normally performed during the winter months when there is excess surface water treatment capacity.

The 2018-2022 CIP constitutes an essential component in TMWA's system of planning, monitoring and managing the activities of purveying water and generating hydroelectric power. This introduction will summarize projects and capital outlays for the ensuing five years including the explanation of prioritization of projects, and methodology for assigning the cost of projects to existing customers, development, also referred to as new and expanded service, or drawing on cash reserves transferred from WCWU and STMGID. A condition of consolidating STMGID into TMWA was that the former STMGID treasury be used only for infrastructure improvements in the former STMGID service area. The current 2018-2022 CIP is incorporated into a broader, constantly-updated Five-Year Funding Plan (FP) for a comparable period. This Funding Plan (FP) will determine adequate levels and sources of funding for projects contained in the 2018-2022-Year CIP.

Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

The 2018-2022 FP indicates that TMWA can fund the CIP in light of diminished water sales. This situation is the result of significant reductions in water demands resulting from the drought. Otherwise there appears to be adequate treasury and revenues from various sources to fund operations, pay principal and interest on existing debt, principal and interest on future financing activities, and capital improvements as presented in the 2018-2022 CIP.

The 2018-2022 CIP envisions a total of \$172.8 million of spending with approximately 74.9% or \$129.5 million of this total amount dedicated to upgrades or replacement of existing infrastructure, and approximately 17.2% or \$29.8 million allocated to construction of new water system capacity projects, conjunctive use construction projects, retrofit of remaining unmetered services, and potential opportunistic acquisition of water rights. Construction/capital outlays associated with the former STMGID service area are estimated to be approximately 6.4% or \$11 million of total spending over the fiscal year 2018-2022 period. There are sufficient STMGID transferred reserves to fund the next five years of capital improvements in this category. Of the total projected spending over the next five years 13.8% or \$23.9 million is considered contingency spending which is dependent on certain events occurring to trigger spending. The \$172.8 million in projected spending is categorized in ten broad categories of improvements and spending outlays. These ten categories are:

1. Raw Water Supply Improvements
2. Groundwater Supply Development
3. Treatment Plant & Water Quality (WQ) Improvements
4. Distribution System Improvements
 - a. Pressure Improvements
 - b. Water Main Distribution & Service Line Improvements
5. Potable Water Storage Improvements
6. Hydroelectric Improvements
7. Customer Service Outlays
8. Administrative Outlays
9. Special Projects Funded by Development
10. Former STMGID System Improvements

The ninth category, *Special Programs Funded by Development* programs, are separated from a presentation standpoint because in the case of water right acquisitions, spending is currently driven by pricing opportunity and is part of the contingency spending. The completion of the water meter retrofit project may occur during the current five-year planning horizon since TMWA is seeing increasing contributions from developers to fund the few remaining meter installations. TMWA is seeking matching grant funding to combine with existing water meter retrofit cash reserves which together should be sufficient to complete the program. The tenth category, *Former STMGID System Improvements*, are separated from a presentation standpoint because projects in this category are funded by the STMGID reserve, which TMWA acquired through the acquisition of former STMGID.

A broad description of each category is provided next with detailed project descriptions to be found in the Project Description Section of the 2018-2022 CIP.

Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

The first category, *Raw Water Supply Improvements*, contains 3.5% or approximately \$6.1 million of total spending in the 2018-2022 CIP. Projects focus on improvements to the Highland Canal/Siphon raw water conveyance infrastructure, upstream storage improvements for Donner and Independence Lakes where TMWA stores its Privately-Owned Stored Water (POSW) and expenses associated with the storage and implementation of the Truckee River Operating Agreement (TROA). Implementation of TROA is invaluable to TMWA since it now allows for the modification of river operations to expand upstream storage in the federal reservoir system for increased drought storage. TROA was implemented on December 1, 2015. TMWA is now storing water in the federal reservoir system under this new river operating regime.

The second category, *Ground Water Supply Improvements*, contains 8.5% or approximately \$14.6 million of total spending in the 2018-2022 CIP. These projects focus on preserving existing well capacities, drilling and equipping of new wells and at times complete replacement of existing wells.

The third category, *Treatment Plant Improvements*, contains 14.9% or approximately \$25.7 million of total spending in the 2018-2022 CIP. This spending targets fix and finish projects with the primary focus on the Chalk Bluff and Glendale Surface Water Treatment Plants located on the Truckee River. Another significant planned investment is the Mt. Rose Surface Water Treatment Plant which will provide additional critical conjunctive use water supplies on the Mt. Rose/Galena Fan with water sourced from local creeks. Other improvements focus on satellite water system treatment upgrades and a complete upgrade of the Supervisory Control and Data Acquisition (SCADA) system which provides centralized automated system control and data storage for the distribution system.

The fourth category, *Distribution System Improvements*, contains 40.2% or approximately \$69.4 million of total spending and is the most significant spending category in the 2018-2022 CIP. This spending is bifurcated into pressure improvements and water main and service line improvements. Pressure improvements include pump station rebuilds and new construction, correction of pressure or fire flow deficiencies, pressure regulating station rebuilds and new construction, as well as reconstruction of pressure regulating valves. Water main improvements include replacement of aged water mains reaching end of service life, installation of new mains for new and expanded service, water main oversizing and extensions, and the remaining two of three major conjunctive use projects to extend surface water supplies to the areas that rely heavily on year round groundwater pumping. The last set of projects furthers the conjunctive use philosophy of water resource management.

The fifth category, *Potable Water Storage Improvements*, contains 11.8% or approximately \$20.3 million of total spending in the 2018-2022 CIP. These projects are comprised mainly of new treated water storage tank construction to serve new and expanded service, some replacement of existing treated water tank capacity as well as systematic recoating of treated water tank interiors and exteriors to extend service life of these facilities.

The sixth category, *Hydroelectric Improvements*, contains 2.3% or approximately \$4.1 million of total spending in the 2018-2022 CIP. These improvements center on the three run-of-river

Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

hydroelectric facilities currently owned by TMWA. Efforts on these facilities focus primarily on flume, forebay, diversion and canal improvements as well as equipment upgrades.

The seventh category, *Customer Service Outlays*, contains 4.7% or approximately \$8.1 million of total spending in the 2018-2022 CIP. Spending in this category focuses on meter reading device replacements and meter replacement if required. This spending is on an as needed basis. Also in this category is a spending provision for new business meters which is funded by development.

The eighth category, *Administrative Outlays*, contains 6.5% or approximately \$11.3 million of total spending in the 2018-2022 CIP. These outlays are primarily for Information Technology equipment, licenses, and desktop computer replacements as required. Included in this category of spending are fleet upgrades for heavy and light vehicles as well as excavation equipment.

The ninth category, *Special Projects Funded by Development*, contains 1.3% or approximately \$2.3 million of total spending in the 2018-2022 CIP. These outlays are for water meter retrofit and opportunistic water right purchases.

The tenth category, *Former STMGID System Improvement*, contains 6.4% or approximately \$11.0 million of total spending in the 2018-2022 CIP. Improvements in this category focus on conjunctive use, well replacement and improvements, and tank recoats. Also as meter pit failures occur in the former STMGID water system service areas those meter pits are converted to TMWA material standards.

DEFINITIONS

Capital Improvement Program Definitions

The Five-Year CIP is a planning and budgeting tool, which provides information about TMWA's infrastructure needs for a five-year time frame. Each year, the list of projects is reviewed for cost and priority. New projects may be added and other projects delayed or deleted entirely. Since most projects are mandatory or necessary, deletion of a project would be rare with the exception of contingency spending. However, capital spending plans must remain flexible, and it is often necessary to take revisions to the approved fiscal year's CIP back to the TMWA Board for approval. If construction or outlays can be deferred, TMWA will defer spending in order to preserve cash reserves, regardless whether or not there are difficult economic times. These decisions are made on a case by case basis.

Generally, capital improvements/outlays are defined as physical assets, constructed or purchased, that have a useful life of one year or longer and a cost of \$5,000 or more.

Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Definition of Capital Outlays

"Capital Outlays," which are in TMWA's capital budget, include such things as furniture, computer equipment and software, vehicles, and heavy equipment needed to support TMWA's operations. These items are generally found in the Administrative category of projects. For Customer Service category, these outlays involve meter installations, and acquiring meter reading equipment.

PRIORITIZATION OF PROJECTS/OUTLAYS

TMWA may not have sufficient funding to meet all its capital needs each year or may divert funding to meet unexpected capital improvements. If such conditions arise, projects are prioritized based on the effect each project has on TMWA's ability to meet customer demand and maintain water system reliability. TMWA's updated Five-Year FP is used to analyze overall total spending, identify various funding alternatives, and help determine whether or not water rate adjustments will be required.

The priority categories represent a relative degree of need for any particular project and are described below.

- * **PRIORITY 1 MANDATORY:** These are considered absolutely required, and are the highest priority of all capital projects. Mandatory projects include those in final design or already under construction, or those required by legislation, or regulation for protection of public health and safety. These projects are generally found in the first fiscal year of the 2018-2022 CIP. Water demands or infrastructure conditions are such that if the project is not completed TMWA runs the risk of eventually being unable to reliably provide water service to its existing customers and/or new and expanded service, or incur extended outages.
- * **PRIORITY 2 NECESSARY:** A project that is important for providing water service to customers, yet timing of construction or spending outlay is not as critical as a mandatory project. These projects are required and are generally found in the last four years of the 2018-2022 CIP. External factors such as the pace of new development or the condition of existing infrastructure may delay or accelerate the timing of project construction. When return on investment is a determining factor, projects in this category must have a payback of less than five years. A rate of return may not be applicable to projects whose economic/financial benefits cannot be easily quantified.
- * **PRIORITY 3 CONTINGENCY:** These projects or capital outlays are not immediately critical to the operation of the water system. Expenditures in this category generally require a business case study or specific criteria to be met before spending can occur. If such criteria are not met, then spending may or may not be justified. Also, some projects are deferrable if spending is required in an area of higher priority. Even though these projects and outlays are in the 2018-2022 CIP the likelihood spending will occur may be remote and is based upon future conditions that are difficult to predict.

Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

FUNDING OF CAPITAL SPENDING

Funding Sources

The 2018-2022 CIP will rely on various funding sources to pay for capital projects/capital outlays. TMWA relies heavily on revenues generated from water sales, hydroelectric, and other operating sales to fund the majority of projects. Developer contributions have historically been an important funding source for certain construction projects for new and expanded water system capacity. Investment income is also available to augment other revenue sources but is minor in relation to other funding sources. Collection of developer fees have been at historical lows since the inception of TMWA. TMWA has not been reliant on these fees to fund operations or fund annual principal and interest payments on TMWA's outstanding debt. In fiscal year 2017 residential, and commercial development activity, has accelerated in a meaningful manner providing financial resources to fund projects listed in the 2018-2022 CIP for new and expanded service. TMWA may rely on the issuance of new money debt to fund large levels of capital spending in a particular period. The 2018-2022 CIP does not anticipate reliance on funding from new money at this time. TMWA has relied on a number of new money debt issuances in the past to fund capital spending.

Developer Contributions

TMWA looks to the development community for developer contributions in the form of system development charges or direct reimbursements to fund capital expenditures related to new or expanded water service, including pump station construction or expansions and feeder main extension projects. In June 2003, the TMWA Board adopted facility charges to pay for new treatment/supply capacity projects and new storage capacity projects. TMWA began collecting these facility charges in January 2004. Under TMWA's Rule 5 these proceeds are used to support new capacity construction. Rule 7 governs the purchase of water rights and reimbursement by developers for issuance of will-serve commitments for water service. However, because of the timing of certain growth driven capital projects, additional financial resources may be called upon as needed. The TMWA Board updated the system development charges in March 2005, in October 2006, in February 2008 (effective March 1, 2008) and finally in July 2013. In January 2015, TMWA created new area fees for the former Washoe County Department of Water Resources. In June 2015 TMWA revised fees for Areas 14 and 15 and in June 2016 TMWA Board approved consolidating Area 10 fees for Areas 8A, 10, 13 and 13B and Storage Fee were revised. These fees are subject to periodic review for funding adequacy.

Bonds and Other Financing/Funding Tools

New money revenue bond issuance has been historically an integral part of funding construction spending. TMWA prefers to not use senior lien debt, but rather rely on subordinated debt financing obtained through the Drinking Water State Revolving Loan Fund and the tax-exempt commercial paper program due to lower cost of capital and

Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

repayment subordination features of these funding vehicles. Customer water sales and various developer fees may not be immediately sufficient to pay for construction spending and capital outlays so there may be some reliance on new money debt and reliance on future tax-exempt commercial paper note sales.

At the time of the acquisition of the water assets of Sierra Pacific Resources (SPR), TMWA established a \$40.1 million capital improvement project fund from proceeds of Series 2001-A acquisition bonds issuance. Since inception, TMWA has primarily relied upon operating cash flow, investment income and developer fees to fund capital projects. However, during fiscal year 2005, TMWA was able to utilize a low cost *Drinking Water State Revolving Fund (DWSRF)* loan for \$4.8 million to fund arsenic removal projects and to issue \$40.0 million in additional senior lien bonds to fund various capital improvements. The \$40.0 million Series 2005 Revenue bond proceeds (totaling a net \$37.2 million to apply to construction) were fully expended before the end of fiscal year 2008. TMWA inaugurated a tax-exempt commercial paper program in August 2006; initially to fund water right purchases with two issues that totaled \$43 million. Moreover, the program provides another resource to draw upon for additional funding for capital projects and water rights acquisitions. Market conditions were extremely favorable in February 2008, at which time TMWA took the opportunity to issue an additional \$25 million at an initial rate of 1.59% which includes letter of credit fees and commercial paper remarketing costs. TMWA has taken advantage of 0% interest rate federal stimulus funding and obtained a \$2.3 million loan through the DWSRF program to partially fund the Mogul Bypass Siphon Project. In December 2009 TMWA obtained an \$8.5 million DWSRF loan authorization to construct the Glendale Raw Water Diversion and Intake Structure which was completed in fiscal year 2011. TMWA drew only \$4.4 million on this facility and de-obligated the remaining authorization. TMWA extended its tax-exempt commercial paper program in fiscal year 2012 and completed the process of extending the direct pay liquidity facility with two banks, Wells Fargo N.A and J.P. Morgan N. A. to substitute Lloyds TSB, the originator of the first liquidity facility. Subsequently in fiscal year 2014 TMWA extended the tax-exempt commercial paper program again and replaced Wells Fargo N.A and J.P. Morgan N. A. liquidity facility with an expanded Liquidity facility with Bank of Tokyo-Mitsubishi UFJ. The new liquidity facilities provide for a direct-pay letter of credit to support remarketing of TMWA's commercial paper and also supports an A-1/P-1 rating (highest rating) for TMWA's short term variable rate debt program. This has resulted in favorable interest rates, ranging from less than 1/10 of 1% to 1% which was continually experienced throughout the last three years. In the fourth quarter of fiscal year 2015, TMWA applied for a DWSRF Loan for \$15.0 million to fund the construction phase of the North Valleys Integration Project. Draws on this loan were used to fund the North Valleys Integration Pipeline Project.

Rule 5 and Rule 7 Fees

These fees are collected from the development community. Rule 5 fees are paid by developers to TMWA for the construction of new water feeder mains, new treatment/supply capacity, new storage capacity, and for new or rebuilt pump stations to

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meet demand resulting from new and expanded service. Rule 7 Fees are derived from will-serve sales to development. TMWA historically purchased water rights on the open market and reserves these rights for will-serve letters to be sold to development. TMWA also recovers a modest amount of administrative and financing costs with the sale of each will-serve. The title to water rights are retained by and dedicated to TMWA. TMWA has sufficient inventory of water rights to meet the demands for new and expanded service for the foreseeable future.

Water Meter Retrofit Fees

TMWA has been retrofitting flat rate water services with meter boxes, setters and meters. The intent is to meter the entire water system which is now in the final stage. To accomplish this task TMWA collects \$1,830 for each surface acre-foot of demand when will-serve commitments are issued for new or expanded service. Proceeds from the \$1,830 per surface acre-foot fee are used to fund the water meter retrofit project. TMWA expects to complete the water meter retrofit program over the course of the next several years

Capital Contributions from Other Governments

TMWA is a water wholesaler to the Sun Valley General Improvement District (SVGID). From time to time, new infrastructure must be constructed to service this retail water-service provider. There are no expectations of any need for reimbursement from this source in the 2018-2022 CIP although historically SVGID has made contributions to TMWA.

Reserves from the Water Utility Consolidation

TMWA, the WCWU and STMGID consolidated on January 1, 2015. As a result of the consolidation, the respective treasuries of the WCWU and STMGID were transferred to TMWA. The WCWU treasury that was transferred to TMWA amounted to approximately \$43.4 million after the final transfer of funds while the STMGID treasury transferred to TMWA was approximately \$15.7 million. These cash and investment reserves will be used to make necessary improvements in the former water utility service areas including conjunctive use enhancements.

Other Resources

One method of generating additional funds for capital improvements is to increase existing fees/charges or to add new fees/charges. However, future increases will be provisional if TMWA is able to meet revenue requirements and maintain bond coverage ratios that will suffice to maintain strong investment-grade credit ratings. TMWA has obtained many benefits of Aa1/AA+ credit ratings with positive/stable outlooks. The Board ultimately decided up through fiscal year 2009 to forego any potential customer rate increases since the last rate increase that occurred in March 2005. The TMWA Board did approve a 4.5% general rate increase for fiscal year 2010 and another 4.4% general

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rate increase for fiscal year 2011. The TMWA Board has approved and implemented a 3.5% general rate increase that was put into effect February 1, 2012 and another general 3.4% water rate increase in February 2014. As a consequence of the water utility consolidation any review of water rate adjustments was forestalled until TMWA had at least one full year of operating history as a consolidated water utility. Water rate increases are essential for TMWA to maintain sound credit ratings, to ensure that the liquidity facility that supports TMWA's commercial paper program can be successfully extended, and to preserve access to other opportunities in the capital markets. TMWA should also fund rehabilitative capital projects in a meaningful manner due to water delivery being an essential municipal service.

FISCAL YEAR 2018 CAPITAL SPENDING-THE CAPITAL BUDGET

TMWA expects to spend \$43.0 million for fiscal year 2018, the first year of the FY 2018-2022 CIP. Of this total 77.2% or \$33.2 million will be focused on water system rehabilitation while 19.3% or \$8.3 million is dedicated to water system expansion, limited opportunistic acquisition of water rights and some water meter retrofit activities. Distribution system improvements are expected to account for approximately 35.0% or \$15.1 million of the total projected spending for fiscal year 2018. The Verdi Main Extension Project for \$2.2 million is the largest single project in this category. Groundwater supply improvements are expected to account for approximately 7.7% or \$3.3 million of annual spending. Other activities include activities on existing wells and various rehabilitation projects to preserve well capacities. Treatment plant improvements are expected to account for approximately 24.8% or \$10.7 million of total projected annual spending. Water treatment plant rehabilitation and system control upgrades are expected to be \$2.3 million with construction of a new surface water treatment plant on the Mt. Rose Fan for \$6.0 million. System controls and associated telemetry transport is reaching its technological service life and upgrades will be necessary to stay current but not to the extent of being cutting edge technology. All other capital spending and outlays are expected to be 3.5% or \$1.5 million among a number of various smaller projects to improve water quality. Residential-housing growth and commercial-construction activity declined to a virtual standstill in fiscal years 2009 through 2013. Some residential and commercial construction activity revived in fiscal year 2015. Based on current new business applications, growth accelerated in fiscal year 2016 which is now driving more attention to projects for new and expanded service.

Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

SUMMARY OF PROJECTS FOR THE FISCAL YEAR 2018 BUDGET

Total construction spending, acquisition spending, and capital outlays are expected to be \$43.0 million for the fiscal year 2018. TMWA has established the following projects for the capital budget in fiscal year 2018:

Category 1 Raw Water Supply Improvements \$2,875,000:

- Highland Canal Upgrades – Downstream of Chalk Bluff – \$225,000
- Highland Canal Upgrades – Diversion to Chalk Bluff – \$100,000
- Donner Dam Improvements – \$300,000
- Independence Lake Permitting Study - \$100,000
- Indirect Potable Reuse – \$100,000
- TROA Drought Storage / Implementation – \$150,000
- Mesa Park Drainage - \$1,900,000

Category 2 Groundwater-Development \$3,305,000:

- Well Rehabilitation and Improvements – \$1,050,000
- Sunrise Well #3 Replacement – \$500,000
- Bedell Flat Water Bank – \$50,000
- Well Fix & Finish – \$150,000
- Well Plugging / Conversion - \$110,000
- NDEP Monitoring Wells - \$110,000
- Spanish Springs Nitrate Treatment - \$400,000
- Fish Springs Ranch Monitoring Well Rehabilitation - \$25,000
- Well Head TTHM Mitigation - \$200,000
- Desert Springs 1 & 2 and Spring Creek 5 Aquifer Storage Recovery Retrofit - \$710,000

Category 3 Treatment-Improvements \$10,654,000:

- Chalk Bluff Treatment Plant Fix & Finish - \$845,000
- Glendale Treatment Plant Fix & Finish - \$405,000
- Longley Lane Treatment Plant Fix & Finish - \$145,000
- Chalk Bluff Pump Building Air Handler - \$850,000
- Truckee Canyon Water Treatment Improvements – \$65,000
- Lightning W Treatment Improvements – \$60,000
- SCADA Rehab / Plant Operating Software – \$1,339,000
- Mt. Rose Surface Water Treatment Plant – \$6,000,000
- Longley Lane Water Treatment Plant Assessment/Retrofit - \$55,000
- Terminal Tank PH Adjustment - \$290,000
- Glendale Diversion Emergency Flood Repairs - \$600,000

Category 4 Distribution-Improvements \$15,078,000:

Pressure Improvements Subtotal \$4,878,000

- Pressure Regulator Rehabilitation – \$400,000
- Pressure Reducing Valve (Roll Seal) Removal & Replacement– \$400,000
- Land Acquisitions – \$250,000
- Paloma Pressure Regulating Station/Main - \$1,000,000

Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

- Pump Station Oversizing – \$250,000
- Pump Station Rehabilitation – \$900,000
- D’Andrea #3 Pump Station (developer reimbursed) – \$619,000
- Standby Generators – \$150,000
- Generator Additions – Lightning W, Sunrise Estates, and Old Washoe - \$79,000
- Mogul Booster Pump Station - \$500,000
- Yellow Pine Main Pressure Regulating Station - \$330,000

Water Main Distribution Service Line Improvements Subtotal \$10,200,000

- Street & Highway Main Replacements – \$3,000,000
- 4th and Prater Replacement / Modification - \$2,000,000
- South Virginia / Midtown Main Plumb to Liberty - \$1,100,000
- Pyramid Way Transmission Main - \$800,000
- California-Marsh 24" Main Replacement – \$100,000
- Arrowcreek-Mt Rose Conjunctive Use Phase 2 – \$400,000
- Arc Flash Improvements – \$100,000
- General Waterline Extensions – \$100,000
- Galvanized/Polybutylene Service Replacements – \$400,000
- Verdi Main Extension – \$2,200,000

Category 5 Storage–Improvements \$3,510,000:

- Peavine Tank Replacement – \$ 2,500,000
- Zone 11 Tank - \$150,00
- Storage Tank Recoats, Access & Drainage Improvements– \$860,000

Category 6 Hydroelectric – Improvements \$345,000:

- Forebay, Diversion and Canal Improvements – \$45,000
- Flume Rehabilitation - \$300,000

Category 7 Customer Service \$1,785,000:

- Meter Reading Equipment - \$60,000
- New Business Meters – \$350,000
- Mueller Pit Replacements (former Washoe County service area) – \$125,000
- Meter ERT-RTR Replacements – \$1,250,000

Category 8 Administrative \$4,255,000:

- GIS/GPS System Mapping Equipment - \$40,000
- Desktop Computer Upgrades – \$100,000
- Network Server / Storage Upgrades – \$175,000
- Network Security Upgrades – \$150,000
- Disaster Recovery Improvements - \$215,000
- Furniture, Office Equipment – \$50,000
- Crew Trucks-Vehicles – \$825,000
- Security-Emergency Response (ER) Projects – \$150,000
- Emergency Operations Annex (Design) – \$500,000
- Corporate Office Expansion– \$1,800,000
- System Wide Asphalt Rehabilitation - \$250,000

Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Category 9 Special Projects Funded by Development \$450,000:

- Water Meter Retrofit – \$300,000
- Water Right Purchases – \$150,000

Category 10 Former STMGID System Improvements \$775,000:

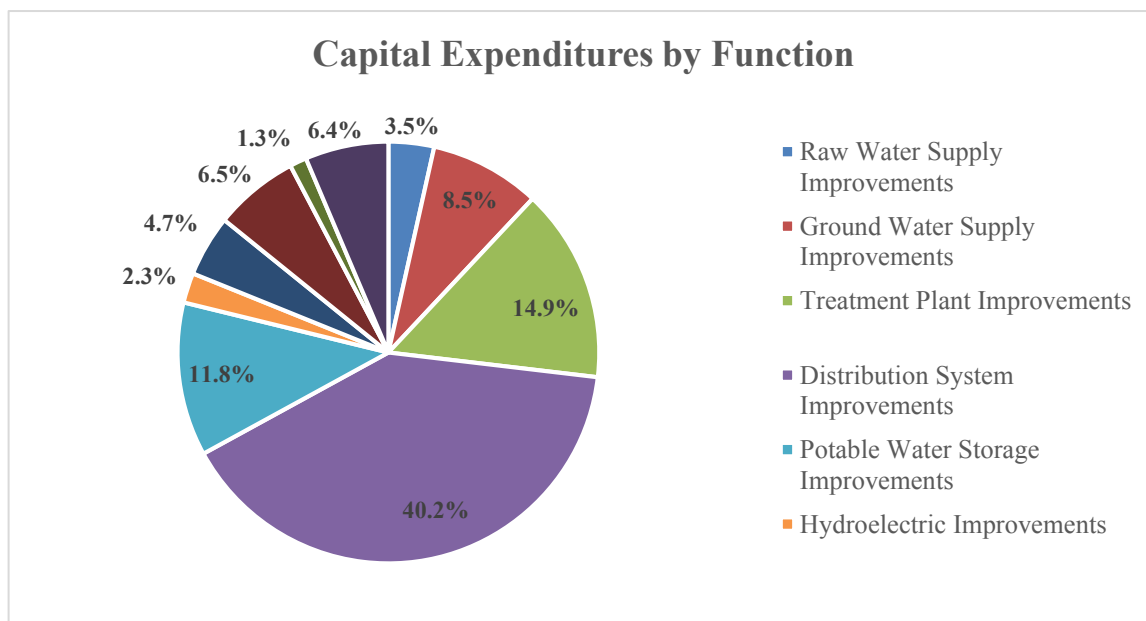
- STMGID Well Bypass & Chlorine Room Improvements - \$400,000
- STMGID Well Fix & Finish - \$150,000
- STMGID Conjunctive Use Facilities - \$150,000
- STMGID Mueller Pit Replacements - \$75,000

Detailed project descriptions are provided for all projects in the 2018-2022 CIP. These descriptions cover the fiscal year 2018 capital budget as well as the four additional years from 2019-2022.

Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

CAPITAL EXPENDITURES BY FUNCTION
(Amounts in thousands of dollars)

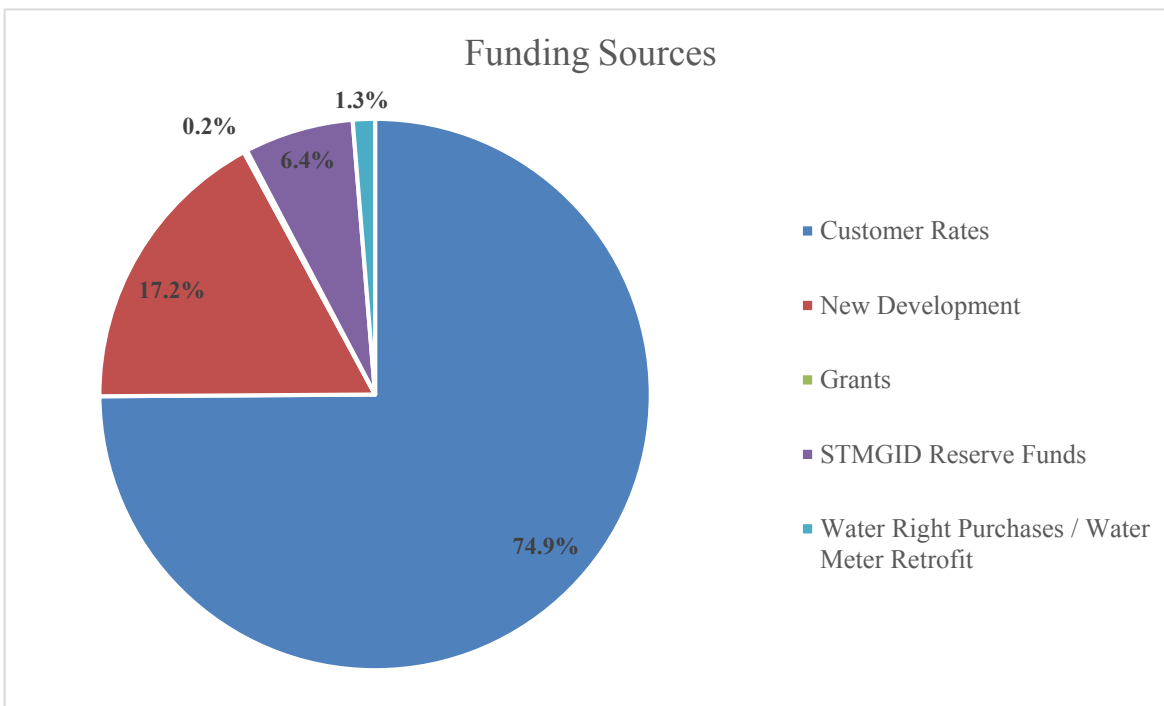
Summary of Capital Expenditures by Function	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	Five Year CIP Total
Raw Water Supply Improvements	2,875	575	575	1,475	575	6,075
Ground Water Supply Improvements	3,305	2,385	3,575	3,175	2,175	14,615
Treatment Plant Improvements	10,654	6,967	5,187	1,795	1,089	25,692
Distribution System Improvements	15,078	12,600	13,630	16,200	11,590	69,398
Potable Water Storage Improvements	3,510	3,950	3,450	2,900	6,500	20,310
Hydroelectric Improvements	345	1,055	1,000	1,000	650	4,050
Customer Service Outlays	1,785	1,725	1,610	1,475	1,535	8,130
Administrative Outlays	4,255	2,835	1,350	1,415	1,465	11,320
Water Meter Retrofit/ Water Right Purchases	450	450	450	450	450	2,250
Sub-Total TMWA Construction Spending & Outlays	42,257	32,842	30,827	29,885	26,029	161,840
Former STMGID System Improvements	775	3,520	3,300	2,900	500	10,995
Total Projected Capital Spending, Including STMGID	43,032	36,362	34,127	32,785	26,529	172,835



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

PRELIMINARY FUNDING PLAN
FUNDING SOURCES
(Amounts in thousands of dollars)

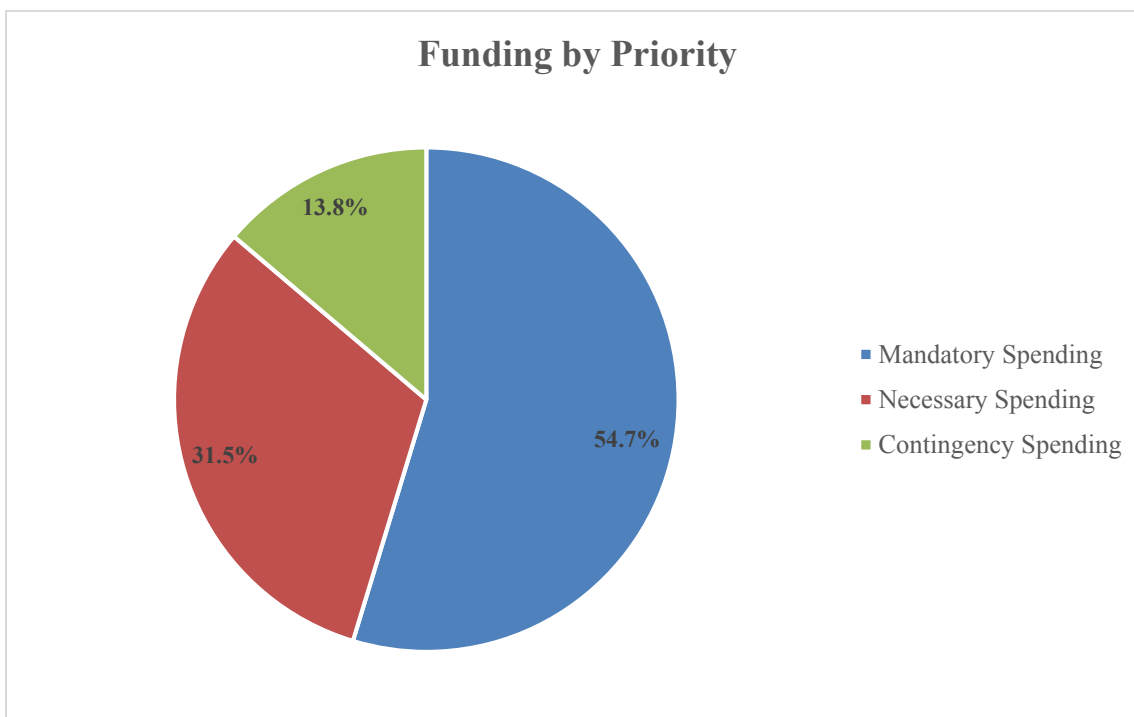
Summary of Funding Sources	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	Five Year CIP Total
Capital Improvements Funded by Customer Rates	33,223	26,798	25,205	23,845	20,464	129,534
Capital Improvements Funded by Development	8,284	5,595	5,173	5,590	5,115	29,756
Capital Improvements Funded by Grants	300	-	-	-	-	300
Capital Improvements Funded with former STMGID Reserve Funds	775	3,520	3,300	2,900	500	10,995
Water Meter Retrofit/ Water Right Purchases	450	450	450	450	450	2,250
Total Projected Capital Spending	43,032	36,362	34,127	32,785	26,529	172,835



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

FUNDING BY PRIORITY
(Amounts in thousands of dollars)

Summary of Funding by Priority	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	Five Year CIP Total
Priority 1 – Mandatory Spending, Projects in Progress, Regulatory	31,572	24,917	13,842	12,830	11,299	94,460
Priority 2 – Necessary Spending	9,875	8,425	17,360	12,885	5,970	54,515
Priority 3 – Contingency Spending	1,585	3,020	2,925	7,070	9,260	23,860
Total Projected Capital Spending	43,032	36,362	34,127	32,785	26,529	172,835



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

PROJECT FUNCTIONS AND DESCRIPTIONS

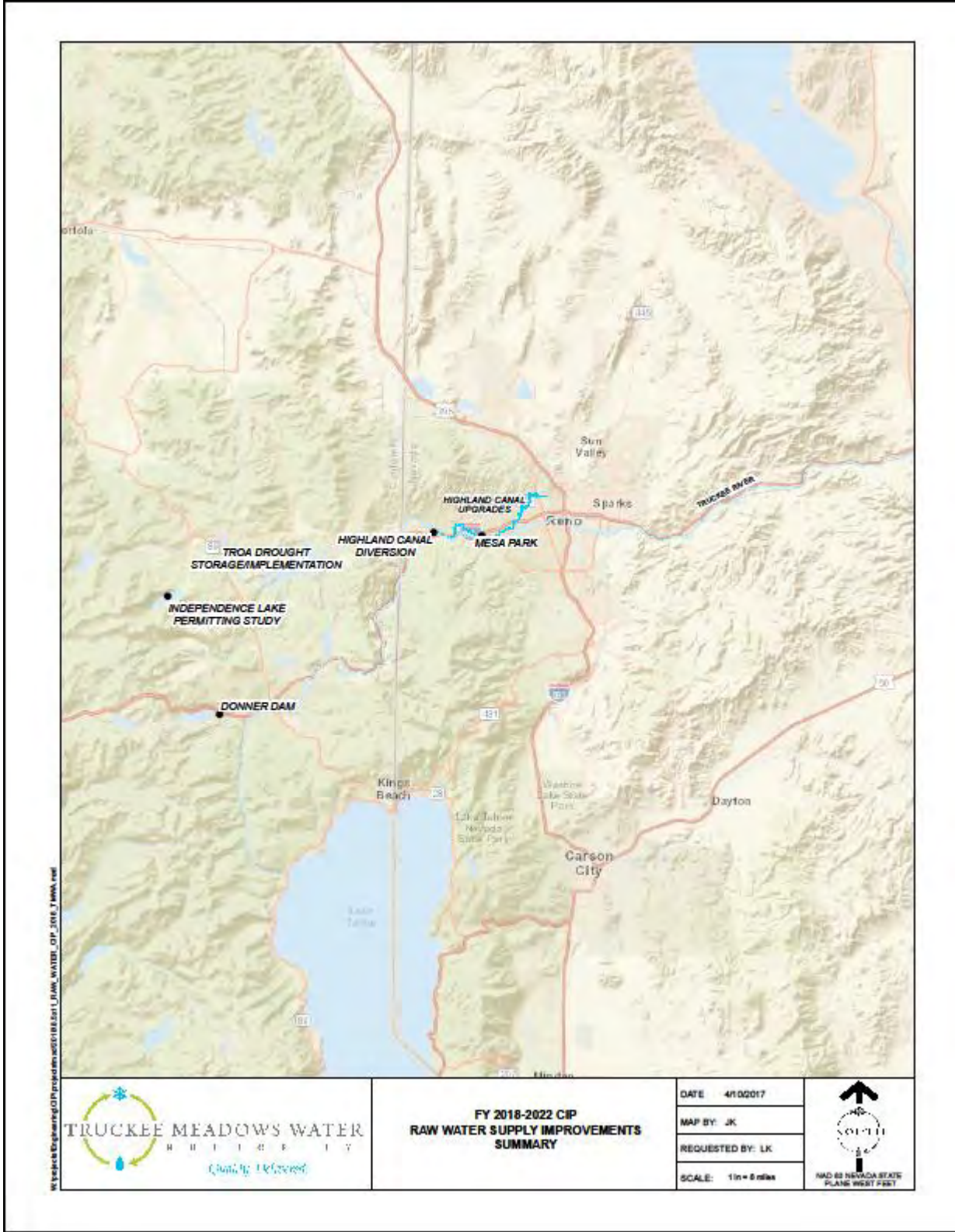
RAW WATER SUPPLY IMPROVEMENTS

Summary

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
1	Customer Rates	Highland Canal- Upgrades-Downstream	225	225	225	225	225	1,125
1	Customer Rates	Highland Canal- Upgrades-Diversion to Chalk Bluff	100	100	100	1,000	100	1,400
1	Customer Rates	Donner Dam Improvements	300	-	-	-	-	300
2	Customer Rates	Independence Lake Permitting Study	100	-	-	-	-	100
2	Customer Rates	Indirect Potable Reuse	100	100	100	100	100	500
1	Customer Rates	TROA Drought Storage/Implementation	150	150	150	150	150	750
1	Customer Rates	Mesa Park Drainage	1,900					
Subtotal			2,875	575	575	1,475	575	6,075

Project Locations: Map of all *Raw Water Supply Improvements* projects are highlighted in the following map.

Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan



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TRUCKEE MEADOWS WATER AUTHORITY
Quality Delivered

**FY 2018-2022 CIIP
RAW WATER SUPPLY IMPROVEMENTS
SUMMARY**

DATE	4/10/2017
MAP BY:	JK
REQUESTED BY:	LK
SCALE:	1in = 5 miles

NAD 83 NEVADA STATE PLANE WEST FOOTING

Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

**Raw Water Supply Improvements
Highland Canal-Upgrades-Downstream FY 2018 – 2022**

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
1	Customer Rates	Highland Canal – Upgrades - Downstream	225	225	225	225	225	1125

PROJECT DESCRIPTION: The improvements reflected in this capital project item are for betterments along the canal downstream of the Chalk Bluff Water Treatment Plant to the Rancho San Rafael Park. Approximately 2,000 feet of “smart ditch” (a molded plastic trapezoidal channel section) has been installed downstream of Chalk Bluff in recent years. This product reduces leakage and maintenance and it is planned to continue to extend the installation in the future. Other efforts are rehabilitative in nature and may address access and security concerns.

SCHEDULE: Projects are identified and prioritized on an annual basis.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Raw Water Supply Improvements

Highland Canal – Upgrades – Diversion to Chalk Bluff FY 2018 – 2022

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
1	Customer Rates	Highland Canal – Upgrades-Diversion to Chalk Bluff	100	100	100	1,000	100	1,400

PROJECT DESCRIPTION: These improvements are for the stretch of canal between the diversion on the Truckee River and Chalk Bluff Water Treatment Plant. The proposed spending is to secure the canal from trespass to enhance public safety and prevent encroachment on TMWA property. Due to swift flows in the Highland Canal TMWA will also complete fencing along the canal for public safety, install security cameras and access barriers. The proposed FY 2021 budget is for replacement of the existing 54” siphon pipe under the Truckee River just downstream of the diversion installed in 1954.

SCHEDULE: Projects are identified and prioritized on an annual basis.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

**Raw Water Supply Improvements
Donner Dam Improvements FY 2018**

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
1	Customer Rates	Donner Dam Improvements	300	-	-	-	-	300

PROJECT DESCRIPTION: During the annual inspection of the Donner Dam facility the Division of Safety of Dams (DSOD) noted areas of the structure that are suffering from deteriorating concrete. TMWA completed repairs to the dam in FY 2016 but still needs to make repairs to the concrete railings and deck. In addition, several safety and operational improvements are needed which became apparent during the January 2017 flood. Monies are budgeted to perform a project scoping and permitting strategy assessment.

SCHEDULE: Project scoping and permitting strategy assessment to be performed in FY 2018.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

**Raw Water Supply Improvements
Independence Lake Permitting Study FY2018**

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Customer Rates	Independence Lake Permitting Study	100	-	-	-	-	100

PROJECT DESCRIPTION: TROA calls for the use of storage at Independence Lake before TMWA can access its Credit Water Storage. There is a provision in TROA to provide fish passage between the natural lakes in the event of a substantial reservoir drawdown. The purpose of this project is to begin a dialogue with the appropriate permitting agencies to proactively develop a strategy to understand the future implementation steps to satisfy the fish passage requirement.

SCHEDULE: Permitting strategy to be developed in FY 2018.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

**Raw Water Supply Improvements
Indirect Potable Reuse FY 2018 – 2022**

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Customer Rates	Indirect Potable Reuse	100	100	100	100	100	500

PROJECT DESCRIPTION: NDEP has approved new regulations for future reuse in Nevada, including urban, agricultural (food and non-food crops), impoundments, environmental, industrial, and indirect potable reuse (IPR). IPR is a process whereby the purified water is stored in an environmental buffer such as a lake or aquifer before re-entering the drinking water supply.

Conceptually, an IPR project might be well suited for areas such as the North Valleys or the South Truckee Meadows. IPR in these locations could improve the utilization of existing water resources and water rights, since the Water Reclamation Facilities for these areas do not return the treated water to the Truckee River. The purified water could be recharged using infiltration basins or injection wells in areas generally isolated from domestic wells, blended with ambient groundwater, and eventually recovered using TMWA’s municipal wells.

SCHEDULE: Planning, permitting, design and operation of an advanced treatment pilot / demonstration project with UNR over the next 3-5 year time frame, with funding support from Reno, Sparks, Washoe County, WRWC and TMWA.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Raw Water Supply Improvements
TROA Drought Storage/Implementation FY2018 - 2022

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
1	Customer Rates	TROA Drought Storage / Implementation	150	150	150	150	150	750

PROJECT DESCRIPTION: TROA became effective and TMWA began implementation officially on December 1, 2015.

Ongoing budget under TROA implementation is for additional stream gages in new locations as required, as well as improving the monitoring capabilities of existing gages as needed on an annual basis. Other smaller capital improvements related to the operation of reservoir sites such as:

- Improvements to existing and/or construction of remote power source for Independence outlet gates and PLC
- Improvements to existing and/or new satellite service provider to improve communication reliability
- Independence and Donner Lake spillway channel maintenance dredging

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

**Raw Water Supply Improvements
Mesa Park Drainage FY2018**

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
1	Customer Rates	Mesa Park Drainage	1,900	-	-	-	-	1,900

PROJECT DESCRIPTION: The project involves construction of new large diameter storm drain facilities to capture surface drainage that previously flowed into the Highland Canal which delivers the raw water supply to the Chalk Bluff Water Treatment Plant. Not only were these discharges a significant source of raw water turbidity, the drainage areas included several large animal corrals and pens. The project includes boring and jacking of a new large diameter storm drain pipeline railroad crossing; installation of storm drain pipeline crossing under the Highland Canal; relocation and construction of a new sanitary sewer pipeline and appurtenances; restoration and construction of new surface improvements, including asphalt paving, concrete curb, gutter and driveway aprons.

SCHEDULE: Construction of the improvements began in FY17 and will continue into FY18.

PROJECT TYPE:



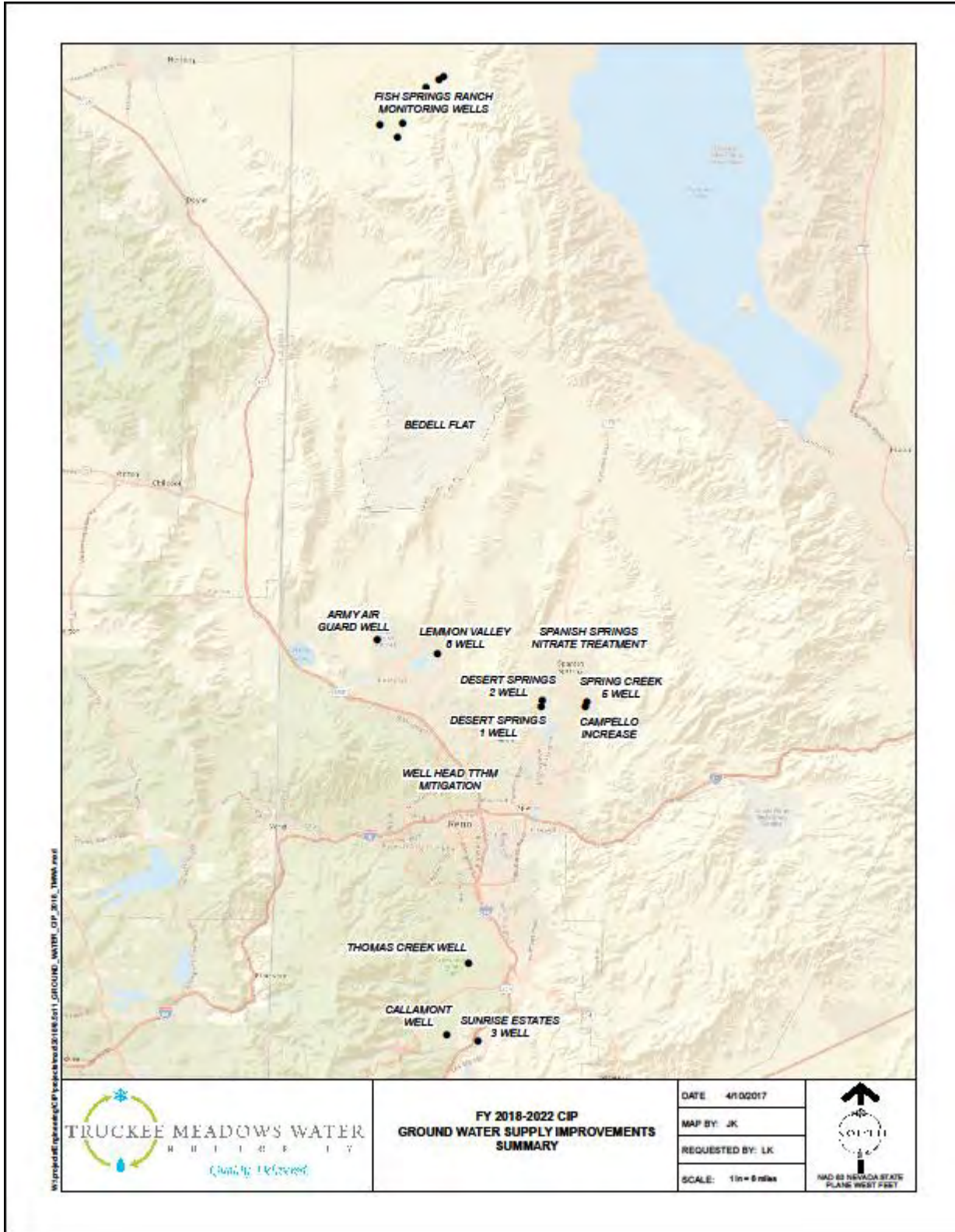
Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

GROUND WATER SUPPLY IMPROVEMENTS
Summary

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
1	Customer Rates	Well Rehabilitation Improvements	1,050	725	925	925	925	4,550
2	Customer Rates	Campello Capacity Increase	-	-	150	-	-	150
2	Developer Fees	Callamont Well South Equip	-	-	-	1,000	-	1,000
2	Customer Rates	Air Guard Well Replacement	-	-	1,000	-	-	1,000
1	Customer Rates	Sunrise #3 Replacement	500	900	-	-	-	1,400
3	Customer Rates	Bedell Flat Water Bank	50	100	100	100	100	450
2	Customer Rates	Lemmon Valley Well #8 Replacement	-	-	-	-	1,000	1,000
1	Customer Rates	Well Fix & Finish	150	150	150	150	150	750
2	Customer Rates	Well Plugging / Conversion	110	-	-	-	-	110
1	Customer Rates	NDEP Monitoring Wells	110	-	-	-	-	110
2	Customer Rates	Thomas Creek Well Replacement	-	-	1,250	1,000	-	2,250
1	Customer Rates	Spanish Springs Nitrate Treatment	400	-	-	-	-	400
2	Customer Rates	Fish Springs Ranch Monitoring Well Rehabs	25	-	-	-	-	25
2	Customer Rates	Well Head TTHM Mitigation	200	-	-	-	-	200
2	Customer Rates	Spring Creek Well #7 Recharge	-	500	-	-	-	500
1	Grant	Desert Springs 1 & 2 and Spring Creek 5 ASR Retrofit	710	10	-	-	-	720
Subtotal			3,305	2,385	3,575	3,175	2,175	14,615

Project Locations: Map of all *Ground Water Supply Improvements* projects are highlighted in the following map.

Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Ground Water Supply Improvements
Well Rehabilitation Improvements FY 2018 – 2022

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
1	Customer Rates	Well Rehabilitation Improvements	1,050	725	925	925	925	4,550

PROJECT DESCRIPTION: Funds are budgeted to rehabilitate TMWA production wells as required. Typically for subgrade rehabilitation efforts, six to eight wells are inspected, tested and evaluated every year to determine if rehabilitation is required. Typical subgrade rehab activities include but are not limited to: pump and pump column pipe replacements; rehabilitation of well casing and screen; and other enhancements to maintain well quality and capacities. Spending in fiscal years 2018-2022 will include improvements at several wells to provide general above grade well equipment and building upgrades including upgrades to electrical and telemetry equipment. TMWA has over 80 water production wells operating throughout the water system. TMWA relies on these wells to provide drought and emergency supply and as a supplemental source to meet peak demands on the water system.

SCHEDULE: Wells targeted for rehabilitation improvements in FY 2018 include Mt. Rose 6, Lightning W 1, Old Washoe Estates 3, STMGID 2, and Arrowcreek 2.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

**Ground Water Supply Improvements
Campello Capacity Increase FY 2020**

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Customer Rates	Campello Capacity Increase			150			150

PROJECT DESCRIPTION: These improvements will increase the transfer capacity between the Spanish Springs #2 pressure zone and the former County Spring Creek system on the east side of Spanish Springs Valley to provide sufficient surface water supply for passive and/or active recharge of former County wells.

SCHEDULE: The improvements are currently planned to be completed in FY 2020.

PROJECT TYPE:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

**Ground Water Supply Improvements
Callamont Well South Equipping FY 2021**

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Developer Fees	Callamont Well South Equipping	-	-	-	1,000	-	1,000

PROJECT DESCRIPTION: Construct pumping facilities for one of the existing Callamont wells in the Mt. Rose system including the pump house building, electrical power, pump/motor and valves and piping to provide an additional 500 gallons per minute of peak period supply to the area.

SCHEDULE: This project is currently scheduled for construction in FY 2021, but may be constructed sooner depending on the actual schedule for the proposed 210 unit Callamont residential development.

PROJECT TYPE:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

**Ground Water Supply Improvements
Air Guard Well Replacement FY 2020**

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Customer Rates	Air Guard Well Equip		-	1,000	-	-	1,000

PROJECT DESCRIPTION: Replacement of the Air Guard Well in Stead was necessary to reduce sanding and provide additional capacity to the Stead system. The new/replacement well was drilled and constructed in FY 2016. Test pumping indicates the new well will have a capacity of about 2,500 gallons per minute which is twice the capacity of the old well. The budget for FY 2021 is for constructing the pumping facilities including the well building, pump and motor, valves and piping, electrical and controls, etc.

SCHEDULE: The pumping facilities will be constructed in FY 2021.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Ground Water Supply Improvements
Sunrise #3 Replacement FY 2018 - 2019

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
1	Customer Rates	Sunrise #3 Replacement	500	900				1,400

PROJECT DESCRIPTION: This project involves complete replacement of the existing Sunrise Well #3, a six-inch monitoring well in Pleasant Valley in order to verify groundwater quantity and quality on property owned by UNR. The existing well is operated on an emergency basis only because it produces excessive sand and is located too close to an existing septic system. This project requires exploration drilling before the final site selection and well construction in FY18, and well equipping in FY19.

SCHEDULE: The well drilling is scheduled for completion in FY 2018 if a suitable site can be acquired.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

**Ground Water Supply Improvements
Bedell Flat Water Bank FY 2018 – 2022**

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
3	Customer Rates	Bedell Flat Water Bank	50	100	100	100	100	450

PROJECT DESCRIPTION: As part of TMWA’s overall water resource conjunctive use management strategy, TMWA is working with cost sharing partners including the City of Reno, Sparks and Washoe County to evaluate of the feasibility of an integrated water resource ASR program in Bedell Flat. Bedell Flat is located in southern Washoe County, about 13 miles north of Stead and appears to have favorable hydrogeologic characteristics for a large scale ASR program. Several water resource options are under consideration, including: injection of potable water using ASR wells off of the existing NVIP pipeline; infiltration of highly treated wastewater along a natural drainage referred to as Bird Spring Wash; infiltration of highly treated wastewater through a spreading basin; or a combination of these. Water stored or banked in Bedell Flat could serve as a future non-Truckee River based drought or emergency water supply for the region. This project is a joint funded agreement with USGS to conduct water infiltration monitoring and assessment to determine feasibility of ASR in Bedell Flat.

SCHEDULE: Geologic/hydrogeologic feasibility investigations and environmental clearance and permitting work are proposed over the next 3-5 years to gain an understanding of the feasibility, scope and cost of a water banking program in Bedell Flat.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

**Ground Water Supply Improvements
Lemmon Valley Well #8 Replacement FY2022**

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Customer Rates	Lemmon Valley Well #8 Replacement	-	-	-	-	1,000	1,000

PROJECT DESCRIPTION: The exiting Lemmon Valley 8 Well has been in service since 1974, making it one of the older wells in the East Lemmon Valley system. The exiting well casing and screens show signs of significant corrosion. With the potential for a well casing failure, TMWA intends to drill and equip a replacement well on the exiting well property. In addition, the replacement well is expected to have similar construction and produce at least 20 percent more capacity as than the original Lemmon Valley 8. The additional capacity is necessary as a peaking supply to support base load supply from the Fish Springs groundwater system.

SCHEDULE: Well drilling will occur in FY22 and well equipping in FY23.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

**Ground Water Supply Improvements
Well Fix & Finish FY 2018 - 2022**

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
1	Customer Rates	Well Fix & Finish	150	150	150	150	150	750

PROJECT DESCRIPTION: Equipment improvements are expected to bring existing wells up to modern standards, including antiquated equipment replacements and improvements for water quality purposes. This project includes improvements to sodium hypochlorite rooms, pump to waste lines and drainage improvements. It also includes well retrofit for recharge where needed.

SCHEDULE: Improvements are planned to continue for the duration of this CIP funding plan.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

**Ground Water Supply Improvements
Well Plugging / Conversion FY 2018**

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Customer Rates	Well Plugging / Conversion	110	-	-	-	-	110

PROJECT DESCRIPTION: There are a number of old wells in the TMWA system that were recently replaced by new wells (or system supply) and are no longer viable or necessary. These old production wells may be plugged or, if they occur in areas where water level and water chemistry data are needed, they will be converted to monitoring wells. Wells slated for plugging will be disconnected from the distribution system and filled with neat cement to 2 feet below land surface. Wells slated for conversion will be designed to accommodate a 2” PVC monitoring well liner, appropriate gravel pack, and sanitary seal to allow formerly screened aquifer intervals to transmit water to the new monitoring well. Plugged wells will be terminated 1 foot below grade. Monitoring wells will be completed to 2’ above land surface and secured with a steel monument where possible; otherwise they will be completed at grade with a traffic-rated vault.

SCHEDULE: New monitor well drilling and installation as well as old monitoring well plugging activities will occur in FY18.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

**Ground Water Supply Improvements
NDEP Monitoring Wells FY 2018**

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
1	Customer Rates	NDEP Monitoring Wells	110	-	-	-	-	110

PROJECT DESCRIPTION: There are a number of old monitoring wells in the TMWA system that were relied on to collect water level and/or water quality data to meet NDEP-UIC Permit requirements. Several of these wells were found to be plugged and no longer viable monitoring points. This project estimate assumes 3 monitoring wells will be replaced with new monitoring wells and the 3 replaced monitoring wells will be plugged.

SCHEDULE: New monitor well drilling and installation as well as old monitoring well plugging activities will occur in FY18.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Ground Water Supply Improvements
Thomas Creek Well Replacement FY 2020 – 2021

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Customer Rates	Thomas Creek Well Replacement	-	-	1,250	1,000	-	2,250

PROJECT DESCRIPTION: This project involves complete replacement of the existing Thomas Creek well, pump, tank and booster pump system. The existing well, which has been in service since 1978, is inefficient and results in excessive drawdown, which in turn burns out the motor on a frequent basis. The new well will be designed to pump directly into the system, so the existing tank and booster pump system can be abandoned. The replacement well is expected to have higher capacity compared to the existing well.

SCHEDULE: This project requires drilling in FY20 and well equipping in FY21.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

**Ground Water Supply Improvements
Spanish Springs Nitrate Treatment FY 2018**

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
1	Customer Rates	Spanish Springs Nitrate Treatment	400	-	-	-	-	400

PROJECT DESCRIPTION: TMWA has contracted with Carollo Engineers in the amount of \$351,500 to set up and manage the operation of the wellhead pilot treatment study. TMWA has also contracted with UNR (\$60,006.60) to provide a graduate student to work with Carollo and operate the system. The \$60,000 will be reimbursed to TMWA from money in the WaterStart program. The Nevada Center of Excellence (WaterStart) is a non-profit organization with aims to make Nevada a global water innovation hub and portal for investment by leveraging the state’s leadership and expertise in water. The project will extend over an 18-month period starting mid-February 2017.

SCHEDULE: Pilot work began in FY 2017 and will finish in FY 2018.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

**Ground Water Supply Improvements
Fish Springs Ranch Monitoring Well Rehabs FY 2018**

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Customer Rates	Fish Springs Ranch Monitoring Well Rehabs	25	-	-	-	-	25

PROJECT DESCRIPTION: Project will consist of rehabilitation and sampling of 10 monitoring wells in Honey Lake Valley for accurate TDS transport modelling and simulations.

SCHEDULE: Rehabilitation and sampling will be completed in FY 2018.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

**Ground Water Supply Improvements
Well Head TTHM Mitigation FY 2018**

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Customer Rates	Well Head TTHM Mitigation	200	-	-	-	-	200

PROJECT DESCRIPTION: Planning, permitting and implementation of tank mixers and ventilation equipment at Zolezzi and Verdi Business Park tanks, dechlorination pilot testing at one or more recharge well sites.

SCHEDULE: Planning and design began in FY 2017 and is ongoing. Construction will begin in summer FY 2018 and will be completed by winter FY 2018.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

**Ground Water Supply Improvements
Spring Creek Well #7 Recharge FY 2019**

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Customer Rates	Spring Creek Well #7 Recharge	-	500	-	-	-	500

PROJECT DESCRIPTION: A new 12-inch diameter recharge water line and well piping improvements are needed to provide the necessary capacity to allow TMWA to recharge SC Well 7. TMWA is in the process of expanding its ASR program into areas formerly served by Washoe County.

SCHEDULE: Construction will occur in FY 2019.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Ground Water Supply Improvements
Desert Springs 1 & 2 and Spring Creek 5 ASR Retrofit FY 2018 -2019

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
1	Customer Rates/ Grant	Desert Springs 1 & 2 and Spring Creek 5 ASR Retrofit	710	10	-	-	-	720

PROJECT DESCRIPTION: Three wells in Spanish Springs Valley (Desert Springs #1, #2, and Spring Creek #5) will be retrofit to function as dual-purpose ASR wells to improve conjunctive use of surface water and groundwater in the basin, in order to be more drought resilient. These three wells will be modified with downhole flow control valves, SCADA controls, and modified wellhead and well house piping to allow the wells to recharge water from the distribution system. Prior to retrofit activities, each well will be rehabilitated to increase pumping and recharge efficiency. The project was made possible through a competitive grant received from the Bureau of Reclamation in 2016, which provided federal matching funds in the amount of \$300,000 with a total project cost of \$765,205.

SCHEDULE: Planning and design were completed, and construction began, in FY 2017. Construction is scheduled for completion in FY 2018.

PROJECT:



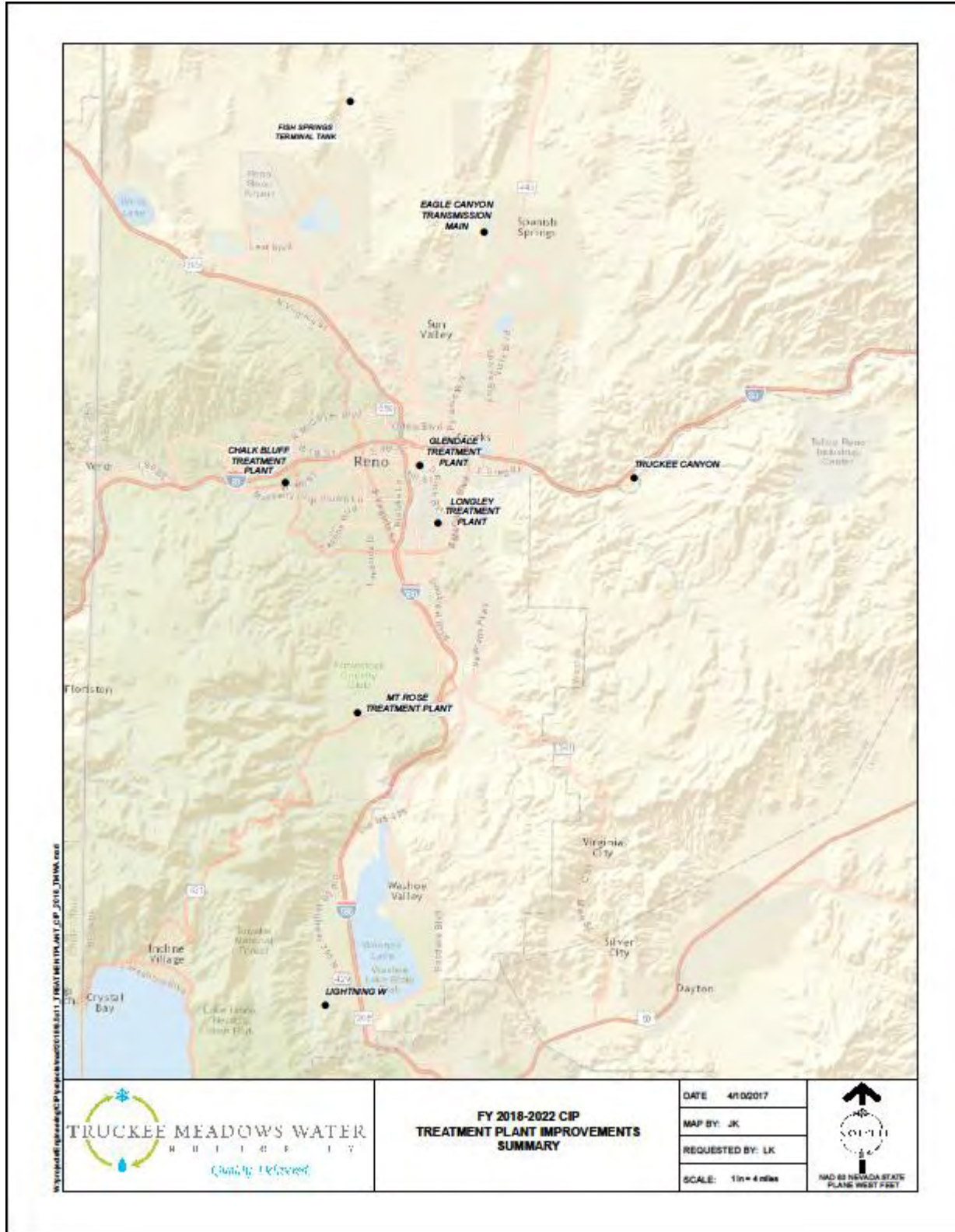
Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

TREATMENT PLANT IMPROVEMENTS
Summary

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Customer Rates	Chalk Bluff Treatment Plant Fix & Finish	845	780	600	360	355	2,940
2	Customer Rates	Glendale Treatment Plant Fix & Finish	405	485	1,250	210	65	2,415
2	Customer Rates	Longley Lane Treatment Plant Fix & Finish	145	-	-	-	-	145
2	Customer Rates	Chalk Bluff Pump Building Air Handler	850	-	-	-	-	850
2	Customer Rates	Chalk Bluff Lighting Upgrade	-	-	-	350	-	350
2	Customer Rates	Glendale Lighting Upgrade	-	250	-	-	-	250
2	Customer Rates	Eagle Canyon Transmission Main Phase 2	-	100	1,800	-	-	1,900
2	Developer Fees	Truckee Canyon Water Treatment Improvements	65	35	60	60	35	255
2	Developer Fees	Lightning W Treatment Improvements	60	60	10	60	160	350
1	Customer Rates	SCADA Rehab/Plant Operating Software	1,339	1,257	867	755	474	4,692
1	Developer Fees	Mt. Rose Surface Water Treatment Plant	6,000	4,000	-	-	-	10,000
2	Customer Rates	Longley Lane Water Treatment Plant Assessment/Retrofit	55	-	600	-	-	655
1	Developer Fees	Terminal Tank PH Adjustment	290	-	-	-	-	290
1	Customer Rates	Glendale Diversion Emergency Flood Repairs	600	-	-	-	-	600
Subtotal Treatment Improvements			10,654	6,967	5,187	1,795	1,089	25,692

Project Locations: Map of all *Treatment Plant Improvements* projects are highlighted in the following map.

Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

**Treatment Plant Improvements
Chalk Bluff Treatment Plant Fix & Finish FY 2018 – 2022**

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Customer Rates	Chalk Bluff Treatment Plant Fix & Finish	845	780	600	360	355	2,940

PROJECT DESCRIPTION: The Chalk Bluff Water Treatment Plant is 24 years old and requires rehabilitation work to remain operational 24/7/365. This spending is classified as necessary due to the criticality of maintaining plant operations during rehabilitation work. Plant improvements include, but are not limited to, plate settlers inspections, valve and instrument replacement, filter media replacement, UPS upgrades, Trac Vac improvements, treatment train isolation valves, Orr Ditch Pump Station improvements, flow meter improvements and safety improvements.

SCHEDULE: Major projects and timelines include: improvements to maintain raw water via the Highland Canal, raw water scaffolding additions and valve/meter replacements which will start in FY 2018. Work to isolate sections of the treatment plant influent trains will begin in FY 2019. Orr Ditch Pump Station Improvements are scheduled for FY 2022. Filter media removal will occur as filter media evaluations indicate that replacement will soon be necessary. As the Chalk Bluff plant is operated year-round, most work will continue over the course of the five-year CIP and when system demands allow maintenance.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

**Treatment Plant Improvements
Glendale Treatment Plant Fix & Finish FY 2018 - 2022**

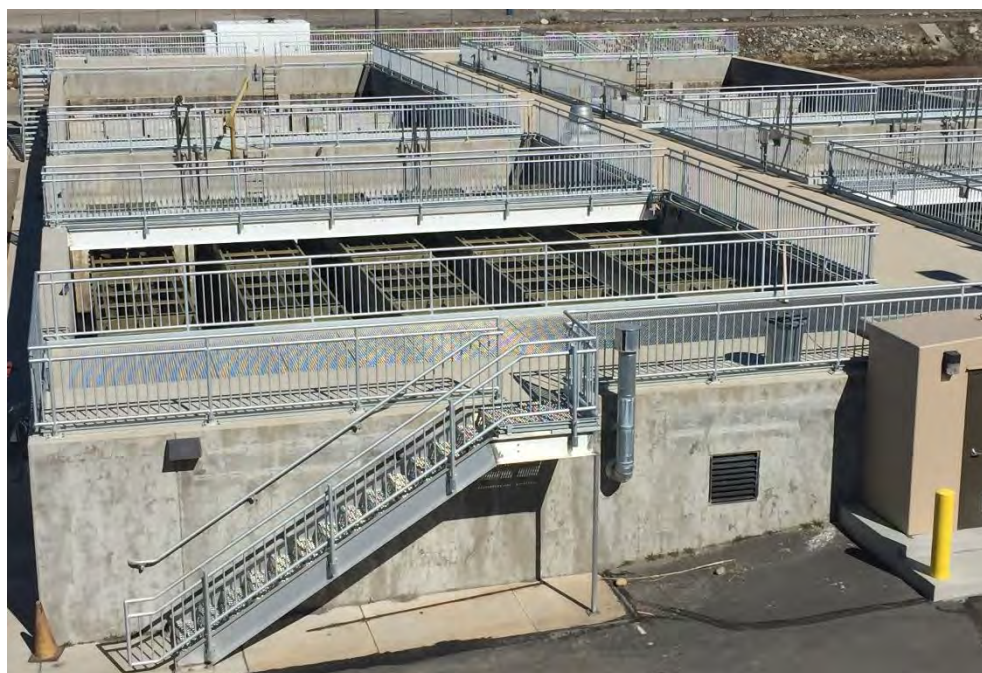
FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Customer Rates	Glendale Treatment Plant Fix & Finish	405	485	1,250	210	65	2,415

PROJECT DESCRIPTION: The Glendale Water Treatment Plant is 40 years old and while there have been significant upgrades, Glendale remains a significant piece of the water supply portfolio by operating 24/7 typically during the months of April thru October. Glendale plays an important role due to its availability to treat off-river water supplies, such as groundwater wells that cannot pump straight to the distribution system. This spending is classified as necessary due to the criticality of maintaining plant operations. Plant improvements include, but are not limited to, plate settlers inspections, valve and instrument replacement, filter media replacement, Trac Vac improvements, flow meter improvements, installation of a second clearwell, treatment chemical upgrades and maintenance storage/shop upgrades.

SCHEDULE: Major projects such as soda ash mixer improvements and water recovery basin piping will begin in FY 2018. The treatment plant maintenance shop and storage improvements are currently scheduled in FY 2020. Initial planning for the addition of a second clearwell is slated for FY 2022. Filter media removal will occur as filter media evaluations indicate that replacement will soon be necessary. As the Glendale plant is used seasonally, most work will continue over the course of the five-year CIP and during the periods that the plant is not operating.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

**Treatment Plant Improvements
Longley Lane Treatment Plant Fix & Finish FY 2018**

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Customer Rates	Longley Lane Treatment Plant Fix & Finish	145	-	-	-	-	145

PROJECT DESCRIPTION: The Longley Lane Water Treatment Plant plays an important role in providing water to various pressure zones. Treatment plant improvements include, but are not limited to pump station and clearwell improvements, maximizing groundwater blending opportunities, chemical storage and handling improvements, facility storage and maintenance improvements and safety improvements.

SCHEDULE: The project is scheduled for completion before the end of FY2018.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Treatment Plant Improvements
Chalk Bluff Pump Building Air Handler FY 2018

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Customer Rates	Chalk Bluff Pump Building Air Handler	850	-	-	-	-	850

PROJECT DESCRIPTION: This project replaces the Chalk Bluff Outflow Pump Station Air Handlers. Existing evaporative cooling air handlers will be replaced with 2-stage closed loop air handlers with 1st stage cooling provided by a cooling tower and second stage cooling accomplished by a chiller. The electrical room will be cooled with three standalone evaporator/condenser units.

SCHEDULE: Construction is scheduled to begin October 2017 with a completion date in January 2018.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Treatment Plant Improvements
Chalk Bluff Lighting Upgrade FY 2021

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Customer Rates	Chalk Bluff Lighting Upgrade	-	-	-	350	-	350

PROJECT DESCRIPTION: Upgrade lighting at the Chalk Bluff Water Treatment Plant. Work will include all areas and buildings outside of the most recent remodel areas as well as upgrades to outside area lighting.

SCHEDULE: Lighting upgrade is scheduled to begin in FY 2021.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Treatment Plant Improvements
Glendale Lighting Upgrade FY 2019

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Customer Rates	Glendale Lighting Upgrade	-	250	-	-	-	250

PROJECT DESCRIPTION: Upgrade lighting at the Glendale Water Treatment Plant. Work will include all areas and buildings outside of the most recent remodel areas as well as upgrades to outside area lighting.

SCHEDULE: Lighting upgrade is scheduled to begin in FY 2019.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Treatment Plant Improvements
Eagle Canyon Transmission Main Phase 2 FY 2019 – 2020

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Customer Rates	Eagle Canyon Transmission Main Phase 2	-	100	1,800	-	-	1,900

PROJECT DESCRIPTION: This project involves construction of approximately 4,700 feet of 24-inch pipe to complete a dedicated blending pipeline to the Desert Springs 2B Tank sites. The project allows poor quality groundwater from several wells on the west side of the Spanish Springs Valley to be utilized by blending with surface water from the Lazy 5 intertie.

SCHEDULE: The project is scheduled to be designed and bid in FY 2018 with construction in FY 2019.

PROJECT TYPE:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Treatment Plant Improvements
Truckee Canyon Water Treatment Improvements FY 2018 - 2022

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Developer Fees	Truckee Canyon Water Treatment Improvements	65	35	60	60	35	255

PROJECT DESCRIPTION: The current treatment system which removes arsenic, iron, and manganese consists of a greensand filter system and an evaporation pond for backwash water with a total capacity of about 100 gallons per minute. Scheduled improvements may include the addition of a polymer feed system to improve filter performance, fine tuning of the treatment process to reflect chemical changes in the raw water and replacement of miscellaneous components and control upgrades.

SCHEDULE: Expenditures in FY 2018 – FY 2022 are contingent spending related to treatment efficiency and for chemical changes in the raw water.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Treatment Plant Improvements
Lightning W Treatment Improvements FY 2018 – 2022

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Developer Fees	Lightning W Treatment Improvements	60	60	10	60	160	350

PROJECT DESCRIPTION: The existing treatment process consists of two ion exchange resin pressure vessels to remove uranium. The project includes change out/replacement of the filter media, disposal of the spent media and miscellaneous improvements to the building that houses the treatment equipment including making provisions to hook up a portable generator.

SCHEDULE: The project is scheduled for FY 2017 and future resin replacements will ultimately be determined based on the remaining life of the ion exchange resin in the filter vessels.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Treatment Plant Improvements
SCADA Rehab/Plant Operating Software FY 2018 - 2022

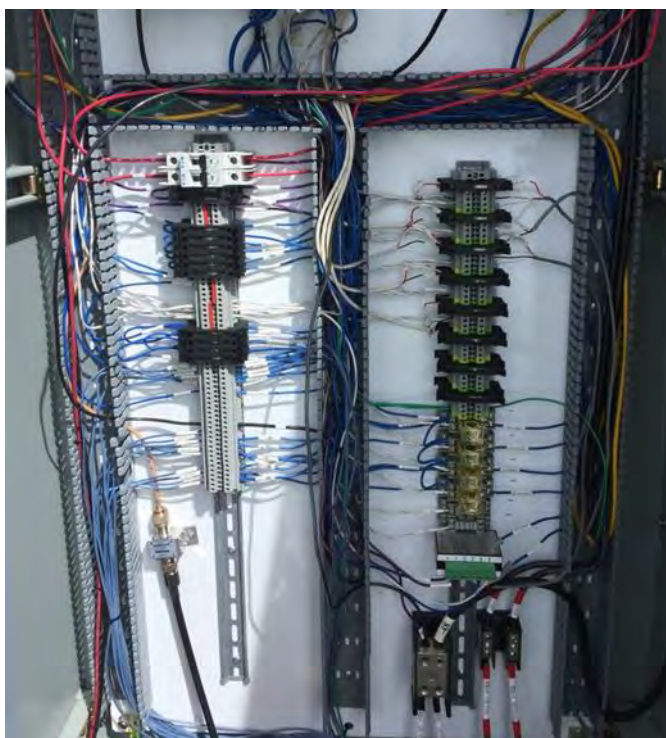
FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
1	Customer Rates	SCADA Rehab/Plant Operating Software	1,339	1,257	867	755	474	4,692

PROJECT DESCRIPTION: SCADA (Supervisory Control and Data Acquisition) is the system by which TMWA monitors, records and controls the water system inputs, outputs, flows and pressures. Data acquired by these system controls are primarily monitored at the treatment plants, but the system equipment and technology is spread throughout the water system infrastructure. Much of the technology is approaching obsolescence and needs to be replaced with emphasis on standardization of programmable logic controllers (PLC) and other equipment. Therefore, TMWA settled on a systematic approach to updating the equipment and operating software starting in fiscal year 2015 with telemetry improvement in the ensuing four years to convert to wireless transmission of data feeds where possible.

SCHEDULE: The improvements and replacements of the equipment and operating software have already begun and will continue over the course of the five-year CIP.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Treatment Plant Improvements
Mt. Rose Surface Water Treatment Plant FY 2018 – 2019

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
1	Developer Fees	Mt. Rose Surface Water Treatment Plant	6,000	4,000	-	-	-	10,000

PROJECT DESCRIPTION: Due to a combination of municipal and domestic well pumping and the extended drought, TMWA has determined that additional infrastructure and facilities are needed to utilize Thomas and Whites Creek resources to improve the long-term viability and sustainability of groundwater supplies in this region. To provide reliability of supply, avoid or reduce pumping costs and avoid major on-peak capacity improvements within the lower TMWA gravity system, a 4 MGD treatment plant located off of Callahan Road near the Monte Vista subdivision has received a SUP to treat Whites Creek and Thomas Creek water. The County’s South Truckee Meadows Facility Plan recognized “The upper treatment plant is an integral component of the recommended water supply plan. Most importantly, it will provide recharge water and/or offset winter groundwater pumping in the upper Mt Rose fan area.”

SCHEDULE: Permitting and design to be completed in FY 2018. Bidding and construction will occur in FY2018, and completion of construction in FY 2019.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Treatment Plant Improvements
Longley Lane Water Treatment Plant Retrofit FY 2018 – 2020

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Customer Rates	Longley Lane Water Treatment Plant Retrofit	55		600			655

PROJECT DESCRIPTION:

The Longley Lane Water Treatment Plant cannot currently be operated due to safety concerns with chemical feed, clean in place and solids handling piping systems. An assessment of the plant needs to be completed and improvements made prior to future operations.

SCHEDULE: Planning of the treatment plant began in spring FY 2017 and will be completed in winter FY 2018.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

**Treatment Plant Improvements
Terminal PH Adjustment FY 2018**

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
1	Developer Fees	Terminal PH Adjustment	290	-	-	-	-	290

PROJECT DESCRIPTION: The purpose of the project is to reduce the pH levels of the water supplied from the Fish Springs Water System. Project includes the relocation of an 18 ton liquid CO2 storage tank from the Longley Lane Treatment Plant and re-install it at the Terminal tank location. Also included are a new chlorine storage, pumping, and carbonic acid treatment structure and a new precast concrete vault for injection of carbonic acid and sodium hypochlorite.

SCHEDULE: Construction will begin at the end of FY 2017 and be completed in FY 2018.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Treatment Plant Improvements
Glendale Diversion Emergency Flood Repairs FY 2018

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
1	Customer Rates	Glendale Diversion Emergency Flood Repair	600	-	-	-	-	600

PROJECT DESCRIPTION: This project will consist of emergency repairs to the Glendale Diversion dam due to flood damage incurred during the winter of 2016-17.

SCHEDULE: Due to the extreme snowpack this year, it is anticipated that the repairs will not be completed until the fall-winter of FY 2018.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

DISTRIBUTION SYSTEM IMPROVEMENTS – PRESSURE IMPROVEMENTS
Summary

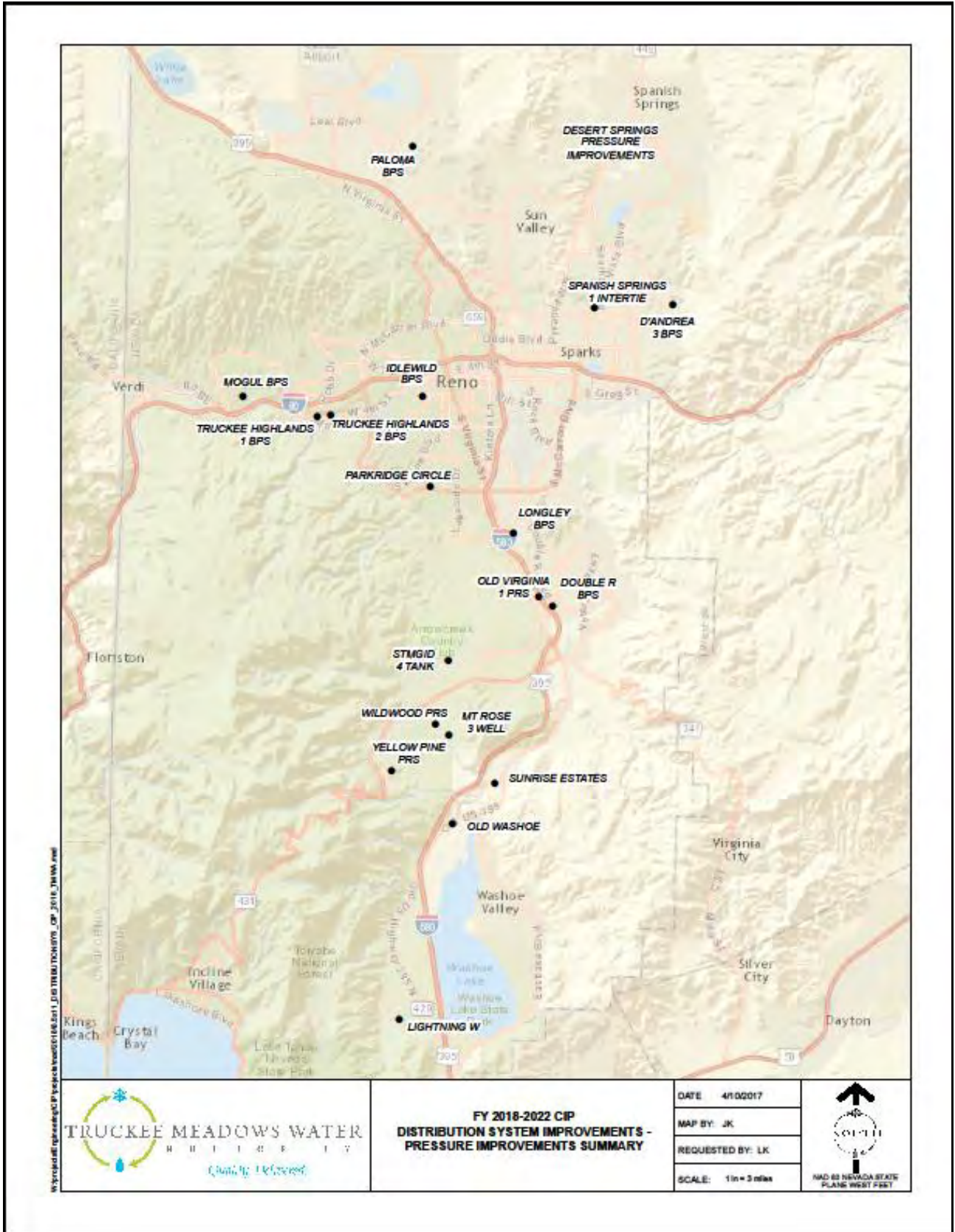
Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
1	Customer Rates	Pressure Regulators Rehabilitation	400	350	500	500	500	2,250
1	Customer Rates	Pressure Reducing Valve (Roll Seal) Removal	400	400	400	400	400	2,000
2	Customer Rates	Land Acquisitions	250	250	250	250	250	1,250
2	Customer Rates	Desert Springs Pressure Improvements	-	400	-	-	-	400
1	Customer Rates	Paloma Booster Pump Station / Pressure Regulating Station /Main	1,000	-	-	-	-	1,000
2	Developer Fees	Longley Booster Pump Station /Double R Capacity Increase	-	500	-	-	-	500
3	Customer Rates	Pump Station Oversizing	250	100	100	100	100	650
1	Customer Rates	Pump Station Rebuilds Rehabilitation	900	1,000	1,000	1,000	1,000	4,900
1	Developer Fees	D’Andrea #3 Pump Station (developer reimbursement)	619	-	-	-	-	619
3	Developer Fees	Truckee River Highlands PS #1	-	-	-	1,000	-	1,000
2	Customer Rates	Mt. Rose Well #3 Pump Station Improvements	-	50	250	-	-	300
3	Customer Rates	Standby Generator Improvements	150	800	150	150	150	1,400
1	Customer Rates	Generator Additions – Lightning W, Sunrise Estates, and Old Washoe Systems	79	-	-	-	-	79

Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Customer Rates	Idlewild Booster Pump Station Improvements	-	-	-	100	1,200	1,300
1	Customer Rates	Mogul Booster Pump Station	500	-	-	-	-	500
3	Customer Rates	Parkridge Circle Conversion	-	-	-	-	300	300
3	Developer Fees	SW Reno Pump Zone Consolidation Phase 1	-	-	-	-	300	300
3	Customer Rates	Spanish Springs #1 Pressure Zone Intertie	-	-	-	600	-	600
2	Developer Fees	STMGID Tank 4 Booster Pump Station/ Transmission Line	-	-	2,450	550	-	3,000
1	Customer Rates	Yellow Pine Main/Pressure Regulating Station	330	-	-	-	-	330
3	Developer Fees	Wildwood Pressure Regulating Station /Scada Control	-	-	-	50	-	50
3	Developer Fees	Truckee River Highland Pump Station #2	-	-	-	-	900	900
3	Customer Rates	Old Virginia Regulation Station	-	-	330	-	-	330
Sub-Total Pressure Improvements			4,878	3,850	5,430	4,700	5,100	23,958

Project Locations: Map of all *Distribution System Pressure Improvements* projects are highlighted in the following map.

Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan



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**FY 2018-2022 CIP
DISTRIBUTION SYSTEM IMPROVEMENTS -
PRESSURE IMPROVEMENTS SUMMARY**

DATE	4/10/2017
MAP BY:	JK
REQUESTED BY:	LK
SCALE:	1 in = 3 miles



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

**Distribution System Improvements – Pressure Improvements
Pressure Regulators Rehabilitation FY 2018 - 2022**

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
1	Customer Rates	Pressure Regulators Rehabilitation	400	350	500	500	500	2,250

PROJECT DESCRIPTION: Provision is made in the annual budget for major rehabilitation or complete reconstruction of several pressure regulators in the distribution system. TMWA has evaluated nearly 130 pressure regulator stations currently in service and has identified a number of pressure regulator stations requiring a certain amount of rehabilitation on an annual basis.

SCHEDULE: This is an ongoing rehabilitation project with about 130 individual stations identified as requiring rehabilitation or replacement over the next fifteen years.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

**Distribution System Improvements – Pressure Improvements
Pressure Reducing Valve (Roll Seal) Removal FY 2018 – 2022**

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
1	Customer Rates	Pressure Reducing Valve (Roll Seal) Removal	400	400	400	400	400	2,000

PROJECT DESCRIPTION: There are approximately 180 pressure regulating stations in former County systems where Roll Seal pressure reducing valves are installed. These valves are subject to failure on a 3-5 year basis as compared to an expected life of 10-20 years for the Cla-Val regulator valves utilized in the TMWA system. A Roll Seal failure can result in significant damage to customer homes and in most cases requires a major service outage to repair or replace the valve.

SCHEDULE: Projects will be prioritized based on potential damage (unregulated pressure) and failure rate records. This will be a multi-year project to replace Roll Seals at about 20 stations per year.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

**Distribution System Improvements – Pressure Improvements
Land Acquisition FY 2018 – 2022**

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Customer Rates	Land Acquisitions	250	250	250	250	250	1,250

PROJECT DESCRIPTION: TMWA has over 120 pump stations in service. Many of these pump stations have 480 volt electrical services and are underground (below grade) in locations that allows for water infiltration. Many underground pump stations will be reaching the end of their service life, which will require replacement of the underground vault. Rather than replace the stations in place TMWA is planning to acquire other sites so these stations can be rebuilt above grade improving access and safety. Acquisition of sites may be time consuming and may not be purchased in a particular year.

SCHEDULE: This is an ongoing project with funding to allow purchase of 3-4 sites per year depending on location and market conditions.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

**Distribution System Improvements – Pressure Improvements
Desert Springs Pressure Improvements FY 2019**

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Customer Rates	Desert Springs Pressure Improvements	-	400	-	-	-	400

PROJECT DESCRIPTION: Distribution improvements to correct Nevada Administrative Code (NAC) pressure deficiencies in the southwest portion of the Desert Springs South system including a 1,500 foot 8-inch main tie between Shelby and Grove, a main/check valve tie at Taryn and Indian Springs, a main/check valve tie at Erin and Dolores and approximately 24 individual booster pump systems.

SCHEDULE: The improvements are scheduled for construction in FY 2019.

PROJECT TYPE:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Distribution System Improvements – Pressure Improvements
Paloma Pressure Regulating Station/Main
FY 2018

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
1	Customer Rates	Paloma PRS/Main	1,000	-	-	-	-	1,000

PROJECT DESCRIPTION: The Paloma pressure zone is a continuous pumping zone in Lemmon Valley currently served by a booster pump station and 10,000 gallon pneumatic tank. The existing facilities do not provide adequate emergency or fire flow capacity to the 35 customers in the pressure zone. The improvements will consist of a pressure regulating station supplied by a main tie to the high pressure 24-inch Lemmon Drive main.

SCHEDULE: The improvements are currently scheduled for construction in FY 2018.

PROJECT TYPE:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

**Distribution System Improvements – Pressure Improvements
Longley Booster Pump Station/Double R Capacity Increase FY 2019**

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Developer Fees	Longley BPS/Double R Capacity Increase	-	500	-	-	-	500

PROJECT DESCRIPTION: Increase pumping capacity at the existing Longley Lane Booster Pump Station and make improvements at the Double R Intertie to provide additional peak supply to the Double Diamond area. The improvements at the Longley pump station will consist of replacing one of the existing pumps/motors with a new higher capacity unit along with electrical and motor starter upgrades. Certain components of the Double R Intertie will also be replaced to provide the additional capacity without excessive friction losses.

SCHEDULE: The improvements are scheduled for FY 2019 but are dependent upon growth. The improvements are necessary when supply through the Double R Intertie must exceed 5400 gallons per minute.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

**Distribution System Improvements – Pressure Improvements
Pump Station Oversizing FY 2018 – 2022**

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
3	Customer Rates	Pump Station Oversizing	250	100	100	100	100	650

PROJECT DESCRIPTION: The FY 2018 project consists of cash contributions towards construction of a new above ground booster pump station located near the Comstock Tank to replace the existing Sierra Pump Station which is located in an underground vault and is in need of major rehabilitation. TMWA would normally expend approximately \$1 million to replace an existing underground pump station with a new above ground station.

SCHEDULE: The improvements are ongoing, but the schedule is subject to change based on development & operational needs.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

**Distribution System Improvements – Pressure Improvements
Pump Station Rebuilds, Rehabilitations FY 2018 – 2022**

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
1	Customer Rates	Pump Station Rebuilds, Rehabilitations	900	1,000	1,000	1,000	1,000	4,900

PROJECT DESCRIPTION: TMWA has over 120 pump stations in service. An amount is budgeted annually for rehabilitation of TMWA’s older pump stations. Other pump stations may require pump, motor, and electrical upgrades. Budget for future years will allow TMWA to complete up to one above ground replacement project per year if suitable sites can be acquired. Otherwise, normal rehabilitation work will be performed per the priorities established by the study at a lower overall annual cost. One such project is to construct new dual booster pump station at the corner of Big Knob Dr. And Wall Canyon Dr. on TMWA parcel APN 083-591-03. The pump station replaces previously abandoned Sun Valley 4 booster pump station and removes water dependency from SVGID intertie.

SCHEDULE: In FY 2018, the Sun Valley #4 pump station will be relocated/replaced in an above ground installation. In FY 2019, the Satellite Hills pump station will be relocated/replaced in an above ground location.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

**Distribution System Improvements – Pressure Improvements
D’Andrea #3 Pump Station (developer direct cost) FY 2018**

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
1	Developer Fees	D’Andrea #3 Pump Station (developer direct cost)	619	-	-	-	-	619

PROJECT DESCRIPTION: The project is a new developer funded booster pump station to serve a new phase of the D’Andrea residential development on the east side of Sparks, which includes a dual pressure zone booster pump station equipped with all necessary electrical, hvac, and controls. TMWA will design and construct the facilities on a site dedicated by the developer. The developer is responsible for 100 percent of the project costs. TMWA will be reimbursed for out of pocket expenditures as the project proceeds.

SCHEDULE: The developer has requested an in-service date in the fall of 2017.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

**Distribution System Improvements – Pressure Improvements
Truckee River Highlands Pump Station #1 FY 2021**

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
3	Developer Fees	Truckee River Highlands Pump Station #1	-	-	-	1,000	-	1,000

PROJECT DESCRIPTION: The project is a new booster pump station located on an existing site in the Truckee River Highlands development between W. Fourth St. and I-80. Completion of this pump station along with the proposed Truckee River Highlands #2 pump station and a main tie to the existing 16-inch main on Robb Drive will ultimately replace capacity in the US 40 booster pump system that will be diverted to the Verdi area. The new pump system will also improve reliability of supply to the Northgate area.

SCHEDULE: Construction is scheduled for FY 2021, but the actual construction date will be determined by growth and demand in the Verdi area.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Distribution System Improvements – Pressure Improvements
Mount Rose Well #3 Pump Station Improvements
FY 2019 – 2020

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Customer Rates	Mount Rose Well #3 Pump Station Improvements	-	50	250	-	-	300

PROJECT DESCRIPTION: The project involves rehab of the building, removal of pipe and valves that will no longer be necessary following completion of the Mt. Rose Conjunctive Use Phase 2 improvements and upgrades to electrical and control systems.

SCHEDULE: Improvements are scheduled for design in FY 2019 and construction in FY 2020.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

**Distribution System Improvements – Pressure Improvements
Standby Generator Improvements FY 2018 – 2022**

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
3	Customer Rates	Standby Generator Improvements	150	800	150	150	150	1,400

PROJECT DESCRIPTION: A number of TMWA pumps stations have backup generation in case of power failures. TMWA incorporates a contingency for replacement of a generator in case of failure or if the Washoe County Health District requires backup generation at a particular site. No spending will occur unless necessary. This spending does not include backup generation for new pump stations required by and paid for by growth.

SCHEDULE: In FY 2019, a dedicated generator will be installed for the North Gate pump at Chalk Bluff.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

**Distribution System Improvements – Pressure Improvements
Generator Additions – Lightning W, Sunrise Estates, and Old Washoe
Systems FY 2018**

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
1	Customer Fees	Generator Additions - Lightning W, Sunrise Estates, & Old Washoe Systems	79	-	-	-	-	79

PROJECT DESCRIPTION: This project will provide diesel backup power generator sets for the Lightning W, Sunrise Estates, and Old Washoe Systems. The generators will be installed at Lightning W2 and W3 Wells, Sunrise Estates 1 Well, and Old Washoe 3 Well. These systems do not currently have backup power generation capability and the ability to provide backup power is required by the Washoe County Health District.

SCHEDULE: Construction is scheduled to begin in FY 2018.

PROJECT TYPE:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

**Distribution System Improvements – Pressure Improvements
Idlewild BPS Improvements FY 2021 – 2022**

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Customer Rates	Idlewild BPS Improvements	-	-	-	100	1,200	1,300

PROJECT DESCRIPTION: The project will replace existing pumps and motors at the Idlewild BPS Transfer Station to insure adequate and reliable emergency capacity. It is the only booster station that is capable of transferring water from the Highland Reservoir Zone to the Hunter Creek Reservoir Zone. The station was originally constructed as part of the Idlewild WTP, and was never designed specifically for the purpose that it is used for today. Improvements identified in the project include: Properly sizing new pumps and motors for today’s application, upgrading antiquated electrical systems and HVAC systems and bringing building up to modern construction codes. Evaluations by TMWA indicated this was the most cost effective alternative to provide a redundant supply for the zone and allowed retirement of the old 24-inch transmission pipeline on Plumb Lane all the way to the Hunter Creek Reservoir.

SCHEDULE: Design is scheduled for FY21 and construction should begin in FY22. This schedule may be moved based on system needs.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Distribution System Improvements – Pressure Improvements
Mogul Booster Pump Station FY 2018

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
1	Customer Fees	Mogul Booster Pump Station	500					500

PROJECT DESCRIPTION: The project includes replacement of the pumps and motors at the existing Mogul Booster Pump Station to provide a temporary capacity increase to allow extension of limited water service to the Verdi area. When this excess capacity is fully allocated it will be necessary to construct the remainder of the Verdi backbone water supply facilities such as the Verdi Pump Station, several thousand feet of transmission main from Mae Anne/Mesa Park to Somerset Ridge Parkway and the lower Verdi storage tank.

SCHEDULE: The improvements are scheduled to be constructed in the fall/winter of FY 2018.

PROJECT TYPE:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Distribution System Improvements – Pressure Improvements
Parkridge Circle Conversion FY 2022

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
3	Customer Rates	Parkridge Circle Conversion	-	-	-	-	300	300

PROJECT DESCRIPTION: Construct a new pressure regulating station on the discharge side of the Lakeridge pump zone and approximately 640 feet of parallel main on Parkridge Circle to correct NAC pressure and fire flow deficiencies.

SCHEDULE: The improvements are scheduled for FY 2022. Construction of either Phase 1 of the Southwest Pump Zone Consolidation project or replacement of the Lakeridge pump station must occur prior to or concurrently with this project.

PROJECT TYPE:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Distribution System Improvements – Pressure Improvements

SW Reno Pump Zone Consolidation Phase 1 FY 2022

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
3	Developer Fees	SW Reno Pump Zone Consolidation Phase 1	-	-	-		300	300

PROJECT DESCRIPTION: The project includes a new high head booster pump station located on Lakeridge golf course property adjacent to Plumas; a new 12-inch suction pipeline from Lakeside Dr.; a high pressure transmission pipeline from the pump station across golf course property to Greensboro and McCarran Blvd.; and another 12-inch pipeline tie to the Ridgeview #1 pump zone. The completion of Phase 1 will allow the retirement of four existing below ground pump stations (Lakeside, Lakeridge, Plumas, Ridgeview #1).

SCHEDULE: Design of the improvements is scheduled to begin in FY 2021. Construction is scheduled to start in FY 2022 and continue into FY 2023 (\$6.8 million total over 3 years).

PROJECT TYPE:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Distribution System Improvements – Pressure Improvements

Spanish Springs #1 Pressure Zone Intertie FY 2021

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
3	Customer Rates	Spanish Springs #1 Pressure Zone Intertie	-	-	-	600	-	600

PROJECT DESCRIPTION: The project consists of about 1,600 feet of 8-inch main from Rio Alayne Ct to Martini Rd. paralleling the Orr Ditch and a new pressure regulating station. Completion of the facilities will allow the retirement of the existing underground Spanish Springs #1 pump station.

SCHEDULE: The project is scheduled for FY 2021. The relocation of the Satellite Hills pump station must be completed prior to this project.

PROJECT TYPE:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Distribution System Improvements – Pressure Improvements

STMGID Tank #4 Booster Pump Station / Transmission Line FY 2020-2021

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Developer Fees	STMGID Tank #4 BPS/ T-Line	-	-	2,450	550	-	3,000

PROJECT DESCRIPTION: The project includes a new booster pump station located at or near the STMGID Tank 4/5 site and approximately 5800 feet of 12-inch discharge main to the Mt Rose WTP. The facilities will provide a supplemental source to the Mt Rose WTP that will back up plant production on the maximum day during drought and will also provide another source of supply for implementing conjunctive use in the area.

SCHEDULE: Design and construction will begin in FY 2020 and construction will continue into FY 2021. Schedule assumes that the STMGID Conjunctive Use facilities are completed by 2020.

PROJECT TYPE:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Distribution System Improvements – Pressure Improvements

Yellow Pine Main / Pressure Regulating Station FY 2018

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
1	Customer Rates	Yellow Pine Main/PRS	330	-	-	-	-	330

PROJECT DESCRIPTION: The project consists of a new main tie between the Douglas Fir and Blue Spruce pressure zones in the Mt Rose system and construction of a new dual zone pressure regulating station (PRS) to replace the existing Yellow Pine PRS that contains roll seal pressure reducing valves. The project will provide a second source of supply into the Blue Spruce regulated zone, improve fire flow in both pressure zones; and will increase system reliability by replacing the roll seal valves with cla-vals.

SCHEDULE: The project is scheduled for FY 2018 due to the condition of the existing PRS and also due to its priority risk factor concerning potential impact from failure of the roll seal valves.

PROJECT TYPE:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan
Distribution System Improvements – Pressure Improvements
Wildwood Pressure Regulating Station/Scada Control FY 2021

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
3	Developer Fees	Wildwood PRS/Scada Control	-	-	-	50	-	50

PROJECT DESCRIPTION: The project involves retrofitting an existing pressure regulating station to SCADA (remote) control to provide additional transfer capacity into the Mt Rose Tank #4 zone. It will be necessary to obtain electrical service to the existing vault; install a new PLC; and to equip the existing pressure regulating valve with solenoid control to allow the valve to be remotely operated from the Glendale control room.

SCHEDULE: The project is scheduled for FY 2021 but may be delayed or accelerated depending on the timing of growth and the need for the additional tank fill capacity.

PROJECT TYPE:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Distribution System Improvements – Pressure Improvements

Truckee River Highlands Pump Station #2 FY 2022

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
3	Developer Fees	Truckee River Highlands PS #2	-	-	-	-	900	900

PROJECT DESCRIPTION: The project consists of a new booster pump station located on a yet to be determined site between the Truckee River Highlands (TRHL) subdivision north of W. Fourth St and the Robb Dr. interchange at I-80. Along with the Truckee River Highlands Pump Station #1, the pump system will provide a third source of supply for the Northwest water system and it will free up some capacity in the existing US40 pump station for deliver to the Verdi area.

SCHEDULE: Construction is scheduled for FY 2022, but the actual construction date will be determined by growth and demand in the Verdi area. The TRHL Pump Station #1 must be completed before the #2 pump station can be placed into service.

PROJECT TYPE:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Distribution System Improvements – Pressure Improvements

Old Virginia Regulation Station FY 2020

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
3	Customer Rates	Old Virginia Regulation Station	-	-	330	-	-	330

PROJECT DESCRIPTION: The project involves construction of a new pressure regulating station (PRS) at Old Virginia and Sutherland; a short main tie between the former STMGID Well #9 site and the distribution system; and about 450 feet of 8-inch main in Sutherland from the PRS to Sage Hill Road. The improvements will convert an area with very high distribution system pressures to the existing Kohl’s Regulated Zone. A future Phase 2 would expand the regulated zone by consolidating the Kohl’s, Walmart and Old Virginia #2 regulated pressure zones.

SCHEDULE: The project is scheduled for construction in FY 2020.

PROJECT TYPE:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

**DISTRIBUTION SYSTEM IMPROVEMENTS – WATER MAIN-
DISTRIBUTION-SERVICE LINE IMPROVEMENTS**

Summary

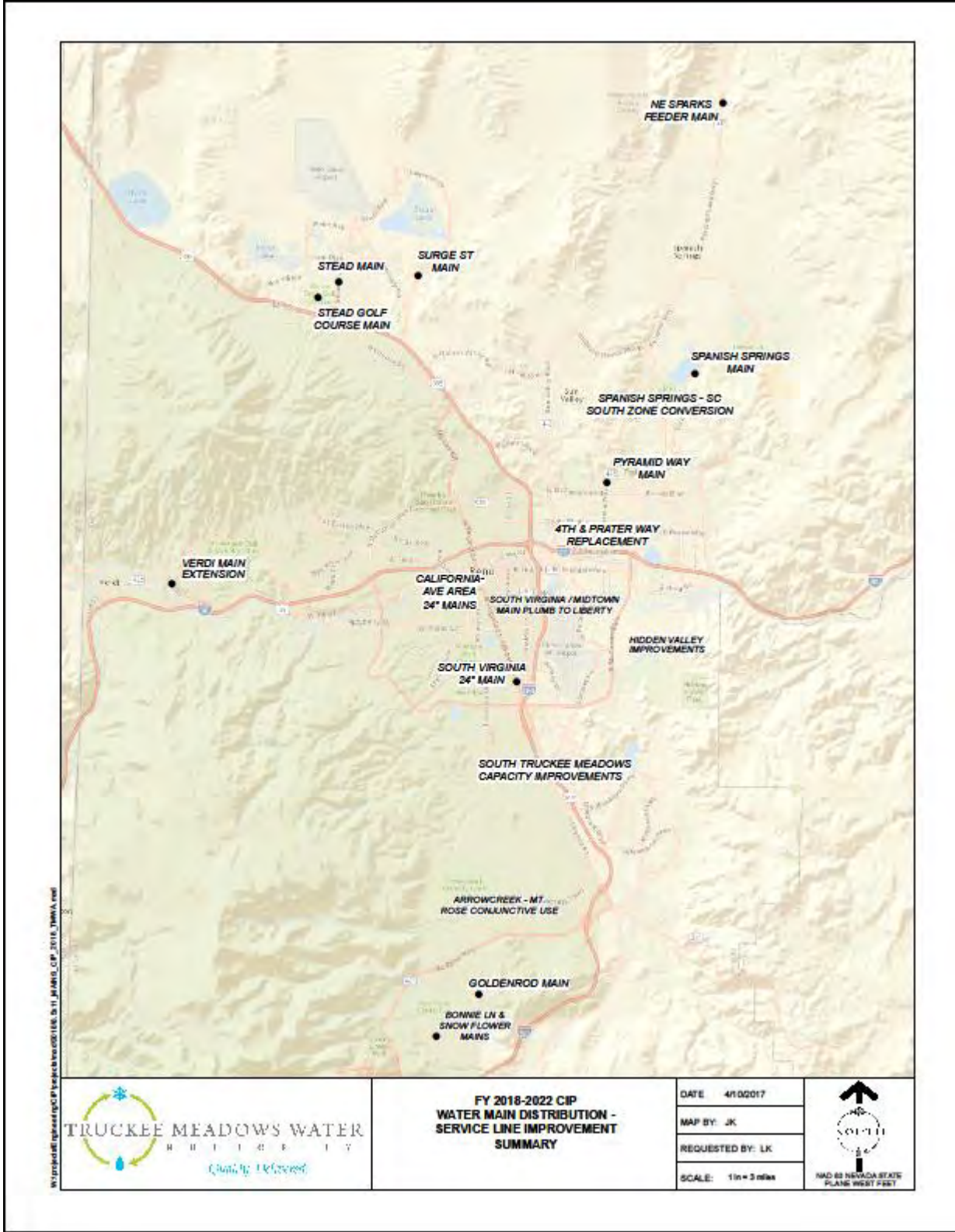
Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
1	Customer Rates	Street & Highway Main Replacements	3,000	5,000	5,000	5,000	5,000	23,000
1	Customer Rates	4th and Prater Way Replacement / Modification	2,000	-	-	-	-	2,000
1	Customer Rates	South Virginia / Midtown Main Plumb to Liberty	1,100	500	-	-	-	1,600
1	Developer Fees	Pyramid Way Transmission Main	800	-	-	-	-	800
1	Customer Rates	California-Marsh 24" Main Replacement	100	1,200	-	-	-	1,300
2	Customer Rates	Booth, Sharon Way, Monroe 24" Main Replacements	-	-	100	3,100	-	3,200
2	Developer Fees	South Virginia 24" Main (Kumle to Peckham)	-	100	900	-	-	1,000
2	Customer Rates	NE Sparks Feeder Main Relocation	-	-	50	950	-	1,000
2	Customer Rates	Spanish Springs –Spring Creek South Zone Conversion	-	700	-	-	-	700
2	Customer Rates	West Hidden Valley, Surge St., Piping Rock Main Replacements	-	-	1,000	230	500	1,730
2	Customer Rates	Spanish Springs Main Replacement	-	650	650	-	-	1,300
3	Developer Fees	Bonnie Ln., Snow Flower, Main Extensions	-	-	-	620	900	1,520
2	Developer Fees	South Truckee Meadows Capacity Improvements	-	400	-	-	-	400
2	Customer Rates /Developer Fees	Stead Golf Course Main Replacement	-	-	-	-	90	90
1	Customer Rates	Arrowcreek-Mt. Rose Conjunctive Use Phase 2	400	-	-	-	-	400
1	Customer Rates	Arc Flash Improvements	100	-	-	-	-	100
3	Developer Fees	General Waterline Extensions	100	100	100	100	-	400

Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Customer Rates	Galvanized/Poly Service Line Replacements	400	400	400	400	-	1,600
2	Developer Fees	Verdi Main Extension	2,200	-	-	-	-	2,200
3	Developer Fees	Goldenrod Main	-	-	-	1,100	-	1,100
Subtotal Main-Distribution Improvements			10,200	9,050	8,200	11,500	6,490	45,440

Project Locations: Map of all *Distribution System Water Main Distribution – Service Line Improvements* projects are highlighted in the following map.

Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

**Distribution System Improvements – Water Main-Distribution-
Service Line Improvements**

Street & Highway Main Replacements FY 2018 - 2022

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
1	Customer Rates	Street & Highway Main Replacements	3,000	5,000	5,000	5,000	5,000	23,000

PROJECT DESCRIPTION: Provision is made each year for water main replacements in conjunction with repaving efforts by the City of Reno, City of Sparks, and RTC. In addition to repaving projects, TMWA coordinates water main replacements with sewer main replacements in areas where TMWA also has older water lines. TMWA plans for approximately \$5.0 million annually for these efforts, so that TMWA can capitalize on repaving projects planned by other entities. The FY 2018 budget reflects that three large projects totaling \$3.9 million have already been identified and are listed separately in the CIP. Anticipated spending in the out years is reflective of historical activity. Levels of spending can vary year to year and are difficult to predict. These efforts by far are the largest expenditure in the water system rehabilitation category.

PROJECT TYPE:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Distribution System Improvements – Water Main-Distribution-Service Line Improvements

4th and Prater Way Replacement/Modification FY 2018

FUNDING TIMELINE:

Priority	Funding Source	Description	FY18	FY19	FY20	FY21	FY22	CIP Total
1	Customer Rates	4th & Prater Way Replacement/Modification	2,000	-	-	-	-	2,000

PROJECT DESCRIPTION: Replace approximately 10,000 feet of antiquated water main, valves, service connections, and related appurtenances on E. 4th Street/Prater Way from Evans Ave. to Pyramid Way. Also includes installing corrosion protection provisions on the existing 4th Street/Prater 24” transmission main and the new replacement mains. TMWA work is included in RTC’s 4th Street/Prater Way Bus Rapid Transit Project, and will be constructed by RTC’s contractor, after which TMWA will reimburse RTC for the water related construction costs.

SCHEDULE: The project is scheduled to begin construction in FY 2017 and to be completed in FY 2018.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Distribution System Improvements – Water Main-Distribution-Service Line Improvements

South Virginia/Midtown Main Plumb to Liberty FY 2018 – 2019

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
1	Customer Rates	South Virginia / Midtown Main Plumb to Liberty	1,100	500	-	-	-	1,600

PROJECT DESCRIPTION: Replacement of antiquated water main, valves, service connections and appurtenances in South Virginia Street from Plumb Lane to Liberty Street. Also, a new round-a-bout at UNR’s Lawlor Stadium will require relocating a portion of the existing 12” main. TMWA work will be included in RTC’s Virginia Street Bus Rapid Extension Project, a full road reconstruction project, and will be constructed by RTC’s contractor, after which TMWA will reimburse RTC for the water related construction costs.

SCHEDULE: Planning and design will conclude in fall of FY 2018 and construction to begin in spring FY 2018.

PROJECT TYPE:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

**Distribution System Improvements – Water Main-Distribution-
Service Line Improvements**

Pyramid Way Transmission Main FY 2018

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
1	Customer Rates	Pyramid Way Transmission Main	800	-				800

PROJECT DESCRIPTION: Construct new transmission main from Queen Way to the Pyramid Pump Station. Water work will be done in conjunction with the RTC Pyramid Way/North McCarran road reconstruction project. In addition, various water mains within the RTC work limits are being replaced/relocated and as part of TMWA’s Street and Highway program. TMWA work will be constructed by RTC’s contractor, after which TMWA will reimburse RTC for the water related construction costs.

SCHEDULE: Construction for this project is scheduled to begin in late summer FY 2018.

PROJECT TYPE:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

**Distribution System Improvements – Water Main-Distribution-
Service Line Improvements
California-Marsh 24" Main Replacement FY 2018 – 2019**

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
1	Customer Rates	California-Marsh 24" Main Replacement	100	1,200	-	-	-	1,300

PROJECT DESCRIPTION: When TMWA evaluated the alternatives to replacing the 66-year old 24-inch main on Plumb Lane (installed in 1949) when the west end of Plumb Lane was widened in 2012-2013, it was decided to abandon that section of the pipeline, ultimately saving about \$4 million in replacement costs. The alternate plan for providing water service to the Hunter Creek gravity zone should a main break occur on the existing 42-inch Mayberry main, or if transmission capacity from Chalk Bluff was disrupted requires replacement of existing 24-inch mains on Booth, Sharon and Monroe (installed in 1948) to allow transfer of adequate capacity through the Idlewild transfer facilities. The construction of the California-Marsh Ave Intertie will be installed in FY 2018 so that a significant amount of pipe that is located under private property between California and Marsh can be retired.

SCHEDULE: The pipeline will be designed in FY 2018 and construction in fiscal year 2019.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Distribution System Improvements – Water Main-Distribution-Service Line Improvements

Booth, Sharon Way, Monroe 24" Main Replacements FY 2020 – 2021

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Customer Rates	Booth, Sharon Way, Monroe 24" Main Replacements	-	-	100	3,100	-	3,200

PROJECT DESCRIPTION: This project is a continuation of the previously described California-Marsh Intertie to provide reliable emergency capacity to the Hunter Creek gravity zone. The project consists of about 6,900 feet of 24-inch main on Booth, Sharon to Plumb Lane and on Monroe between Sharon and Nixon to supply the Nixon-Monroe regulator.

SCHEDULE: Design is scheduled for FY 2020 and construction is scheduled for FY 2021. TMWA will attempt to coordinate construction with other municipal infrastructure projects if possible, but the existing pipes will be 73-years old by the proposed construction date.

PROJECT TYPE:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Distribution System Improvements – Water Main-Distribution-Service Line Improvements

South Virginia 24" Main (Kumle to Peckham) FY 2019 – 2020

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Developer Fees	South Virginia 24" Main (Kumle to Peckham)	-	100	900	-	-	1,000

PROJECT DESCRIPTION: The project consists of construction of about 1,700 feet of new 24-inch water main on South Virginia Street between Kumle Lane and Peckham Lane. The project is required to expand transmission capacity to the South Truckee Meadows area.

SCHEDULE: Design is planned in FY 2019 and construction is planned in FY 2020 subject to adjustment for actual growth or coordination with road improvements.

PROJECT TYPE:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Distribution System Improvements – Water Main-Distribution-Service Line Improvements

North-East Sparks Tank Feeder Main Relocation FY 2020 – 2021

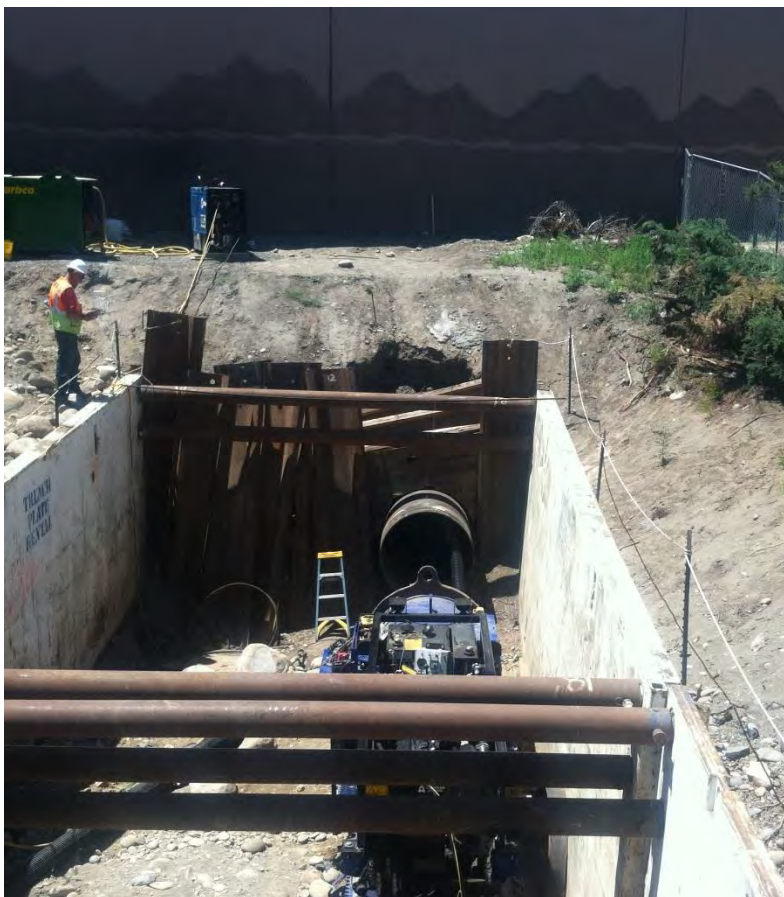
FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Customer Rates	NE Sparks Tank Feeder Main Relocation	-	-	50	950	-	1,000

PROJECT DESCRIPTION: The North-East Sparks Tank Feeder Main was constructed in 1988 within private easements several years prior to the construction of South Los Altos Parkway. The final alignment selected for South Los Altos Parkway does not follow the alignment of the tank feeder main. As a result, the tank feeder main now runs through developed properties next to buildings, under parking areas and at considerable depth in some locations. This situation presents potential problems for access to the pipe for maintenance and repair of the critical pipeline. This project will relocate approximately 3000 feet of the 18-inch tank feeder main out into the public right-of-way in South Los Altos Parkway.

SCHEDULE: The improvements will be constructed in FY 2021.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

**Distribution System Improvements – Water Main-Distribution-
Service Line Improvements**

Spanish Springs – Spring Creek South Zone Conversion FY 2019

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Customer Rates	Spanish Springs – Spring Creek south Zone Conversion	-	700	-	-	-	700

PROJECT DESCRIPTION: The project will convert the southern portion of the Spring Creek system over to the Pyramid pump zone and avoid operational problems of adequately replenishing storage in the Spring Creek tanks. The project will require construction of main ties on Pah Rah Drive, Panama Drive and Pyramid Hwy, removal/demolition of the Spring Creek tanks, modification of the Canoe Hill intertie, retirement of the Blue Skies flow control valve and a main tie connection south of the Lazy 5 intertie.

SCHEDULE: The improvements are scheduled for construction in FY 2017.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

**Distribution System Improvements – Water Main-Distribution-
Service Line Improvements**

**West Hidden Valley, Surge St., Piping Rock Main Replacements
FY 2020– 2022**

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Customer Rates	West Hidden Valley, Surge St., Piping Rock Main Replacements	-	-	1,000	230	500	1,730

PROJECT DESCRIPTION: The project consists of priority main replacements in former County systems including replacing 12” steel pipe on Piping Rock and West Hidden Valley Drive in the Hidden Valley system with extensive history of leaks. Also, replacement of existing 6” steel pipe on Surge Street in the Lemmon Valley system is planned.

SCHEDULE: Replacement of the West Hidden Valley Drive main is scheduled for FY 2020, the Surge Street main is scheduled for FY 2021 and the Piping Rock main replacement is scheduled for FY 2022.

PROJECT TYPE:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Distribution System Improvements – Water Main-Distribution-Service Line Improvements

Spanish Springs Main Replacement FY 2019 - 2020

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Customer Rates	Spanish Springs Main Replacement	-	650	650	-	-	1,300

PROJECT DESCRIPTION: The project involves replacement of approximately 6,700 feet of existing Schedule 40 PVC pipe on Cordoba Blvd, Virgil Dr., Virgil Ct, La Posada, Benedict Dr., Valparaiso Ct and Cortez Ct in Spanish Springs. The actual extent of the Schedule 40 pipe has not been determined, but several of these substandard pipes have failed in the last several years in the areas noted.

SCHEDULE: Construction is currently scheduled for FY 2019-20.

PROJECT TYPE:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Distribution System Improvements – Water Main-Distribution-Service Line Improvements

Bonnie Ln., Snow Flower, Main Extensions FY 2021 – 2022

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
3	Developer Fees	Bonnie Ln., Snow Flower, Main Extensions	-	-	-	620	900	1,520

PROJECT DESCRIPTION: The project involves main extensions in the Mt. Rose system to provide looping of the distribution system and eliminate these two long dead end mains in accordance with the NAC 445A water regulations.

SCHEDULE: Unless required and constructed sooner by specific developments, the projects are scheduled for construction in FY 2021 and FY 2022.

PROJECT TYPE:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Distribution System Improvements – Water Main-Distribution-Service Line Improvements

South Truckee Meadows Capacity Improvements FY 2019

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Developer Fees	South Truckee Meadows Capacity Improvements	-	400	-	-	-	400

PROJECT DESCRIPTION: The project consists of a 1,000 foot long extension of a 12-inch main on Offenhauser and a new intertie to the Area 11 distribution system on Gateway. Also included is an 8-inch main tie between Portman and Bluestone. The improvements will provide an incremental increase in capacity to the South Truckee Meadows area where growth is anticipated to occur.

SCHEDULE: The improvements are scheduled for construction in FY 2019.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Distribution System Improvements – Water Main-Distribution-Service Line Improvements

Stead Golf Course Main Replacement FY 2022

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Developer Fees and Customer Rates	Stead Golf Course Main Replacement	-	-	-	-	90	90

PROJECT DESCRIPTION: The project consists of replacement of about 10,000 feet of 14-inch steel pipe installed around 1945. The pipe provides an important hydraulic tie between the Stead tanks and the northeast extremities of the Stead distribution system. The pipeline may also be useful to alleviate an existing bottleneck between the Stead wells and the distribution system.

SCHEDULE: The project is scheduled for construction in 2022.

PROJECT TYPE:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Distribution System Improvements – Water Main-Distribution-Service Line Improvements

Arrowcreek-Mt. Rose Conjunctive Use Phase 2 FY 2018

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
1	Customer Rates	Arrowcreek-Mt. Rose Conjunctive Use Ph 2	400	-	-	-	-	400

PROJECT DESCRIPTION: Phase 2 facilities consist of improvements and modifications at the Mt. Rose Well #5 site to expand the delivery of off-peak conjunctive use water to the remainder of the Mt Rose water system. The improvements will also allow about a 200 psi reduction in pressure in an existing transit transmission main.

SCHEDULE: These facilities are scheduled for construction in FY 2018.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

**Distribution System Improvements – Water Main-Distribution-
Service Line Improvements
Arc Flash Improvements FY 2018**

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
1	Customer Rates	Arc Flash Improvements	100	-	-	-	-	100

PROJECT DESCRIPTION: This project involves performance of short circuit studies, breaker analysis and coordination studies and arc flash hazard studies for newly acquired County and STMGID facilities in conformance with National Electric Code (NEC), OSHA and National Fire Protection Agency regulations. Ultimately the results of the studies will allow identification of potential electrical hazards for workers so that they can utilize appropriate personal protective equipment.

SCHEDULE: Completion of the studies, adjustment or replacement of breakers and hazard labeling of electrical equipment will be phased over a two year period between FY 2016 and FY 2018.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

**Distribution System Improvements – Water Main-Distribution-
Service Line Improvements**

General Waterline Extensions FY 2018 – 2022

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
3	Customer Rates	General Waterline Extensions	100	100	100	100	100	500

PROJECT DESCRIPTION: A nominal amount of funding is budgeted each year to accommodate water main extensions to correct pressure, dead ends and fire flow deficiencies as they are identified. Funds will not be expended unless determined necessary.

SCHEDULE: This is an ongoing annual project budget. Projects will not be constructed unless determined necessary to correct deficiencies identified above.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Distribution System Improvements – Water Main-Distribution-Service Line Improvements

Galvanized/Poly Service Line Replacements FY 2018 – 2021

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Customer Rates	Galv/Poly Service Line Replacements	400	400	400	400	-	1,600

PROJECT DESCRIPTION: TMWA has shifted from just repairing service lines from the street main to the curb valve or meter box to completely replacing service lines that are galvanized steel or polybutylene. These two materials are responsible for many after-hours call outs which escalate overtime expenses to repair leaks in the street because the galvanized lines are corroded, and polybutylene once thought very durable, becomes brittle and cracks or splits very easily. Just repairing these lines does not prevent them from leaking in the near future, escalating repair costs while further damaging city streets. Complete replacement provides a permanent repair in a cost effective manner and prevents further water system losses.

SCHEDULE: This is an ongoing annual project budget. Service lines will be replaced as they are identified.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

**Distribution System Improvements – Water Main-Distribution-
Service Line Improvements
Verdi Main Extension FY 2018**

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Developer Fees	Verdi Main Extension	2,200	-	-	-	-	2,200

PROJECT DESCRIPTION: The project involves construction of about 3,500 feet of 18-inch transmission main from the West Meadows subdivision to the Riverbelle MHP and potentially further west on US 40 to the Verdi Mutual Water Company.

SCHEDULE: The project is scheduled for construction in FY 2018.

PROJECT TYPE:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

**Distribution System Improvements – Water Main-Distribution-
Service Line Improvements
Goldenrod Main FY 2021**

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
3	Developer Fees	Goldenrod Main	-	-	-	1,100	-	1,100

PROJECT DESCRIPTION: The project consists of about 4,500 feet of 12-inch pipe between the Tessa West well and the Mountain Meadows pressure reducing station. The pipeline will allow simultaneous tank fills to the Mt Rose #1 and #2 tanks when conjunctive use supplies are in use.

SCHEDULE: The improvements are scheduled for construction in FY 2021 depending on the rate of growth in the Mt Rose #2 tank zone on the east side of the system.

PROJECT TYPE:



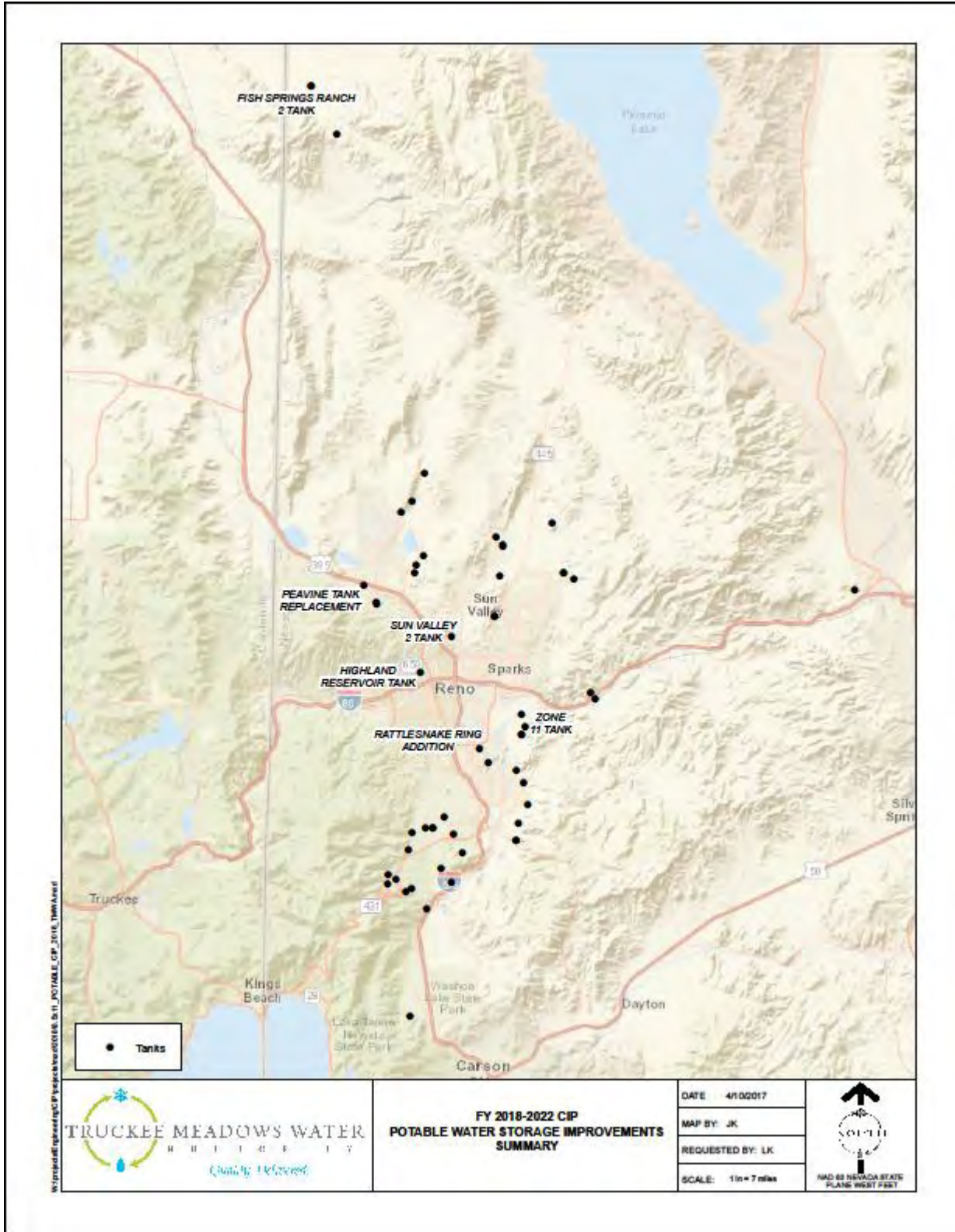
Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

POTABLE WATER STORAGE IMPROVEMENTS
Summary

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
1	Customer Rates	Peavine Tank Replacement	2,500	-	-	-	-	2,500
2	Developer Fees / Customer Rates	Sun Valley #2 Tank	-	150	1,750	-	-	1,900
2	Developer Fees	Rattlesnake Ring Addition	-	-	800	-	-	800
1	Customer Rates	Zone 11 Tank	150	3,000	-	-	-	3,150
3	Developer Fees	Fish Springs Ranch #2 Tank	-	-	100	2,000	-	2,100
1	Customer Rates	Storage Tank Recoats; Access; Drainage Improvements	860	800	800	800	800	4,060
3	Developer Fees / Customer Rates	Highland Reservoir Tank	-	-	-	100	5,700	5,800
Subtotal Storage Improvements			3,510	3,950	3,450	2,900	6,500	20,310

Project Locations: Map of all *Potable Water Storage Improvements* projects are highlighted in the following map.

Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

**Potable Water Storage Improvements
Peavine Tank Replacement FY 2018**

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
1	Customer Rates	Peavine Tank Replacement	2,500	-	-	-	-	2,500

PROJECT DESCRIPTION: The Peavine Tank is an existing 2.0 MG pre-stressed concrete tank constructed by the Silver Lake Water Company in 1978. A 2008 inspection of the tank interior revealed significant areas of concrete spalling and exposed reinforcing steel in the tank roof. Repairs were attempted in 2009. The repair process required chipping and cleaning of damaged areas which revealed much more extensive deterioration than was initially estimated. Over 1400 square feet of damage to the roof dome structure was actually repaired as compared to the original estimate of 400 square feet. Significant delamination of the roof structure is expected to continue. In addition, closer inspection during the roof repair work indicated moderate cracking of the dome ring and walls. Damage to the pre-stressed dome ring is of special concern since it resists the thrust of the arched roof in tension. The replacement tank will be a 2.5 MG above ground steel tank. The additional volume will accommodate future storage needs of the Stead system and may eliminate a future storage tank project.

SCHEDULE: It was anticipated that the 2008 repairs would provide an additional 5-7 years of life for the existing structure; therefore, it is recommended that construction not be delayed beyond FY 2018.

PROJECT TYPE:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

**Potable Water Storage Improvements
Sun Valley #2 Tank FY 2019 – 2020**

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Developer Fees/ Customer Rates	Sun Valley #2 Tank	-	150	1,750	-	-	1,900

PROJECT DESCRIPTION: TMWA continues to analyze opportunities to consolidate pump zones to eliminate future pump station replacement costs and to increase reliability to continuous pumping zones. Several years ago, TMWA consolidated the Sutro #1 pump zone with the Sun Valley/Sullivan pump zone, placing additional capacity requirements on the Sun Valley zone. This tank is needed to provide the required emergency storage capacity to the expanded zone and will also provide the capacity for the Sun Valley zone to reach buildout.

SCHEDULE: The project is scheduled for construction in FY 2020 subject to successful acquisition of a suitable tank site which is elevation sensitive.

PROJECT TYPE:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

**Potable Water Storage Improvements
Rattlesnake Ring Addition FY 2020**

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Developer Fees	Rattlesnake Ring Addition	-	-	800	-	-	800

PROJECT DESCRIPTION: Additional storage is necessary to meet the total system capacity requirements of NAC 445A regulations under buildout conditions. The bulk of the additional storage is planned for the major gravity zones since distribution facilities make the storage available to other parts of the system. The existing 2.5 MG Rattlesnake Tank is the only major storage facility on the south end of the gravity system. The addition of another 8-foot high ring to the tank would increase storage by about 1.0 MG and would also increase the available head to allow the tank to operate under a wider range of hydraulic conditions.

SCHEDULE: The project is currently scheduled for construction in FY 2020.

PROJECT TYPE:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

**Potable Water Storage Improvements
Zone 11 Tank FY 2018 - 2019**

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
1	Customer Rates	Zone 11 Tank	150	3,000	-	-	-	3,150

PROJECT DESCRIPTION: The project involves construction of a 2.5 MG above ground welded steel storage tank in Area 11 of the South Truckee Meadows formerly owned by STMGID. Due to growth in the area over the last several years, additional storage is required to meet the requirements of the NAC 445A regulations and TMWA standards.

SCHEDULE: The project is currently scheduled for construction in FY 2019 subject to acquisition of the Special Use Permit.

PROJECT TYPE:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Potable Water Storage Improvements
Fish Springs Ranch #2 Tank FY 2020 – 2021

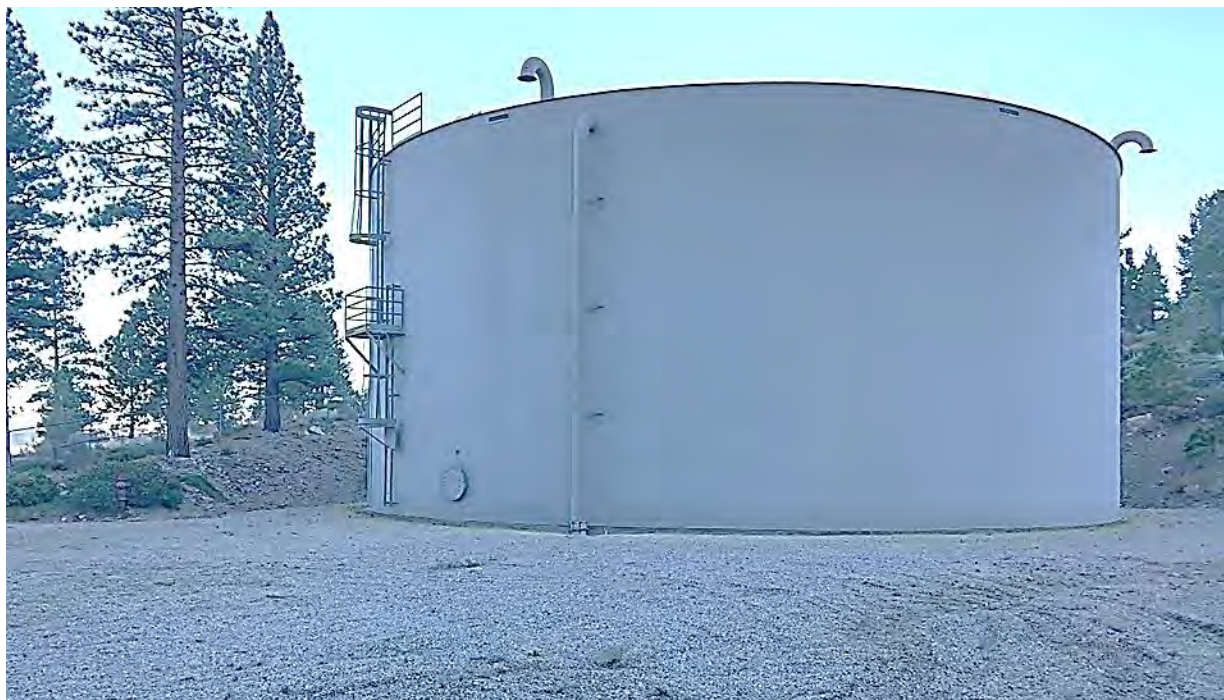
FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
3	Developer Fees	Fish Springs Ranch #2 Tank	-	-	100	2,000	-	2,100

PROJECT DESCRIPTION: Ultimately, a second storage tank is needed at the terminus of the Fish Springs pipeline at the north end of Lemmon Valley to equalize demand and supply during peak use periods.

SCHEDULE: The project is currently scheduled for design in FY 2020 with construction to follow in FY 2021. The actual schedule will be dependent upon the rate of growth in the North Valleys.

PROJECT TYPE:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Potable Water Storage Improvements
Storage Tank Recoats; Access; Drainage Improvements
FY 2018 – 2022

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
1	Customer Rates	Storage Tank Recoats; Access; Drainage Improvements	860	800	800	800	800	4,060

PROJECT DESCRIPTION: TMWA has a very proactive tank reservoir maintenance program whereby 20% of all tanks are inspected annually on a rotating basis. Based upon these inspection observations, a determination is made as to whether interior tank coatings (for steel tanks) or other fix and finish work is required. TMWA has 93 storage tanks in service, with combined storage of approximately 121 million gallons. Interior coating/liners are generally replaced every 15 years resulting in the need to recoat several tanks per year to maintain the rehabilitation cycle. The budget and plan also includes exterior painting of steel tanks and any replacement of any interior components that may be corroded.

SCHEDULE: This is an ongoing annual project. It is anticipated that several tanks will need to be recoated approximately every year.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

**Potable Water Storage Improvements
Highland Reservoir Tank FY 2021 - 2022**

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
3	Customer Rates & Developer Fees	Highland Reservoir Tank	-	-	-	100	5,700	5,800

PROJECT DESCRIPTION: TMWA has two large finished water storage reservoirs, one at Hunter Creek and one at the Highland site just west of the intersection of Washington and College Drive. These reservoirs are lined and covered with flexible polyethylene or hypalon membranes. As such, they are more maintenance intensive and susceptible to damage than a conventional steel or concrete tank. To provide reliability during repairs or during extended outages for inspection and cleaning, it is proposed to construct a conventional 4 million gallon water storage tank at the reservoir site. Due to topography and proximity to residential areas it is assumed that the tank will need to be a buried pre-stressed concrete tank. The tank will also provide additional storage capacity to meet future system requirements as required by the NAC regulations.

SCHEDULE: The tank is scheduled for construction in FY 2022-2023.

PROJECT:



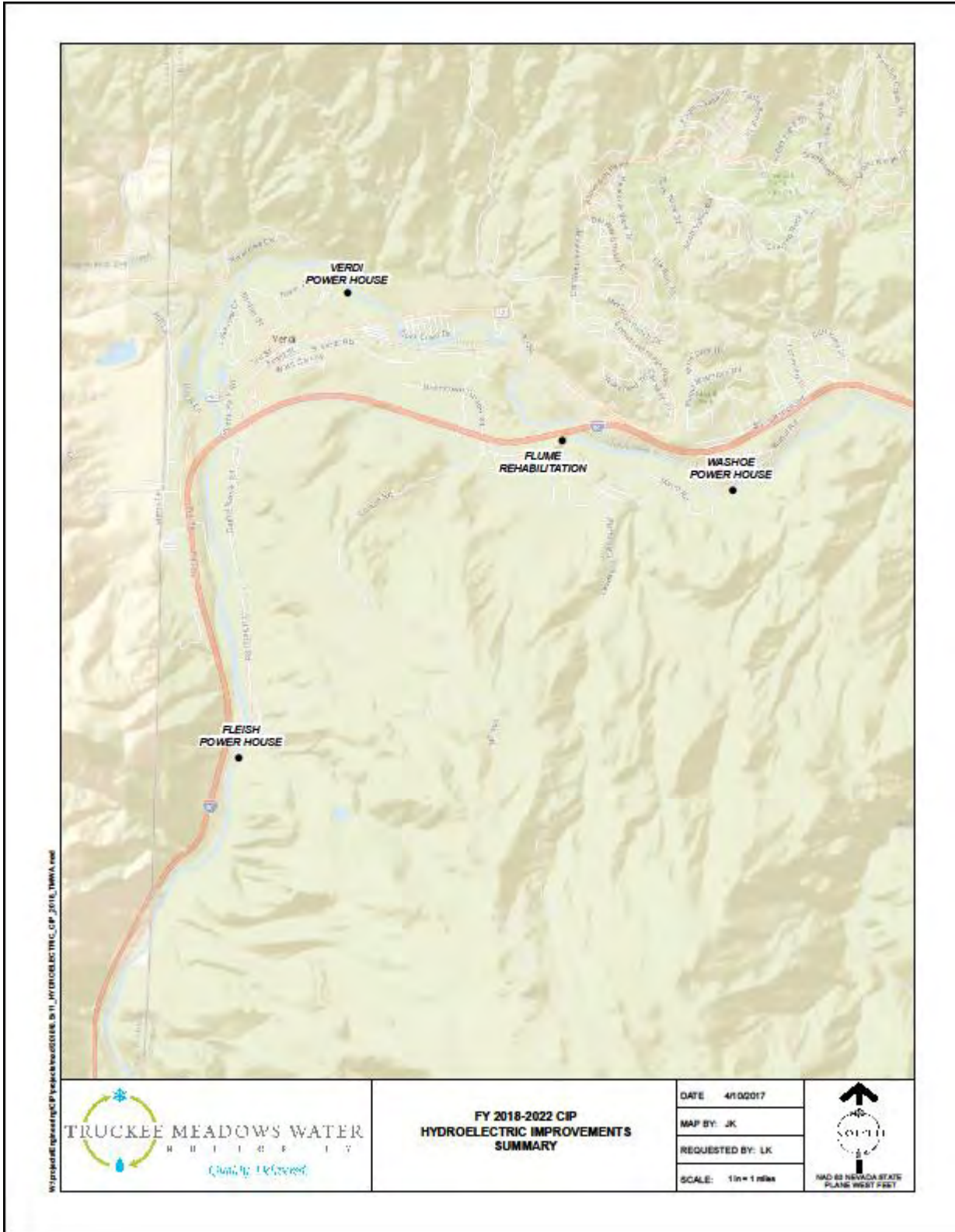
Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

HYDROELECTRIC IMPROVEMENTS
Summary

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
1	Customer Rates	Forebay, Diversion, and Canal Improvements	45	55	50	50	50	250
2	Customer Rates	Flume Rehabilitation	300	650	600	600	600	2,750
3	Customer Rates	Hydro Plant Generator Rewinds	-	350	350	350	-	1,050
Subtotal Hydroelectric Improvements			345	1,055	1,000	1,000	650	4,050

Project Locations: Map of all *Hydroelectric Improvements* projects are highlighted in the following map.

Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

**Hydroelectric Improvements
Forebay, Diversion, and Canal Improvements
FY 2018 – 2022**

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
1	Customer Rates	Forebay, Diversion, and Canal Improvements	45	55	50	50	50	250

PROJECT DESCRIPTION:

Provision is made each year for hydroelectric flume reconstruction to mitigate damage from unexpected rock falls, landslides and/or flooding events. Diversion structures including gates, canals, flumes, forebays and all hydro-plant water conveyance structures are monitored and evaluated for reliable and safe operation.

SCHEDULE: Ongoing annual evaluation and prioritization of forebay and canal conditions in the early spring (winter weather can change priorities) to identify projects for fall construction when historically, river flows are lower.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Hydroelectric Improvements
Flume Rehabilitation FY 2018 – 2022

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Customer Rates	Flume Rehabilitation	300	650	600	600	600	2,750

PROJECT DESCRIPTION: TMWA’s three operating hydroelectric facilities have nearly 12,150 feet of flume. The average service life for flume structures is 35 years using treated timbers, at an average replacement cost of approximately \$1,000 per lineal foot of flume. The present cost to replace a linear foot of flume depends on the location and height of the flume structure.

SCHEDULE: Ongoing annual evaluation and prioritization of flume condition in the early spring (winter weather can change priorities) to identify projects for fall construction when historically, river flows are lower.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Hydroelectric Improvements
Hydro Plant Generator Rewinds FY 2019 – 2021

FUNDING TIMELINE:

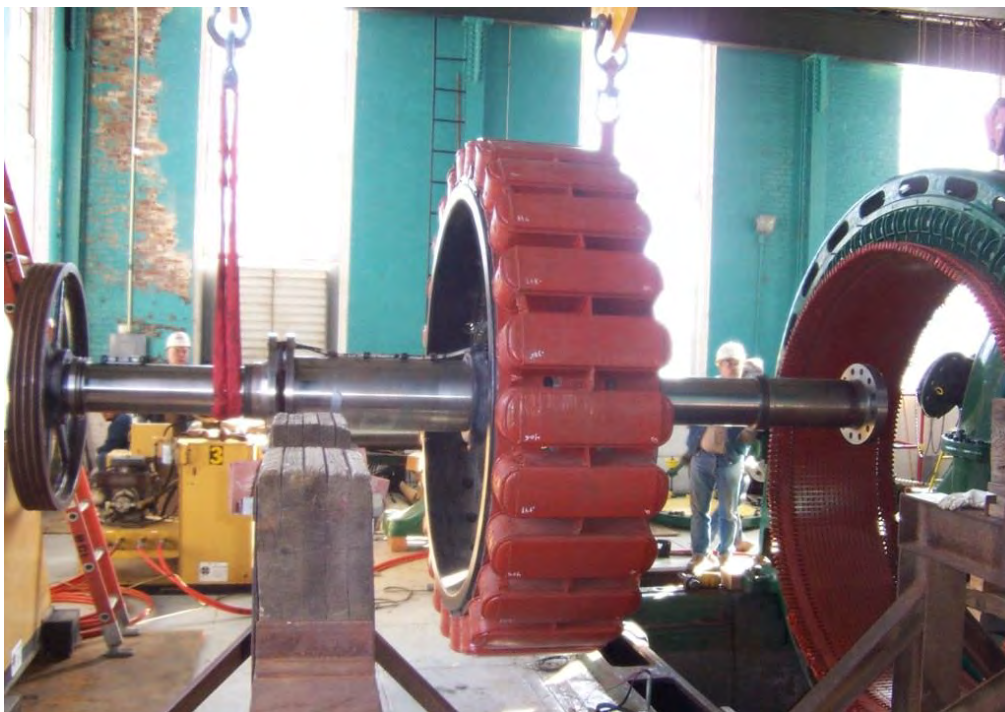
Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
3	Customer Rates	Hydro Plant Generator Rewinds	-	350	350	350	-	1,050

PROJECT DESCRIPTION:

The Fleish generator was last rewind in 1958 and is still operational. The typical in service life of this type of generator is about 50 years. The two Washoe generators were damaged in a flood in 2006. The units were cleaned and repaired but suffered damage to the core laminations that has shortened the operating life. Work would consist of rewinding the plant generators with spending in fiscal years 19, 20 & 21.

SCHEDULE: Washoe Hydro Plant generators FY19 & FY20, Fleish Hydro Plant generator FY21. This schedule may be adjusted depending on river flows and generator condition evaluation.

PROJECT:



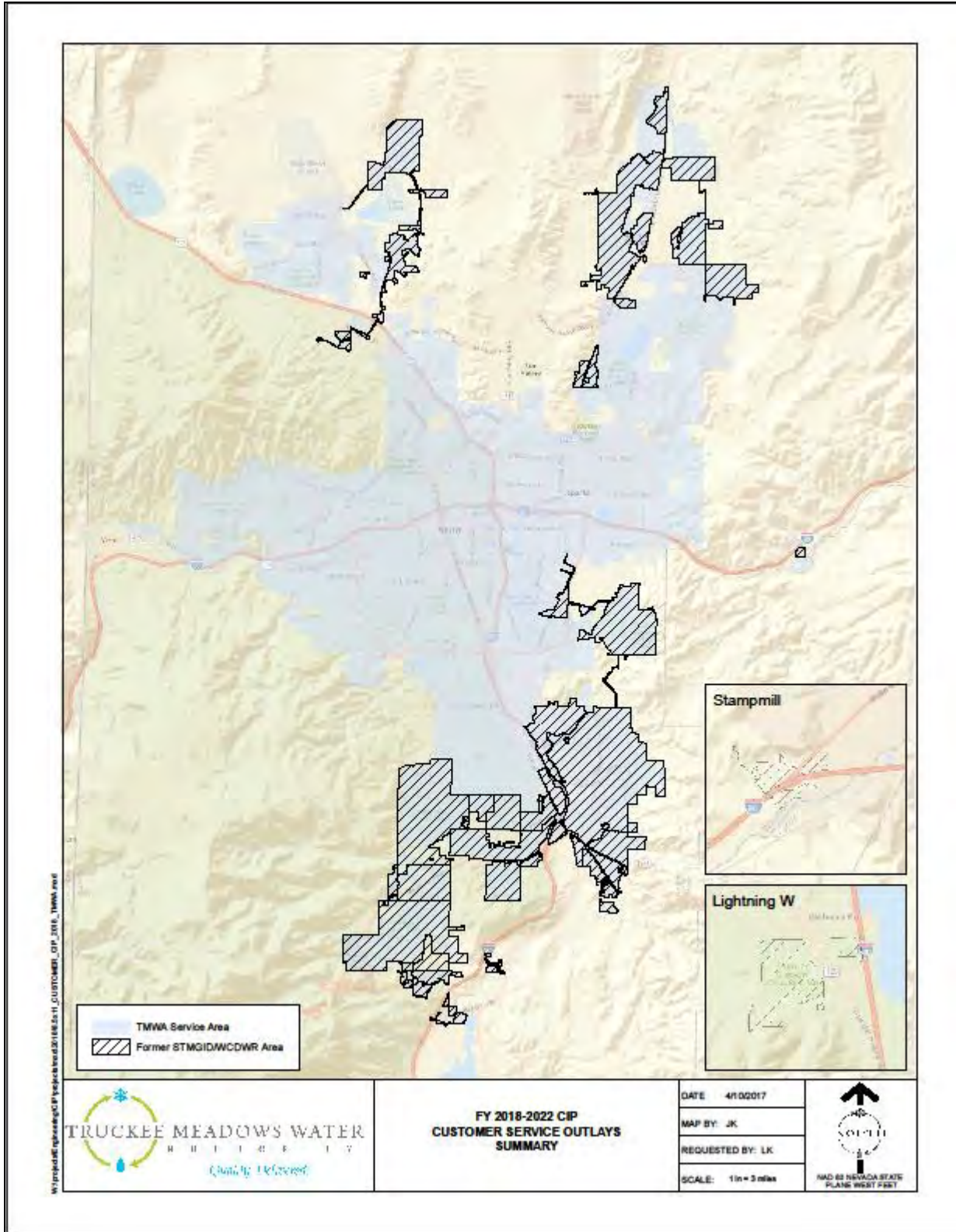
Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

CUSTOMER SERVICE OUTLAYS
Summary

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
3	Customer Rates	Meter Reading Equipment	60	-	60	-	60	180
2	Developer Fees	New Business Meters	350	350	175	100	100	1,075
1	Customer Rates	Mueller Pit Replacements former Washoe County	125	125	125	125	125	625
1	Customer Rates	Meter -ERT-RTR Replacements	1,250	1,250	1,250	1,250	1,250	6,250
Subtotal Customer Service			1,785	1,725	1,610	1,475	1,535	8,130

Project Locations: Map of all *Customer Service Outlays* projects are highlighted in the following map.

Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Customer Service Outlays
Meter Reading Equipment FY 2018 - 2022

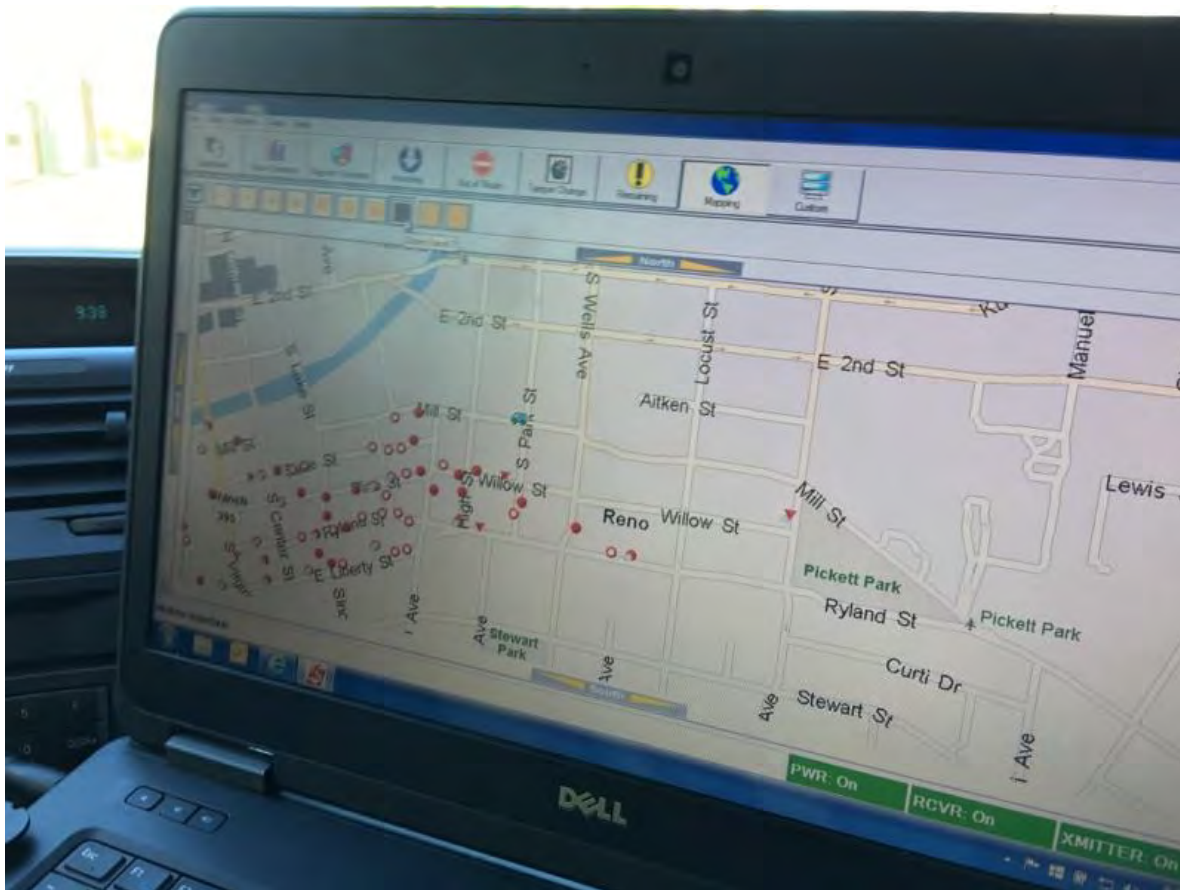
FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
3	Customer Rates	Meter Reading Equipment	60	-	60	-	60	180

PROJECT DESCRIPTION: TMWA utilizes a multiple meter reading systems in which the transmitters attached to the meters send a signal out to be collected by data collectors. These collectors are mounted in the meter reading vehicles or on various mountain peaks surrounding the valley. TMWA is anticipating replacing units that have degraded.

SCHEDULE: Will need to purchase equipment on an as needed basis.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Customer Service Outlays
New Business Meters FY 2018 – 2022

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Developer Fees	New Business Meters	350	350	175	100	100	1,075

PROJECT DESCRIPTION: All new water services are required to be metered. Meters are purchased by TMWA and installed for new development. New business fees pay for these installations.

SCHEDULE: As development picks up, more meters will need to be purchased.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Customer Service Outlays

Mueller Pit Replacements Former Washoe County FY 2018 – 2022

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
1	Customer Rates	Mueller Pit Replacements former Washoe County	125	125	125	125	125	625

PROJECT DESCRIPTION: The Mueller metering pits are a very high maintenance metering facility and are prone to leaks and failures. TMWA plans to replace these facilities in response to leaks and or subsidence of these facilities.

SCHEDULE: Equipment and employee needs are evaluated and updated annually.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Customer Service Outlays
Meter - ERT-RTR Replacements FY 2018 - 2022

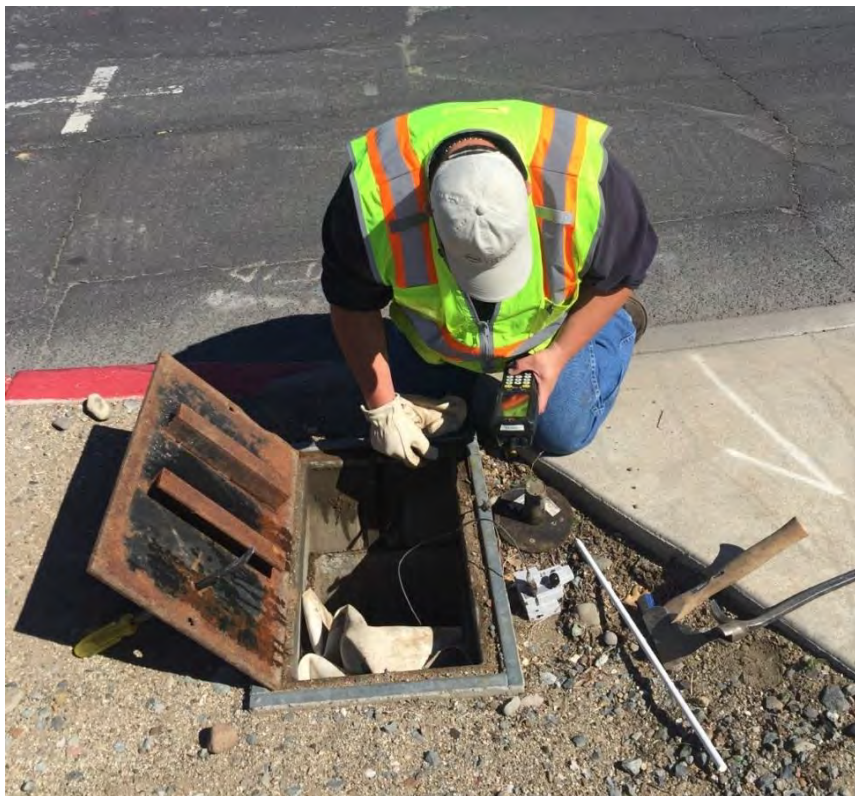
FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
1	Customer Rates	Meter - ERT-RTR Replacements	1,250	1,250	1,250	1,250	1,250	6,250

PROJECT DESCRIPTION: Meter/ERT/RTR replacements are required annually for approximately 7% of TMWA’s metered services. Meters have an expected service life of 20-25 years. ERTs and RTRs have an expected service life of at least 15 years. TMWA is upgrading these devices to the 100w class which will allow for fixed based meter readings and ability to read meters remotely for purposes of move-in and move-out meter reading cut-off without the need for a truck roll. In addition, we have taken on 23,000 Sensus meters of a varying age, as well as different meter reading systems.

SCHEDULE: These are both replaced systematically as well as on an as needed basis.

PROJECT:



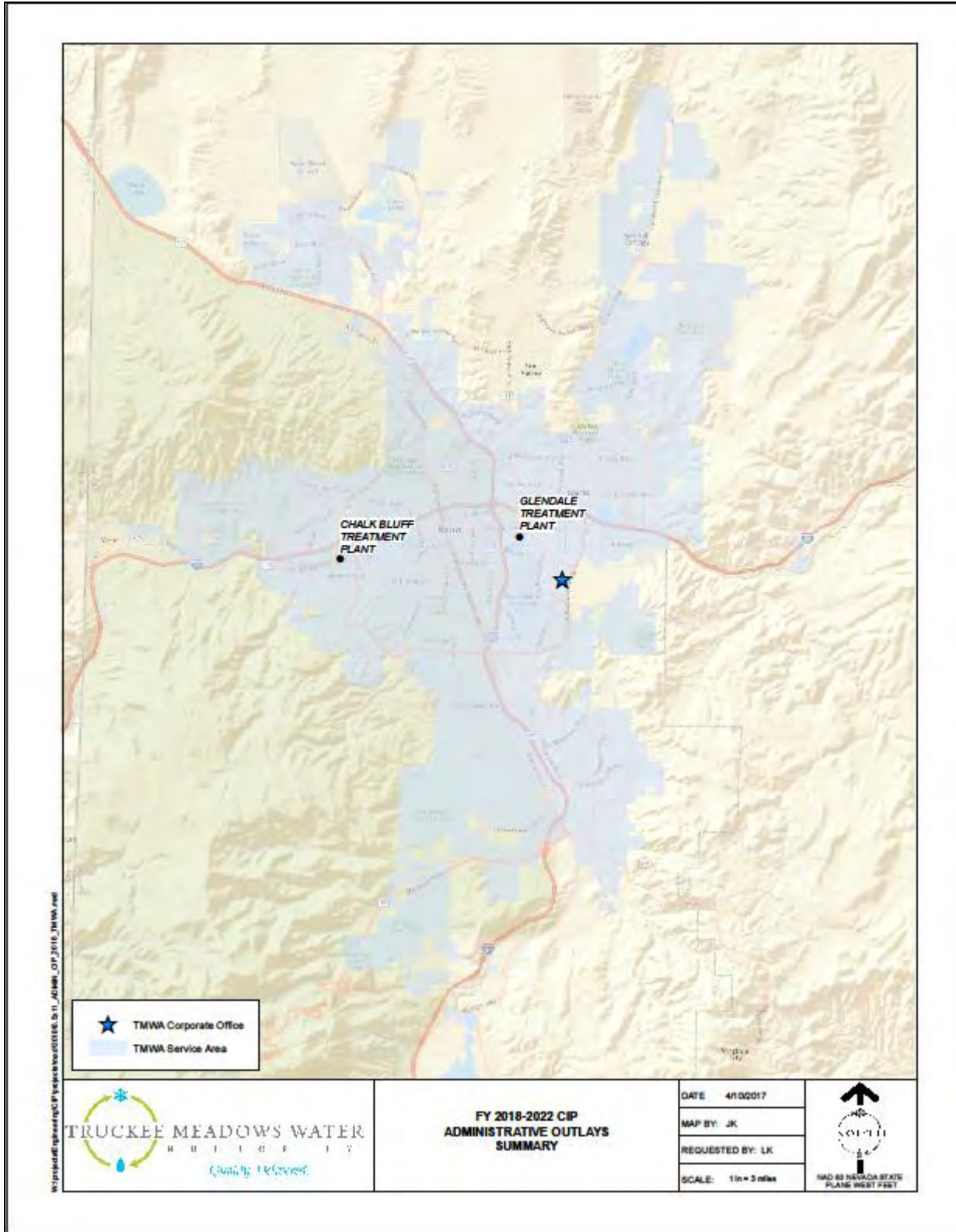
Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

ADMINISTRATIVE OUTLAYS
Summary

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Customer Rates	GIS/GPS System Mapping Equipment	40	40	40	40	40	200
2	Customer Rates	Desktop Computer Upgrades	100	100	100	100	100	500
2	Customer Rates	Server/Storage upgrades	175	175	175	175	275	975
2	Customer Rates	Network Security Upgrades	150	150	150	150	150	750
1	Customer Rates	Disaster Recovery Improvements	215	-	-	-	-	215
2	Customer Rates	Furniture -Office Equipment	50	50	50	50	50	250
3	Customer Rates	Crew Trucks / Vehicles	825	570	585	650	600	3,230
1	Customer Rates	Security-ER Projects	150	150	150	150	150	750
1	Customer Rates	Emergency Operations Annex-Design	500	1,500	-	-	-	2,000
2	Customer Rates	Corporate Office Expansion	1,800	-	-	-	-	1,800
2	Customer Rates	System Wide Asphalt Rehabilitation	250	100	100	100	100	650
Subtotal Administrative Outlays			4,255	2,835	1,350	1,415	1,465	11,320

Project Locations: Map of all *Administrative Outlays* projects are highlighted in the following map.

Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Administrative Outlays
GIS/GPS System Mapping Equipment FY 2018 – 2022

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Customer Rates	GIS/GPS System Mapping Equipment	40	40	40	40	40	200

PROJECT DESCRIPTION: TMWA will have to update mapping equipment on a periodic basis to keep up with changes in technology; and to replace existing equipment as it reaches obsolescence.

SCHEDULE: Equipment is replaced and/or purchase as needed.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Administrative Outlays
Desktop Computer Upgrades FY 2018 - 2022

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Customer Rates	Desktop Computer Upgrades	100	100	100	100	100	500

PROJECT DESCRIPTION: TMWA utilizes a computer refresh program to ensure employees are provided with the latest technological tools to stay productive in their work. TMWA has over 250 desktop and laptop computing resources in service, with approximately one-quarter needing to be changed out each year due to warranty arrangements, asset age, or staffing needs. TMWA annually completes a full inventory of all IT assets to make an appropriate determination of the required resource replacement.

SCHEDULE: Spending would be determined on an as needed basis.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Administrative Outlays
Server/Storage/Operating System Software Upgrades
FY 2018 – 2022

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Customer Rates	Server / Storage / Operating System Software upgrades	175	175	175	175	275	975

PROJECT DESCRIPTION: TMWA currently has over 50 physical servers and 150 virtual servers, hosting a variety of enterprise software applications that support TMWA’s daily business operations. All physical servers are typically purchased with a three year warranty, with the expectation that they will reach the end of their system life cycle in a three to five year time frame, requiring a replacement. TMWA annually reviews its server platforms and can option a strategy of warranty extension, if cost effective, rather than outright hardware replacement. All servers require an Operating System Software license to run. Operating System Software is upgraded only when the current release is obsolete or a newer version offers a significant advantage over the current iteration.

SCHEDULE: Spending occurs only on an as needed basis.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Administrative Outlays
Disaster Recovery Improvements FY 2018

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
1	Customer Rates	Disaster Recovery Improvements	215	-	-	-	-	215

PROJECT DESCRIPTION: This project will focus on the necessary improvements to critical IT infrastructure to reduce potential downtime and data loss for TMWA Corporate Data Center Outages.

SCHEDULE: Installation will begin in the summer of FY 2018 and will be completed in fall FY 2018.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Administrative Outlays
Furniture – Office Equipment FY 2018 – 2022

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Customer Rates	Furniture -Office Equipment	50	50	50	50	50	250

PROJECT DESCRIPTION: A small provision is made each year for furniture requirements if necessary.

SCHEDULE: Furniture and office equipment is purchased or replaced as needed.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Administrative Outlays
Crew Trucks/Vehicles FY 2018 – 2022

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
3	Customer Rates	Crew Trucks / Vehicles	825	570	585	650	600	3,230

PROJECT DESCRIPTION: TMWA’s service fleet consists of light duty and heavy duty crew trucks. TMWA plans to cycle the light crew fleet over a period of seven to ten years. Spending is determined annually depending on vehicle availabilities and other factors. Spending only occurs if justified. TMWA’s fleet cycles older vehicles to the treatment plants or other less demanding activities prior to disposal at auction. TMWA has scaled back spending on light vehicles for the past several years and a number of vehicles will be in excess of ten years old and greater than 120,000 miles of duty.

SCHEDULE: Equipment and employee needs are evaluated and updated annually.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Administrative Outlays
Security-ER Projects FY 2018 – 2022

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
1	Customer Rates	Security-ER Projects	150	150	150	150	150	750

PROJECT DESCRIPTION: Various ongoing improvements to security infrastructure are required to protect TMWA facilities. Perpetual upgrades to video surveillance and control access infrastructure are necessary in order to provide pertinent and real time information to TMWA in the event of unauthorized access to TMWA property. TMWA has performed vulnerability assessment studies in the past and reviews the applicability of the findings to continually improve physical security as needed. In addition, TMWA is preparing a new disaster recovery plan with procedures to recover and protect water system operations.

SCHEDULE: Upgrades to security projects is ongoing and the disaster recovery plan is scheduled for completion in FY 2017.

PROJECT LOCATION: Various locations at treatment plants, at well sites, storage area for water fill station manifolds.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Administrative Outlays
Emergency Operations Annex-Design FY 2018- 2019

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
1	Customer Rates	Emergency Operations Annex-Design	500	1,500	-	-	-	2,000

PROJECT DESCRIPTION: TMWA is currently in the planning and conceptual design phase for a Primary Emergency Operations Center (EOC) with potential for Disaster Recovery (DR) capacity. TMWA’s EOC will relocate from the current location at the corporate office to the Chalk Bluff Water Treatment Plant. Which includes scope review, design, and contract bid packages, bid and award, construction, and testing. Potential emergency operations would include responding to earthquakes, floods, or other emergency related events. Disaster Recovery includes providing a system to backup and restore all key operating systems to operational status.

SCHEDULE: Design, bid and build in FY 2017 to include design, fabrication, installation of two construction water fill stations at Glendale and Chalk Bluff Water Treatment Plant, construction of water fill stations at four tank sites, standby power retrofits at four existing wells and ten portable water fill manifold stations.

Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Administrative Outlays
System Wide Asphalt Rehabilitation FY 2018 – 2022

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Customer Rates	System Wide Asphalt Rehabilitation	250	100	100	100	100	650

PROJECT DESCRIPTION: TMWA has 93 tanks, 90 wells, 113 pump stations, 2 storage reservoirs and 3 treatment plants, most of which have some asphalt pavement. It is much more economical to extend the life of existing pavement with routine maintenance such as repairing cracks and applying slurry seals than it is to prematurely replace the pavement.

SCHEDULE: This is a new reoccurring maintenance item. It is originally assumed that up to 15 sites per year will receive some sort of rehabilitation that may include patching, crack repair, slurry seal and/or partial replacement.

PROJECT:



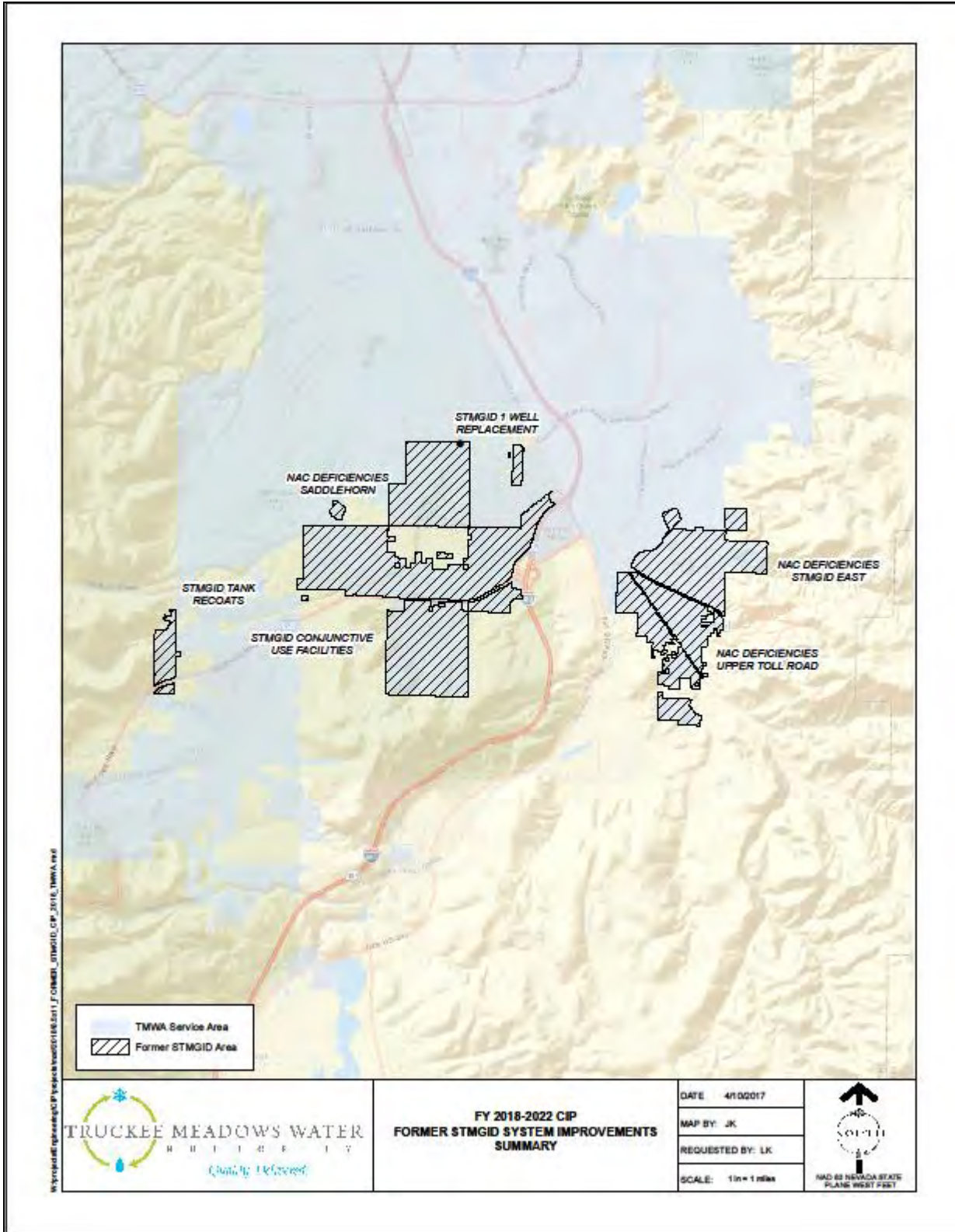
Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

FORMER STMGID SYSTEM IMPROVEMENTS
Summary

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Reserves	Well Bypass and Chlorine Room Improvements (former STMGID wells)	400	100	-	-	-	500
3	Reserves	STMGID Well #1 Replacement	-	850	900	-	-	1,750
2	Reserves	STMGID Well Fix & Finish	150	150	150	150	150	750
1	Reserves	STMGID Conjunctive Use Facilities	150	1,800	2,100	-	-	4,050
1	Reserves	STMGID Tank Recoats	-	220	-	300	-	520
1	Reserves	STMGID Mueller Pit Replacements	75	50	50	50	-	225
2	Reserves	NAC Deficiencies-Saddlehorn, Upper Toll Road, STMGID East	-	350	100	2,400	350	3,200
Subtotal Administrative Outlays			775	3,520	3,300	2,900	500	10,995

Project Locations: Map of all *Former STMGID System Improvements* projects are highlighted in the following map.

Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Ground Water Supply Improvements
Well Bypass and Chlorine Room Improvements (former STMGID wells)
FY 2018 – 2019

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Reserves	Well Bypass and Chlorine Room Improvements (former STMGID wells)	400	100	-	-	-	500

PROJECT DESCRIPTION: During pre-merger facility assessments, it was determined that several former STMGID wells need to be retrofitted with bypass piping and valves to evacuate a certain amount of water prior to discharge to the distribution system. Other wells also require isolation of the chlorine rooms to reduce corrosion issues.

SCHEDULE: It is anticipated that all improvements will be completed in the next five years.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Ground Water Supply Improvements
STMGID Well 1 Replacement FY 2019 – 2020

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
3	Reserves	STMGID Well #1 Replacement	-	850	900	-	-	1,750

PROJECT DESCRIPTION: The exiting STMGID 1 Well has been in service since 1984, making it one of the older wells in the STMGID system. The exiting well casing and screens show signs of significant corrosion. With the potential for a well casing failure, TMWA intends to drill and equip a replacement well on the exiting well property. The replacement well is expected to have similar construction and capacity as STMGID 1.

SCHEDULE: Well drilling will occur in FY19 and well equipping in FY20.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Ground Water Supply Improvements
STMGID Well Fix & Finish FY 2018 - 2022

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Reserves	STMGID Well Fix & Finish	150	150	150	150	150	750

PROJECT DESCRIPTION: Equipment improvements are expected to bring existing wells up to modern standards, including antiquated equipment replacements and improvements for water quality purposes. This project includes improvements to sodium hypochlorite rooms, electrical and instrumentation equipment, pump to waste lines and drainage improvements. It also includes retrofit for recharge where needed.

SCHEDULE: Improvements are planned to continue for the duration of this CIP funding plan.

PROJECT TYPE:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

**Distribution System Improvements – Water Main-Distribution-
Service Line Improvements**

STMGID Conjunctive Use Facilities FY 2018 – 2020

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
1	Reserve	STMGID Conjunctive Use Facilities	150	1,800	2,100	-	-	4,050

PROJECT DESCRIPTION: The project involves construction of a new booster pump station on the reclaim water reservoir site on Arrowcreek Parkway and approximately 8,100 feet of 14-inch discharge pipe on Arrowcreek Parkway to the STMGID Tank 4/5 pressure zone. Approximately \$0.5 million of the \$3.6 million will be used for pipeline oversizing to be allocated to development. The facilities will provide off-peak supply which will allow TMWA to implement conjunctive use in the STMGID West system.

SCHEDULE: The facilities are scheduled for design in FY 2018 and construction in FY 2019 and 2020.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

**Potable Water Storage Improvements
STMGID Tank Recoats FY 2019 - 2021**

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
1	Reserve	Former STMGID Tank Recoats	-	220	-	300	-	520

PROJECT DESCRIPTION: The former STMGID system included a total of seven storage tanks providing a total storage capacity of about 6.2 million gallons. A number of these tanks will be inspected annually on a rotating basis. Based upon these inspection observations, a determination is made as to whether interior or exterior tank coatings or other fix and finish work is required. Tank interior coating/liners and exterior paint are generally replaced every 15 years.

SCHEDULE: This is an ongoing annual project. It is anticipated that two tanks will need to be recoated approximately every 2-3 years.

PROJECT TYPE:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

Customer Service Outlays
Mueller Pit Replacements Former STMGID FY 2018 – 2021

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
1	Reserve	Mueller Pit Replacements former STMGID	75	50	50	50	-	225

PROJECT DESCRIPTION: The Mueller metering pits are a very high maintenance metering facility and are prone to leaks and failures. TMWA plans to replace these facilities to leaks and or subsidence of these facilities.

SCHEDULE: Equipment and employee needs are evaluated and updated annually.

PROJECT:



Truckee Meadows Water Authority FY 2018-2022 Capital Improvement Plan

**Distribution System Improvements – Pressure Improvements
NAC Deficiencies-Saddlehorn, Upper Toll Road, STMGID East
FY 2019 – 2022**

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
1	Reserve	NAC Deficiencies-Saddlehorn, Upper Toll Road, STMGID East	-	350	100	2,400	350	3,200

PROJECT DESCRIPTION: The project consists of main ties, hydrant installations and individual booster pump systems to be constructed in multiple locations in former STMGID service areas to correct NAC pressure and fire flow deficiencies. In order to correct deficiencies in the upper Toll Road area, it will be necessary to create a new higher pressure zone by constructing a new tank, booster pump station and approximately 6,300 feet of 12-inch main.

SCHEDULE: The deficiencies on Sioux Trail, on Geiger Grade, on Westwind Circle and Terry Way will be addressed in FY 2018. The new pressure zone on upper Toll Road will be constructed in FY 2021 subject to acquisition of the tank site on BLM property.

PROJECT:





Fleet & Equipment Management

Vehicle and Equipment Replacement Guidelines:

The objective of the vehicle replacement program is to provide an orderly system of purchasing and funding a fleet and heavy equipment replacement process and to plan departmental transportation requirements. This process also provides for standardization of the fleet vehicles to provide a consistent product to all fleet users. This procedure is intended to be a general guideline.

Background:

The Truckee Meadows Water Authority (TMWA) Fleet Services Department is assigned the overall responsibility for managing the Municipality's fleet of vehicles and construction/maintenance equipment. The Fleet Services Department works in conjunction with all departments to develop vehicle and equipment specifications, replacement schedules, coordinates the acquisition of new vehicles/equipment and reassigns and disposes of all surplus vehicles/equipment.

The appropriations to replace vehicles and equipment is budgeted in the capital budget as part of the Capital Five Year Plan and is reviewed and updated annually. TMWA currently has over 150 registered vehicles and an additional 50 pieces of equipment including backhoes and trailers.

Acquisition:

The goal of the Fleet Service Department's acquisition practices is to obtain the lowest possible price and the highest possible quality. Currently TMWA purchases vehicles through the State of Nevada Purchasing Division, Master Service Agreement for all sedans, SUV's, and pickup trucks up to 1.5 tons. Vehicles and equipment more than 20,000lbs GVW are put to public bid and are awarded to the lowest responsive bidder. In addition to the State of Nevada's Purchasing agreements, we also utilize the National Joint Powers Alliance (NJPA) which has been recognized by the State of Nevada as a purchasing option.

Replacement:

The goal is to analyze the costs associated with a vehicle and identifying the point when, on average, a vehicle has reasonably depreciated but not yet incurred significant maintenance costs. By replacing vehicles at this point, we can avoid escalating maintenance costs and optimize vehicle resale value. The five criteria that we consider when establishing the vehicle replacement schedules are:

- Vehicle/equipment mileage
- Age of the vehicle/equipment
- Vehicle/equipment use
- Engine hours for equipment (backhoes, loaders, vehicles with PTO driven tools)
- Annual Maintenance/repair costs

Below are the age and mileage standards that are being used by TMWA to plan for the replacement of vehicles/equipment in our fleet. Once the vehicles and equipment reach the age and/or mileage/hour threshold they are inspected and evaluated to ensure that they are in safe working order and that maintenance and repair costs have not exceeded 30% of the vehicles residual value.

Vehicle Type	Replacement Range Years	Threshold Mileage
Sedans	7-10	100,000
SUV	7-10	120,000
.5-.75 ton Pickups	7-10	120,000
.75-1.5 ton Utility Trucks	7-10	120,000 + engine hour consideration
Crew trucks >25,000 GVW	12-15	120,000 + engine hour consideration
Heavy Dump Trucks	12-15	150,000
Backhoe, Loaders	12-15	7,500 hours.

Source: American Public Works Association Vehicle Replacement Guide



STAFF REPORT

TO: TMWA Board of Directors
FROM: Mark Foree, General Manager
THRU: Andy Gebhardt, Operations and Water Quality Director
Marlene Olsen, GoodStanding
DATE: May 1, 2017
RE: Presentation on proposed Summer 2017 Campaign and Water Leadership Communications Plan, discussion and possible direction to staff

Report Highlights:

- *With water supplies at record highs this year, a standard conservation plan will be in effect with particular focus and emphasis on smart water use.*
- *The plan will use all forms of communication: multi-media advertising, news coverage, direct customer messages in bills, social media, digital media and website content, in addition to some tactics that are more unconventional, such as restaurant cards and public restroom mirror stickers.*
- *Due to the implementation of the Truckee River Operating Agreement, the opportunity exists to change the conversation and mindset of the community about water supply planning, droughts and how our water situation has improved. We will begin Year One of an educational effort entitled: Water Leadership Plan.*

Contents:

Summer 2017 Campaign	Pages 2-5
Water Leadership Communications Plan	Pages 6-8
Summary from Research	Attached

Summer 2017 Campaign

Situational Analysis:

This campaign is a component of TMWA's 2016-2035 Water Resource Plan (WRP) Demand-Side Management Programs. See Volume II, Chapter 5.

Per the WRP, TMWA is committed to public education about conservation and efficient water use. TMWA utilizes every opportunity to promote education. TMWA's conservation plan extends beyond a responsibility for resource stewardship and must fulfill specific provisions—including water conservation requirements per the Joint Powers Agreement, the NRS, regional planning and TROA. The plan for this year is a Level 1 Response, meaning Standard Conservation will be needed with standard conservation messaging.

Overview:

The Summer 2017 Campaign will begin in June and will run concurrently alongside the new Water Leadership Communications Plan.

The campaign will test a *Smart About Water* (SAW) messaging platform that may be incorporated into the brand position, based on results. This year, the opportunity is rare and timely to broaden messaging well beyond conservation and into other topics regarding diligent water management, as it is rare to have water capacity levels so robust.

Being “Smart About Water” is a focused, long-term-orientated platform. It addresses the findings in the SAW research (see addendum). Intensive planning and coordination at multiple community levels over multiple decades have provided a solid foundation for securing the water supply in this region. The 2017 summer campaign will establish this fact and celebrate the Truckee River as the amazing multi-use economic and community resource that it is.

The campaign will rely upon an integrated effort comprised of paid advertising, including traditional media such as print, television and radio buys, while increasing our presence through a wider array of digital advertising and search channels. Additionally, the campaign will integrate and leverage many of TMWA's “owned channels” – social networks, email database, website, newsletters and blogs – to increase exposure and audience reach.

Goal:

Build awareness and reinforce the message of smart water use in the community

Campaign Dates:

June 5- September 17

Objective 1: Test the Smart About Water messaging across all campaign communication channels:

The campaign will introduce SmartAboutWater.com, which will redirect to appropriate landing pages living on TMWA.com through the Summer '17 campaign. The campaign will be supported through engaging messaging that includes the following:

- How TMWA, and water planners before TMWA, have stewarded our region's resilient water system over the decades

- Our incomparable water system that serves us
- Community pride in our water resources and the Truckee River and its importance to our customers' quality of life
- A reminder for our community to always be Smart About Water

Measurement will include increased awareness as reflected in the annual, fall follow-up survey, social media engagement (Likes, shares, reposts, discussion), and engagement through the website and dedicated landing pages.

Objective 2: Integrate TMWA's owned channels into the overall communications outreach:

By integrating TMWA's respected owned channels – website, social networks (i.e. Facebook, YouTube, Twitter), blog, email database and newsletters – into the campaign. This allows us to:

- Reach a broader audience
- Engage and build a supportive online community
- Coordinate messaging across a breadth of communication channels
- Build a stronger, more cost-effective communications program

Measurement for integration will include a boost in awareness as reflected in the annual fall follow-up survey, social media engagement (Likes, shares, reposts, discussion), emailed newsletter open and click-through rates, and engagement through the website and dedicated landing pages.

Target Audiences:

Customers: Residents and Businesses
Community at large

Key Messaging (in paid campaign and digital media):

Demonstrate how TMWA and water users are and have been “Smart About Water” through all media channels.

- Smart water use: reminders to be Smart About Water
- Leverage the history and a half-century of progress resulting in a sustainable supply of water for the region
- Celebrate the many ways the community enjoys and benefits from our water resources
- Highlight water system improvements and subject matter expertise
- Water into the future—TROA and stable water supply
 - Illustrate requirements and determinations in accessing water for growth

Tone:

Friendly. Affable. Humble. Human. Approachable. Collaborative. Celebratory.

Across the board, through advertising, web copy, newsletters, online video, everywhere... these are the characteristics that TMWA's messaging should convey.

Communications Strategies:

Communications strategies are overall approaches used to achieve stated objectives and are explained below.

Integrated Campaign:

Our creative direction is in production. Because we are introducing TMWA's new Smart About Water brand messaging, we are developing a new look and feel for the campaign, according to TMWA's brand guidelines. The intent is to produce an advertising design and messaging direction that will continue for the next three years or more.

The media buy will be based on a strategic media mix that effectively reaches TMWA's target audience of age 25+. Although we have focused on homeowners in the past, because of outside watering, this year we will consider all water users. Ad space will be purchased in local print, radio, television and social media channels. We require added value (contributed space) for all placements, through either additional space, website content, on-air contests, etc. Television stations will again be offering weather sponsorships where forecasters can provide up-to-date information.

Finally, this summer campaign's media buy will reflect the evolving communication habits of our audiences and will place an ever-greater emphasis on digital advertising network and search-engine optimized buys.

Channels and tools:

The messages above will appear across the media spectrum — multi-media advertising, digital/online, news releases, FAQ's, videos, infographics, emails, bill inserts, envelope backers, etc. We will introduce an array of infographics: *State of the Water*, *How a Developer Gets Water Service*, *Meet Your Standing Advisory Committee*, etc. These graphics will provide content for social channels and website.

Supporting collateral will include tent cards available for restaurants, as this is a popular program over the years and reinforces the smart water use message. Public restroom mirror stickers have also been popular and will be continued. Distribution includes all restrooms in the Greater Nevada Stadium during baseball and soccer games.

Website:

TMWA.com will have dedicated pages promoting smart water use. These landing pages will be monitored through analytics to provide tracking data from specific ads and social media posts.

A blog will be incorporated as part of the website that conveys specific water-related information. The tone will be light and engaging, and is meant to reinforce messaging, including enjoyment and respect of the resource.

Digital and Social Media:

To foster conversations and sharing, staff will utilize regular postings, paid and boosted ads, videos, blog posts, photos, and infographics on various social media channels, including local media, Facebook, YouTube and Twitter. Active listening and responding as needed is also part of what staff does every day.

News Coverage:

The local media and weather forecasters play an important role in conveying the Smart About Water messaging in general, and conservation and other key messaging to the community, in particular. Staff will be responsive to incoming media requests. Tools used to convey our message include: editorial board meetings, desk sides, infographics, interviews, press release, media, FAQ's infographics, tours, etc.

Direct Customer Communications:

Monthly inserts, envelope backers, bill messages, brochures, etc. will convey the pertinent messaging. Cadence for release of information will coincide with the summer integrated campaign.

Workshops/Events:

The conservation department will continue to offer efficient-landscaping workshops throughout the spring and summer. A TMWA exhibit, will also be present at appropriate events such as Earth Day.

TMWA Water Leadership Communications Plan

Overview

The purpose of this plan is to create a more transparent understanding of water resource management in the Truckee Meadows. As a trusted steward of quality water delivery, current perception holds TMWA in a leadership role for broad-scale management of water resources in the region. Though this perception has served TMWA well, the Water Leadership Communications Plan seeks to expand TMWA’s role, and take on misinformation in the community by positioning it as the architect of needed collaboration, education and stewardship that will benefit the knowledge base of the community-at-large.

Positioning: Leadership and Smart About Water

The plan introduces a **Smart About Water (SAW)** position platform and addresses key issues identified in public-perception research projects conducted in the fall of 2016. Accordingly, the long-term goal of this strategic communication plan is to establish high levels of regional water-management knowledge among civic, political and public stakeholders. The outcome will effectively define TMWA’s role as a quality water service provider while educating the community about how broader water-use decisions are made in the region. At present, TMWA holds the url: smartaboutwater.com.

<p><u>Target Audience 1</u> Government stakeholders (Elected city, county and state officials, relevant government staff, civic opinion leaders.)</p>	<p><u>Target Audience 2</u> Community-based organizations (Neighborhood Advisory Boards, civic groups, industry/business groups, environmental groups)</p>	<p><u>Target Audience 3</u> Customers & Community (Residents, businesses)</p>
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Objective for Year 1— 2017

Nurture Collaborative Relationships, Acknowledge Water Management Perceptions

Audience 1/ Government stakeholders – Strategic Goal and Tactics

Develop messaging on growth and development and build consensus with city, county, the community and state partners – using education tactics on the role each plays on the topic:

- Immediate: Gain better understanding from TMWA Board/exec team how to build collaboration to explain growth and respective roles/responsibilities each has
- Immediate/Ongoing: Begin 1x1 meetings with political, civic and opinion leaders to highlight SAW survey findings and how to work together to inform customers and community
- Fall: State of the Water media/public event.

Audience 2/ Community-based Organizations – Strategic Goal and Tactics

Develop an engaging outreach program positioning TMWA's (and the community's) farseeing leadership and expertise in managing and maintaining the region's water supply. Tactics include

- Immediate-Ongoing: NAB and CAB Smart About Water presentations, focusing on historic underpinnings, TROA and TMWA's role in growth and water supply. Demonstrate diligent, proactive TMWA infrastructure improvements
- Immediate-Find or create panel discussions to which TMWA leadership can contribute with like-minded peer organizations (cities, county, regional planning, etc.)
- Immediate-Ongoing: Develop presentation deck and coordinate presentations to civic organizations (Rotary, EDAWN, Chamber, Soroptimists, WIN, etc.) focusing on TROA education/significance and all pieces of the water planning puzzle: TROA, Donner Lake, North Valley Project, Mt. Rose Fan projects, ASR, Conjunctive Use Projects. (We've been working towards this day for a long time.)

Audience 3/ Customers & Community – Strategic Goal and Tactics

Combine TMWA's traditional summer campaign--paid, owned and earned channels -- with new leadership messaging, focusing on smart water use for first year (and out of the political domain) and lightly introducing SAW and leadership messages. Tactics include:

- Immediate: Develop proactive, summer water-season paid advertising campaign introducing Smart About Water messaging (see separate document).
- Immediate: Integrate TMWA Owned Channels (Online/Social/Email): Develop strategic direction to more dynamically integrate TMWA's owned channels into plan. Tactics include sharing supporting collateral to e-newsletter list about state of the water graphic (see bullet below), blog and/or news update. Through more direct calls to action, promote sign ups to social media channels and website in order to build audience engagement and begin to develop core group of TMWA social evangelists and influencers
- Immediate: Online/Social – Dynamic graphics that illustrate state of the water supply, and other campaign-aligned support collateral
- Immediate: Online/Social: Share information to e-newsletter list about state of the water graphic, blog and/or news update. Promote sign ups to social media channels and website.
- Present day - 24 months: Develop PR campaign targeting regional media (launch in second year)
- Spotlight the SAC's (standing advisory committee) role (ensuring a customer-driven perspective stays involved in the way decisions are made)
- Based on feedback from summer campaign, begin integrating the Smart About Water messaging and positioning into brand platform.

Objectives for Year 2—3

Spring/Summer 2018 moves into further integration of collaborative principles toward more interactive partnerships that align community messages and campaigns across a broader network of institutions (cities, county) and stakeholder groups (civic organizations). With a platform that mutually acknowledges and reinforces facts regarding water resource management, integrative, multi-agency approaches to addressing regional water concerns become more formalized. By year 3 the public has received consistent information from multiple channels across various stakeholder groups-- and misinformation regarding factors that impact water resource management in the region is effectively dismantled.

EXECUTIVE SUMMARY OF RESEARCH

SUBMITTED ON JANUARY 4, 2017

PRODUCED BY



OBJECTIVE

The overall intent of this research is to establish baselines of public awareness and confidence levels surrounding sustainability of the long-term water supply in the Truckee Meadows. In doing so, other objectives also include identification of primary influencers and activities that shape public perceptions and create a collective understanding the community has about water in the region.

The outcome of the findings is to get a prioritization of key community concerns regarding water management and stewardship in the Truckee Meadows. With community concerns prioritized, public dialogue about water in the region can become more meaningful and relevant to residents, which helps protect future engagement levels.

METHODOLOGY

Surveys were distributed between Oct. 26 – Nov. 11, 2016 by public link via the Truckee Meadows Water Authority and OneTruckeeRiver. Channels included email and social media.

Statistical Confidence: Out of a total 1,844 responses; 1,815 were from TMWA-oriented distributions and 29 were from OneTruckeeRiver distributions. A sample of 1,844 is solidly representative of the Truckee Meadows population of 400,000+; with a 95% confidence level and a 3% +/- confidence interval. In other words, leadership can be confident that decisions made based upon the research results are representative of the whole of the Truckee Meadows area.

EXECUTIVE SUMMARY

Basic Needs, Complex Systems

In developed countries, delivery of high-quality, safe drinking water is considered a primary municipal function. The expertise of the Truckee Meadows Water Authority to provide dependable, clean water is broadly acknowledged by the public and established— 90% believe TMWA is succeeding in providing an uninterrupted supply of healthy drinking water. (InfoSearch International, 2013-2016).

Yet perceptions about the ability of current water management plans, policies and agreements to chart a solid future for the region hold less confidence. For survey questions that addressed these topics, uncertainty in the future is demonstrated in three ways: 1) ratings with lower agreement levels, 2) more stating they 'do not know' and 3) a broader scattering of ratings across the respective response scales. Specifically, this is demonstrated by the following specific results:

- The ability of water management policies to *secure a vibrant future* had the lowest agreement level (47%) and 15% opted to select 'do not know'. (Agreement level = sum of Strongly Agree and Agree.)
- The Truckee River Operating Agreement (TROA) *effectively safeguards the community's water future* had slightly more agreement (52%), yet 22% 'do not know' enough about it to answer.
- Forty percent of respondents have some degree of skepticism that the region's water plans are *based on reliable facts and available knowledge*, and 14% 'do not know' enough to answer.
- In these topics of operational governance, limited central tendency exists in how questions were rated, demonstrating limited community consensus for each topic.

To address these points, advantages exist to increase public awareness and education for two reasons:

- 1- Conceptually, awareness levels are already considerable. Agreement in each of the operational governance questions is at 47% or higher. That said, how each are specifically structured to help secure the future of the resource is a disconnect to bridge.
- 2- Informationally, TMWA is *the* favored source of facts for the community on the topic of water in the region: 33% of respondents prefer getting news directly from TMWA newsletters/inserts and another 10% would rather rely on TMWA staff or management directly. Local news reports (25%) and conservation and environmental leaders (15%) follow in preference.

With a credible and trusted foundation already established, TMWA-sourced public education campaigns could greatly reduce the 'Do Not Know' responses and potentially increase agreement levels in the process. With outreach, the bulleted findings above represent key areas of public perception that will be insightful benchmarks for the future.

Controls Against the Unknown

The clearest message delivered from all questions was that the county and cities should *make water capacity and supply a high priority factor for growth*. Respondents were extremely unified in how they answered this question: 94% agreed with an average of 6.6 on a 7-point scale. When it comes to water resources needed for growth, residents have a solid opinion even though gaps exist in understanding how water policies or plans may apply to the topic.

In open-ended questions, themes of controlling development and growth carry over as priority topics. In the minds of most respondents, it is meaningless to talk about the future of water in this region without also addressing development and growth.

Conclusion

Conservation and growth have intertwined futures in the perception of the public. When people witness new growth occurring in tangent with conservation messaging, it creates dissonance towards the long-term viability of both.

The impact of growth on the water supply is currently based on anecdotal understandings as there is no entity directly addressing the topic. Not having a trusted source to explain how development and shifting water supplies are balanced opens the door to skepticism about who realistically will benefit from conservation.

If left unaddressed, perceptions that conserved water serves to make additional growth possible may become 'fact' based on opinion only. The long-term consequence of this scenario for TMWA may be reduced participation in future conversation efforts and erosion of credibility that is currently very high.

The full report further outlines the path of public knowledge formation that currently exists based on research insight, as well as the findings that informed this summary. Recommendations are also presented to address distortions revealed in the research that are impacting public perception.

POTENTIAL COMMUNITY ENGAGEMENT APPLICATIONS

Building Blocks of Public Perception

The findings in this report suggest the following path of correlations currently influence public awareness:

- 1) As a municipally-owned resource, residents tend to be protective about water use in the region.
- 2) Residents are pro-active to ensure water is not wasted in their homes.
- 3) Residents expect corresponding levels of diligence from local business operations.
- 4) Residents believe that new development should be limited due to uncertainty in the supply year over year.
- 5) Regulatory or governmental management to address growth in context of the water supply is not understood by residents and is perceived as lax or non-existent.
- 6) Guidance and controls provided by plans, policies or the Truckee River Operating Agreement are not understood by residents in content or application.

Points #1 and #2 represent high levels of awareness that benefit the collective community. The public owns their impact on water resources, resulting in high participation in conservation. This has high benefit to TMWA.

Concerns on points #3, #4 and #5 represent a lack of control (which may be due to a lack of information) that residents find unnerving. How elements of point #6 may secure the future of water is not understood.



STAFF REPORT

TO: Board of Directors
FROM: Mark Foree, General Manager
DATE: May 8, 2017
SUBJECT: General Manager's Report

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

Also, included in your agenda packet are press clippings from April 13, 2017 through May 10, 2017.



STAFF REPORT

TO: Board of Directors
THRU: Mark Foree, General Manager
FROM: Scott Estes, Director of Engineering
BY: Bill Hauck, Senior Hydrologist
DATE: May 8, 2017
SUBJECT: Operations Report

Summary

- The streamflow runoff season is well under way
- Lake Tahoe will fill to capacity by the end of June
- It is already only a little more than a foot from being full (6227.95')
- All other storage reservoirs on the Truckee River system will fill in 2017
- Truckee River flows are significantly above normal
- Normal Truckee River flows are very likely over the course of the next 2 to 3 years
- Hydro revenue will be approximately \$109,261 for April 2017

(A) Water Supply

- **Snowpack** - This has been an amazing water year for the region. The official 2017 season-ending (April 1) snowpack for the Lake Tahoe basin was 205% of normal. The Mt. Rose snow survey site also set a new all-time April 1 record in terms of water content in the snow. And while there is still a significant amount of snow in the upper elevations of the watershed (>200% normal), quite a bit has already melted off over the last several weeks due to springtime temperatures and rainfall events.
- **River Flows** - Truckee River flows at the CA/NV state line were approximately 5,600 cubic feet per second (CFS) as of this morning. Flows are exceptionally high right now due to springtime snowmelt runoff and the most recent rainfall event. River flows are projected to remain very high over the next couple of months or so before finally leveling off in early August. Streamflow runoff projections are showing 300% of normal for both Lake Tahoe and the Truckee River at Farad through July. If these runoff projections are anywhere close to accurate, Water Year (WY) 2017 will end up surpassing WY 1983 in terms of shear runoff volume crossing the CA/NV state line.
- **Reservoir Storage** - The elevation of Lake Tahoe is currently 6227.95 feet (4.95' above the natural rim elevation of 6223.00 feet). Current reservoir storage is as follows:

Reservoir	Current Storage (Acre-Feet)	% of Capacity (Percent)
Tahoe	603,200	81%
Donner	7,041	74%
Independence	15,989	91%
Prosser	10,102	34%
Stampede	185,611	82%

In addition to Donner and Independence lakes, TMWA has approximately 10,100 acre-feet of water stored between Boca and Stampede Reservoirs under the terms of TROA. TMWA's total back-up reservoir storage between Donner and Independence lakes and TROA is approximately 33,000 acre-feet as of this morning.

- **Outlook** - The 2017 Water Year will go down as one of the biggest ever in terms of both total precipitation and runoff. All reservoirs on the Truckee River system are going to fill this year. This occurred last in 2006. This will also end up being the single largest recovery year in terms of gains in reservoir storage at Lake Tahoe in recorded history. The latest streamflow runoff projections for Tahoe and the Truckee River are still significantly above average (+-300% of normal) through July. The 2017 Water Year has by any measure officially ended the drought of 2012-2016.

(B) Water Production

Demand - Customer demand has been climbing aggressively with the onset of springtime weather, and averaged 65 million gallons per day last week. The Glendale water treatment plant was brought on-line April 25 along with a handful of production wells to help maintain system pressures due to increasing demand. But until last week almost 100% of TMWA's customer demand was still being met with surface water from the Chalk Bluff and Glendale water treatment plants.

(C) Hydro Production

Generation - Average Truckee River flow at Farad (CA/NV state line) for the month of April was approximately 4,600 cubic feet per second (CFS). TMWA's Verdi power plant was on-line the entire month. The Fleish and Washoe plants remained off-line for scheduled maintenance during the entire month as completion of scheduled repairs was delayed due to the significant flooding events and unprecedented rainfall over the first three months of the year.

Hydro Plant	Days On-Line	Generation (Megawatt hours)	Revenue (Dollars)	Revenue (Dollars/Day)
Fleish	0	0	0	0
Verdi	31	1,537	\$109,261	\$3,642
Washoe	0	0	0	0
Totals	31	1,537	\$109,261	\$3,642



STAFF REPORT

TO: Board of Directors
THRU: Mark Foree, General Manager
FROM: Marci Westlake, Manager Customer Service
DATE: May17, 2017
SUBJECT: April Customer Service Report

The following is a summary of Customer Service activity for April 2017.

Ombudsman

There were four calls in April. One person called and wanted the Lake Ditch phone number, another called to see if we donated to outside agencies and a customer that was asking for a leak adjustment that was given through the call center. The fourth call was a hang up.

Communications

Customer outreach in April included:

- Neece Schlesener and Lauren Kunin had a spring irrigation workshop at our Capital office and 16 people attended.
- Lauren Kunin had a Landscape Planning & Design workshop at our Capital office and 23 people attended.
- Kara Steeland was at Turning Point Washoe School for water supply, treatment and conservation. 6 students were in attendance.
- Lauren Kunin, Katherine Perkins and Laine Christman were at JCPenney Dist. Center for Earth Day.
- John Enloe was at UNR for the OLLI Book Club for Future supply, water rights, water quality and rates. 30 people attended.
- Bill Hauck was at the Black Bear Diner for the Sparks Centennial Sunrise Rotary discussing water supply. 30 people attended.
- Lauren Kunin and Laine Christman were at Renown for Earth day.
- Robert Charpentier, Neece Schlesener, Lauren Kunin and Laine Christman were at Idlewild park for Earth Day with over 100 in attendance.
- Lauren Kunin and Katherine Perkins were at IGT for Earth Day.

Conservation (January 1 – December 31)

- 87 Water Watcher Contacts
- 420 Water Usage Reviews

Customer Calls – April

- 6,717 phone calls handled
- Average handling time – 4 minutes, 41 seconds per call
- Average speed of answer – 23 seconds per call

Billing – April

- 125,199 bills issued
- 113 (<.1%) corrected bills
- 14,198 customers (11.0%) have signed up for paperless billing to date.

Service Orders –April (% is rounded)

- 6,385 service orders taken
- 3302 (52%) move-ins / move-outs
- 332 (5%) cut-out-for-non-payment and cut-in after receiving payments, including deposits and checks for tamper
- 729 (11%) zero consumption meter checks
- 258 (4%) re-read meters
- 485 (7%) new meter sets and meter/register/ERT exchanges and equipment checks
- 359 (5%) problems / emergencies, including cut-out for customer repairs, dirty water, no water, leaks, pressure complaints, safety issues, installing water meter blankets, etc.
- 92 (1%) high-bill complaints / audit and water usage review requests
- 828 (12%) various other service orders

Remittance – April

- 26,515 mailed-in payments
- 23,608 electronic payments
- 23,301 payments via RapidPay (EFT)
- 14,710 one-time bank account payments
- 4,949 credit card payments
- 3,095 store payments
- 1,716 payments via drop box or at front desk

Collections –April

- 12,981 accounts received a late charge
- Mailed 6,512 10-day delinquent notices, 5.2% of accounts
- Mailed 846 48-hour delinquent notices, 0.6% of accounts
- 114 accounts eligible for disconnect
- 101 accounts actually disconnected (including accounts that had been disconnected-for-non-payment that presented NSF checks for their reconnection)
- 0.18% write-off to revenue

Meter Statistics – Fiscal Year to February 28

- 2 meter retrofits completed
- 1,146 meter exchanges completed
- 1080 new business meter sets completed
- 122,494 meters currently installed



STAFF REPORT

TO: Chairman and Board Members
THRU: Mark Foree, General Manager
FROM: John Zimmerman, Manager, Water Resources
DATE: May 8, 2017
SUBJECT: **Report Water Resources and Annexation Activity**

RULE 7

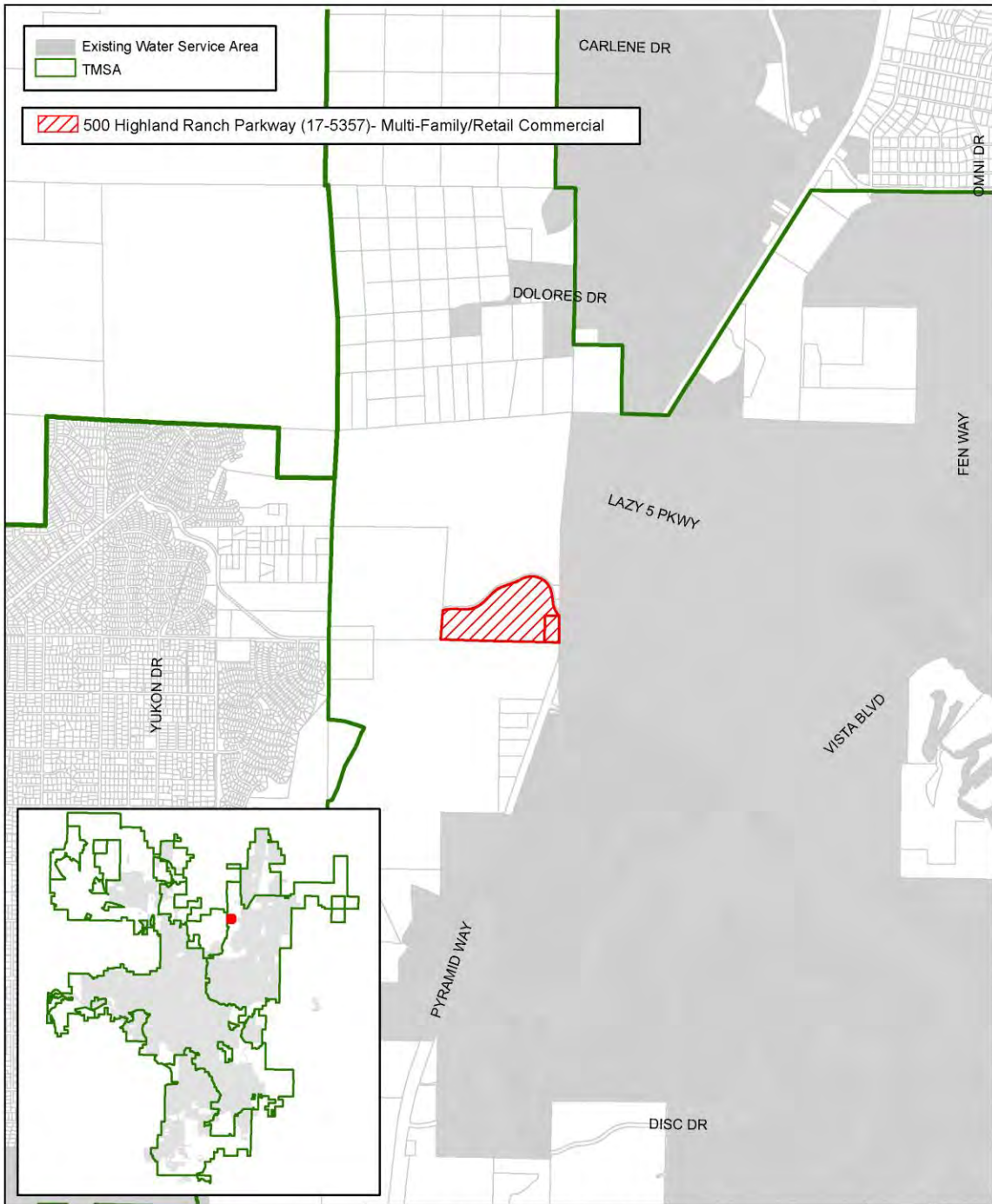
Rule 7 water resource purchases and will-serve commitment sales against purchased water resources through this reporting period:

Beginning Balance		6,017.12 AF
Purchases of water rights	5.84 AF	
Refunds	0.00 AF	
Sales	- 26.52 AF	
Adjustments	0.00 AF	
Ending Balance		5,996.44 AF

Price per acre foot at report date: \$7,500

WATER SERVICE AREA ANNEXATIONS

A 67-acre mixed-use development in Spanish Springs. (See attached map).



TMWA Service Area Annexation
083-011-12 (62.428 Acres)
& 083-011-13 (4.975 Acres)

DATE: 05/08/2017
 MAP BY: AD
 REQUESTED BY: JZ
 SCALE: 1 inch = 3,000 feet





TMWA Board Meeting

Wednesday, May 17, 2017

Press Clippings

April 13, 2017 – May 10, 2017



Mile markers to help in water rescues

By [Colin Lyaren](#) |

Posted: Tue 6:59 PM, Apr 25, 2017 |

Updated: Tue 8:40 PM, Apr 25, 2017



RENO, Nev. (KOLO) -- On Tuesday, One Truckee River (<http://onetruckeeriver.org>) started installing mile markers along river trail [bike](#) paths to help first responders find victims during water rescues.



"They are not going to be hard to find," said Christi Cakiroglu, Executive Director of Keep Truckee Meadows Beautiful. "These mile markers are going to be able to help people evaluate how far they have gone along the pathway."

"It is just a basic system for keeping track of where you are on the river," said Councilman Dave Bobzien with the City of Reno.

Between Reno and Sparks, there will soon be about 120 markers, one every tenth of a mile. They'll be useful for joggers and cyclists. But their true purpose is something far more important.

"This program can absolutely make a difference between life and death," said Chief Dave Cochran with the Reno Fire Department.

"Then we would be able to look at our map and know exactly where that is so that we can direct resources to that location," said Kevin Joell, Team Leader with the Reno Fire Department Water Entry Team.

Noting the time, flows and entry point firefighters can determine a victim's location.

"It is going to give us the precision, literally within a 10th of a mile to know exactly where that person is along the river," said Cochran.

Considering the anticipated runoff the markers couldn't come soon enough.

"Who would have known when this was being planned that this was going to be the runoff of the century," said Joell.

Currently the markers are only being installed in the Reno/Sparks area, but they will eventually line the path from Lake Tahoe to Pyramid Lake.

Washoe County Announcement

Washoe County Board of Commissioners request the withdrawal of regional planning bill

Commissioners committed to collaborative process for regional plan update.

Media Release
For Immediate Release
www.washoecounty.us

Contact: Amy Ventetuolo
aventetuolo@washoecounty.us
775.328.2070

Reno, Nevada. April 11, 2017. The Board of Commissioners requested the withdrawal of Washoe County's regional planning bill, Assembly Bill 39, which addressed the structure of the Governing Board for the Truckee Meadows Regional Planning Agency.

In August of 2016, Washoe County submitted the bill draft request asking for legislative changes in AB 39 as a way to update regional planning, noting that the Truckee Meadows and its planning needs have changed enormously in the past 30 years; specifically Washoe County was seeking fair and equitable representation in regional planning.

Commissioner Vaughn Hartung said, "I am encouraged with the recent discussions and looking forward to a resolution that is approved by all our regional partners, establishing the roles and responsibilities of the County Manager and City Managers in support of the Director of Truckee Meadows Regional Planning and the operations of the regional planning agency. I know Washoe County is committed to a collaborative process on the Truckee Meadows Regional Plan update, and we are looking forward to a consensus process that fairly and equitably considers the priorities, concerns, and needs of the entire region."

Hartung added that there are other priorities the County, and its regional partners need to focus on that are beyond the purview of the Truckee Meadows Regional Plan including: the homeless shelter, consolidated dispatch, forensic laboratory services, the health of our downtowns, the Truckee River Corridor, and the Washoe County Lands Bill.

Commissioner Chair Bob Lucey agreed and said, "For these reasons, Washoe County is committed to moving beyond the attempted changes with AB 39 and addressing greater issues facing the region at this time."

Nevada public workers paid too much? Details add context

Mark Robison, Reno Gazette-Journal Published 9:58 a.m. PT April 12, 2017 | Updated 21 hours ago



(Photo: Provided by TMFPD)

158CONNECTTWEETLINKEDIN 11COMMENTEMAILMORE

If you think public employees in Northern Nevada make too much money, then Nevada Policy Research Institute put out [a recent press release](#) that may make you seethe.

Its headline says, “Two UNR professors earned over \$1,000,000 apiece last year, new data shows.”

Those raw figures can be eye-catching but, in and of themselves, they can be misleading. More context is needed to understand the numbers posted by NPRI through its [Transparent Nevada](#) website listing the pay and benefits of public employees.

For example, if that press release headline made you think taxpayers footed the \$1 million salaries for those two UNR professors, you’d be wrong. Rather, they are surgical specialists whose pay comes from patients at their clinics.

“That’s news to me,” said NPRI’s director of transparency research Robert Fellner. “There’s no note [from the university] saying that’s coming from patients.”

By Nevada state law, salary and benefit information of public employees is considered public record, meaning the public can examine it. Fellner said the primary reason NPRI releases the raw data is that taxpayers have a fundamental right to know how their money is being spent.

“A big reason for the [press] release and [transparency] site in general is that taxpayers deserve to know the full cost of employee salaries because, with specialty pay and overtime pay, it is often far more than the posted salary,” Fellner said of salary schedules posted for jobs on government websites.

He added that background context is important but “it’s not feasible [for NPRI] to look into every situation.” He encourages people who see these high amounts to question why.

So that’s what I did. I looked into many of the names highlighted on the NPRI press release to learn why they received such seemingly high compensation.

UNR



Kayvan Khiabani, a reconstructive surgery specialist, was the highest paid public employee in Nevada in 2016, but only a tiny fraction of his salary came from state funds. (Photo: Provided)

The University of Nevada, Reno had the two public employees with the highest salaries in the state: [Kayvan Khiabani](#), who specializes in hand and microvascular reconstructive surgery, and [Michael Scheidler](#), who is a pediatric surgeon.

“Their regular paid salary is mostly generated by their clinical productivity – by the patients who go to see them,” said Anne McMillin, spokeswoman for the University of Nevada, Reno School of Medicine.

Scheidler's "regular pay" comes 100 percent from his clinic work while 98.38 percent of Khiabani's comes from his, with the additional 1.62 percent from the state of Nevada to cover his administrative and teaching responsibilities, McMillin said.

In other words, although they are considered public employees, almost none of their pay comes directly from public funds.

The two doctors will officially transfer to UNLV starting July 1 because of the university system's new medical school campus opening in Las Vegas.

Sheriff's office

Two Washoe County Sheriff's Office employees ranked in the top 10 for overtime payouts received by Northern Nevada government workers.

One is an unnamed deputy sheriff, who had \$86,150 in OT. "Unnamed" means a person works undercover. The other was Sgt. Frank Eubanks, with \$68,316 in OT.

"The Washoe County Sheriff's Office believes the overtime expense is appropriate," spokesman Bob Harmon said. "Although we make efforts to reduce overtime when possible, we have an obligation to the public to make sure that all our employees are properly trained and available to respond as needed to the unpredictable and unrestrained needs of public safety."

He said all sheriff's office overtime must be approved by a supervisor with an explanation.

"In the specific case you referred to in your email, Sergeant Eubanks, the sergeant's primary duty assignment is as a Detention Bureau supervisor," Harmon said. "At this time we are currently short sergeants in the Detention Facility – remember, when we promote to sergeant, we reduce the deputy workforce – and overtime is required just to fulfill minimum staffing requirements.

"In addition, Sgt. Eubanks is patrol certified and has been called in to fill patrol supervisor shifts as needed. He is also a certified instructor in areas such as defensive tactics, weaponless defense and situational awareness training, an overtime expense that helps to ensure that annual mandatory training requirements are met by this agency.

"Sgt. Eubanks is also a key member of our SWAT team, an additional duty that requires additional training and leads to extra callouts."

School district

In addition to Traci Davis and her [well-reported contract](#) as superintendent for Washoe County School District, NPRI's list of top 10 Northern Nevada salaries in 2016 for non-university and non-hospital public workers includes elementary school teacher Chad Hicks, at \$292,359.

Spokeswoman Victoria Campbell said Hicks' larger than usual compensation reflected "a contractual payout when he transitioned into a teaching job" from being an area superintendent with the district.

Fire district

No firefighters from Reno or Sparks landed on the top overtime list for Northern Nevada government workers, but two did from Truckee Meadows Fire Protection District: Kyle Endres with \$73,616 in OT and Scott Stephenson with \$68,986.

Firefighters are often paid with federal or state money when they are called to assist on wildfires. Erin Holland of TMFPD said this was the case for about 25 percent of the overtime worked by Endres and Stephenson. An additional 11 to 13 percent was for mandatory overtime by covering for unfilled vacancies, injured or sick firefighters, or those out on vacation.

"All shifts must be filled 24/7," she said. "The Board of Fire Commissioners recently approved three additional positions to reduce the overtime burden on the crews."

Regarding the other two-thirds of Endres' and Stephenson's overtime, Holland said that consisted of overtime working local fires. "The 2016 wildland season was exceptional, with a number of fires that ran for multiple operational periods, such as the Hawken Fire, the Virginia Mountain Complex Fire, the Jackpot Fire, the Little Valley Fire, etc. with over 60,000 acres of wildland burned last year," she said.

TMWA

Four workers at Truckee Meadows Water Authority appear on the list for the most overtime, three with the title of "water plant operator III."

"We had staffing changes with the departure of Journeyman Water Plant Operators, which led to the need to backfill the positions with three Water Plant Operator Apprentices," said TMWA's director of operations and water quality, Andy Gebhardt. "It is

a two-year apprenticeship, and two of the apprentices will finish their apprenticeships later this year, which will help to reduce the overtime. There is a fine line between the cost of hiring more operators vs. paying overtime, and once we are full staffed again, we will review this to determine if the staffing levels are appropriate.”

I asked how he would explain seven TMWA employees with more than \$60,000 last year in overtime to a customer who called TMWA’s customer service line.

“TMWA employs a highly skilled team who ensure the treatment, delivery and availability of high-quality drinking water around the clock for more than 385,000 residents of the Truckee Meadows,” he said. “Our water treatment plants need to be operated 24/7, so we have to staff appropriately. In addition, we don’t have any control over water leaks and when they occur. They often occur after hours, so employees need to work overtime to make the necessary repairs to ensure that our customers have as little disruption of water service as possible.”

Washoe County

The county’s chief medical examiner, Ellen Clark, received \$340,151 in compensation in 2016, and deputy chief medical examiner Laura Knight received \$311,203. (Clark retired recently.)

I checked to see how these compared with medical examiner and coroner positions in Clark County, and they were a lot higher. Washoe County spokesman Scott Oxarart explained that is because their duties and the areas they oversee are more extensive.

“The Washoe County medical examiner serves the residents of Washoe County and 18 additional counties in Nevada and California,” Oxarart said by email. “The chief medical examiner encompasses the duties of medical examiner and coroner, which includes administration and management of the office, strategic planning, mass fatality preparedness, and other duties, in addition to the medical examiner caseload of autopsies and death certificate completion. For Clark County specifically, it has two positions to fill the roles mentioned above. Washoe County has one. Thus to get an accurate comparison, you could add the coroner and ME salaries in Las Vegas to compare to Washoe’s chief medical examiner and coroner, in terms of service provided.”

He went on to say that medical examiners are hard to find because of a nationwide shortage of forensic pathologists.

“Salaries are one tool that allows the WCRMEO to remain competitive in recruitments and obtain the best professionals in a reasonable timeframe, for this important area that

is critical to keeping our region safe,” Oxarart said. “A recent WCRMEO forensic pathologist recruitment took nearly a year, for example.”

Top 10 compensation packages

The following are the largest Northern Nevada compensation packages excluding the university and hospital systems in 2016, based on public data published by Nevada Policy Research Institute at TransparentNevada.com. The Reno city manager total includes a severance package after he left his job before the end of his contract.

1. Reno city manager Andrew Clinger: [\\$430,625](#).
2. Reno-Tahoe Airport Authority President/CEO Marily Mora: [\\$391,918](#).
3. Washoe County School District superintendent Traci Davis: [\\$360,057](#).
4. Reno fire battalion chief Stephen Leighton: [\\$352,857](#).
5. Washoe County chief medical examiner Ellen Clark: [\\$340,151](#).
6. Washoe County manager John Slaughter: [\\$325,520](#).
7. Regional Transportation Commission of Washoe County executive director Lee Gibson: [\\$322,510](#).
8. Washoe County deputy chief medical examiner Laura Knight: [\\$311,203](#).
9. Washoe County School District principal Chad Hicks: [\\$292,359](#).
10. Carson City fire captain Matthew Donnelly: [\\$288,970](#)

Top 10 overtime

The highest overtime payouts received by Northern Nevada government workers in 2016, according to public data posted by TransparentNevada.com, went to:

1. Carson City Fire captain Matthew Donnelly: [\\$110,217](#).
2. An unnamed Washoe County deputy sheriff: [\\$86,150](#).
3. Truckee Meadows Water Authority water plant operator III Jeremy Keele: [\\$78,655](#).
4. Truckee Meadows-Sierra Fire Protection firefighter Kyle Endres: [\\$73,616](#).
5. Truckee Meadows-Sierra Fire Protection fire captain Scott Stephenson: [\\$68,986](#).
6. Washoe County sergeant Frank Eubanks: [\\$68,316](#).
7. Truckee Meadows Water Authority water plant operator III Jimmie Winters: [\\$66,518](#).
8. Carson City driver operator Raffi Attashian: [\\$66,026](#).
9. Truckee Meadows Water Authority foreman Tim Flanagan: [\\$64,830](#).
10. Truckee Meadows Water Authority water plant operator III Michael Nevarez: [\\$64,705](#).

Update: This story was updated to include comment from TMWA and to correct attribution for TMWA.



California's Droughts and Deluges Traced to Atmospheric Waves The wavelike patterns are caused by the Earth's rotation, and can have strong effects on local weather

• By [John Fialka](#), [ClimateWire](#) on April 13, 2017

Stumble Upon



Credit: David McNew Getty Images

BOULDER, Colo. — Researchers have traced the severe winter droughts that struck California from 2013 to 2015 and this year's unusually wet winter that caused widespread flooding in the state to the same phenomenon: wavelike patterns of winds in the upper atmosphere that circle the globe.

Two scientists here at the National Center for Atmospheric Research (NCAR) found that a distinctive pattern formed by the wave blocked incoming Pacific storms from coming onshore in the winters of 2013 and 2014, keeping the state unusually dry.

This winter, the same pattern emerged, called "wavenumber-5," but it was in a slightly different position that allowed the jet stream to push drenching rainstorms into the state, causing flooding and stressing dams.

Haiyan Teng, lead author of the NCAR study, said the wavelike patterns, which consist of five pairs of alternating high- and low-pressure areas, can be associated with the approach of long-lasting extreme weather events.

"As we learn more, this may eventually open a new window into long-term predictability," Teng said.

NCAR, which is financed in part by the National Science Foundation, has spent several years searching for ways to extend the predicability of floods, droughts, heat waves and other extreme weather events from weeks to months as a way to give weather-sensitive sectors such as agriculture more time to protect themselves against costly losses.

The idea that atmospheric wave patterns might give scientists a better understanding of approaching seasons was first explored by a Swedish-American meteorologist, Carl-Gustaf Arvid Rossby, in 1939. The patterns he identified using early versions of electronic computers are now called Rossby waves. They are caused by the Earth's rotation, but they can have peculiarly strong impacts on local weather. Some scientists believe that as they meander around the world, their activities can be better weather predictors than variations in sea surface temperatures.

Rossby waves are part of an expensive atmospheric puzzle that has yet to be fully understood. Antonio Busalacchi, president of the University Corporation for Atmospheric Research, which runs NCAR, recently warned Congress that budget cuts contemplated by the Trump administration could "derail" research needed to better predict extreme weather.

He noted recently that last winter's California flooding and other weather-related disasters cost the United States a total of \$15 billion in direct damage. "Strategic and necessary collaborations among government agencies, academia and the private sector are resulting in landmark progress in short- and long-term forecasts," he said.

Grant Branstator, another NCAR researcher, noted that sometimes Rossby waves form the classic pattern seen off the coast of California and sometimes they don't, "indicating that other forces requiring study are also at play." One theory is that heat from tropical rain warms parts of the Earth's upper atmosphere in ways that favor the formation of the classic "wavenumber-5" pattern that has alternately drenched and dried parts of California.

What intrigues scientists is that when it does emerge, the pattern comes about 15 to 20 days before major summertime heat waves hit the United States.

Reprinted from Climatewire with permission from E&E News. E&E provides daily coverage of essential energy and environmental news at www.eenews.net.

TMWA Rates Expected To Increase In May

APRIL 12, 2017 BY [THISISRENO](#) [LEAVE A COMMENT](#)

By Austin Wright



The Truckee Meadows Water Authority is expected to raise water rates by 3 percent in May to make up for a \$9.5 million revenue loss caused in part by water conservation efforts in 2016. Operation cost increases also contributed to the shortfall.

Total water sales revenue was only \$87.5 million in 2016, which is a 10 percent drop from the \$97 million of revenue seen in the previous fiscal year.

The average residential customer's water bill is expected to increase by \$1.42 per month starting May 2017 with an additional monthly increase of \$1.47 in May 2018.

The TMWA board will vote on the increase Wednesday, April 19.

Raising water rates, which has been deemed critical by TMWA, will assist in recovering last year's revenue loss and will ensure continued, favorable credit ratings, preserved cash reserves, and strengthened financial metrics for the organization.

May's rate increase is the first of several incremental raises which are projected to fully make up for the revenue loss while preserving TMWA cash reserves. Rates will increase another 3 percent in the fiscal year of 2018, and then possibly up to an additional 2.5 percent for each of the following three years.

After the first two 3-percent rate adjustments, the rate increases will be subject to annual review to determine if they can either be lowered or deferred.

In total, the rate increase could be as high as 13.5 percent over five years if annual reviews find the rate increases appropriate. The TMWA board will have to hear and approve each rate increase.

Water rates were last raised by 3.4 percent in February, 2014.

The Wednesday hearing will start at 10 a.m. at the Sparks City Hall.

TMWA Rates to Increase in May by 3 Percent

Nevada Assemblyman Holding Healthcare Town Hall

Posted on April 13, 2017

Assemblyman Mike Sprinkle will be leading a town hall discussion on health care with other legislators from Washoe County Saturday at 10 a.m. at the University of Nevada's Davidson Math and Science Center. The event is hosted by the Children's Advocacy Alliance and is open to the public, its aimed at starting a dialogue about ensuring quality and affordable access to health care for all Nevadans regardless of what happens on at the the federal level. Participants include Senator Julia Ratti, Assemblywoman Amber Joiner, Majority Leader Teresa Benitez-Thompson, and Assemblyman Skip Daly

Filed Under: [KOH Local News](#)

Water Fluoridation Bill Receives Strong Opposition

By [MICHELLE BILLMAN](#) · 16 HOURS AGO

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A bill that would mandate fluoridating the water in Truckee Meadows is receiving heavy opposition. Our News Director Michelle Billman spoke with Bob Conrad of [ThisisReno](#) to learn more.

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2:07

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KUNR: Who is proposing this bill and what reasons have they given?

Bob Conrad: [The bill](#) is sponsored by Assembly members Amber Joiner of Reno and Michael Sprinkle of Sparks, and the reason that was given is because many municipalities, some say most, have fluoride in public water supplies.

KUNR: And what are the benefits they tout?

BC: Some of the experts say it's a relatively inexpensive way to basically improve public health via helping folks with issues with their teeth who aren't getting enough of the right chemicals or fluoride or whatever with proper dental practices. So some people say this is an effective way to prevent tooth decay, essentially.

KUNR: It sounds like a fairly simple idea, but there's actually be a lot of vocal opposition. Who is not in favor and why?

BC: I would divide the opposition into two camps. There's a very vocal group that's opposed to fluoridation on the basis that they believe it's not healthy, they believe it's poisoning the water supply, they believe government shouldn't be involved in this kind of intervention on a public health level, even though experts overwhelmingly agree that fluoridation is not harmful—that it does enhance public health relatively inexpensively.

The other group that's opposed to this is the policymakers, and they have two primary complaints as I see it. In 2002, there was a countywide vote, basically, against fluoridation. 58% of the population voted against it, so the Truckee Meadows Water Authority board cited that as one reason for why they're going to oppose this bill. They consider this a circumvention of the will of the voters.

The other reason is potential cost. The TMWA board is saying that this is going to be an approximately \$70 million hit to rate payers, and TMWA is already in the process of raising rates, so on top of that, this would be another, what one board member said, huge hit against the ratepayers.

Forecasters say this year is wettest in Sierra - - breaking a 34-year-old record

[Marcella Corona](#), Reno Gazette-Journal Published 3:25 p.m. PT April 13, 2017 | Updated 14 hours ago



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Light filters through storm clouds over a valley area seen from Nevada 341 near Virginia City on April 11, 2017.(Photo: Marcella Corona/RGJ)Buy Photo

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This year is the wettest year so far since the 1982-83 winter, and there's more rain to come Sunday night, according to Reno forecasters.

The previous wettest record was set at 88.5 inches of cumulative liquid perception during the 1982 through 1983 winter, according to meteorologist Evan LaGuardia.

"Right now, we're sitting at 89.7 inches of liquid precipitation," LaGuardia said.

That spike in precipitation comes from the recent waves of heavy rain and melting snow. It has nothing to do with the region's snow pack levels. That's a separate issue, he said.

“The water year begins October 1 and ends September 30, so we still have quite a few months to see an increase in that record,” LaGuardia said. “It will be pretty cool to see how high we go.”

“When you have warmer temperatures above freezing, you’ll see more rain than snow,” LaGuardia said Thursday. “That’s why the snowpack isn’t as high.”

THE FORECAST NOW:

Reno might see a mix of rain and snow showers by Thursday night, according to the National Weather Service.

Breezy winds and snow showers could continue through Thursday evening as the storm moves eastward, forecasters said.

Stronger snow showers with gusty winds of 45 to 55 mph could create near zero visibility in areas in western Nevada. Drivers should be prepared for slower traffic.

Chains or snow tires are required along Mt. Rose Highway toward Incline Village, according to the Nevada Department of Transportation. That includes U.S. 50 south of South Lake Tahoe.

The California Department of Transportation also reported highway closures along Interstate 80 near Donner Summit due to several spin-outs that involved semi-trucks. Traffic was being held along eastbound lanes at Kingvale, Caltrans said in a Twitter post Thursday afternoon.

Meanwhile, vehicles over 9 feet high are prohibited from traveling along Interstate 580 toward Carson City.

High winds could also likely create choppy conditions on Lake Tahoe and Pyramid Lake through Thursday night, forecasters said.

The National Weather Service issued a lake wind advisory through 7 p.m. Thursday for Lake Tahoe. Forecasters reported 15 to 20 mph winds with gusts up to 40 mph.

Waves could reach 1 to 3 feet with the highest waves likely in the middle of the lake to the eastern and northern shores.

“Small boats, kayaks and paddle boards will be prone to capsizing and should remain off lake waters until conditions improve,” forecasters said on the National Weather Service.

“Check lake conditions before heading out and be prepared for a sudden increase in winds and wave heights,” forecasters said Thursday. “Consider postponing boating activities on the lake until a day with less wind.”

WHAT TO EXPECT THIS WEEKEND:

Reno will get a small break from all the wet weather Friday and Saturday. Temperatures might even reach into the low 60s during the day on Sunday.

But that doesn't mean it will be sunny. Forecasters expect cloud coverage throughout the day.

Then the next storm wave will likely hit Sunday night into Monday, LaGuardia said.

That means travelers driving through the Sierra passes Easter night could run into some snowy conditions. Commuters should expect to see light snow showers along the passes.

Areas above 6,500 feet could receive a few inches of snow, but that can always change. LaGuardia said it's still too early to know for sure just how much snow will fall over the Sierra Sunday night.

"There's high confidence we'll see active weather through next week with periods of gusty winds, rain and mountain snow," LaGuardia said. "And we'll continue to see increased chances for rain and mountain snow Monday night into Tuesday."

Temperatures were expected to drop into the mid to upper-teens Thursday night. Low temperatures might drop into the 20s in Valley areas. And areas at higher elevations will be even colder, LaGuardia said.

"We're still dealing with these cold temperatures, and there's problems with exposed crop and fruit trees," LaGuardia said. "It can get colder but that can also change."

And those cold temperatures could continue through next week, LaGuardia said. Forecasters expect chances of snow, which means freezing temperatures.

"We are certain there's going to be continuing active weather."

RENO AREA FORECAST:

Thursday: Rain, snow showers; less than half inch daytime snow possible; high 48, low 29

Friday: Mostly sunny; high 53, low 32

Saturday: Mostly sunny; high 61, low 41

Sunday: Mostly cloudy with a chance of nighttime rain; high 61, low 38

TAHOE AREA FORECAST:

Thursday: Snow shower; 1 to 3 inches of snow accumulation possible; high 36, low 17

Friday: Mostly sunny; high 41, low 25

Saturday: Mostly sunny; high 49, low 35

Sunday: Rain and snow likely; high 46, low 31

Source: National Weather Service

Nevada prepares for potential Katrina-style spring flooding

Benjamin Spillman , Reno Gazette-Journal Published 2:20 p.m. PT April 13, 2017 | Updated 52 minutes ago

Sierra snowpack will send nearly 500 billion gallons into swollen Walker and Carson rivers

Nevada Division of Forestry An aerial view of this winter's flooding in Lemmon Valley. An aerial image of flooding in Lemmon Valley in late winter 2017.(Photo: Nevada Division of Forestry)

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Nevada could see weeks of Katrina-style flooding when warm spring and summer sunshine melts the massive snowpack blanketing the Sierra Nevada.



Nevada Governor Brian Sandoval hosts a 2017 Spring Flood Briefing to discuss the potentially devastating flooding when this winter's record snowpack melts into already full lakes and reservoirs. Jason Bean/RGJ

That's according to the Nevada National Guard and other emergency planners and responders who briefed Gov. Brian Sandoval on potential disaster scenarios.

"Typically, Nevada experiences flash flooding," Col. Cory Schulz told Sandoval, referencing hurricane flooding in 2005 that devastated New Orleans and southern Mississippi. "This will be saturation flooding, much like Katrina."

The state has already endured two flood situations that triggered federal disaster declarations in February and March for western and northern parts of the state.

Nearly three months later the Sierra snowpack has grown to record levels in some places and communities in the Carson and Walker river basins are at risk. The melting rate is expected to quicken as the weather warms in May and rivers could be at high levels deep into summer.



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Governor Brian Sandoval, middle, speaks during a briefing on possible spring flooding at the Old Assembly Chambers in the Nevada State Capital Building in Carson City on April 13, 2017. Nevada Department of Public Safety Chief Caleb Cage is seen on the left and Brigadier General William Burks of the Nevada National Guard is seen on the right. JASON BEAN/RGJ, RENO GAZETTE-JOURNAL-USA TODAY NETWORK

Three counties, Churchill, Lyon and Douglas, have declared emergencies in advance of the coming snowmelt and more could join that group, Sandoval said.

“Obviously, we are in the midst of ... one of the three greatest water events in the history of Nevada,” Sandoval said. “We could get a warm rainstorm and it might get down faster than we would like.”



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Governor Brian Sandoval, middle, listens to Brigadier General William Burks of the Nevada National Guard, right, speak during a briefing on possible spring flooding at the Old Assembly Chambers in the Nevada State Capital Building in Carson City on April 13, 2017. (Photo: JASON BEAN/RGJ, RENO GAZETTE-JOURNAL-USA TODAY NETWORK)

The briefing was a chance for National Guard officials to update Sandoval on snowpack, water and dam data they compiled over recent weeks.

It showed points at which the Walker and Carson rivers potentially could swell well beyond flood stage. According to the presentations there is an estimated 208 billion gallons yet to flow down the Walker by July and 239 billion gallons down the Carson. It didn't include an estimate for the Truckee, which is larger than the other two.

Presenters pointed out places where they expected dams, spillways and other infrastructure could be overtopped or damaged.

Cpt. Kandace Gonzales highlighted potential problems in the Walker River Basin, including concerns about the Bridgeport dam and reservoir.

She said during the winter of 1982-83, another historic water year, the guard house siphon at the dam experienced problems and witnesses reported vibrating within the dam.

Gonzales also said extended usage of a spillway from the reservoir could result in a scenario, "just like Oroville," referring to the California dam where spillway erosion prompted evacuation over concerns of an uncontrolled breach.

“The don’t know if (the dam) can handle much more than (1982-83),” Gonzales said.

Downstream areas of concern included Mason Valley and Yerington. One inundation map showed U.S. Highway 95 south of Fallon, 95A in Yerington, Hwys. 208 and 388 in Wellington and Miller Lane could be affected.

The community of Schurz between Weber Dam and Walker Lake could also be subjected to flooding or isolation from neighboring towns.

In the Carson River basin much of the concern was centered around Fallon.

Local and state officials there have already created spillways, berms and culverts to direct water from the Carson River around the town. But the briefing for Sandoval suggested homes near the river could still be subjected to flooding, depending on the rate of the melt.

“We are significantly above the 1983 levels,” said Major Geir Gabrielson of inflows into Lahontan Reservoir.



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Governor Brian Sandoval, middle, speaks during a briefing on possible spring flooding at the Old Assembly Chambers in the Nevada State Capital Building in Carson City on April 13, 2017. Nevada Department of Public Safety Chief Caleb Cage is seen on the Governor's left and Brigadier General William Burks of the Nevada National Guard is seen on the right. (Photo: JASON BEAN/RGJ, RENO GAZETTE-JOURNAL-USA TODAY NETWORK)

The Washoe Valley, where Washoe Lake has gone from being completely dry to holding several feet of water, another 44,000 acre-feet is expected to flow into the area.

If it flows at expected or average rates it would bring the lake within 2.4 feet of Interstate 580, which connects Reno and Carson City.

Presenters also updated Sandoval on the formerly dry Swan and Silver lakes in north Reno.

An estimated 2,100 acre feet of water is yet to flow into an area that has already experienced flooding.

Emergency barriers installed after January flooding are expected to protect the area from future flooding. But warm storms or heavy precipitation could result in more problems.



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Washoe Lake is seen just south of Reno on April 5, 2017. (Photo: JASON BEAN/RGJ, RENO GAZETTE-JOURNAL-USA TODAY NETWORK)

The city of Reno and Washoe County have been working to accommodate dozens of flooded out residents.

Officials from the Department of Natural Resources, Nevada Division of Forestry, Nevada Department of Transportation and the Department of Emergency Management also updated Sandoval on preparations for the deluge.

Reid Kaiser, assistant director of operations for the Nevada Department of Transportation, said the state has already spent more than \$10 million responding to floods and that he anticipates the bill will increase.

[2017 Governor's Spring Flood Briefing__SL Edits](#) by [Ben Spillman](#) on Scribd

Sandoval said the need is evident, especially on mountain roads where the snow is so deep it's getting more difficult for plow drivers to remove it.

"It has just gotten to the point where there is nowhere to throw the snow," Sandoval said. "Anyone who has driven through there, it is a tunnel."

To help divert water in rural areas Jason King, the state engineer, said he's waived permit caps for farmers so they can take water from rivers without worrying they will max out their allowable amounts before irrigation season is over.

"Don't worry about your permit cap, please take the water," King said.

King also said he's working with dam inspectors to visit and inspect dams throughout the state and that all but seven high hazard dams have emergency action plans.

Emergency action plans, also called EAPs, include inundation maps to alert emergency planners to where the water would flow in the event of a breach.

[High hazard Nevada dams lack emergency plans](#)

King said verifying the ability of dams to release water in large quantities now will prevent problems later when the melt peaks.

"If you don't and you overtop ... and have a catastrophic failure you can have a wall of water that is going down the river," King said.

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Read or Share this story: <http://www.rgj.com/story/news/2017/04/13/nevada-prepares-potential-katrina-style-spring-flooding/305158001/>

Water Released From Reservoirs Ahead of Snowmelt

Posted: Apr 14, 2017 4:25 PM PDT Updated: Apr 14, 2017 5:08 PM PDT

By Paul Nelson

CONNECT



The Truckee River is flowing through Reno and Sparks at a high rate, but the volume of water is not coming from spring run-off yet.

"We're accumulating. We're not melting much yet," Chad Blanchard, U.S. District Court Water Master said.

The water is coming from upstream reservoirs.

"We're having to pass quite a bit of water through the reservoirs," Blanchard said. "We cannot store yet at Prosser, Stampede and Boca because of flood control."

Those reservoirs are used for flood control and for storage of water supply. Boca is about 75 percent full and Stampede is about 80 percent full, and with snowpack exceeding 200 percent of average, more space is needed.

"We don't want a lot of water," Blanchard said. "We need to pass water through right now and store more later."

The Water Master cannot allow river flows to exceed 6,000 cubic feet per second, so the amount of water drained from the reservoirs takes some balance.

"If we exceed 6,000 cfs, in the river, we have to cut back on the releases," Blanchard said. "So, we have to try to get out water when we can, when there's room in the river."

Lake Tahoe was more than six inches below its natural rim in mid-October. Throughout the winter, it has risen more than feet and the snowmelt has not even started. A rise of 18 more inches will completely fill the lake.

"But we could still have three more feet come," Blanchard said. "So, we're trying to pass water now and trying to really limit the rate of rise on the lake."

Once the snow has completely melted, Lake Tahoe will reach its limit, rising more than 6.5 feet since October.

"This will be the largest physical rise on Lake Tahoe, ever," Blanchard said.

The rate of rise depends on the snowmelt. Blanchard says on a typical warm day, about two inches of water will melt out of the snowpack. How much that affects the lake and reservoir levels varies, depending on how far the snow is spread out, and the elevation.

"It's just a matter of how much surface area is covered when we start getting those warm days when we get up to the maximum melt," Blanchard said.

Water is flowing through the Tahoe City Dam at 1,000 cfs, and while water is also being released from the other reservoirs, Blanchard expects all of them to be completely full by the end of the spring run-off.

PERS secrecy bill based on unfounded fears: Our view

The Opinion of the RGJ Editorial Board 6:42 a.m. PT April 17, 2017



A bill before the Nevada Legislature would replace the names of public employee retirees with an identifying number. (Photo: Getty Images/iStockphoto)

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A bill before the Nevada Legislature would make secret the names of public employees in the state retirement system.

This is a bad idea, based upon unfounded fears, that weakens scrutiny of government fraud, abuse and waste and creates a slippery slope to more government secrecy.

State Sen. Julia Ratti, a Democrat from Sparks, is trying mightily to walk a tightrope between the highly charged concerns of public employee retirees and the right of the public to see how its tax dollars are being spent.

RELATED: [Group wants release of Nevada pension data](#)

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her proposal, [Senate Bill 384](#), would allow for the release of each retirees' annual benefit amount, years of service, retirement date and last public employer but instead of a name, an identifying number would be used. She says this would allow the public and media to investigate problems without identifying those who have privacy concerns.

This might sound like a reasonable compromise, but it raises multiple problems.

• **Names are important.** Supporters of the bill say names are not needed for investigations. This is false. For example, during the recession, the Nevada Legislature was claiming to crack down on the practice of double-dipping when an employee retires and gets hired back, drawing a pension as well as a paycheck for the same or a similar job.

An RGJ public records request of a tiny portion of PERS data revealed that the practice was more widespread than believed, and the findings would not have been possible without the ability to compare retirees' names to current employees.



RGJ ONLY IN PRINT: PENSIONS

Nevada law allows some public employees to draw pensions while earning salaries, costing the state more than \$54 million. Despite high unemployment and a \$2 billion state budget shortfall, public agencies continue to rehire retired workers, with some on the payroll for years.

State's pension laws allow double-dipping

RGJ INVESTIGATES

INSIDE THE HISTORY: The idea of letting retired workers be rehired first arose in 1999, and legislators made it a reality in 2001. **SA**

By Martha Bellisle
mbs@rengazette.com

As Nevada lawmakers struggle to fund state agencies while ensuring the long-term health of the employee retirement account, some public employees continue to legally collect salaries and retirement checks at the same time, an investigation by the Reno Gazette-Journal found.

As of this month, 14 retired workers who were rehired before July 2003 —

dipping law, which allows some workers who are retired and collect a pension to come back to work at state jobs where a "critical labor shortage" exists and earn paychecks. Those are positions that state employers have found difficult to fill for a variety of reasons, including that they are in rural locations, don't pay well or require special skills.

lification every two years — remain in their critical-labor-shortage jobs, documents show. The positions include senior judges, bus drivers and special education teachers.

Double-dippers include:
• A Carson School District bus driver who has been earning his pay and pension since 2002.

• A White Pine County project manager who has been double-dipping for more than a decade;

who has received pension pay since 2005.

The state retirement program spent \$54.4 million on double-dipping employees from 2001 to 2008, according to a study done for the Legislature. The next report isn't due until 2014, so a current assessment of what it's costing is not available.

Meanwhile, Nevada's unemployment rate continues to be the highest in

TODAY: Some lawmakers are worried about the "unfunded liability" of Nevada's state worker pension program, but drastic changes are unlikely this

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A 2011 RGJ investigation looked into the practice of public employees drawing a pension and being rehired to do the same job. (Photo: RGJ)

Other examples where knowing names can raise red flags in salary data include bias based on ethnicity, pay disparities based on gender, nepotism and personal knowledge of individuals who seem to be receiving more than they should.

Beyond investigatory reasons for names, at a fundamental level, taxpayers deserve to know whom the government is giving their money to.

- **This is what a public job requires.** While many public employees do not object to their names and compensation being online, some do. But if this is a concern, taking a public job is optional. Some jobs require security clearances, some require confidentiality clauses, some require random drug testing. Jobs with government entities require that compensation – and who’s getting it – is public record because taxpayer money is being spent.

- **It sets a bad precedent.** Ratti says she intentionally did not seek changes to state law for current public employees, just retirees, who are more frequently targets of identity theft. But if this bill is passed based upon the rationale that revealing names creates an identity theft risk, then it is only a matter of time before current public workers will want the same.

Top of Form
Bottom of Form

It’s a solution without a problem. Testimony at the bill’s committee hearing focused on identity theft fears. Senators were told, correctly, that identity theft is growing and Nevada is among the worst states for it. Supporters then made a leap to say this is why names must be hidden. But ask for an example where public employee salary data contributed to identity theft, and the response is silence. Thieves are getting their information elsewhere.

The RGJ Editorial Board asked a PERS representative for any identity theft cases anywhere linked to public salary data, and none was given. Instead, the representative said the bill would prevent future cases.

But if hundreds of thousands of employees’ data has been released for many years across Nevada and the nation and none has been linked to identity theft, the case has been made for lack of harm, not future danger.

The editorial board contacted a top national organization working to educate the public about identity theft and help its victims resolve their cases: the nonprofit [Identity Theft Resource Center](#). We asked if such data being posted is a factor contributing to identity theft. The answer? No.

“By most data breach notification laws, this type of information is not considered to be sensitive personal identifying information,” said the center’s president and CEO Eva Velasquez. “These pieces of information do not compare to Social Security numbers, financial account numbers or driver’s licenses, which are more sensitive and put an individual at greater risk.”

One aspect of the bill is worth saving. Beneficiary names are currently public record. This happens when someone dies and their benefits transfer to a spouse or other beneficiary. That person did not sign up for public scrutiny. A compromise would be to list “Beneficiary of Jane Doe.”

Public employee pension plans need additional scrutiny, though, because they can have serious consequences for state and local budgets. They have bankrupted nearby Stockton, California, as well as Detroit and have pushed other locales near the edge. Nevada PERS, [according to its latest fiscal report](#), has more than \$13 billion in liabilities for which it doesn’t have the funds to pay. A worsening situation will put Nevada taxpayers on the hook.

More problems in the system will likely be discovered if the data is released, [as happened just this month in California](#).

After fighting its release in court, San Diego County Employees Retirement Association finally released pension data – and scrutiny revealed that a retired sheriff’s captain had been overpaid nearly a half-million dollars because of a clerical error.

This type of mistake will be harder to find and correct if the misplaced fears of some retirees inspire lawmakers to pass [SB384](#). Already [it passed unanimously](#) this month out of committee and is now poised for a full Senate vote.

Transparency in government increases honesty among its workers, and transparency also increases trust among the public. Legislating the concealing of names harms the relationship between government and the people it represents. Nevada legislators should remember this when it comes time to vote on SB384.

Note: One of the RGJ Editorial Board’s eight members – a former county employee – dissents on this opinion and supports Ratti’s bill. He believes if additional identifiers are published that give the employee’s gender and any other markers that would indicate discrimination, then names should not be used because public employees – but not elected officials – deserve more privacy protections.

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Fluoride Legislation Dies In Committee

APRIL 16, 2017 BY [BOB CONRAD 2 COMMENTS](#)



Truckee River image by Bob Conrad.

A bill that would have mandated fluoride in Reno's water supply died in committee on Friday. The bill was sponsored by assembly members Amber Joiner (D-Reno) and Michael Sprinkle (D-Sparks).

While experts generally agree that fluoride offers public health benefits, the cost of adding fluoride to the Truckee Meadows Water Authority (TMWA) system was estimated to cost ratepayers an additional 9-percent increase on top of an already estimated 13.5-percent rate increase in the coming five years.



Assemblyman Michael Sprinkle

TMWA's board unanimously spoke against the legislation, citing its potential cost and calling it an unfunded mandate.

Board Vice Chair Vaughn Hartung called the bill a "circumvention of the voters," saying that Nevada law requires a vote of the people. In 2002, 58 percent of Washoe County residents voted against water fluoridation.

According to TMWA:

It directly contradicts the will of Washoe County voters. In 2002, a countywide vote was taken in Washoe County where 58 percent voted against fluoridation. The Board felt that the present bill, as introduced, circumvents that vote and that any fluoride decisions should require a vote of the public.

Commenters on the Nevada Legislature website also overwhelmingly denounced the legislation. One person wrote:

This bill takes the same approach that we so abhor about national politics. "We politicians know what's best for you!" and "Washoe County, you're too stupid to know what's best for you so we will save you from yourselves." You are mandating fluoridation without the courage of putting it to a public vote. It's unconscionable that two Northern Nevadans are pushing this to a State-wide vote, rather than Washoe deciding what Washoe wants.

On Your Side: Sparks man says call to TMWA got him arrested

by Joe Hart

[Tuesday](#), April 18th 2017

[Link to video](#)

Sparks resident Bobby Cyr claims the city and the court system targeted him unfairly by having him arrested after he filed a complaint with the Truckee Meadows Water Authority over what he viewed as a case of possible water wasting.

Cyr turned to News 4 out of frustration after the case had dragged on for months. It's no secret he and his neighbors on Union Street did not get along. They even took out a protection order against him.

But Cyr says he was just trying to do the right thing when he called TMWA last summer to report excessive watering across the street from his house.

Then one day in August of last year there was a knock on the door. It was Sparks Police.

"They brought me outside, handcuffed me, shut the door and walked me across the street," Cyr told us. "I was still in my sleeping attire."

Cyr was under arrest. The charge: violating a protective order that his neighbors had taken out against him, which is a felony. The Washoe County District Attorney's office confirmed to News 4 that it was Cyr's call to report possible water waste that triggered his arrest.

That's something Cyr says he still finds hard to believe.

"It wasn't done facetiously or in a mean manner or anything like that," he said. "There was water all over the place."

For the next eight months the Washoe County District Attorney's office refused to drop the charge -- even after Cyr's neighbors moved away.

But about the time we began asking questions, earlier this month, the case was suddenly dismissed.

The D.A.'s office told us this week they realized there was not enough proof to get a conviction if the case had gone to trial.

Sparks Police are not commenting at all, and have declined to release the arrest report, even though the charge has been dropped.

TMWA also declined to comment for this story.

As for Bobby Cyr, he still has plenty of questions. But he says he'll think twice before reporting a neighbor for water waste in the future.

"My hope now is this is over," he said.

Cyr says he is considering filing a lawsuit against the city of Sparks.

Water rates in Reno-Sparks to increase in May

by Diane Thao
Wednesday, April 19th 2017
AA

RENO, Nev. (News 4 & Fox 11) — Water rates will soon be going up for residents in the Reno-Sparks area.

The [Truckee Meadows Water Authority](#) Board of Directors voted unanimously to pass an increase of three percent.

ADVERTISING

Customers will begin seeing this change starting May 2017, with another three percent increase in May 2018. TWMA stated that the average residential customer's water bill is expected to rise by \$1.42 per month.

Although customers have cut back on the water usage, the conservation has caused water sales to drop. Costs remain the same, which is why the water utility's staff said the increase rate is needed.

TWMA's Chief Finance Officer Michele Sullivan explained that last year some bonds were refunded with an interest-only payment for three years. TMWA will have to start paying the principal in 2020. It is said to be a \$10 million debt.

"A rate increase is always bad timing. I have to pay the rates too. I'm not happy about it," said Andy Gebhardt, TMWA Director of Operations and Water Quality. "But we know we have to do it, in order to keep the company solvent and make sure we're prudent and we're doing the best we can for our customers."

The TMWA Board of Directors will also have the option of implementing an additional 2.5 percent increase in 2019, 2020 and 2021.

Plan to hike water bills in Reno area unjustified: Heidi Gansert

Heidi Gansert, Special to the RGJ Published 1:37 p.m. PT April 19, 2017 | Updated 3 hours ago



(Photo: Provided by TMWA)

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The following is an April 19 letter from Nevada state Sen. Heidi Gansert to the Truckee Meadows Water Authority's board of directors, which is considering a rate increase for residential, business and agricultural water bills.

Dear Board of Directors:

I am writing regarding my concern about the proposed water rate increase and the possible multi-year water adjustments that have been proposed by your staff. I met with your staff and have reviewed the information provided and have the following observations:

The Fiscal Year '16 Test Year (ended 6/30/16) was a poor test year for revenues due to conservation by customers (see graph Water Sales Revenue chart on page 4 of Proposed Rate Adjustment handout) .

Alternatively, Fiscal Year '17 (in progress, ends 6/30/17) looks to be rebounding significantly as charges for water sales during the six months ended 12/31/16 are up 9.25% year-over-year from the 6-month period ended 12/31/15.

Further, Fiscal Year '17 operating expenses overall are flat; increases in Salaries and Wages and Employee Benefits are offset by a decrease in Services and Supplies. Services and Supplies are down due to the increased availability of hydroelectric generation produced by TMWA plants, which as we know changes with the precipitation levels in the Sierras.

TMWA states in their Proposed Rate Adjustment presentation that they expect river flows will be available for the next three years for increased hydropower, page 3 of Proposed Rate Adjustment handout.

Moody's Investor Service issued a Credit Opinion dated February 22, 2017 regarding Truckee Meadows Water Authority assigning a rating of Aa2 (merely 2 steps below AAA rated) to Truckee Meadows Water Authority Revenue Bonds and a rating outlook which is "stable."

- **Background:** [Reno water rate hike inspired by savings during drought](#)

- **RGJ Editorial Board opinion:** [Charging more for saving water is a problem](#)

The report goes on to say, "The Aa2 rating primarily reflects the authority's sizable service base including the Reno-Sparks area, consistently very strong liquidity that mitigates debt service coverage, and satisfactory legal provisions." Additionally, Moody's notes that "debt coverage is satisfactory if somewhat modest, but mitigated by a very strong cash position."

It appears the test year was a bad year for sales, which are returning to normalized levels after a period of drought and conservation efforts. I appreciate the proposed rate increase is not huge; however, there appears to be room to trim the increase because of the unexpected increase in water sales during the first six (6) months of FY 2017 compared to FY 2016, as well as the increase in hydroelectric power generation which both reduces expense and increases revenue as surplus electricity is sold to other users. Furthermore, with the improving revenue picture, I believe now is not the time to fix and impose multi-year rate adjustments when the financial situation is improving. In looking at cash reserves, TMWA 's grew \$10 million between December 31, 2015 and December 31, 2016 to a total of \$197 million as of December 31, 2016 with more than \$119 million in unrestricted funds. I believe it would be premature and unwise at this time to presume rates will need to be increased in the future given the improving revenue picture.

Last, the [Reno Gazette Journal article dated April 12, 2017](#) on the highest paid overtime public employees for Northern Nevada included four TMWA staff members of the ten identified. That does not bode well at a time when numerous rates increases are being considered.

Given the Legislative Session, I will not be able to attend your meeting. I appreciate your staff taking time to meet with me and please request that you give my comments consideration as you vote on Item No. 10.

Sincerely,

Heidi Gansert
Nevada Senator
District 15

TMWA Passes FY18 Budget, Says Cloud Seeding Funds Aren't Necessary

April 19, 2017 Carla O'Day
By Carla O'Day



DAX8 Cloud Seeding Flare Test at the RC field in Spanish Springs, Nev. on Wed., Jan. 27, 2016 in Reno, Nev. Kevin Clifford/Drone America

A tentative \$43 million budget for next fiscal year was approved Wednesday by the Truckee Meadows Water Authority board, which includes no money for a cloud seeding program because funds were left over from this past season.

Wintertime cloud seeding is a form of weather modification aimed at enhancing snowfall in mountainous regions to increase the snowpack, resulting in more spring runoff and water supplies in the surrounding areas.

However, above average snowfall this winter resulted in just \$75,000 of the \$210,000 from TMWA being spent this season by Desert Research Institute on cloud seeding.

Some board members said DRI doesn't need the money replaced because it still has \$135,000 unused and it's expecting \$680,000 for cloud seeding to come from the state.

Sparks City Councilman Ron Smith suggested \$75,000 be in the budget for DRI in case funds don't come from the state.

"It's easier to put money in now and take it out later than it will be to add it later," Smith said.

Reno City Councilwoman Naomi Duerr said if the \$75,000 becomes a key issue for DRI, TMWA could use reserve funds.

A final budget is scheduled to be approved in May and is due to the state Department of Taxation in early June.

Washoe County Commissioner Vaughn Hartung also suggested disbanding the Western Regional Water Commission, a board he sits on.

The water commission focuses on improving water resource planning at the regional level and

facilitating coordinated resource management. Several elected officials from Washoe County, Reno, Sparks, Sun Valley General Improvement District and TMWA make up the board, which was created by the state in 2008. Additionally, the municipalities and TMWA approved an inter-local agreement then.

"Is there a benefit to getting rid of Western Regional Water? Moving forward, it's something we need to look at," Hartung said. "Is it a necessary board? If not, I'm not going to lose any sleep not having to show up for another board."

TMWA executive director Mark Foree said ratepayers fund the water commission and it's a line item on customer bills.

Since the water commission was created by state statute, the legislature would have to agree to dissolve it but any action would have to wait until the 2019 session, TMWA staff said

Bacteria used to fight antimicrobial contamination of soil and water

April 20, 2017



Students play an active part in Yu 'Frank' Yang's Molecular Environmental Science Lab. Yang, an assistant professor in the Department of Civil and Environmental Engineering, and his team has found a potential way to reduce in the environment the presence of triclosan, an antimicrobial that is also linked to problems with antibiotic resistance. Credit: Photo courtesy of University of Nevada, Reno

We all like to keep things clean, and disinfectants help that happen. Unfortunately, one of the most widely used antimicrobial products in use since 1964, triclosan, is also one of the top 10 environmental contaminants in rivers - possibly disrupting the endocrine systems of wildlife and causing toxic effects to their reproduction and development. Now, a new study at the University of Nevada, Reno has found a potential way to reduce the presence of the antimicrobial that is also linked to problems with antibiotic resistance.

"The results are promising that we gained better understanding about how triclosan is degraded in the natural environment, and can potentially find a way of removing the contaminant from the environment and in the long term fighting the [antibiotic resistance](#) problem," Yu "Frank" Yang, assistant professor of [environmental engineering](#) at the University, said.

Yang and his team's research on how to reduce the presence of triclosan in the environment was recognized among Emerging Investigator Series by the journal *Environmental Science: Processes & Impacts*, a publication of the Royal Society of Chemistry, and published in the April edition as the inside front-cover story. The article describes how the triclosan, used for things like hand sanitizer, detergents, soaps

and paints, can be degraded faster in the environment through a process with a combination of metal-reducing bacterium and natural organic matter.

While the nation is phasing out triclosan and finding replacements for the detergents, it's pervasive in the environment and is persistent under certain environmental conditions, Yang said. Because of its persistence and lack of efficient removal processes in most [water treatment plants](#), triclosan has been widely detected in natural waters, soils, sediments and biosolids.

"Antibiotic resistance induced by antimicrobial or antibiotic agents is a global problem, if they are not degraded rapidly, then bacteria in the environment get exposure and develop resistant genes and then we can't fight it," Yang said. "If we can completely understand the degradation of antimicrobial agent, we can provide a treatment process in engineered and natural environments."

The team tested the matrix of a bacteria strain mixed with the [organic material](#) to find the condition that degraded triclosan the fastest. Yang's research found a mixture that reduced the half-life of [triclosan](#) to about 10 hours. The overall outcome is determined by the concentration of organic material, microbial activities and the chemistry of the water.

"Further study and development are needed, and we would like to fully understand the degradation pathways of emerging organohalides and work out cost-effective removal strategies," Yang said. "Both are challenging tasks."

The journal *Environmental Science: Processes & Impacts* recognized Yang, who is also a member of the College of Science's [Global Water Center](#), for his work and honored him with the distinction of "Emerging Investigator." His paper is part of their [2017 "Emerging Investigator Series"](#) which highlights "the best and brightest early career scientists in the environmental chemical sciences."

The journal website explains the "Emerging Investigator" distinction "showcases the high quality research being carried out by researchers in the early stages of their independent careers. It highlights up-and-coming scientists who are internationally recognized for making outstanding contributions to their respective fields." In early April, Yang and his group presented this project and other work in nine presentations at the American Chemical Society's 2017 spring meeting in San Francisco, California.

He was also selected in early April by the U.S. National Committee for International Union of Pure and Applied Chemistry as a 2017 Young Observer for the organizations General Assembly and Global Congress in São Paulo, Brazil, this July.

He has been at the University of Nevada, Reno since September 2013 as an assistant professor in the Department of Civil and Environmental Engineering. He received his doctorate degree from Peking University, China. Since he joined the University, he has

secured more than \$1 million of federal research grants as principal investigator and Co-PI, and published 14 peer-reviewed manuscripts in top-tier journals in the area. His research is mainly focused on the molecular-level environmental chemistry for critical environmental issues, including carbon cycles and emerging pollutants.

The "Dual Role of Organic Matter in the Anaerobic Degradation of Triclosan" study was supported by the University of Nevada, Reno Startup Fund, the Department of Energy, the U.S. Department of Agriculture and the China Scholarship Council for the support of Lin Wang, a member of the research team.

Explore further: [Ban on triclosan shows need for new chemicals to demonstrate efficacy and safety](#)

More information: Lin Wang et al. Emerging investigator series: dual role of organic matter in the anaerobic degradation of triclosan, *Environ. Sci.: Processes Impacts* (2017). [DOI: 10.1039/C7EM00003K](#)

Provided by: [University of Nevada, Reno](#)

Deaths expected on Truckee River this season

By [Colin Lygren](#) |

Posted: Fri 2:52 PM, Apr 21, 2017 |

Updated: Fri 3:05 PM, Apr 21, 2017



RENO, Nev. (KOLO) -- Rescue crews say the danger cannot be emphasized enough: people will die this **summer** in the Truckee River. In hopes of keeping deaths to a minimum, the Reno Fire Department trained for water rescues Friday.



"This year is different," said Kevin Joell, team leader for the Reno Fire Department Water Entry Team. "The average flow for this date is about 1200 cfs and we are seeing flows of around 5000 cfs."

Flows that fast make swimming to safety incredibly difficult.

"I think they said it moves at about 10 miles per hour at this flow," said Josh Dart, a firefighter with the Water Entry Team. "It's cookin'. You don't have a lot of control."

Getting in the Truckee this summer means putting yourself at risk of death. Already this week there have been three water rescues. That is why Friday's training was so important.

In addition to the highly-trained water entry team, every firefighter in the Reno Fire Department is trained in land-based rescue. They throw ropes to victims in the water and try to drag them to safety. But with flows incredibly fast this season, firefighters will have trouble finding people who have fallen in.

"We are looking at them being possibly already a mile from where the incident took place," said Joell.

That means an expanded search area and lesser chance of survival. Self-rescue may be necessary.

"If you get separated from your boat, make sure you assume the defensive swimming position, which is on your back with your feet pointed downstream. When you see a safe area with an eddy to get to shore, you are going to flip over like you just saw these guys do and do an aggressive swim at a 45-degree angle to the current to get yourself into that safe area," said Joell.

Your best bet at survival is to simply staying out of the river.

Private money and the public good: Promoting investment in American infrastructure

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Karl Kuchel of Macquarie Infrastructure Partners believes the United States could become a much bigger market.

Karl Kuchel is chief executive officer of Macquarie Infrastructure Partners, which manages more than \$8 billion in US and Canadian infrastructure assets, including regulated utilities, toll roads, ports, renewable energy, midstream oil and gas, power, waste, and telecommunications. In this interview with McKinsey, Kuchel discusses the future of private investment in US infrastructure.

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McKinsey: What are the barriers to increasing private investment in US infrastructure?

Karl Kuchel: In the United States, private-sector investors have invested significant capital in many infrastructure sectors, including energy (regulated utilities, power, midstream oil and gas, renewables), ports, rail, wireless towers, and fiber networks. These investments may be held via listed companies or unlisted vehicles. The primary consideration for these investments is generally whether they are able to deliver reasonable risk-adjusted returns.

There are a number of additional challenges for private capital looking to invest in US infrastructure, relating to toll roads, airports, and social infrastructure that traditionally have been developed, owned, and managed by the public sector. In many cases, there is political and public skepticism over [public-private partnerships](#) (PPPs), privatizations, or other innovative solutions involving the private sector. This can make it tough for governors or mayors to convince their constituencies of the merits of taking this route to deliver major infrastructure assets. Questions can arise regarding how the project will be operated, the level of risk-transfer benefits, and the profits that will be earned by the private sector. It is [incumbent on the private sector to assist in educating politicians](#) and the general public on these matters.

Also, in many cases, the lack of a systematic approach to procurement, negotiation, and implementation of potential transactions involving the public sector can increase execution risk and may reduce the private sector's interest in a given project. [These challenges are not new](#). There has been progress in addressing them over the last 10 to 15 years. The Trump administration's focus on infrastructure investment could help to accelerate private participation in traditionally publicly owned infrastructure assets.

McKinsey: Interest rates have risen recently in the United States. How will that affect infrastructure pricing, development, and acquisitions?

Karl Kuchel: In general, the broad infrastructure asset class performs better on an absolute basis in a stable and improving macroeconomic environment. This is because the operating performance of many infrastructure assets is correlated with major macroeconomic trends. This can be due to revenue being linked to consumer-price-index escalators; regulation that allows higher costs to be passed on to customers; or simply from higher demand for the services provided. These higher earnings offset the debt service costs and required returns on equity associated with higher interest rates—and help to support asset valuations.

Higher interest rates will most adversely affect the valuation of infrastructure assets that have bond-like characteristics. These kinds of projects typically have very stable, low-growth cash flows. Given that these assets look like bonds, they should trade like bonds—that is, inversely with interest-rate expectations.

The public sector has missed an important opportunity to improve infrastructure through borrowing over the past five to seven years, when interest rates were at record lows. Higher interest rates, alongside current public-sector funding constraints, should help drive a greater degree of private-sector collaboration and more opportunities for infrastructure investment.

McKinsey: Will global currency volatility affect capital flows into infrastructure?

Karl Kuchel: Global capital flows into the infrastructure asset class have been robust over the past few years, with investors seeking assets that provide stable returns and long-term, dependable cash flows. Clearly that underlying investment performance can be materially influenced by currency volatility.

Infrastructure investors must consider the impact of currency when investing outside their home jurisdiction and consider using suitable hedging, either on an individual investment basis or across their entire investment portfolio.

We have seen this with recent US dollar strength and the impact it has had on the relative valuation of overseas infrastructure assets held by US investors on an unhedged basis. We also continue to see very strong interest from global investors in US infrastructure, as many are underweight and also because of the dollar's role as the world's primary reserve currency.

McKinsey: Are there new financing approaches that the United States should consider?

Karl Kuchel: Yes. One is a variation on Australia’s successful Asset Recycling Initiative, which provides incentive payments for state and local governments to fund infrastructure growth. In the United States, the federal government could offer state and local governments incentives to sell or lease their brownfield assets on the condition that the proceeds are reinvested in new infrastructure. This type of incentive would help politically “de-risk” public–private deals for state and local governments. The federal government could also expand the use and availability of private activity bonds for public projects.

The US has 31 large hub airports with a combined asset value worth billions of dollars. This untapped equity could be used by cities and states to fund other infrastructure needs. The US Federal Aviation Administration’s Airport Privatization Pilot Program and related tax provisions could be altered to encourage local officials to pursue these concession transactions.

Finally, as part of implementing its grant or incentive programs, the federal government should also encourage states to include PPPs in their approach to delivering infrastructure.

McKinsey: Where are the brightest prospects?

Karl Kuchel: In North America, energy infrastructure is likely to continue to provide the largest number of investment opportunities, by deal quantity and dollar value. This should include supply-related midstream assets as well as gas-fired power plants and renewables to replace the retirement of coal-fired power plants. Investors’ risk appetite will determine which opportunities within this sector are most attractive.

The sale of high-quality, low-risk infrastructure assets in the United States is expected to continue, although in some cases, considerations such as regulatory approvals will affect the level of competition for assets.

In general, for investors looking to build a diversified infrastructure portfolio, patience and discipline will be required to find projects across different sectors that meet their risk-return requirements.

by Amy Alonzo
aalonzo@recordcourier.com
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April 24, 2017
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Douglas County's water is best in state



Next time you're thirsty, reach for a cold glass of water — Douglas County has some of the best in the state.

Douglas County Utilities was recently awarded best-tasting water in Nevada for the second time in four years.

The Cave Rock Water Treatment Plant was awarded top honors by the Nevada Rural Water Association in March. The Cave Rock facility services areas including Lakeside, Cave Rock and Skyland.

The county's Montana water system was a close second, Bob Forester, executive director of the water association, said at a Reno conference, where the winners were announced. Montana services homes near Jack's Valley Road north of Genoa.

In 2014 Douglas County Utilities won first place for a Genoa well; in 2015, the Glenbrook Water Cooperative was awarded first place in the state. That year Glenbrook's sample was sent to finals in Washington, D.C., where the sample won first place in the nation's national finals.

Research looks to overcome the effects of global warming with the help of an ice plant

John Cushman's proposal recently picked as one of the Joint Genome Institute's Community Science Program projects through U.S. Department of Energy



The ice plant in its native habitat in Southern California. Photo taken by John Cushman.

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["I became interested in inducible systems, so the ice plant was a beautiful system, and that's how this first began."-John Cushman@UNevadaReno lab's research looks to overcome the effects of global warming with the help of an ice plant](#)

4/24/2017 | By: Robyn Feinberg |  Print

John Cushman is a foundation professor in the University of Nevada, Reno's Department of Biochemistry and Molecular Biology, whose research proposal to the U.S. Department of Energy's Joint Genome Institute has been picked for a partnership under its Plant Flagship Genomes program.

"The goal of the plant flagship program is basically to sequence genomes, or sequence transcriptomes of a series of target crops that are of importance to the mission of the Department of Energy, mainly as bioenergy feedstocks," Cushman said. "And these can also include model species that grow rapidly and are easy to study to better understanding gene function."

Cushman's project proposal, a research effort that started in 2012 in his lab at the University, focuses on the common or crystalline ice plant and its demonstrated tolerance to stressors such as salinity and drought.



The JGI holds a yearly competition for its Community Science Program for researchers who are exploring solutions to energy and environmental challenges, while also giving them access to high-quality resources to continue their area of research.

"These new CSP projects, selected through our external review process, exploit JGI's experimental and analytical 'omics' capabilities and build our portfolio in key focus areas including sustainable bioenergy production, plant microbiomes and terrestrial biogeochemistry," Susannah Tringe, DOE JGI User Programs Deputy, said in the announcement of the 2017 Community Science Portfolio.

Cushman's proposal was one of the 37 selected out of 123 original letters of intent submitted, and 98 full proposals received.

Cushman's lab is looking at the functional genomics of crassulacean acid metabolism or CAM. CAM is a water-conserving photosynthetic pathway that helps plants survive in seasonally arid climates or those with intermittent water supply.

"Our project, and the project of our collaborators at Oak Ridge National Laboratory and the Universities of Liverpool and Newcastle in the United Kingdom, on another model CAM species called Kalanchoe, is to understand CAM," Cushman said. "CAM is present in more than six percent of all vascular plant species across 36 different plant families, so it is a fairly widespread ecological adaptation."

The importance of the ice plant, which originated in the Namibian desert in Africa, is that it is the first reported plant species that could be induced to switch from C3 photosynthesis to CAM following salinity stress or water-deficit treatment.

Most plants use what is known as the C3 pathway to photosynthetically fix atmospheric carbon during the day. However, plants that rely on the water-conserving CAM pathway take up and fix carbon during the night, thereby avoiding water losses that normally occur due to a process called evapotranspiration, which helps keep plants cool during the day. However, daytime transpiration results in water loss through small pores in the leaf surfaces called stomata.

"They open their stomata so carbon dioxide can enter the leaf, and then it gets fixed into sugars and all other compounds that support most of life on Earth," Cushman said. "But because plants transpire to cool themselves, they lose enormous amounts of water."

However, CAM plants limit this water loss by keeping their stomata closed during all or most of the day, and only opening them at night when evapotranspiration is low because it is cooler and the sun is not shining. Thus, CAM plants are five-to-six times more water-use efficient than C3 photosynthesis plants.

The research objectives for Cushman's lab are to understand how the expression of CAM is controlled by environmental stress and the circadian clock. The lab is conducting integrated transcriptome, proteome and metabolome analyses using the ice plant, which is capable of surviving under extremely harsh environmental conditions.

Related Link

- [Cushman receives 2017 Nevada Regents' Researcher Award](#)

"We have studied the process of gene expression, and so we know exactly which genetics parts are important for doing CAM, and that's why the ice plant is such an important model, and that's why the DOE is interested in it," Cushman said. "So now, we can take those genes and reengineer them back to a C3 photosynthesis plant like wheat or rice, or a woody bioenergy feedstock like poplar, and we hope to make those more water-use efficient."

During the past 30 years, Earth's temperature has begun to rise, and the resulting heat and drought effects are beginning to slow the rate of increasing crop productivity.

"It's simple really, we release carbon dioxide and other greenhouse gases into the atmosphere and the Earth gets hotter," Cushman said. "More heat leads to greater soil drying and more transpirational water loss, both of which in turn lead to greater possibility of drought stress. So, one of the predictions of global warming is that with all of this heating, we are going to need to make more drought-tolerant plants in the very near future."

A microbiologist by training, Cushman received his bachelor's degree from Ursinus College, in Collegeville, Pennsylvania, and his master's and doctorate from Rutgers University - New Brunswick, New Jersey. He has been a part of the College of Agriculture, Biotechnology and Natural Resources at the University of Nevada, Reno since 2000, and also serves as the Director of the Graduate Program in Biochemistry and Molecular Biology.

Related Academic Programs

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"I like microbiology but I thought that plants would have more relevance," Cushman said. "And I like stress, so I got into the area of plant stress as I was doing my post-doctoral research. I became interested in inducible systems, so the ice plant was a beautiful system, and that's how this first began."

Cushman's project is ongoing, and he said that it could take several more years to truly learn about the plant and what the research could do. But, with the project's partnership with the Joint Genome Institute, his lab will have access to state-of-the-art resources and facilities to continue this research.

Ask the RGJ: Why can't Lemmon Valley floodwater be piped to Honey Lake?

[Mark Robison](#), Reno Gazette-Journal Published 12:39 p.m. PT April 26, 2017 | Updated 2 minutes ago



[Skip](#)

Crews have begun the process of pumping flood water away from homes in the Lemmon Valley north of Reno. Jason Bean



[Buy Photo](#)

Crews work to block flood water from flowing back into residential areas via storm drains in Lemmon Valley on March 17.(Photo: Jason Bean/RGJ)[Buy Photo](#)

Can floodwaters in Lemmon Valley be pumped to Honey Lake for storage since pipes connect the two?

- **Short answer:** No, for health reasons and gravity.

Full question

Edwin Jordan called to ask why Lemmon Valley water isn't being pumped to the Honey Lake are since pipes already exist.

Full reply

Severe flooding has taken a toll on Lemmon Valley and upcoming snowmelt may exacerbate the situation.

Meanwhile, a 28-mile pipeline was constructed to bring water to Lemmon Valley from Fish Springs in the Honey Lake Basin along the Nevada-California border. It became operational in 2014 and is owned by Truckee Meadows Water Authority.

Andy Gebhardt, TMWA's director of water quality and operations, responded to Jordan's question:

- **Background:** [Will promise of Lemmon Valley pipeline be fulfilled?](#)

“As this pipeline is currently integrated into our treated water distribution system, health requirements wouldn't allow for it to be used to transmit untreated water.

“In addition, it was engineered and designed to gravity-flow down to the North Valley area, so the infrastructure is not in place for water to flow the other way.”

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River man

By [Jeri Chadwell-Singley](#)

This article was published on [04.27.17](#).

Charles Albright is a local kayaker and instructor who has been paddling on the Truckee River for more than four decades. This year, he's concerned for people's safety.

So, you actually contacted me to talk about river safety.

This is 5,000 [cubic feet per second], at least, out here right now. The river is going probably 10 miles per hour. And you can't fight that kind of current. OK? And there's several situations along the river right now. The water is bank full, so if you get anywhere near the shore, you're near the trees and bushes. OK? And water goes through trees and bushes, and people don't. There's several places upstream from here, mainly Glendale Dam and Chalk Bluff Dam, that have some very serious reversals going on right now, and they've already had a couple of rescues at some of those. Just this week some woman fell in the river.



PHOTO/JERI CHADWELL-SINGLEY

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What do you mean by reversal?

Like at Chalk Bluff Dam, which is just west of West McCarran, the water is going [over a drop-off], so the water goes down, and it goes deep, and then it comes back up, and it starts to fill in that void from where it went down. ... And it's river-wide, and if you get into it with a raft or a kayak or tube, like people use all summer long, it's going to at least flip you. And it's probably going to keep you and your raft there for a while.

So it's like those spots at the downtown whitewater park that are terraformed, but bigger?

Yes, well, at the whitewater park there's drops like that. Correct. But when it comes to river-wide reversals, like ... Glendale Dam, they're really dangerous, because they're so big, and there's no way to really escape them. ... You might swim out, but it's not going to be easy, and you could drown or get severely hurt. And then the other thing about Glendale Dam is the fact that it's primarily built out of fracked rock. Fracked rock is rock that's been crushed and broken up into pieces, and it's just thrown all over the river bank, and it is not stable. ... It's a really good place to twist an ankle or fall and get your leg or your foot stuck or your arms. And another thing that's really important is to realize that people have got to wear life jackets and helmets. It's a good idea to let people know that you're doing something, so that they can check on you if you don't come back right away. Does that make sense?

Yeah.

And typically when you flip over in a tube, you flip over backwards, so your head goes underneath the stream. And what's on the bottom is rocks, and you could get a head injury really easily. ... It's a real common occurrence, and this year the river is just going to be huge all the way through August, at least. ...

Don't you think the river will hit a point where it's closer to what people expect during tubing and kayaking season?

No. Well, here's what's going on. There's so much snow up there, and this winter has been weird in that it's still raining and snowing and stuff. ... Tahoe is already full. All of those other Lakes upstream—Boca, Stampede, Prosser—all of those are still at flood holding levels. ... But they're all going to get maxed out as the summer progresses. The river is, for the River Festival next month, ... if it's warm beforehand, it'll probably be flowing at 6,000 cfs This is 5000.

Will they even have the River Festival?

Oh, yeah. But there won't be many events. I can't even get in the channel [at Wingfield Park] to put in my slalom course, because it's so high

RTC closing Rock and Prater for weekend



By Staff/RTC Release |

Posted: Fri 11:08 AM, Apr 28, 2017 |

Updated: Fri 4:52 PM, Apr 28, 2017



[View Map](#)

SPARKS, Nev. (KOLO) - The Regional Transportation Commission is urging drivers to plan for delays when the intersection of Rock Boulevard and Prater Way is fully closed to all traffic this weekend.

The intersection will close about 7PM Friday, April 28 and not reopen until about 6AM Monday, May 1. [Detours will be in place](#), but there could be heavy traffic and delays.

RTC says the work taking place is related to upgrading utilities and the storm drain system. The work is being done with the city of Sparks and Truckee Meadows Water Authority.

RTC says businesses in the area will remain open and accessible during the project. There will be a temporary water outage at night for at least one business and Deer Park at that intersection.

The project is part of a project RTC says will enhance safety and mobility on 4th Street in Reno and Prater Way in Sparks.

Lake Tahoe invasive species inspection stations open Monday



Corey Rich |

Meyers Boat Inspection Station Tahoe Regional Planning Agency TRPA

A decade of checking boats has helped mitigate the number of invasive species in Lake Tahoe.

"Entering our 10th season with no new invasions, boat inspections are clearly doing what they are intended to do, protect Lake Tahoe," said Dennis Zabaglo, Tahoe Regional Planning Agency's aquatic resources program manager. "The Tahoe RCD boat inspectors have allowed us to be ready for any invaders that try to come our way."

Roadside stations at Spooner Summit, Meyers and Alpine Meadows are opening Monday for inspections and decontamination of motorized boats for the 2017 boating season

The Truckee Tahoe station will open May 17. All stations are open 8:30 a.m. to 5:30 p.m. seven days a week.

All motorized watercraft require inspection for aquatic invasive species prior to launching into Lake Tahoe, Fallen Leaf Lake and Echo Lake.

"Invasive species, such as quagga mussels, New Zealand mudsnails and hydrilla, are known to multiply quickly and colonize underwater surfaces, including docks and piers, water supply and filtration systems, buoys, moored boats, and even the beautiful rocky shoreline," officials said. "They destroy fish habitat, ruin boat engines, and can negatively impact water quality and the local economy, recreation and ecosystem. Boats and other watercraft are the largest transporters of AIS [aquatic invasive species], and the inspection program is critical to preventing their spread into Lake Tahoe and other waterbodies.

Knowingly transporting AIS into Lake Tahoe is against the law, and violators may be subject to monetary penalties."

In 2016, Tahoe RCD inspectors inspected over 8,000 vessels and decontaminated approximately half of them. Throughout the season inspectors found 39 vessels containing foreign species such as mussels, snails and plant material.

"Boaters are encouraged to clean, drain and dry their boats prior to arriving at inspection stations in order to save time and money," according to Nicole Cartwright, AIS program coordinator for the Tahoe Resource Conservation District. "Make sure to drain all water, even water from your garden hose used to flush. Taking these three simple steps will get you on the water faster."

Annual watercraft inspection fees remain unchanged from last year. The "Tahoe In & Out" inspection ranges from \$35 for personal watercraft and vessels under 17 feet and up to \$121 for vessels over 39 feet. The "Tahoe Only" inspection sticker is \$30. An additional fee of \$35 is charged for any boat requiring decontamination and an additional \$10 fee for the decontamination of ballast tanks or bags

River Festival On as Scheduled Despite Fast-Flowing Truckee

May 2, 2017 ThisIsReno



Image: Reno River Festival

By Austin Wright

City officials are warning residents to stay away from the fast-flowing Truckee River, but the annual Reno River Festival is proceeding as scheduled.

In fact, extreme conditions in the river caused by this year's record-breaking winter are drawing notable whitewater athletes to this year's festival.

Competition Director Noah Fraser said that "world-renowned athletes are flocking to the West Coast because of our record water year. These kinds of conditions are what they live for. They are fired up to take on the Truckee River Whitewater Park."

At a flow rate 5,000 cfs, about five times greater than at last year's competition, this year's river conditions are the most extreme in the festival's history.

"The record water levels will once again showcase Northern Nevada as America's great outdoor adventure destination," said Neil Horning, partner at Liquid Blue Events. "These conditions will definitely keep audiences on edge once the athletes hit the water."

The event will showcase more than 60 of the world's top whitewater athletes. Professional men, women, and juniors will compete for more than \$10,000 in Freestyle, Boatercross, and Slalom categories.

The Reno River Festival also features food, shopping, obstacles, carnival rides, live music, and much more.

The festival is Mother's Day weekend, Saturday, May 13 and Sunday, May 14 in downtown Reno's Wingfield Park.

City spokesperson Matt Brown said, "The Reno Fire Department's river safety advice is based on current conditions only and is not meant to deter people from attending the Reno River Festival. Public safety remains the City of Reno's highest priority.

"The city supports special events and is looking forward to another successful, safe Reno River Festival," he added.

News | May 3, 2017

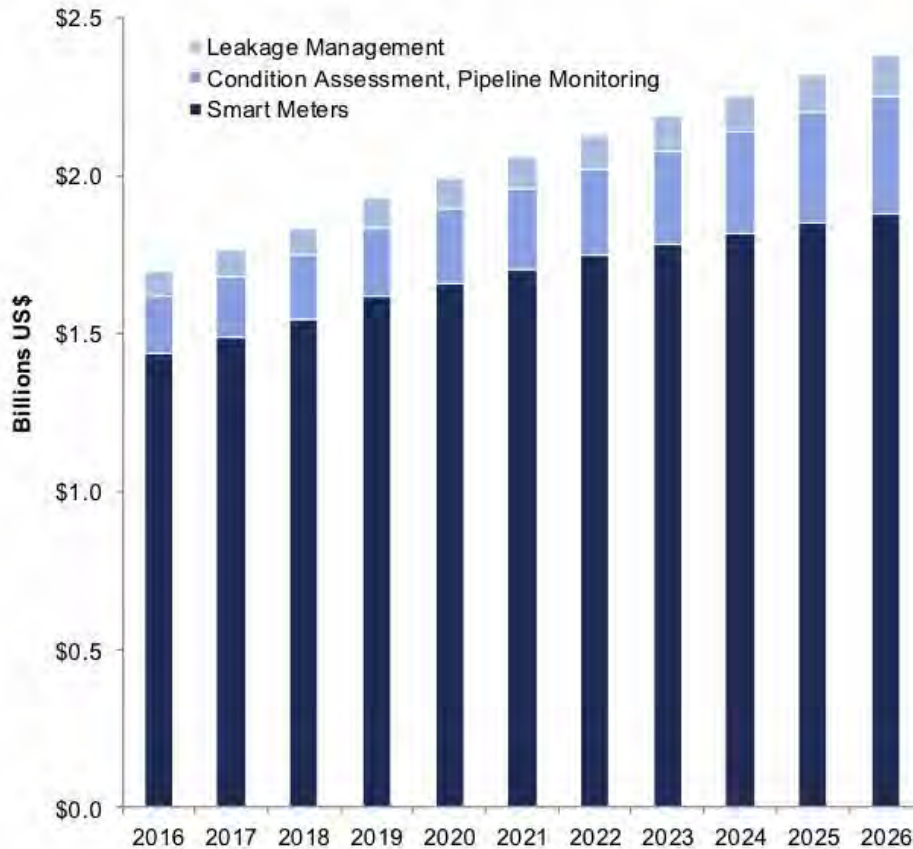
Convergence Of Water And Data Drives \$20B U.S. Smart Water Forecast

The U.S. municipal water sector, which has traditionally been slow to adopt new technologies, sits at the cusp of change with over \$20B of forecasted spending on software, data, and analytics solutions over the next decade. As a result, more than 40 companies are positioning to deploy state-of-the-art solutions to enable more advanced levels of system intelligence, real-time network visibility, energy efficiency, and customer management, according to a new report from Bluefield Research, [U.S. Smart Water: Defining the Opportunity, Competitive Landscape, and Market Outlook](#).

A number of factors, including state legislation for water loss, aging infrastructure, and pressure on utilities to be more efficient, are driving interest in what is more commonly known as smart water. “Historically, utilities have been hobbled by their inability to generate actionable insights from disparate network and water usage data, but this is changing with more advanced data management and cloud-based solutions,” says [Will Maize](#), a Senior Analyst at Bluefield Research. “Early adopting utilities, including American Water and East Bay Municipal Water District, are leading the shift towards smart water technology adoption.”

In the near-term, advanced water meters (e.g. AMR, AMI) will represent the lion’s share of forecasted expenditures at 82% from 2017 through 2026. A consolidated group of established metering players are expanding their product and service portfolios to leverage the value of data collected through their installed hardware. Market leaders, including Mueller and Itron, have moved downstream into communications, data management and analytics, while recent market entries via acquisition by Xylem and Honeywell will further reshape the competitive landscape.

Exhibit: U.S. Smart Water Water Forecasts



Source: Bluefield Research

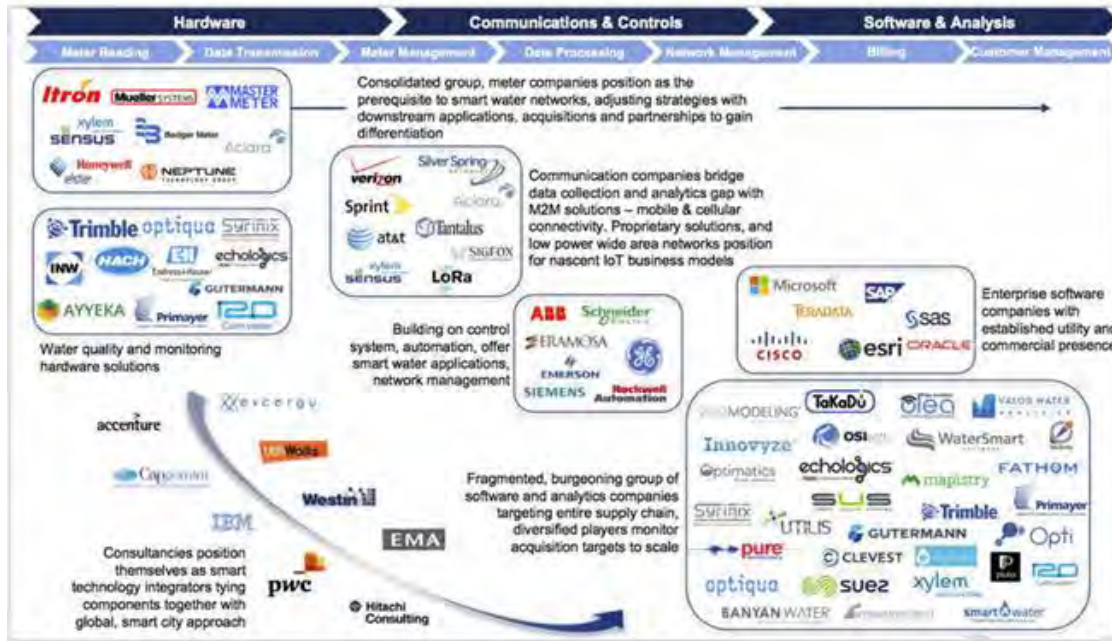
At the same time, over US\$2.7B will be directed towards asset condition assessment and pipeline monitoring through 2026. Operating expenditures on leakage management will total \$1B through the forecast period, according to Bluefield Research.

“While the smart meters have garnered the most attention, asset intelligence and visibility into real-time network conditions offer significant benefits,” says Mr. Maize.

“Water companies can now go from being reactive to proactive.”

Seizing on this burgeoning demand for solutions is an outside group of venture-backed start-ups seeking to leverage their data expertise, much of which draws from other industry applications. These data and analytics companies are looking to integrate disparate sources of data to optimize networks, track water quality, and generate insights for asset performance management. Their primary challenge, however, will be overcoming a credibility gap with demonstrated pilot projects and buy-in from municipal utilities. A select group of companies from more mature smart water markets, Europe and Israel, are also beginning to make headway in the U.S. market.

Exhibit: U.S. Smart Water Value Chain



Source: Bluefield Research

Making inroads into 50,000 U.S. municipal water systems is no small task for vendors. The challenge is further heightened by their need to navigate utilities’ operating silos – back office operations, billing and revenues, and network operations.

“The market is already beginning to take on a different shape. We are seeing larger, diversified companies enter the fray, utilities reshaping their mindset, and Silicon Valley-types applying data expertise. This combination has huge potential to change the way the U.S. water industry works,” says Mr. Maize. “If you looked at the smart water market a few years ago, there were just a handful of players.”

About Bluefield Research:

Companies approaching water as a business are often challenged by a lack of high quality, reliable intelligence. Bluefield bridges this gap with actionable, data-backed analysis supported by a transparent research methodology and ongoing access to our global water experts. As an independent insight firm focused exclusively on water markets, executives rely on our suite of research services to validate their assumptions, address critical questions, and strengthen strategic planning processes.

SOURCE: Bluefield Research

Water Level at Pyramid Lake

Posted: May 05, 2017 3:05 PM PDT Updated: May 06, 2017 10:03 AM PDT
By Angela Schilling

CONNECT

Content starts in 11 sec



Pyramid Lake has risen about six feet since January, and it could rise another five to ten feet through the summer months. If it does, it would be the highest it's been in a decade. All great news for fisherman and our ecosystem.

"In addition to the aquatic benefits you got an increase in stream flows that's helpful for upstream users too. So there's multiple stake holders on those such as the Truckee River," added Hutchinson.

Measuring the water is quite simple and is done at the beginning of each month.

"We would just tape down from our given known elevation and from that subtract elevation to the water surface and that's what our lake determination would be," said Hutchinson.

Figuring the lakes capacity is more of a challenge. With the impressive winter season we've had more water is flowing into Pyramid Lake than is being evaporated. But if you look back to the late 1800s when they first took measurements the lake level has gone down about 90 feet. The Newlands Project allows you to see how far back the lake used to be thousands of years ago by looking at the ridge lines in the hills behind the lake.

"This was all one continuous ancient Lake Lahontan. It extended all the way to encompass Walker Lake. This was all one continuous sea," added Hutchinson.

This would make the area look way different than it is now. The current data is free to the public and can be found on the [USGS](#) website.

own of Truckee Releases Motorboat Inspection Information

Posted: May 05, 2017 8:53 PM PDT Updated: May 05, 2017 8:53 PM PDT



Courtesy: Lauren Shearer

Watercraft inspections are mandatory for all motorized and/or trailered watercraft launching on Donner Lake through the Town of Truckee ordinance Title 14. Inspections are to help prevent the introduction of aquatic invasive species into Donner Lake.

Non-motorized watercraft may be subject to an inspection prior to entering Donner Lake if determined necessary by the Town of Truckee or its designee. Inspections are available at any Truckee or Lake Tahoe roadside watercraft inspection station.

Inspections are not being offered at the public Donner Lake boat launch this season. All Truckee inspections will be at the Truckee-Tahoe Airport location. Any boats that try to launch without a current sticker will be directed to the inspection station, and may be subject to a citation if they launch without a valid sticker.

Inspection Stations Now Open:

- Alpine Meadows Inspection Station, Highway 89 in the Deer Park parking lot across from the Transfer Station. Open daily from 8:30 a.m. until 5:30 p.m.
- Meyers Inspection Station, 2175 Keetak Street, near the intersection of Highways 89 and 50. Open daily from 8:30 a.m. until 5:30 p.m.
- Spooner Summit Inspection Station, near the intersection of Highway 28 and U.S. 50, in the Snow Park area. Open daily from 8:30 a.m. until 5:30 p.m. *Note: Larger vessels over 30 feet may have difficulty with turning radius.*

Inspection Stations Opening Dates:

- Truckee-Tahoe Inspection Station, near Highway 267 and Truckee Airport Road on Chandelle Way. Starting May 17, open daily from 8:30 a.m. until 5:30 p.m.

Watercraft identified as high risk will be required to be decontaminated before being able to launch in Donner Lake. Be prepared and save time and money by arriving at the inspection station Clean, Drain, and Dry.

Donner Lake inspection prices:

- Annual Inspection (valid for calendar year) \$40/vessel
- Seasonal Inspection (valid May – Sept) \$25/vessel
- Monthly Inspection \$10/vessel
- Donner Only (valid May – Sept) \$20/vessel

Boaters who certify that their vessel only launches on Donner Lake are eligible for a Donner Only sticker. Donner Only vessels are required to be inspected, and must sign an affidavit verifying the vessel will only be launched in Donner Lake. Boaters who do not exclusively launch on Donner Lake, and visit other waterbodies must submit to monthly or seasonal inspections.

7 smart ideas for a low-water yard

When you need to ditch the lawn due to low-water conditions, opt for native plantings

Kathleen N. Brenzel, *Sunset Magazine*

Published 4:04 am, Saturday, May 6, 2017



IMAGE 1 OF 10
Losing the lawn

Photo: Holly Lepere

It looks vibrant, with flowering and fruiting plants, shade trees, and grasses that shimmer like spun gold in sunlight. But this garden, fronting a custom prefab home near downtown Santa
... more

Low-water gardens are now fashionable in California, especially after homeowners were forced to deal with the drought in more recent years.

ALSO FROM SUNSET

- Top 50 Water-Wise Plants
- How to Set up a Drip Irrigation System
- Guide to Low-Maintenance Gardening

Although the water restrictions have loosened up with this year's rain, it is important to still keep conservation in mind when planning your yard. Native and drought-tolerant flowers, shrubs and grasses are great for replacing those water-thirsty plants that clutter up many yards.

Unsure of where to start? To help with options, *Sunset Magazine* learned some smart ways to work with a low-water yard. Take a look at a few tips on keeping your garden looking great, while making smart choices for your house — and the environment.

*This article originally appeared on **Sunset.com**: "7 Smart Ideas for a Low-Water Yard"*

City: Switch, Tesla Want Reno's Effluent

May 8, 2017 Bob Conrad



Tesla Gigafactory construction in 2016. Image: Bob Conrad.

The Tahoe Reno Industrial General Improvement District (TRIGID) is seeking to get reclaimed water from Reno and Sparks to serve the Tahoe Reno Industrial Center (TRIC).

A proposal in front of the Reno City Council, to be heard on Wednesday, could potentially pipe 4,000-acre-feet of reclaimed water from Reno-Sparks' water reclamation facility each year.

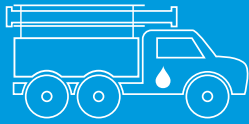
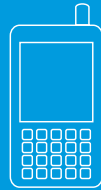
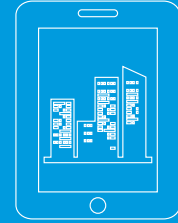
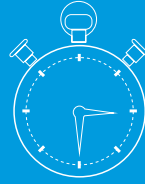
The project proposes that "TRI and Switch will build and dedicate all necessary improvements for the proposed project to TRI GID. State bond financing may be available for the cost of the project and some on-site infrastructure at (TRIC)," according to a city staff report.

However, in order to apply for those bonds, the [Nevada Governor's Economic Development](#) has a June 2017 deadline, which means the project's partners must quickly get an agreement in place.

"All costs, including bonds, would be the sole responsibility of TRI GID. Additionally, TRI GID will be responsible for planning, permitting, engineering and construction of all improvements within Storey County and Washoe County, including right of way acquisition and system improvements with TRI Center," according to city staff.

A \$20 million pipeline would need to be built, along with \$31 million in upgrades at TRIC. The city could gain from the project, including operations and maintenance fees, but the amount has not yet been determined.

City staff indicated that that "Tahoe-Reno Industrial Center, LLC (TRI), the master developer of TRI Center, has received numerous inquiries from companies, including Switch and Tesla, needing high amounts of reclaimed water for business operations and energy efficiency."



Smart Water Technology

Creating the Cities of Tomorrow

Brought to you by Clevest



Creating the cities of tomorrow

Smart water technology is revolutionizing the water utility industry, enabling the leap from paper orders and mechanical meters to workforce automation and Advanced Metering Infrastructure (AMI) systems.

Water and wastewater utilities across the globe are implementing smart water technology as part of their strategy to create cities of tomorrow. These green cities view resources as the heart of a smart city – and this includes their mobile workforce.

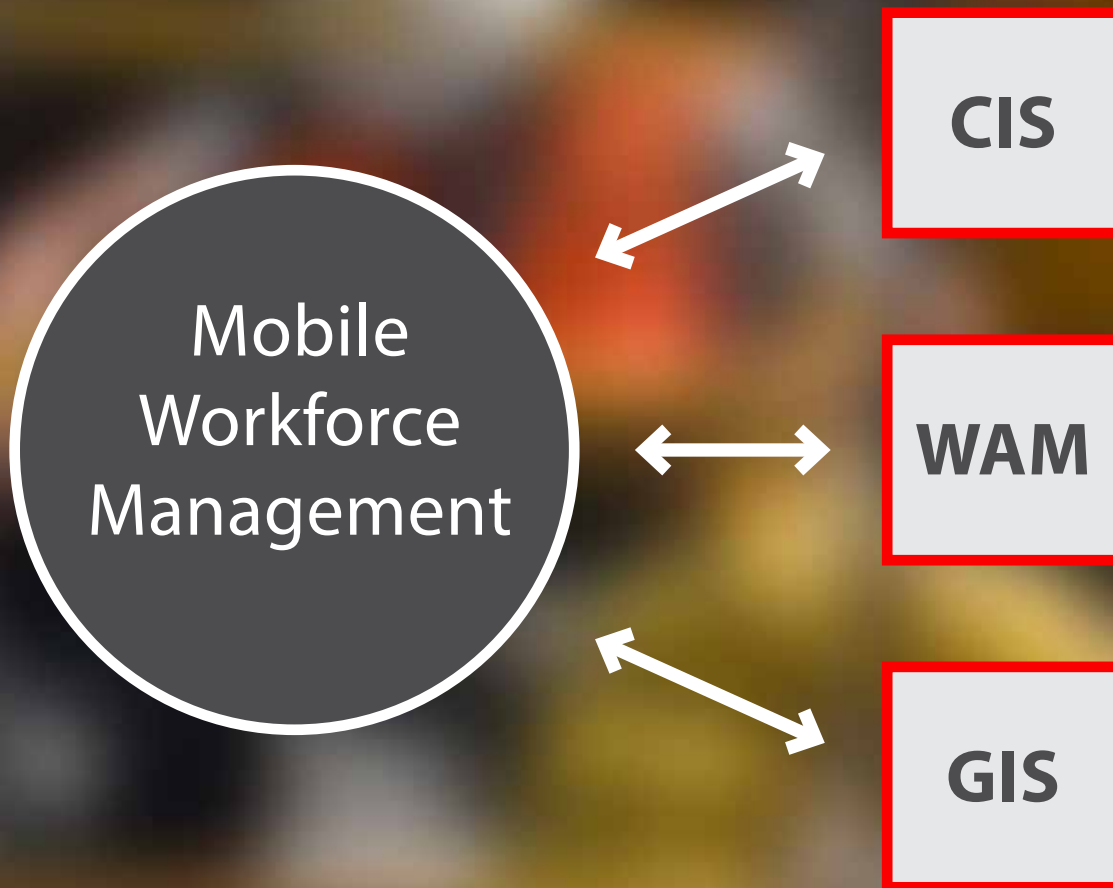
The smart city strategy includes fully automating their mobile workforce for any type of work completed in the field. This ranges from AMI deployment, inspections and service work to damage assessment and service restoration. Adding smart workforce automation technology will address a utility's aging workforce and infrastructure, as well as drive down the total cost of service by processing more field work quickly and accurately.

Utility-focused Mobile Workforce Management

A next-generation Mobile Workforce Management solution unifies the field and the office on a single, mobile platform to manage utility crews and any type of work they perform. Mobile Workforce Management provides the ability to create, receive, schedule, dispatch, and execute work orders.

For ease of use, it should include out-of-the-box integrations to leading utility Customer Information (CIS) & Billing systems, Work and Asset Management (WAM) and Geographic Information Systems (GIS), as well as extensions to leading AMI systems and hardware devices, when needed.

Out of the box integrations



CIS: Customer Information System
WAM: Work and Asset Management
GIS: Geographic Information System
MWFM: Mobile Workforce Management

Some of the measurable benefits of a Mobile Workforce Management solution include:

- Enhanced worker productivity
- Improved Service Level Agreement (SLA) compliance
- Enhanced customer satisfaction
- Improved on-time arrivals
- Improved first-time fix rates
- Reduced overtime
- Reduced travel time
- Reduced fuel consumption

The Architecture of a Mobile Workforce Management Solution



A Mobile Workforce Management system is built around a highly configurable architecture that enables a utility to quickly launch a production-ready system and transform their field operations. It includes next-generation applications (for office and mobile

users) that empower the utility's workforce to complete more work accurately, efficiently, and in less time. These applications provide users with interoperable views of field operations while providing intuitive user interfaces with rich geospatial interactions.

The Mobile Workforce Management hardware and software platforms provide utilities with a number of configuration options. Third-party components are integrated seamlessly to provide extra support and functionality.

Integration and interfaces with leading CIS and GIS solutions provide dispatchers, managers, and supervisors with real-time visibility into outage locations and severity. This enhanced location awareness with an integrated map view of orders, vehicles, and workers in relation to the utility's asset infrastructure enable faster and safer restoration of breaks and spills.

The office user applications feature rich, geospatial interactions that provide dispatchers and supervisors with a comprehensive view and toolset to manage their entire field operations safely and efficiently. Interoperable views of maps, orders, workers, vehicles, alerts, safety timers, and summary snapshots, along with advanced filtering and reporting capabilities, provide a highly personalized view, along with drag-and-drop capabilities between summary views and integrated maps. A dashboard provides real-time alerts for safety timers, lone worker emergencies, geofences, and general exceptions to enable office users to make informed and critical operational decisions and respond effectively to emergencies. This empowers office users with real-time visibility into field operations.

User applications



In the office



In the field

The mobile applications used by those in the field feature an intuitive user interface and rich geospatial interactions for use with laptops and touch-enabled tablets. These applications empower a utilities' mobile workforce with maps, screens, and best practice workflows to have instant access to assigned work, including new



work assigned through the day. Mobile workers can visualize where they are in relation to their orders, create orders from GIS assets, search and filter GIS assets to view relevant information, and get optimized routes to minimize driving time. They can continue working even in out-of-coverage areas, allowing them to view, redline and annotate maps, and access GIS asset information offline. When back online, their work is automatically sent to the office and GIS asset information is synchronized. Mobile workers are guided through best practices workflows for any given type of work and provided the right information at the right time. To complete orders when out of coverage, mobile workers have full support in offline mode and can automatically synchronize orders when back in coverage.

The mobile applications let workers manage work and capture information in the field. With an integrated map to view orders, order details, nearby workers, and GIS assets, workers can search, filter, and create orders from GIS assets, redline and annotate assets, and trace assets upstream and downstream. Workers can redline and annotate the map to send important field instructions to the office. Special work order indicators alert workers to various conditions at the property such as life support. Mobile workers can capture photos, signatures, GPS coordinates, and barcodes. Meter and device serial numbers can be scanned and validated to ensure the worker is working on the right equipment. Other features allow mobile workers to alert office staff and supervisors prior to engaging in potentially dangerous activity, so help may be dispatched immediately if needed.

Operating in offline mode

In the event mobile workers have intermittent wireless coverage, an application allows the user to continue working, buffering unsuccessful messages to the server and re-transmitting once coverage has been re-established. This application may also be operated in true offline or unconnected mode, using “store-and-forward” technology where the handheld device is cradled and orders are batch-downloaded at the start of the day (or start of the shift), then operated by the user in offline mode, and cradled again at the end of the day for batch upload of completed work information to the server.

Case Study for Mobile Workforce Management in Action

Some water and wastewater utilities use multiple AMR/AMI systems throughout their organization. Often times these systems are integrated into their operations with a centralized billing solution, which then becomes the central hub of the meter information and customer relationship business processes.

Utilities wanting to leverage their investment in the billing solution can include a Mobile Workforce Management solution for a streamlined, fully integrated workflow that mitigates or fully eliminates time consuming tasks. These tasks include the completion and transfer of hard-copy documentation and repetitive data entry.

A major water treatment and waste management utility engaged Clevest to provide a Mobile Workforce Management system that will address several key components:

1. A framework that will allow standardization of work orders across multiple business units located in different parts of the country. The initial workflows and business processes created will be used as a model for subsequent implementations in other areas of the company.
2. Accurate workflow identification at a granular level. An example is the process of changing a meter including all activity and interaction with a customer visit. The outcome will include generation of a separate and unique work order for each activity involved in the process.

3. Real-time fleet management.
4. Provision of a tool that measures workforce efficiency. This includes the performance of personnel and the related efficiencies in specific field operations/activities.
5. Provide the ability to monitor and report on work performance quality metrics.
6. Optimization of work assignments and staff scheduling as a result of the automation of the dispatch process.
7. Elimination of non-value added administrative tasks (manual re-entry) and those done via paper.

Additionally, Clevest will integrate the system with the utility's Customer Information System (CIS), shall include full integration with Esri mapping to aid in route planning, will integrate with all AMR/ AMI systems, will be compliant with IOS, Android and the Windows mobile platforms, and the solution will be provided in a SaaS format.

Empower mobile workers

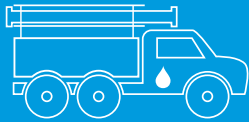
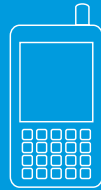
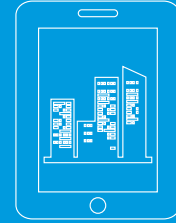


WorkBook is a mobile application with smart workflows, eforms and interfaces to enterprise systems, along with integrated maps to visualize work in relation to the utility's asset infrastructure.

Embracing Smart Technology

As the water utility industry continues to move forward with intelligent devices, workforces will continue to embrace smart technologies. Mechanical meters and paper work orders are items used in the past. Green cities and smart cities view their resources, including their workforce and automation tools, as valuable assets.

Incorporating a Mobile Workforce Management solution as part of this push forward, a utility can achieve multiple benefits such as enhanced worker productivity, improved on-time arrivals and first-time fix rates, plus reduced overtime, reduced travel time and reduced fuel consumption. Most importantly, smart technologies empower their workforce to make better and informed decisions leading to improved and enhanced customer satisfaction.



10 years of innovation

Clevest provides software for mobile workforce management and smart grid operations exclusively for electric, gas and water utilities. We are specialists at enabling utilities to transform their field operations by rapidly automating and optimizing any field work activity or process to improve response time and effectiveness.



Reno River Festival prepares for high-flowing Truckee River

by News 4-Fox 11 Digital Staff
Monday, May 8th 2017

Reno Riverfest prepares for risks with high-flowing Truckee River

AA

RENO, Nev. (News 4 & Fox 11) — Organizers of the Reno River Festival say they are preparing for some exciting conditions that a high-flowing Truckee River could bring to this year's event.

The festival is scheduled for May 13 and 14, and the record-breaking winter and ensuing river flow should attract whitewater athletes from around the world.