



STANDING ADVISORY COMMITTEE AGENDA

Tuesday, June 5, 2018 at 3:00 p.m.
Truckee Meadows Water Authority
Independence Meeting Room
1355 Capital Boulevard, Reno, NV 89502

NOTES:

1. The announcement of this meeting has been posted at the following locations: Truckee Meadows Water Authority (1355 Capital Blvd., Reno), Reno City Hall (1 E. First St., Reno), Sparks City Hall (431 Prater Way, Sparks), Sparks Justice Court (1675 E. Prater Way, Sparks), Washoe County Courthouse (75 Court St., Reno), Washoe County Central Library (301 South Center St., Reno), Washoe County Administration (1001 East Ninth St., Reno), at <http://www.tmwa.com>, and State of Nevada Public Notice Website, <https://notice.nv.gov/>.
2. In accordance with NRS 241.020, this agenda closes three working days prior to the meeting. We are pleased to make reasonable accommodations for persons who are disabled and wish to attend meetings. If you require special arrangements for the meeting, please call 834-8002 at least 24 hours before the meeting date.
3. Staff reports and supporting material for the meeting are available at TMWA and on the TMWA website at <http://www.tmwa.com/meeting/> or you can contact Sonia Folsom at (775) 835-8002. Supporting material is made available to the general public in accordance with NRS 241.020(6).
4. The Committee may elect to combine agenda items, consider agenda items out of order, remove agenda items, or delay discussion on agenda items. Arrive at the meeting at the posted time to hear item(s) of interest.
5. Asterisks (*) denote non-action items.
6. Public comment is limited to three minutes and is allowed during the public comment periods. The public may sign-up to speak during the public comment period or on a specific agenda item by completing a "Request to Speak" card and submitting it to the clerk. In addition to the public comment periods, the Chairman has the discretion to allow public comment on any agenda item, including any item on which action is to be taken.
7. In the event the Chairman and Vice-Chairman are absent, the remaining SAC 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**).

1. Roll call*
2. Public comment — limited to no more than three minutes per speaker*
3. Approval of the agenda (**For Possible Action**)
4. Approval of the minutes of April 3, 2018 meeting (**For Possible Action**)
5. Presentation on the Mount Rose Water Treatment Plant — John Enloe*
6. Presentation of the TMWA Final Budget for Fiscal Year ending June 30, 2019 and Capital Improvement Plan for Fiscal Years 2019 through 2023 — Michele Sullivan and Joe Petrelli*
7. Presentation on the results on TMWA's 2018 Refunding Bond Issue and Financial Update — Michele Sullivan*

8. Presentation of financial performance of third quarter Fiscal Year 2018 — Matt Bowman*
9. Presentation of the 2018 Summer Communication Campaign — Andy Gebhardt*
10. Discussion and possible recommendation to the TMWA Board of Directors regarding the potential repurposing of the meter retrofit fund program — John Zimmerman **(For Possible Direction)**
11. Discussion and possible direction to staff regarding agenda items for future meetings **(For Possible Action)**
12. Staff Items* (Unless otherwise listed with a topic description, this portion of the agenda is limited to announcements)
13. Committee Items* (Unless otherwise listed with a topic description, this portion of the agenda is limited to announcements)
14. Public Comment — limited to no more than three minutes per speaker*
15. Adjournment **(For Possible Action)**



STANDING ADVISORY COMMITTEE

DRAFT MINUTES

April 3, 2018

The Standing Advisory Committee (SAC) met at Truckee Meadows Water Authority (TMWA) in the Independence Room, 1355 Capital Blvd., Reno, Nevada. Chair McGuire called the meeting to order at 3:02 p.m.

1. ROLL CALL

Primary Members and Voting Alternates Present: *Bob Chambers, Harry Culbert, **Bruce Gescheider, Jim Smith, Don Kowitz, Carol Litster, Neil McGuire, Ken McNeil, Mike Pidlypchak, Mike Schulewitch and Jerry Wager.

Alternates Present: Fred Arndt, ***Jordan Hastings, and Scot Munns.

Primary Members and Alternates Absent: Ken Becker, Kevin Haddock, Colin Hayes, Bill Hughes, Karl Katt, Jonnie Pullman, Dale Sanderson, and Fred Schmidt.

**Member Chambers arrived at 3:03 p.m.*

***Member Gescheider arrived at 3:05 p.m.*

****Member Hastings arrived at 3:11 p.m.*

Staff Present: Matt Bowman, Scott Estes, Sonia Folsom, Andy Gebhardt, Bill Hauck, Joe Petrelli, Shawn Stoddard, Michele Sullivan, Marci Westlake, John Zimmerman, and Legal Counsel Debbie Leonard.

2. PUBLIC COMMENT

There was no public comment.

3. APPROVAL OF THE AGENDA

Upon motion duly made by Member Culbert and seconded by Member Schulewitch, and carried by unanimous consent of the members present, the Committee approved the agenda.

4. APPROVAL OF THE MINUTES OF THE FEBRUARY 6, 2018 MEETING

Upon motion duly made by Member Kowitz and seconded by Member Wager, and carried by unanimous consent of the members present, the Committee approved the February 6, 2018 meeting minutes.

5. WATER SUPPLY UPDATE

Bill Hauck, TMWA Senior Hydrologist, reported the water content tripled and doubled in the Tahoe and Truckee Basins, respectively; it is the fourth wettest March in Lake Tahoe; the wettest month in history at Boca Reservoir; to expect a normal runoff year; all Truckee River reservoirs will fill in 2018; and water is being released from Lake Tahoe.

6. PRESENTATION OF THE TMWA TENTATIVE BUDGET FOR FISCAL YEAR ENDING JUNE 30, 2019 AND DRAFT CAPITAL IMPROVEMENT PLAN FOR FISCAL YEARS 2019 THROUGH 2023

Michele Sullivan, TMWA Chief Financial Officer, informed the Committee that the significant increase in the salaries budgeted, \$2.1 million, is related to the fact that 21 employees will be retiring over the next three-four years and the need to train apprentices during that time; the Cloud Seeding program was funded at \$75,000 to maintain the equipment; and a possible fixed senior lien refunding of \$44.2 million of the tax exempt commercial paper (TECP) is included to avoid risk from increasing interest rates.

Joe Petrelli, TMWA Principal Financial Analyst, presented the draft Capital Improvement Plan (CIP) for fiscal years 2019-2023: the current plan shows \$46.6 million in spending in FY 2019 overall and \$191.5 million for FY 2019-2023.

Member Gescheider inquired what the original estimate was for the Mount Rose Water Treatment Plant (MRWTP) and inquired if part of the funding used was the former South Truckee Meadows General Improvement District (STMGID) reserves. Scott Estes, TMWA Engineering Director, replied it was originally estimated at \$8-10 million, but the increase is due to the fact that the plant capacity was increased to 4 million gallons per day (MGD) instead of the original 2 MGD. Mr. Estes further explained the decision to increase capacity came after a study of the availability of creek water showed that more water could be diverted than originally thought and it is more cost effective to build for the higher capacity now rather than expand the infrastructure at a later date.

Member Schulewitch added the MRWTP is not going to be in the former STMGID area (therefore STMGID reserves will not be used) and the capacity will be used to serve new development, which will be paid for by the developers.

Member McNeil inquired about expanding water service to Verdi. Ms. Sullivan replied that the \$14-\$15 million in backbone facilities necessary to expand water service to the Verdi area are not included in this CIP. Funding for that project, if it occurs, would come from developers or a special assessment district, and not TMWA.

Mr. Petrelli confirmed that developer contribution is tied to economic growth and development and the developer fees are collected over time. Ms. Sullivan added that TMWA determines how much of each project should be funded by development, and that amount plus interest is calculated into the fees developers pay.

Member Gescheider expressed the need to show more in the projections and especially outer years of the CIP.

Vice Chair Pidlypchak responded that this is the way it is done, where you know almost certainly for the first two years, what projects and the amount of funding will come through, but beyond that it is uncertain.

No action taken.

7. UPDATE ON THE AGREEMENT FOR WATER SYSTEM ACQUISITION BETWEEN WEST RENO WATER COMPANY AND TMWA

John Zimmerman, TMWA Water Resources Manager, reported that staff is still working on the main agreement and the 120-day due diligence period has not started. There are 3 agreements: 1. The developer agreement with Reno Land and BT South LLC, which has two components: meridian North subdivision, which calls for \$1800 per unit for connection fees, and the planned development in the south subdivision, which calls for \$4866 per unit for connection fees; 2. BCH Gaming for the river casing agreement will transfer upon closing; and 3. Draft agreement with SJP Properties owner of the underlying water right and land owner in Boomtown properties.

Discussion followed regarding the \$2.5 million to be paid for by the developer (it is the \$1800 & \$4866 per unit for connection fees, respectively); the reason for holding onto the river casing transfer (waiting for the system acquisition to be final); if all water rights would transfer to TMWA (SJP currently owns the groundwater rights for the existing development, which will be dedicated to TMWA at closing, BT South and Reno Land will hold their water rights for future dedication and will work with SJP properties to dedicate their water rights to TMWA); and the charge per unit is paid for by the developer at the point of meter set.

8. UPDATE ON STONEGATE RETAIL SERVICE REQUEST

Mr. Zimmerman reported that not much progress has been made since the last report in February. The Stonegate developer agreed to look into developing on-site groundwater wells and to tie development to freeway capacity improvements planned by the Nevada Department of Transportation.

9. UPDATE ON POTENTIAL ESTIMATE AND TIMELINE TO RETROFIT ALL UNMETERED SERVICES AND ALTERNATIVE OPTIONS FOR THE METER RETROFIT FUND PROGRAM

Mr. Zimmerman informed the Committee that the Board adopted the Committee's recommendation, Option #1, to reserve the current fund balance for future retrofits and change fee purpose. Mr.

Zimmerman added that they are still conducting retrofits, but it is slowing down, and the funds cannot be used for any other purpose.

10. DISCUSSION AND POSSIBLE DIRECTION TO STAFF REGARDING AGENDA ITEMS FOR FUTURE MEETINGS

June meeting:

1. Presentation of third quarter financial performance for FY 2018
2. Presentation of the final budget for FY 2019 and the Capital Improvement Plan for fiscal years 2019 through 2023
3. Presentation of the senior lien refunding of the tax exempt commercial paper (TECP)
4. Presentation of the 2018 Summer Communication Campaign
5. Discussion regarding the repurposing of the Meter Retrofit Fund program
6. Presentation on the Mount Rose Water Treatment Plant

Upon motion duly made by Member Gescheider and seconded by Member Wager, and carried by unanimous consent of the members present, the Committee approved to cancel the May 1, 2018 meeting.

Upon motion duly made by Member Culbert and seconded by Member McNeil, and carried by unanimous consent of the members present, the Committee approved the agenda items for future meetings.

Upon motion duly made by Member Chambers and seconded by Member Schulewitch, and carried by unanimous consent of the members present, the Committee approved to cancel the July 3, 2018 meeting.

11. STAFF ITEMS

Sonia Folsom, TMWA SAC Liaison informed the Committee of TMWA's annual BBQ to be held on Saturday, July 14th, 2018 from 11am-3pm.

12. COMMITTEE ITEMS

There were no committee items.

13. PUBLIC COMMENT

There was no public comment.

14. ADJOURNMENT

With no further items for discussion, Chair McGuire adjourned the meeting at 4:19 p.m.

Approved by the Standing Advisory Committee in session on _____.

Sonia Folsom, Recording Secretary

****Member Chambers was present for agenda items 3 thru 14***

*****Member Gescheider was present for agenda items 5 thru 14***

******Member Hastings was present for agenda items 5 thru 14***

DRAFT



TO: Board of Directors
THRU: Mark Foree, General Manager
FROM: Michele Sullivan, Chief Financial Officer
Joe Petrelli, Principal Financial Analyst
DATE: May 15, 2018
SUBJECT: **Discussion and action on request for adoption of Resolution No. 263: A resolution to adopt the final budget for the Fiscal Year ending June 30, 2019 and the 2019-2023 Five-Year Capital Improvement Plan**

Recommendation

That the TMWA Board approve the proposed Final Budget for the fiscal year ending June 30, 2019 and direct staff to file the adopted Final Budget and related 2019-2023 Capital Improvement Plan with the State of Nevada Department of Taxation as required by statute.

Summary

TMWA has prepared the proposed Final Budget for consideration and approval by the TMWA Board. Changes to the tentative budget presented originally at the March 21, 2018 board meeting result in a favorable increase in the change in net position of \$1.3M. This is mainly due to estimated FEMA awards for repairs related to flood damage on TMWA access roads and the diversion at the Glendale water treatment plant. Adjustments to final interest expense related to the 2018 series bond transaction which closed on May 15, 2018 are also included. CIP spending for 2019-2023 increased from \$191.6M to \$195.8M, or \$4.2M due to delays in projects due to be completed in 2018, as well as higher costs related to several projects.

Discussion

A comparison of the proposed Final Budget to the original approved Tentative Budget is accompanying this report in *Attachments A and B*. An additional \$1.2M in grants from FEMA related to road rehab and Glendale Plant diversion was added to contributions from grants. Included in the original tentative budget were \$1.6M in flood related repairs, with \$1.5M in services and supplies expenses and \$0.1M in capital improvements. FEMA reimburses a portion of these expenses, and has approved these projects for reimbursement of which we expect to receive \$1.2M in FY2019. Interest expense and interest paid were updated for the final numbers related to the 2018 series bonds. The cash flow statement was adjusted for these items, and for an increase of \$1.8M in capital spending for a net cash decrease of \$0.7M as compared to the tentative budget.

A draft CIP document was presented at the March 21, 2018 board meeting. The final CIP document is accompanying this report in ***Attachment C***. FY 2019 changes in the accompanying CIP document are listed below and result in a net increase \$1.8M:

• Paloma Pressure Regulating Station – Higher than anticipated bid	\$.75M
• Chalk Bluff Additional Backup Generator – Increased design estimate	.30M
• Satellite Hills Booster Pump Station – Spend pushed into FY 19	.40M
• South Virginia Midtown to Liberty – Increased anticipated construction	1.50M
• Street & Highway Main Replacements – Offset to S. Virginia Midtown	-.50M
• Mt. Rose Surface Water Treatment Plant – Permitting delays	-.50M
• Eagle Canyon Transmission Main Phase 2 – Priority shift 1 Year	-.10M
• Furniture – Office Equipment – Removed from CIP	<u>-.05M</u>
• Total	\$1.8M

In addition to the increased spending in FY2019, delays in permitting for the Mt Rose Water Treatment Plant pushed that project completion date further into FY 2020, increasing spend by \$2.5M in that year.

**TRUCKEE MEADOWS WATER AUTHORITY
SCHEDULE OF REVENUES, EXPENSES
AND CHANGES IN NET POSITION
FOR THE FISCAL YEAR ENDING JUNE 30, 2019**

	Proposed	Tentative	
	Final	Fiscal Year	
	Fiscal Year	2019	Increase
	Total	Total	(Decrease)
OPERATING REVENUES			
Charges for water sales	\$ 100,626,513	\$ 100,626,513	\$ -
Hydroelectric sales	2,812,568	2,812,568	-
Other operating sales	3,404,500	3,404,500	-
Total Operating Revenues	106,843,581	106,843,581	-
OPERATING EXPENSES			
Salaries and wages	21,078,271	21,078,271	-
Employee benefits	10,125,919	10,125,919	-
Services and supplies	28,268,124	28,268,124	-
Total Operating Expenses before Depreciation	59,472,314	59,472,314	-
Depreciation	33,862,476	33,862,476	-
Total Operating Expenses	93,334,790	93,334,790	-
Operating Income	13,508,791	13,508,791	-
NONOPERATING REVENUES (EXPENSES)			
Investment earnings	2,833,548	2,833,548	-
Unrealized gain on investments	-	-	-
Gain (Loss) on disposal of assets	-	-	-
Amortization of bond/note issuance costs	(215,748)	(215,748)	-
Interest expense	(13,436,520)	(13,494,768)	58,248
Other non-operating revenue	-	-	-
Other non-operating expenses	-	-	-
Total Nonoperating Revenues (Expenses)	(10,818,720)	(10,876,968)	58,248
Income (Loss) before Capital Contributions	2,690,071	2,631,823	58,248
CAPITAL CONTRIBUTIONS			
Grants	1,700,000	500,000	1,200,000
Water meter retrofit/Sustainability program	676,020	676,020	-
Developer infrastructure contributions	-	-	-
Developer will-serve contributions (net of refunds)	3,470,232	3,470,232	-
Developer capital contributions-other	5,922,000	5,922,000	-
Developer facility charges (net of refunds)	4,950,708	4,950,708	-
Contributions from others	-	-	-
Contributions from other governments	-	-	-
Net Capital Contributions	16,718,960	15,518,960	1,200,000
Change in Net Position	19,409,031	18,150,783	1,258,248
NET POSITION , BEGINNING OF YEAR	\$ 602,342,294	\$ 602,342,294	
NET POSITION, END OF YEAR	\$ 621,751,325	\$ 602,342,294	

**TRUCKEE MEADOWS WATER AUTHORITY
STATEMENTS OF CASH FLOWS
FOR THE YEAR ENDED JUNE 30, 2019**

	Proposed Final Fiscal Year 2019 Total	Tentative Fiscal Year 2019 Total	Increase (Decrease)
INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS			
CASH FLOWS FROM OPERATING ACTIVITIES			
Cash received from customers	\$ 106,843,581	\$ 106,843,581	\$ -
Cash paid to employees	(31,204,190)	(31,204,190)	-
Cash paid to suppliers	(28,268,124)	(28,268,124)	-
Net Cash Provided by Operating Activities	47,371,267	47,371,267	-
CASH FLOWS FROM CAPITAL AND RELATED FINANCING ACTIVITIES			
Acquisition and construction of capital assets	(48,441,000)	(46,641,000)	(1,800,000)
Interest paid on financing	(17,103,819)	(16,993,550)	(110,269)
Principal paid on financing	(2,738,723)	(2,738,723)	-
Proceeds from capital debt issuance	-	-	-
Redemptions of commercial paper notes	(5,000,000)	(5,000,000)	-
Proceeds from refunding bonds	-	-	-
Proceeds transferred to refunding/redemption escrow	-	-	-
Proceeds (spending) from (on) capital asset disposal	-	-	-
Contributions for water meter retrofit program	676,020	676,020	-
Contributions from developers-will-serve letters	3,470,232	3,470,232	-
Contributions from developers-other	5,922,000	5,922,000	-
Contributions from developers-facility charges	4,950,708	4,950,708	-
Contributions from (to) others	-	-	-
Contributions from (to) other governments	-	-	-
Grants	1,700,000	500,000	1,200,000
Bond/Note issuance costs	(215,748)	(215,748)	-
Net Cash (Used) by Capital and Related Financing Activities	(56,780,330)	(56,070,061)	(710,269)
CASH FLOWS FROM INVESTING ACTIVITIES			
Interest received	2,833,548	2,833,548	-
Net Increase (Decrease) in Cash and Cash Equivalents	(6,575,515)	(5,865,246)	(710,269)
CASH AND CASH EQUIVALENTS, BEGINNING OF YEAR	\$ 180,000,000	\$ 180,000,000	\$ -
CASH AND CASH EQUIVALENTS, END OF YEAR	\$ 173,424,485	\$ 174,134,754	\$ (710,269)

Attachment B

TRUCKEE MEADOWS WATER AUTHORITY
(TMWA)

RESOLUTION NO. 263

A RESOLUTION ADOPTING THE FINAL BUDGET FOR THE FISCAL YEAR ENDING
JUNE 30, 2019 AND
THE 2019-2023 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 23, 2018, the fourth 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, 2019 and adopt the 2019-2023 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 23, 2018 by the following vote of the Board:

Ayes: _____

Nays: _____

Abstain: _____ Absent: _____

Approved: _____

Geno Martini, Chairman

Truckee Meadows Water Authority
Resolution 263 (continued)

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

On this 23rd day of May, 2018, 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



June 2018



Photo: Brent Eisert

Five Year Capital Improvement Plan ***Fiscal Year 2019 - 2023***

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 2019-2023 Capital Improvement Plan

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INTRODUCTION

The Truckee Meadows Water Authority's (TMWA's) Five-Year Capital Improvement Plan 2019-2023 (CIP), describes all infrastructure construction and major capital outlays that will take place between July 1, 2018 and June 30, 2023. Guidance for identifying and scheduling projects in the 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 2018. 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.

TMWA 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 158 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). TMWA has no authority to provide water service outside of its service area; however, may provide service in the future to developments that are annexed into its service area. The CIP incorporates a comprehensive compilation of water system improvements for TMWA. A major feature of the CIP is the construction of several 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 drawn upon during periods of persistently dry weather. Another aspect of the CIP is to expand the Aquifer Storage and Recovery Program (ASR Program) which is the recharge of groundwater basins with treated surface water. In addition, this CIP includes several major projects to extend limited water service to the Verdi area, made possible by cost effective oversizing of developer main extensions and Nevada Drinking Water State Revolving Fund (DWSRF) contributions for consolidation of small community water systems. The projects include potential acquisition of the Boomtown water system assets and a connection to the Boomtown system. This connection will provide a conjunctive use supply to a system that relies 100 percent on local groundwater that will experience increased pumping to serve growth in the area. Full capacity water service for the entire Verdi area will not be available until an additional \$12.5 million of new backbone water facilities are constructed.

The CIP constitutes an essential component in TMWA's system of planning, monitoring and managing the activities of purveying water and generating hydroelectric power. The 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 CIP.

The 2018-2022 FP indicates that TMWA can fund the CIP in light of a significant funding gap. This situation is the result of substantial reductions in water demands resulting from the drought that ended in the spring of 2017. Otherwise there appears to be adequate treasury and revenues from various sources to fund operations, pay principal and interest on existing debt, and capital improvements as presented in the CIP.

The CIP includes total spending of \$195.8 million with approximately 76.2% or \$149.1 million dedicated to upgrades or replacement of existing infrastructure, and approximately 17.9% or \$35.0 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 and capital outlays associated with the former STMGID service area are estimated to be approximately 4.5% or \$8.8 million of total spending over fiscal years 2019-2023. 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 11.7% or \$22.9 million is considered contingency spending which is dependent on certain events occurring to trigger spending. The \$195.8 million in projected spending is grouped into broad categories of improvements and spending outlays. These categories are described below with detailed project descriptions to be found in the Project Description Section.

Raw Water Supply Improvements contains 4.1% or approximately \$8.0 million of total spending in the 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 as it 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.

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Ground Water Supply Improvements contains 8.5% or approximately \$16.6 million of total spending in the CIP. These projects focus on preserving existing well capacities, drilling and equipping of new wells and at times complete replacement of existing wells.

Treatment Plant Improvements contains 15.9% or approximately \$31.1 million of total spending in the CIP. The principal spending in this category is construction of 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, the Glendale Diversion for emergency flood repairs, and the Sparks Groundwater Treatment Plant. Additionally, 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. 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.

Distribution System Pressure Improvements contains 14.5% or approximately \$28.3 million of total spending and is the most significant spending category in the 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 Distribution & Service Line Improvements contains 25.5% or approximately \$50.0 million of total spending in the CIP. These 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, Boomtown water system improvements and connection to TMWA, 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.

Potable Water Storage Improvements contains 9.3% or approximately \$18.2 million of total spending in the 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.

Hydroelectric Improvements contains 3.6% or approximately \$7.1 million of total spending in the CIP. These improvements center on the three run-of-river hydroelectric facilities currently owned by TMWA. Efforts on these facilities focus primarily on flume, forebay, diversion and canal improvements as well as equipment upgrades.

Customer Service Outlays contains 6.1% or approximately \$11.9 million of total spending in the CIP. Spending in this category focuses on meter reading device replacements and meter replacement if required. TMWA is currently conducting studies to determine the best option for consolidating the meter system to one format which will provide more frequent and automatic meter reading, meter data management, and a customer portal for water usage information and bill payment. Also in this category is a spending provision for new business meters which is funded by development.

Administrative Outlays contains 6.8% or approximately \$13.3 million of total spending in the 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.

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. It contains 1.2% or approximately \$2.4 million of total spending in the CIP. These outlays are for water meter retrofit and opportunistic water right purchases.

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. It contains 4.5% or approximately \$8.8 million of total spending in the 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.

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 Five-Year FP is used to analyze total spending, identify various funding alternatives, and 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 2019-2023 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 2019-2023 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. 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 2019-2023 CIP the likelihood that spending will occur may be remote and is based upon future conditions that are difficult to predict.

FUNDING OF CAPITAL SPENDING

Funding Sources

The 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 rebounded since reaching historical lows during the great recession. TMWA continues a non-reliance policy 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 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 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 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, primarily to construct the North Virginia-Stead pump station and transmission pipelines. 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 1.4% which was continually

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experienced throughout the last three years. Due to recent and projected federal interest rate hikes, TMWA is planning to reduce \$44.2 million of its variable rate commercial paper with a new bond offering with fixed interest rate payments. 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 total \$8.9 million and 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 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 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 (which was absorbed into TMWA's account) while the STMGID treasury transferred to TMWA was approximately \$15.7 million of which \$10.7 million remains. These cash and investment reserves will continue to 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 Aa2/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 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 a 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. Consequently, an additional water rate increase of 3.0% was put into effect in May of 2017, and an increase of 3% has been approved by the Board for May of 2018. Water rate increases are essential for TMWA to maintain sound credit ratings, to preserve access to opportunities in the capital markets. TMWA also funds rehabilitative capital projects in a meaningful manner due to water delivery being an essential municipal service.

FISCAL YEAR 2019 CAPITAL SPENDING-THE CAPITAL BUDGET

TMWA expects to spend \$48.4 million for fiscal year 2019, the first year of the FY 2019-2023 CIP. Of this total \$38.9 million will be paid for by customer rates for water system rehabilitation, hydroelectric improvements, pressure system improvements, water main distribution service line improvements, and administrative and customer service outlays. While \$6.3 million will be paid for by developer fees, which includes \$0.5 million in grants awarded by DWSRF Loan Forgiveness for the Verdi Main Extension project, and will be dedicated to water system expansion, limited opportunistic acquisition of water rights and some water meter retrofit activities. Finally, STMGID treasury reserves account for \$2.8 million of improvements in the STMGID area.

SUMMARY OF PROJECTS FOR THE FISCAL YEAR 2019 BUDGET

Total construction spending, acquisition spending, and capital outlays are expected to be \$48.4 million for the fiscal year 2019. TMWA has established the following projects for the capital budget in fiscal year 2019 (Amounts presented in thousands of dollars):

Summary of Projects for FY 2019	Amount
Raw Water Supply Improvements	
Highland Canal-Upgrades-Downstream	225
Highland Canal-Upgrades-Diversion to Chalk Bluff	100
Independence Lake Permitting Study	100
Indirect Potable Reuse	100
TROA Drought Storage / Implementation	75
Donner Lake Outlet Improvements Phase 2	300
Total	900
Ground Water Supply Improvements	
Well Rehabilitation Improvements	725
Sunrise Well #3 Replacement	100
Bedell Flat Water Bank	100
Well Fix & Finish	150
NDEP Monitoring Wells	110
Wellhead Biological Treatment Pilot Study	200
Well Head TTHM Mitigation	300
Spring Creek Well 7 Recharge	75
Desert Springs 1 & 2 and Spring Creek 5 ASR Retrofit (Bureau of Rec Grant)	10
Total	1,770

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Project Summary for FY 2019 (continued)	Amount
Treatment Plant Improvements	
Chalk Bluff Treatment Plant Fix & Finish	780
Glendale Treatment Plant Fix and Finish	485
Chalk Bluff Pump Building Air Handler	150
Truckee Canyon Water Treatment Improvements	50
Lightning W Treatment Improvements	60
SCADA Rehab / Plant Operating Software	1,331
Mount Rose Surface Water Treatment Plant	10,500
Glendale Diversion Emergency Flood Repairs (FEMA)	100
Total	13,456
Pressure Improvements	
Pressure Regulators Rehabilitation	500
Pressure Reducing Valve (Roll Seal) Removal	400
Land Acquisitions	250
Paloma Pressure Regulating Station / Main	950
Longley Booster Pump Station / Double R Capacity Increase	500
Pump Station Oversizing	100
Pump Station Rebuilds, Rehabilitations	1,450
Mount Rose Well #3 Pump Station Improvements	50
Chalk Bluff Additional Backup Generator	1,300
Huffaker Booster Pump Station	400
Twin Lakes Booster Pump Station	400
Satellite Hills Booster Pump Station	400
Total	6,700
Water Main-Distribution-Service Line Improvements	
Street & Highway Main Replacements	2,500
South Virginia / Midtown Main Plumb to Liberty	3,000
California-Marsh 24" Main Replacement	50
South Virginia 24" Main (Kumle to Peckham)	100
Spanish Springs - Spring Creek South Zone Conversion	50
Spanish Springs Main Replacement	300
South Truckee Meadows Capacity Improvements	400
General Waterline Extensions	100
Verdi Main	2,500
Mount Rose 5 Distribution / Pressure Improvements	150
Gordon Avenue Main Replacement	1,580
Boomtown Water System Improvements	1,990

Truckee Meadows Water Authority FY 2019-2023 Capital Improvement Plan Attachment C

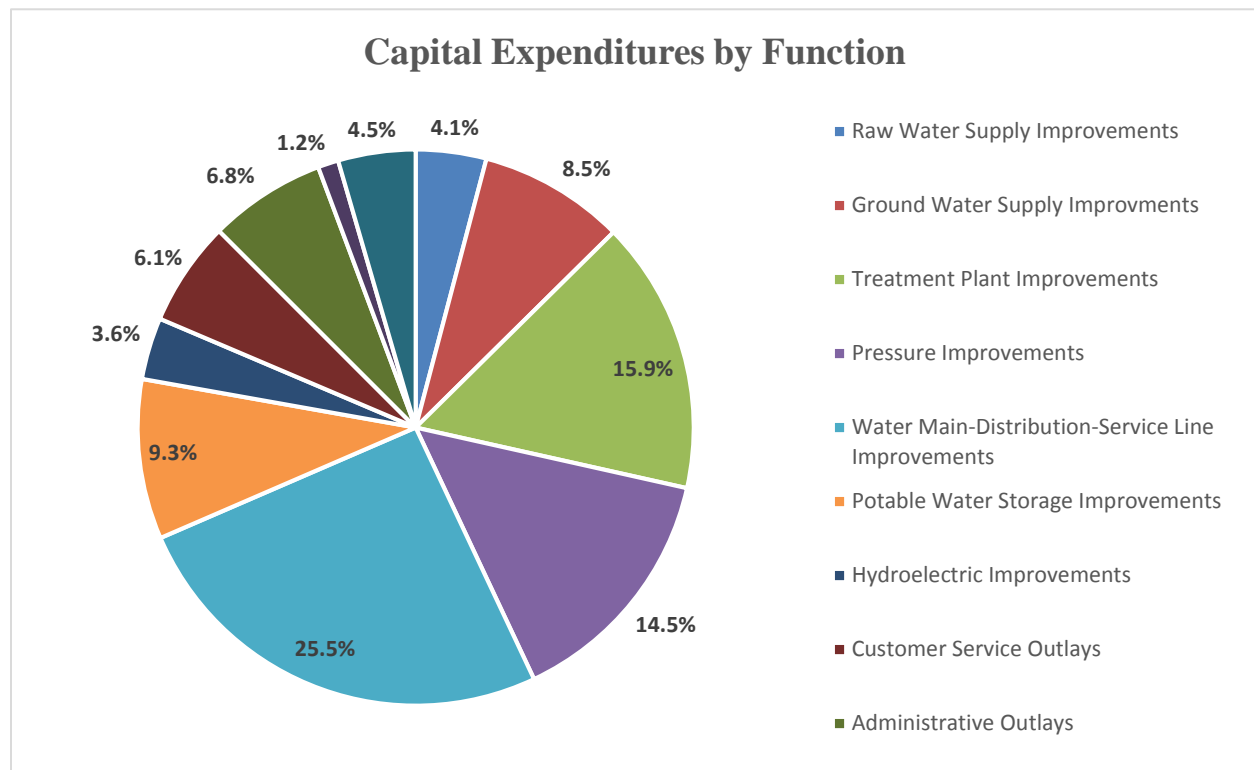
Project Summary for FY 2019 (continued)	Amount
Water Main-Distribution-Service Line Improvements (continued)	
Boomtown to TMWA Connection	130
Lemmon Valley Sand Yard	530
Total	13,380
Potable Water Storage Improvements	
Sun Valley #2 Tank	50
Storage Tank Recoats; Access; Drainage Improvements	900
STMGID Tank East (Zone 11 Tank (Not STMGID))	50
Total	1,000
Hydroelectric Improvements	
Forebay, Diversion, and Canal Improvements	55
Flume Rehabilitation	600
Hydro Plant Generator Rewinds	650
Fleish Overflow Reconstruction	1,400
Total	2,705
Customer Service Outlays	
New Business Meters	350
Mueller Pit Replacements former Washoe County	125
Meter - ERT-RTR Replacements	1,250
Galvanized / Poly Service Line Replacements	400
AMI Automated Meter Infrastructure	750
Total	2,875
Administrative Outlays	
GIS / GPS System Mapping Equipment	40
Desktop Computer Upgrades	100
Network Server / Storage Upgrades	175
Network Security Upgrades	150
Crew Trucks / Vehicles	1,270
Security-ER Projects	150
CIS System Replacement	100
Emergency Operations Annex Design / Construction	250
System Wide Asphalt Rehabilitation	200
Total	2,435

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Project Summary for FY 2019 (continued)	Amount
Special Projects Funded by Development	
Water Meter Retrofits	300
Water Right Purchases	150
Total	450
Former STMGID System Improvements	
STMGID Well Bypass & Chlorine Room Improvements	300
STMGID Well Fix & Finish	150
STMGID Conjunctive Use Facilities	1,800
STMGID Tank Recoats	220
STMGID Mueller Pit Replacements	50
STMGID NAC Deficiencies - Saddlehorn, Upper Toll, STMGID East	250
Total	2,770

CAPITAL EXPENDITURE BY FUNCTION**(Amounts in thousands of dollars)**

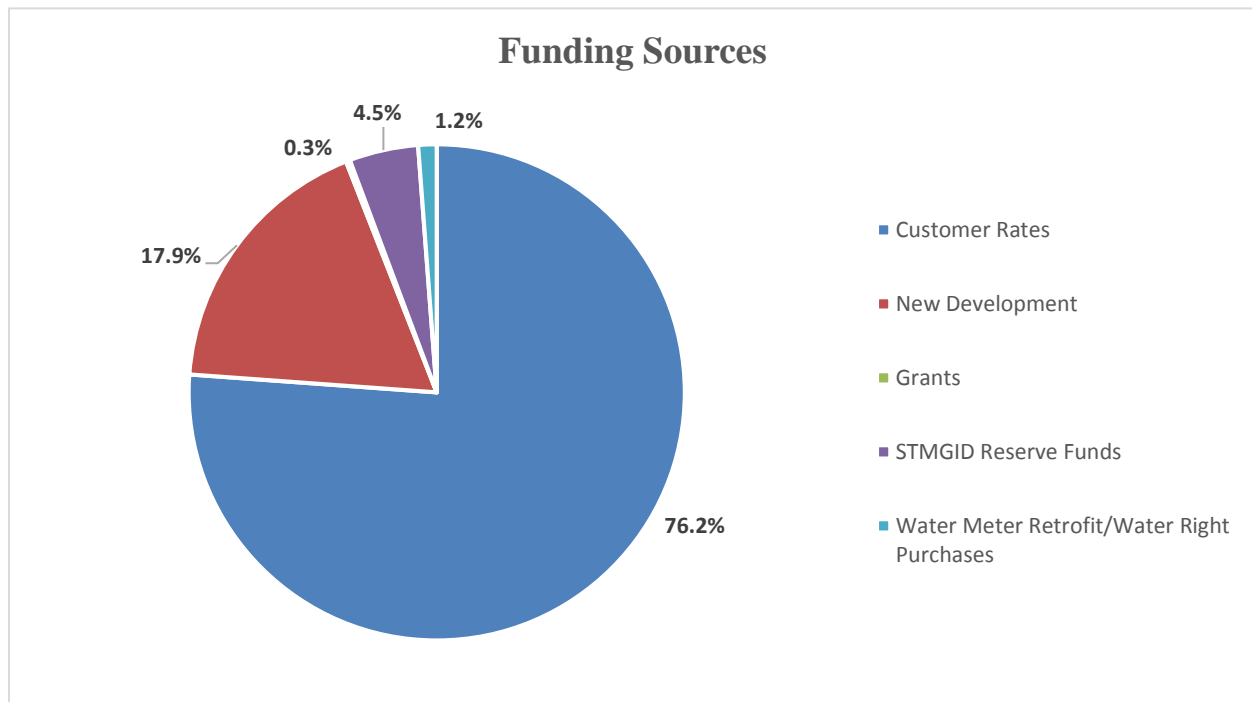
Summary of Capital Expenditures by Function	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Five Year CIP Total
Raw Water Supply Improvements	900	775	5,375	475	475	8,000
Ground Water Supply Improvements	1,770	2,510	5,175	2,735	4,415	16,605
Treatment Plant Improvements	13,456	10,272	3,633	1,104	2,641	31,106
Distribution System Pressure Improvements	6,700	6,430	4,100	5,200	5,900	28,330
Water Main Distribution Service Line Improvements	13,380	12,750	10,000	6,590	7,260	49,980
Potable Water Storage Improvements	1,000	4,875	2,750	6,700	2,900	18,225
Hydroelectric Improvements	2,705	2,900	1,050	400	50	7,105
Customer Service Outlays	2,875	2,760	2,625	2,285	1,375	11,920
Administrative Outlays	2,435	4,850	2,965	1,515	1,515	13,280
Water Meter Retrofit/ Water Right Purchases	450	450	450	450	600	2,400
Sub-Total TMWA Construction Spending & Outlays	45,671	48,572	38,123	27,454	27,131	186,951
Former STMGID System	2,770	2,900	2,500	500	150	8,820
Total Projected Capital Spending, Including STMGID	48,441	51,472	40,623	27,954	27,281	195,771



PRELIMINARY FUNDING PLAN FUNDING SOURCES

(Amounts in thousands of dollars)

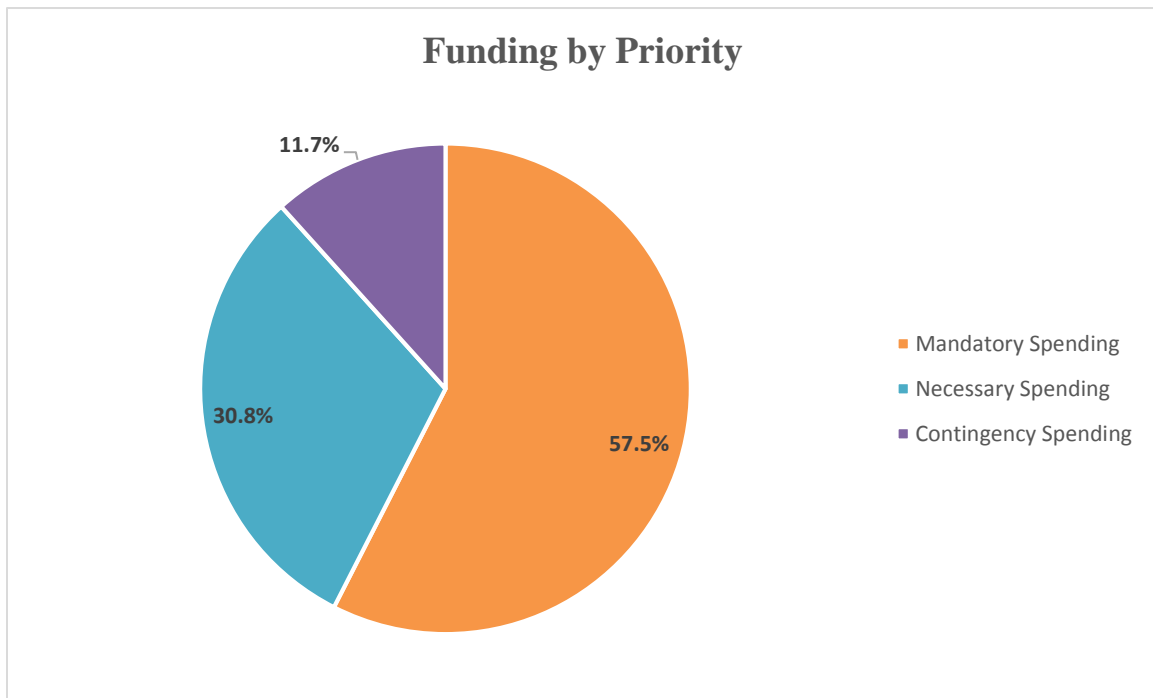
Summary of Funding Sources	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Five Year CIP Total
Capital Improvements Funded by Customer Rates	38,926	34,622	32,628	22,804	20,101	149,081
Capital Improvements Funded by Development	5,795	13,500	5,045	4,200	6,430	34,970
Capital Improvements Funded by Grants	500	—	—	—	—	500
Capital Improvements Funded with former STMGID Reserve Funds	2,770	2,900	2,500	500	150	8,820
Water Meter Retrofit/ Water Right Purchases	450	450	450	450	600	2,400
Total Projected Capital Spending	48,441	51,472	40,623	27,954	27,281	195,771



FUNDING BY PRIORITY

(Amounts in thousands of dollars)

Summary of Funding by Priority	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Five Year CIP Total
Priority 1 - Mandatory Spending, Projects in Progress, Regulatory	36,671	34,452	17,518	12,714	11,246	112,601
Priority 2 - Necessary Spending	9,400	14,795	20,055	6,880	9,185	60,315
Priority 3 - Contingency Spending	2,370	2,225	3,050	8,360	6,850	22,855
Total Projected Capital Spending	48,441	51,472	40,623	27,954	27,281	195,771



PROJECT FUNCTIONS AND DESCRIPTIONS**RAW WATER SUPPLY IMPROVEMENTS****Summary**

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	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	1,000	100	100	1,400
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	75	50	50	50	50	275
2	Customer Rates	Donner Lake Outlet Improvements Phase 2	300	300	4,000	—	—	4,600
Subtotal			900	775	5,375	475	475	8,000

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



Raw Water Supply Improvements

Highland Canal-Upgrades-Downstream

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
1	Customer Rates	Highland Canal - Upgrades - Downstream	225	225	225	225	225	1,125

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.



Raw Water Supply Improvements

Highland Canal – Upgrades – Diversion to Chalk Bluff

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
1	Customer Rates	Highland Canal - Upgrades-Diversion to Chalk Bluff	100	100	1,000	100	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.



Raw Water Supply Improvements

Independence Lake Permitting Study

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	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 2019.



Raw Water Supply Improvements

Indirect Potable Reuse

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	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 projects with Nevada Water Innovation Campus (NWIC) over the next 3-5 year time frame, with additional funding support from Reno, Sparks, Washoe County, and WRWC.



Raw Water Supply Improvements TROA Drought Storage/Implementation

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
1	Customer Rates	TROA Drought Storage / Implementation	75	50	50	50	50	275

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 are related to the operation of reservoir sites.



Raw Water Supply Improvements

Donner Lake Outlet Improvements Phase 2

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
2	Customer Rates	Donner Lake Outlet Improvements Phase 2	300	300	4,000	—	—	4,600

PROJECT DESCRIPTION: Dredging of a portion of the Donner Lake outlet channel was completed in FY2018. The project was scaled back to fit within the CEQA emergency permitting requirements. Additional work is required to extend and improve the outlet channel further into the lake, including possible bank stabilization improvements to minimize future dredging requirements.

SCHEDULE: Permitting and preliminary design will be conducted over the next two years. Construction of improvements tentatively scheduled for FY2021.

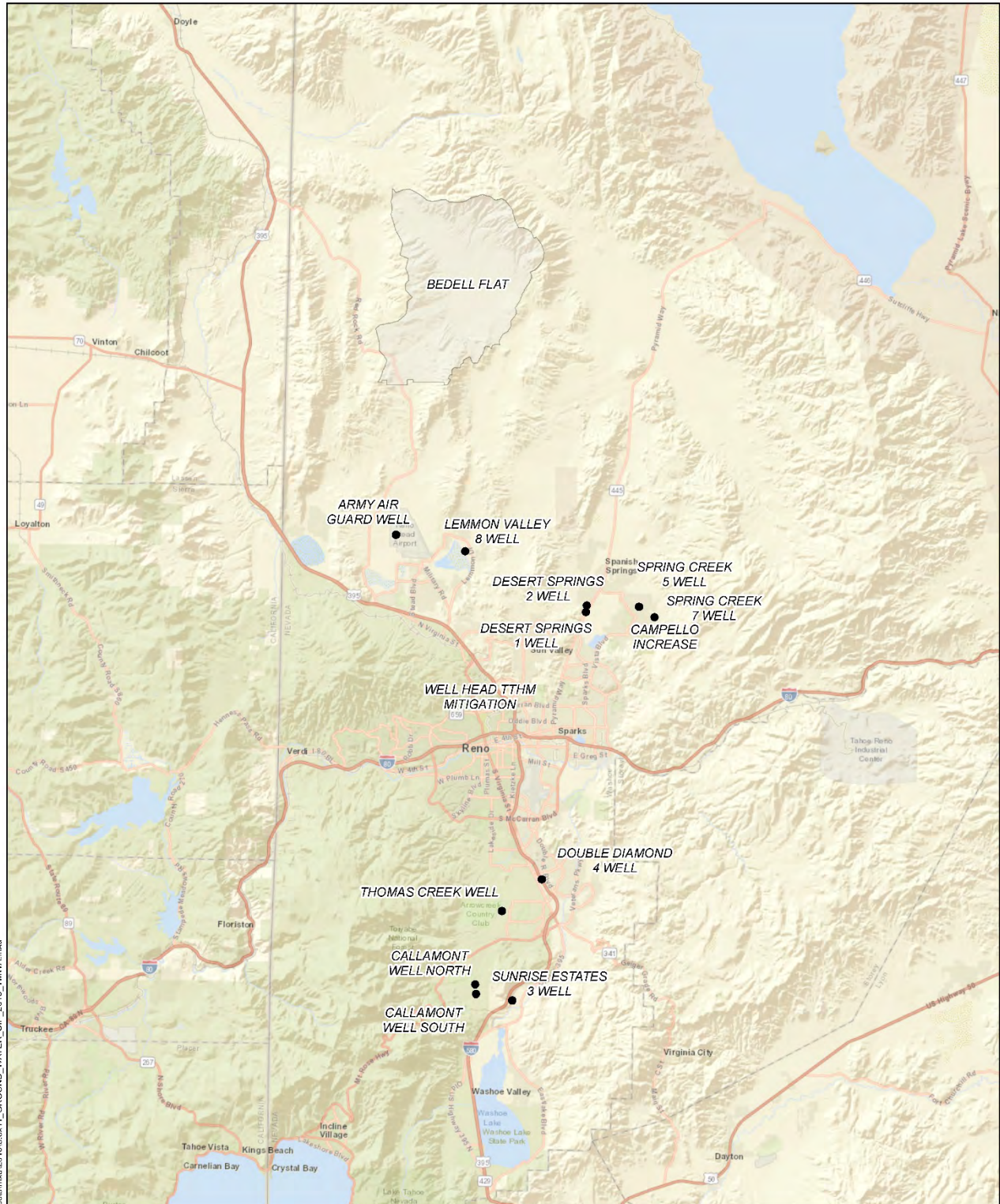


GROUND WATER SUPPLY IMPROVEMENTS

Summary

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
1	Customer Rates	Well Rehabilitation Improvements	725	925	925	925	925	4,425
2	Developer Fees	Double Diamond #4 Equipping	—	—	—	—	1,100	1,100
2	Customer Rates	Campello Capacity Increase	—	250	—	—	—	250
2	Customer Rates	Callamont Well South Equip	—	60	1,040	—	—	1,100
2	Customer Rates	Air Guard Well Replacement	—	—	1,000	—	—	1,000
1	Customer Rates	Sunrise #3 Replacement	100	—	—	—	—	100
3	Customer Rates	Bedell Flat Water Bank	100	100	100	100	100	500
2	Customer Rates / Developer	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	100	100	—	—	310
2	Customer Rates	Thomas Creek Well Replacement	—	—	1,250	1,000	—	2,250
2	Customer Rates	Wellhead Biological Treatment Pilot Study	200	—	—	—	—	200
2	Customer Rates	Well Head TTHM Mitigation	300	500	500	500	—	1,800
2	Customer Rates	Spring Creek Well #7 Recharge	75	425	—	—	—	500
1	Customer Rates / Grant	Desert Springs 1 & 2 and Spring Creek 5 ASR Retrofit	10	—	—	—	—	10
2	Customer Rates	Callamont Well North Equipping	—	—	—	60	1,140	1,200
Subtotal			1,770	2,510	5,175	2,735	4,415	16,605

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



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**FY 2019-2023 CIP
GROUND WATER SUPPLY IMPROVEMENTS
SUMMARY**

DATE 4/1/2018

MAP BY: JK

REQUESTED BY: LK

SCALE: 1 in = 6 miles



Ground Water Supply Improvements

Well Rehabilitation Improvements

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
1	Customer Rates	Well Rehabilitation Improvements	725	925	925	925	925	4,425

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 function and capacities. Spending in fiscal years 2019-2023 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 2019 include STMGID 2, Lightning W 3, Corbett, Nugget, and Lemmon Valley 9.



Ground Water Supply Improvements

Double Diamond #4 Equipping

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
2	Developer Fees	Double Diamond #4 Equipping	—	—	—	—	1,100	1,100

PROJECT DESCRIPTION: Construct pumping facilities for the existing Double Diamond Well #4 including the pump house building, electrical power, pump/motor and valves and piping to provide an additional 1,200 gallons per minute of peak period supply to the Double Diamond area.

SCHEDULE: Based on current growth rates, it is anticipated that the additional capacity from the new well will be needed in the summer of 2023.



Ground Water Supply Improvements

Campello Capacity Increase

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
2	Customer Rates	Campello Capacity Increase	—	250	—	—	—	250

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.



Ground Water Supply Improvements

Callamont Well South Equipping

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
2	Customer Rates	Callamont Well South Equipping	—	60	1,040	—	—	1,100

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 (or later) depending on the actual schedule for the proposed 210 unit Callamont residential development.



Ground Water Supply Improvements

Air Guard Well Replacement

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
2	Customer Rates	Air Guard Well Replacement	—	—	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 are scheduled for construction in FY 2021.



Ground Water Supply Improvements

Sunrise #3 Replacement

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
1	Customer Rates	Sunrise #3 Replacement	100	—	—	—	—	100

PROJECT DESCRIPTION: This project involves activities associated with relocating a septic tank that is currently within the regulated setback distance of Sunrise Estates Well #3. Groundwater quality and available land space will be reviewed to verify the potential for septic tank relocation. If septic tank relocation efforts are found to be non-feasible, additional exploratory drilling may be carried out in order to attempt to identify a new groundwater resource at a different location.

SCHEDULE: Septic tank relocation activities will begin during FY 2019.



Ground Water Supply Improvements

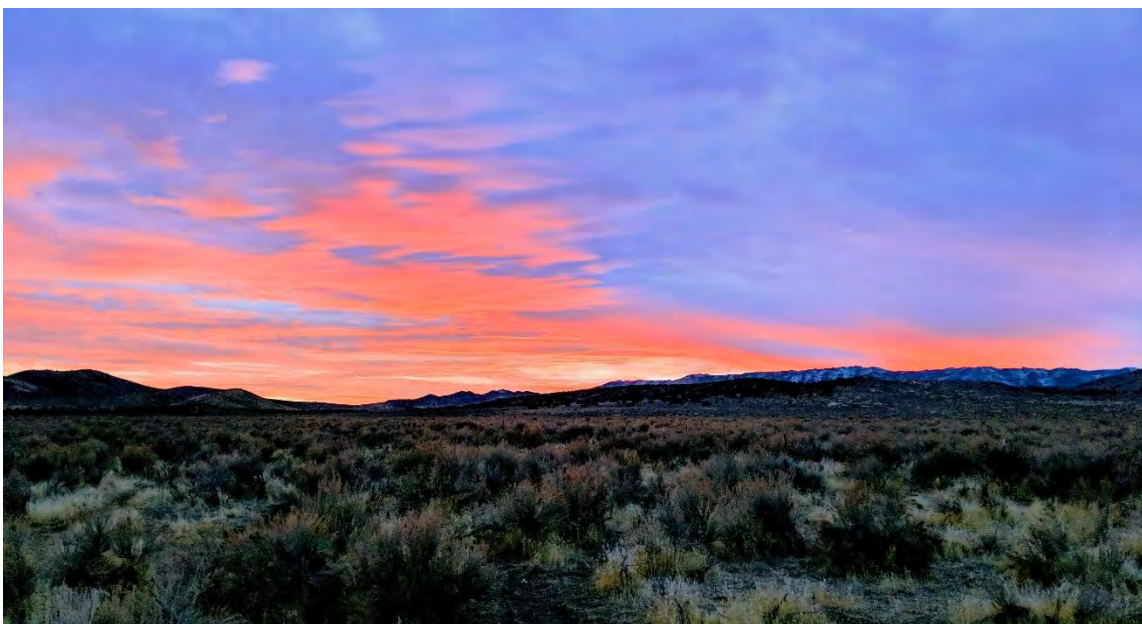
Bedell Flat Water Bank

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
3	Customer Rates	Bedell Flat Water Bank	100	100	100	100	100	500

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, Washoe County, and the U.S. Geological Survey (USGS) to evaluate the feasibility of expanding TMWA's conjunctive use program to include aquifer storage and recovery (ASR) 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 near the existing Fish Springs pipeline; infiltration of highly treated reclaimed water along a natural drainage referred to as Bird Spring Wash; infiltration of highly treated reclaimed water through rapid infiltration basins (RIBs); 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 includes a joint funding agreement with the USGS to conduct water infiltration monitoring and assessments to determine the feasibility of ASR in Bedell Flat, and an NDEP grant for infiltration testing.

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.



Ground Water Supply Improvements

Lemmon Valley Well #8 Replacement

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
2	Customer Rates / Developer	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 while producing at least 20 percent more capacity than the original Lemmon Valley 8 Well. The additional capacity will provide supply to support base load supplied from the Fish Springs groundwater system.

SCHEDULE: Well drilling will occur in FY23 and well equipping in FY24.



Ground Water Supply Improvements

Well Fix & Finish

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	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.



Ground Water Supply Improvements

Well Plugging / Conversion

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	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 FY21.



Ground Water Supply Improvements

NDEP Monitoring Wells

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
1	Customer Rates	NDEP Monitoring Wells	110	100	100	—	—	310

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 the Nevada Division of Environmental Protection - Underground Injection Control (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 FY 18-19.



Ground Water Supply Improvements

Thomas Creek Well Replacement

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	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 FY21 and well equipping in FY22.



Ground Water Supply Improvements

Well Head Biological Treatment Pilot Study

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
2	Customer Rates	Well Head Biological Treatment Pilot Study	200	—	—	—	—	200

PROJECT DESCRIPTION: Operation of a 5 gallon per minute pilot treatment process in Spanish Springs to potentially treat several groundwater wells that are out of service due to elevated Nitrate and Arsenic.

TMWA completed the planning, permitting and site design of the pilot treatment plant in 2017. Biological treatment of Nitrate in potable water is currently not permitted in Nevada. TMWA, working with Carollo Engineers, UNR and WaterStart, is evaluating this innovative technology to see if it can be a cost-effective treatment solution compared to traditional, high cost alternatives. WaterStart contributed \$60,000 towards funding the local operation of the pilot plant using a master's student from UNR.

SCHEDULE: Continued operation, testing and evaluation of the pilot unit will be ongoing through calendar year 2018.



Ground Water Supply Improvements

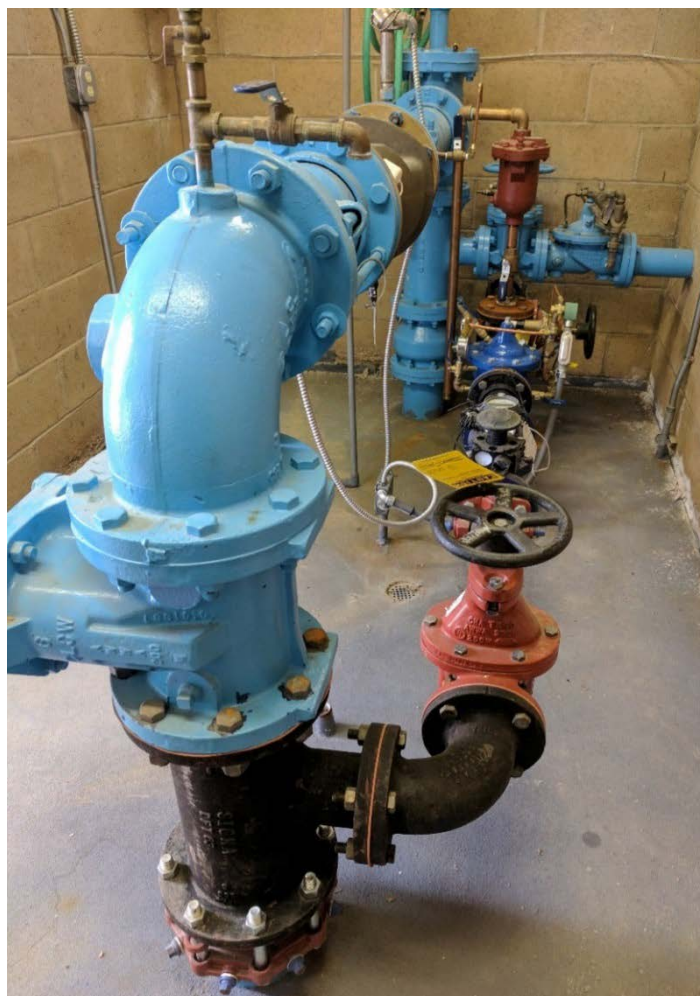
Well Head TTHM Mitigation

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
2	Customer Rates	Well Head TTHM Mitigation	300	500	500	500	—	1,800

PROJECT DESCRIPTION: Planning, permitting and implementation of tank mixers and ventilation equipment at Zolezzi and Verdi Business Park tanks, dechlorination and testing alternative treatment technologies to reduce disinfection by product (DBP) formation in recharged water and receiving groundwater.

SCHEDULE: Planning and design began in FY 2018 and is ongoing. Construction of tank mixers and ventilation equipment at Zolezzi and Verdi Business Park tanks will begin in summer FY 2019 and will be completed by winter FY 2019. Other technologies will be implemented at key recharge well sites in subsequent years based on priority.



Ground Water Supply Improvements

Spring Creek Well #7 Recharge

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
2	Customer Rates	Spring Creek Well #7 Recharge	75	425	—	—	—	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 begin in FY 2019.



Ground Water Supply Improvements

Desert Springs 1 & 2 and Spring Creek 5 ASR Retrofit

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
1	Customer Rates / Grant	Desert Springs 1 & 2 and Spring Creek 5 ASR Retrofit	10	—	—	—	—	10

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.

SCHEDULE: Construction was completed in FY 2018. Monitoring and reporting to be completed in FY 2019.



Ground Water Supply Improvements

Callamont Well North Equipping

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
2	Customer Rates	Callamont Well North Equipping	—	—	—	60	1,140	1,200

PROJECT DESCRIPTION: Construct pumping facilities for the remaining existing Callamont well 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 2023, but may be constructed sooner (or later) depending on the actual schedule for the proposed 210 unit Callamont residential development.



TREATMENT PLANT IMPROVEMENTS

Summary

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
2	Customer Rates	Chalk Bluff Treatment Plant Fix & Finish	780	600	360	355	355	2,450
2	Customer Rates	Glendale Treatment Plant Fix & Finish	485	1,250	210	65	65	2,075
1	Customer Rates	Chalk Bluff Pump Building Air Handler	150	—	—	—	—	150
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	—	100	1,800	—	—	1,900
2	Developer Fees	Truckee Canyon Water Treatment Improvements	50	60	60	35	—	205
2	Customer Rates	Lightning W Treatment Improvements	60	10	60	160	—	290
1	Customer Rates	SCADA Rehab/Plant Operating Software	1,331	1,002	793	489	471	4,086
1	Developer Fees	Mt. Rose Surface Water Treatment Plant	10,500	5,500	—	—	—	16,000
2	Customer Rates	Longley Lane Water Treatment Plant Assessment/Retrofit	—	600	—	—	—	600
1	Customer Rates	Glendale Diversion Emergency Flood Repairs	100	900	—	—	—	1,000
2	Developer Fees	Sparks Ground Water Treatment Plant	—	—	—	—	1,750	1,750
Subtotal Treatment Improvements			13,456	10,272	3,633	1,104	2,641	31,106

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



Treatment Plant Improvements

Chalk Bluff Treatment Plant Fix & Finish

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
2	Customer Rates	Chalk Bluff Treatment Plant Fix & Finish	780	600	360	355	355	2,450

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 was started in FY 2018, will be completed in FY 2019. 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.



Treatment Plant Improvements

Glendale Treatment Plant Fix & Finish

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
2	Customer Rates	Glendale Treatment Plant Fix & Finish	485	1,250	210	65	65	2,075

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 through 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 planning was completed in FY 2018 with construction scheduled for FY 2019. 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.



Treatment Plant Improvements

Chalk Bluff Pump Building Air Handler

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
1	Customer Rates	Chalk Bluff Pump Building Air Handler	150	—	—	—	—	150

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 for the end of FY 2018 and continue into the first quarter of FY 2019.



Treatment Plant Improvements

Chalk Bluff Lighting Upgrade

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	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.



Treatment Plant Improvements

Glendale Lighting Upgrade

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	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 2020.



Treatment Plant Improvements

Eagle Canyon Transmission Main Phase 2

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	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 design is scheduled to be completed in FY 2020 with construction scheduled to begin in FY 2021.



Treatment Plant Improvements

Truckee Canyon Water Treatment Improvements

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
2	Developer Fees	Truckee Canyon Water Treatment Improvements	50	60	60	35	—	205

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 2019 – FY 2022 are contingent spending related to treatment efficiency and for chemical changes in the raw water.



Treatment Plant Improvements

Lightning W Treatment Improvements

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
2	Developer Fees	Lightning W Treatment Improvements	60	10	60	160	—	290

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

SCHEDULE: The FY 2019 work includes miscellaneous building improvements.



Treatment Plant Improvements

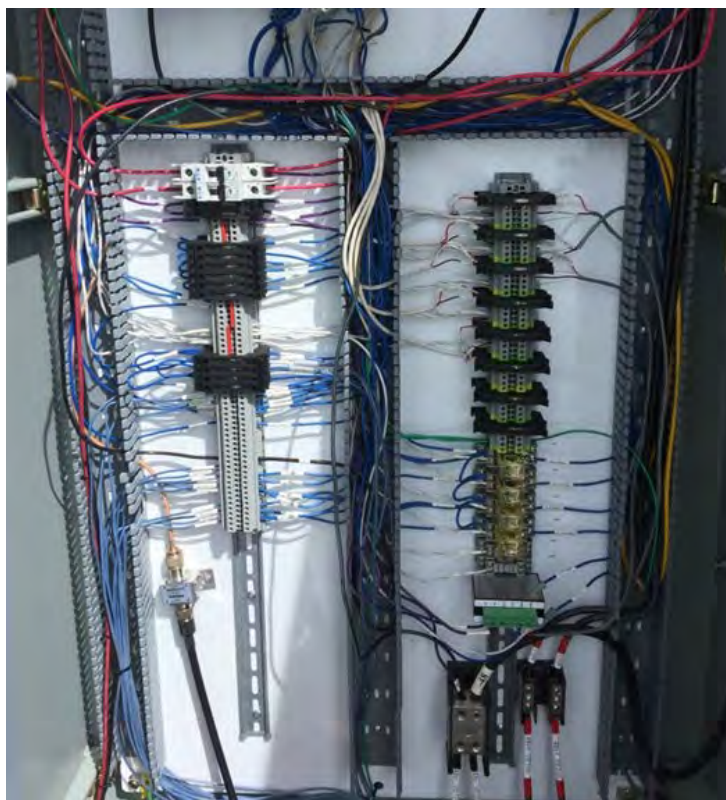
SCADA Rehab/Plant Operating Software

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
1	Customer Rates	SCADA Rehab/Plant Operating Software	1,331	1,002	793	489	471	4,086

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.



Treatment Plant Improvements

Mt. Rose Surface Water Treatment Plant

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
1	Developer Fees	Mt. Rose Surface Water Treatment Plant	10,500	5,500	—	—	—	16,000

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 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 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, design, and bidding to be completed in FY 2018. Construction will occur in FY2019, and completion of construction in FY 2020.



Treatment Plant Improvements

Longley Lane Water Treatment Plant Retrofit

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
2	Customer Rates	Longley Lane Water Treatment Plant Retrofit	—	600	—	—	—	600

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 was completed and short-term improvements identified to modify the facility to serve as a booster pump station using either surface water or groundwater supply sources. Preliminary Engineering Report (PER) will be completed in FY2018.

SCHEDULE: Improvements will be implemented in FY2020.



Treatment Plant Improvements

Glendale Diversion Emergency Flood Repairs

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
1	Customer Rates	Glendale Diversion Emergency Flood Repair	100	900	—	—	—	1,000

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: Basic repairs were completed in FY 2018. Improvements to mitigate future failures is scheduled for completion in FY 2019 pending environmental permitting.



Treatment Plant Improvements

Sparks Ground Water Treatment Plant

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
2	Developer	Sparks Ground Water Treatment Plant	—	—	—	—	1,750	1,750

PROJECT DESCRIPTION: The Sparks Ground Water Treatment Plant will have a 12 million gallons a day (MGD) capacity with the initial phase built to accommodate 8 MGD. Phase 1 includes equipping Prater, Dillworth and Stanford wells and constructing raw water pipelines to the I Street WTP site. Phase 2 includes equipping Sparks High, Sparks UMC and Mitchell wells and construction of raw water pipelines to the site. Current planning suggests Phase 2 would be needed in FY 2039.

SCHEDULE: Design is planned for FY 2023 with Construction of Phase 1 planned for FY 2024-2025.



DISTRIBUTION SYSTEM PRESSURE IMPROVEMENTS

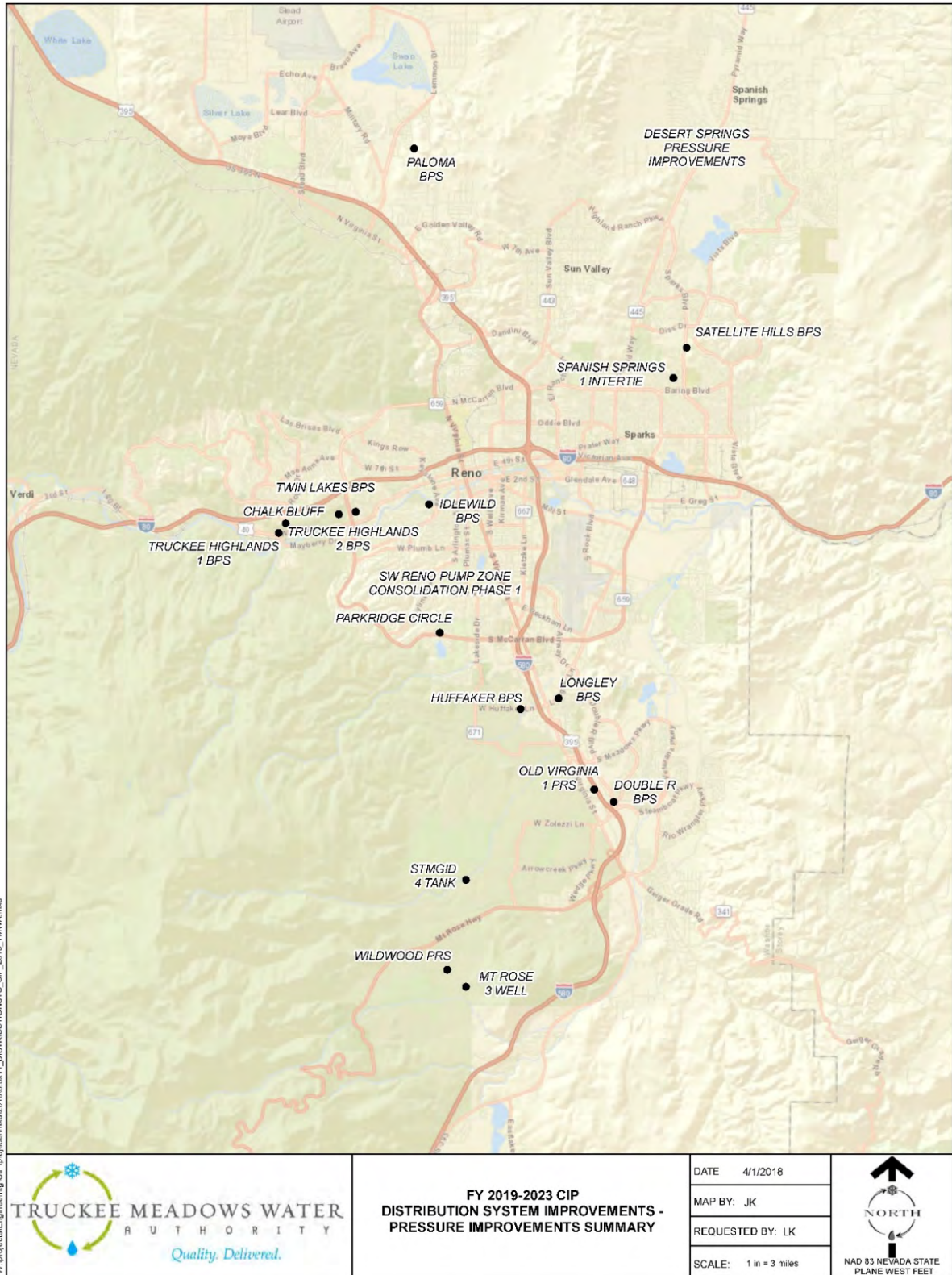
Summary

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
1	Customer Rates	Pressure Regulators Rehabilitation	500	500	500	500	500	2,500
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	950	—	—	—	—	950
2	Developer Fees	Longley Booster Pump Station /Double R Capacity Increase	500	—	—	—	—	500
3	Customer Rates	Pump Station Oversizing	100	100	100	100	100	500
1	Customer Rates	Pump Station Rebuilds	1,450	1,000	1,000	1,000	1,000	5,450
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	150	150	150	600
2	Customer Rates	Idlewild Booster Pump Station Improvements	—	—	100	1,200	—	1,300
2	Customer Rates	Parkridge Circle Conversion	—	—	—	300	—	300
3	Customer Rates /	SW Reno Pump Zone Consolidation Phase 1	—	—	—	300	3,500	3,800
2	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
3	Developer Fees	Wildwood Pressure Regulating Station /Scada Control	—	—	50	—	—	50

Truckee Meadows Water Authority FY 2019-2023 Capital Improvement Plan Attachment C

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
3	Developer Fees	Truckee River Highland Pump Station #2	—	—	—	1,000	—	1,000
3	Customer Rates	Old Virginia Regulation Station	—	330	—	—	—	330
1	Customer Rates	Chalk Bluff Additional Backup Generator Design	1,300	—	—	—	—	1,300
1	Customer Rates	Huffaker Booster Pump Station	400	—	—	—	—	400
1	Customer Rates	Twin Lakes Booster Pump Station	400	—	—	—	—	400
1	Customer Rates	Satellite Hills Booster Pump Station	400	—	—	—	—	400
Sub-Total Pressure Improvements			6,700	6,430	4,100	5,200	5,900	28,330

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



Distribution System Pressure Improvements

Pressure Regulators Rehabilitation

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
1	Customer Rates	Pressure Regulators Rehabilitation	500	500	500	500	500	2,500

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.



Distribution System Pressure Improvements

Pressure Reducing Valve (Roll Seal) Removal

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	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.



Distribution System Pressure Improvements

Land Acquisition

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	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.



Distribution System Pressure Improvements

Desert Springs Pressure Improvements

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	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 2020.



Distribution System Pressure Improvements

Paloma Pressure Regulating Station/Main

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
1	Customer Rates	Paloma PRS/Main	950	—	—	—	—	950

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 and will continue into FY 2019.



Distribution System Pressure Improvements

Longley Booster Pump Station/Double R Capacity Increase

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	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 5,400 gallons per minute.



Distribution System Pressure Improvements

Pump Station Oversizing

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
3	Customer Rates	Pump Station Oversizing	100	100	100	100	100	500

PROJECT DESCRIPTION: The FY 2019 project may consist 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.



Distribution System Pressure Improvements

Pump Station Rebuilds, Rehabilitations

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
1	Customer Rates	Pump Station Rebuilds, Rehabilitations	1,450	1,000	1,000	1,000	1,000	5,450

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. In FY 2019, TMWA plans to reconstruct the Sun Valley #1 pump station above ground and potentially make distribution system improvements to improve the hydraulic connectivity in the combined Sun Valley-Sutro-Valley system. The pump station may also be equipped with a standby generator.

SCHEDULE: Construction is scheduled for FY 2019.



Distribution System Pressure Improvements

Truckee River Highlands Pump Station #1

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	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.



Distribution System Pressure Improvements

Mt. Rose Well #3 Pump Station Improvements

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
2	Customer Rates	Mt. 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 Well #5 improvements and upgrades to electrical and control systems.

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



Distribution System Pressure Improvements

Standby Generator Improvements

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
3	Customer Rates	Standby Generator Improvements	—	150	150	150	150	600

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 second generator will be installed pump at Chalk Bluff to allow more pumping and treatment processes to continue during a power failure. This project is contained in a stand alone line item as reflected in the FY 2019 budget above.



Distribution System Pressure Improvements

Idlewild BPS Improvements

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	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 FY 2021 and construction should begin in FY 2022. This schedule may be moved based on system needs.



Distribution System Pressure Improvements

Parkridge Circle Conversion

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	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.



Distribution System Pressure Improvements

SW Reno Pump Zone Consolidation Phase 1

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
3	Developer Fees	SW Reno Pump Zone Consolidation Phase 1	—	—	—	300	3,500	3,800

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 2022. Construction is scheduled to start in FY 2023 and continue into FY 2024 (\$6.8 million total over 3 years).



Distribution System Pressure Improvements

Spanish Springs #1 Pressure Zone Intertie

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	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 2020. The relocation of the Satellite Hills pump station must be completed prior to this project.



Distribution System Pressure Improvements

STMGID Tank #4 Booster Pump Station / Transmission Line

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	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.



Distribution System Pressure Improvements

Wildwood Pressure Regulating Station/Scada Control

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	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 #2 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.



Distribution System Pressure Improvements

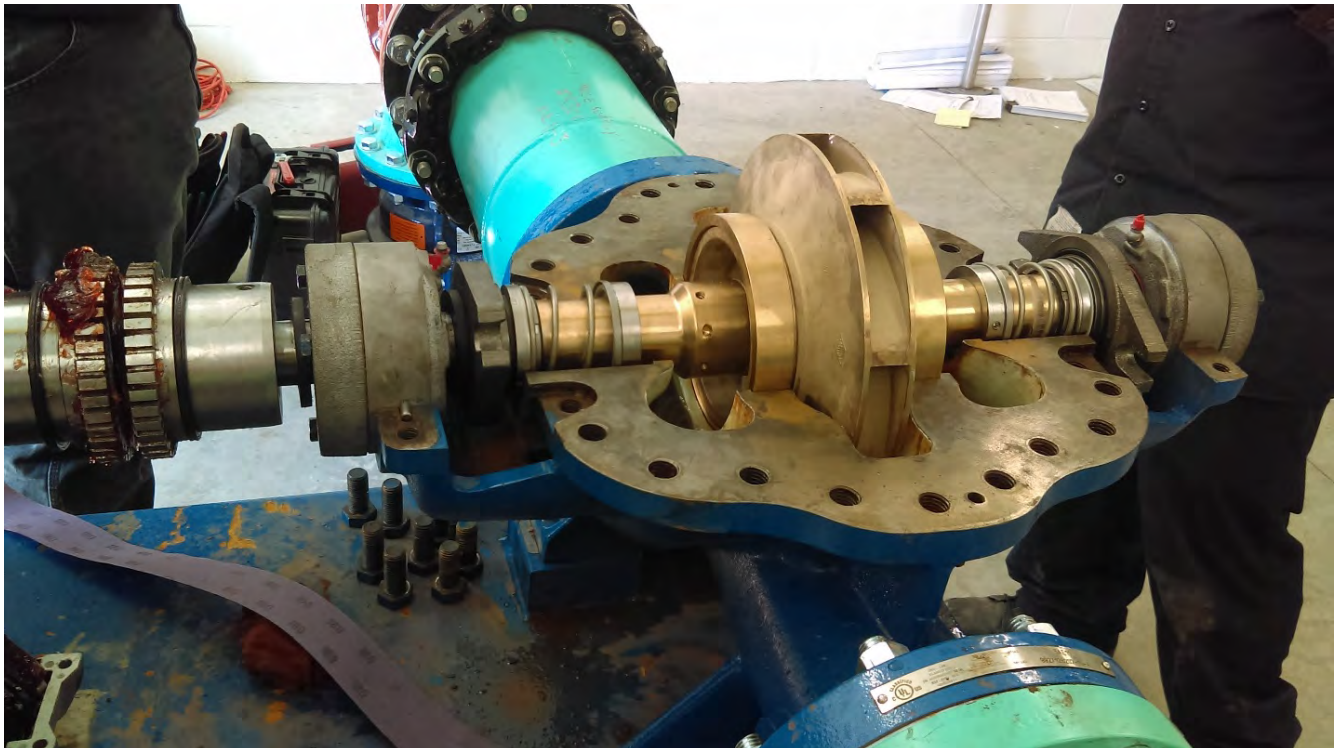
Truckee River Highlands Pump Station #2

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
3	Developer Fees	Truckee River Highlands PS #2	—	—	—	1,000	—	1,000

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.



Distribution System Pressure Improvements

Old Virginia Regulation Station

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	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.



Distribution System Pressure Improvements

Chalk Bluff Additional Backup Generator

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
1	Customer Rates	Chalk Bluff Additional Backup Generator	1,300	—	—	—	—	1,300

PROJECT DESCRIPTION: The project was originally scoped as a dedicated generator for the 6,000 gallons per minute Northgate booster pump located at Chalk Bluff; however, studies revealed that it was more efficient and effective to add a larger standby generator in parallel with the existing generator at Chalk Bluff to allow more treatment processes and pumps (raw water and effluent pumps) to be operated during power outages.

SCHEDULE: Construction is scheduled for FY 2019.



Distribution System Pressure Improvements

Huffaker Booster Pump Station

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
1	Customer Rates	Huffaker Booster Pump Station	400	—	—	—	—	400

PROJECT DESCRIPTION: In the floods of 2017, this station sustained damage. The repairs were completed and submitted to FEMA for reimbursement. Upon further inspection it was noted that the vault roof was not structurally sound and needs replacement. Additional safety improvements were identified to bring live electrical equipment above grade so that if future flooding occurs it will be safe to deenergize and work on the station. This pump station is on the list for replacement in the next 10-20 years, however all viable land options are cost prohibitive at this point in time.

SCHEDULE: Construction is scheduled for FY 2019.



Distribution System Pressure Improvements

Twin Lakes Booster Pump Station

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
1	Customer Rates	Twin Lakes Booster Pump Station	400	—	—	—	—	400

PROJECT DESCRIPTION: The project cost contains oversizing of a developer funded booster pump station to provide redundant supply to the Summit Ridge Regulated Zone which is currently fed off of the Chalk Bluff / Highland Zone. Supply will be provided from the Hunter Creek zone. The current total is estimated at \$800,000 with TMWA providing 50% reimbursement to the developer.

SCHEDULE: Construction is planned to start in FY 2018 and go into FY 2019 with reimbursement planned in FY 2019.



Distribution System Pressure Improvements

Satellite Hills Booster Pump Station

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
1	Customer Rates	Satellite Hills Booster Pump Station	400	—	—	—	—	400

PROJECT DESCRIPTION: The Satellite Hills pump station was designed in FY2017. The project went to bid but was canceled due to unfavorable bid conditions. In an effort to stay on top of the booster station rehabilitation projects, the project was re-bid in FY2018. The FY2019 budget includes the final portion of the relocation of the Satellite Hills pump station to an above ground location. Once this project is completed, in FY2020 the “Spanish Springs #1 Pump Zone Intertie” will allow the Spanish Springs #1 pump station to be retired.

SCHEDULE: Construction will be completed in FY 2019.



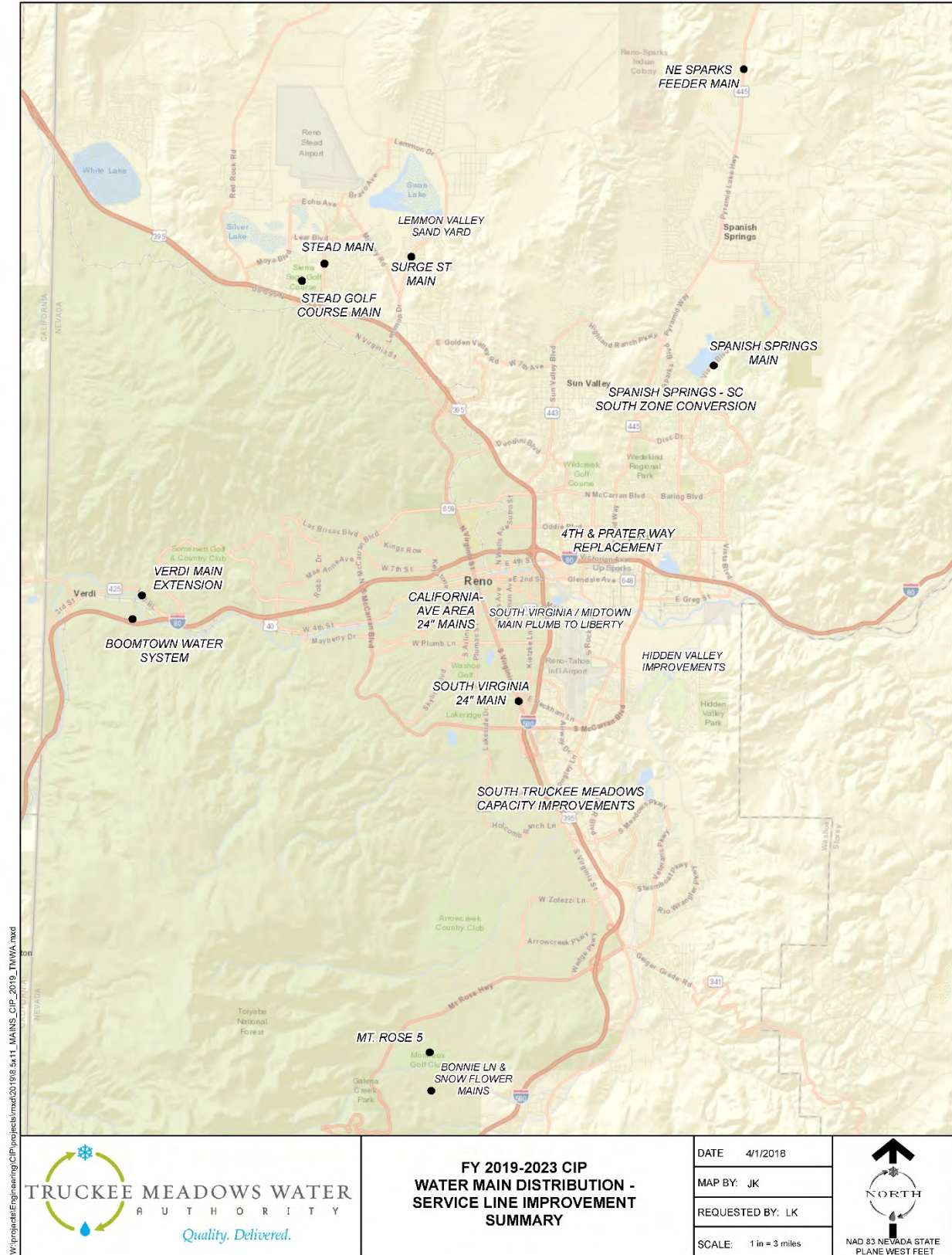
WATER MAIN DISTRIBUTION SERVICE LINE IMPROVEMENTS

Summary

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
1	Customer Rates	Street & Highway Main Replacements	2,500	5,000	5,000	5,000	5,000	22,500
1	Customer Rates	South Virginia / Midtown Main Plumb to Liberty	3,000	—	—	—	—	3,000
1	Customer Rates	California-Marsh 24" Main Replacement	50	1,150	—	—	—	1,200
2	Customer Rates	Booth, Sharon Way, Monroe 24" Main	—	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	50	650	—	—	—	700
2	Customer Rates	West Hidden Valley, Surge St., Piping Rock Main	—	1,000	230	500	—	1,730
2	Customer Rates	Spanish Springs Main Replacement	300	1,000	—	—	—	1,300
2	Customer Rates	Bonnie Ln., Snow Flower, Main Extensions	—	—	620	900	—	1,520
2	Customer Rates	South Truckee Meadows Capacity Improvements	400	—	—	—	—	400
2	Customer Rates/Developer Fees	Stead Golf Course Main Replacement	—	—	—	90	2,160	2,250
3	Developer Fees	General Waterline Extensions	100	100	100	100	100	500
2	Developer Fees/Grants	Verdi Main Extension	2,500	—	—	—	—	2,500
1	Developer Fees	Mt. Rose 5 Distribution / Pressure Improvements	150	1,000	—	—	—	1,150
1	Customer Rates	Gordon Avenue Main Replacement	1,580	—	—	—	—	1,580
1	Developer Fees	Boomtown Water System Improvements	1,990	—	—	—	—	1,990
1	Developer Fees	Boomtown to TMWA	130	1,800	—	—	—	1,930
2	Customer Rates	Lemmon Valley Sand Yard	530	—	—	—	—	530
Subtotal Water Main Distribution Improvements			13,380	12,750	10,000	6,590	7,260	49,980

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

Truckee Meadows Water Authority FY 2019-2023 Capital Improvement Plan Attachment C



Water Main-Distribution Service Line Improvements

Street & Highway Main Replacements

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
1	Customer Rates	Street & Highway Main Replacements	2,500	5,000	5,000	5,000	5,000	22,500

PROJECT DESCRIPTION: Provision is made each year for water main replacements in conjunction with repaving efforts by the City of Reno, City of Sparks, Washoe County 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 2019 budget reflects that three large projects totaling \$1.8 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.



Water Main-Distribution Service Line Improvements

South Virginia/Midtown Main Plumb to Liberty

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
1	Customer Rates	South Virginia / Midtown Main Plumb to Liberty	3,000	—	—	—	—	3,000

PROJECT DESCRIPTION: Replacement of antiquated water main, valves, service connections and appurtenances in South Virginia Street from Plumb Lane to Liberty Street.

SCHEDULE: Planning and design will conclude in fall of FY 2018, and construction to begin in spring FY 2018 and completed in FY 2019.



Water Main-Distribution Service Line Improvements

California-Marsh 24" Main Replacement

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
1	Customer Rates	California-Marsh 24" Main Replacement	50	1,150	—	—	—	1,200

PROJECT DESCRIPTION: When TMWA evaluated the alternatives to replacing the 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 2019-2020 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 2019 and construction in fiscal year 2020.



Water Main-Distribution Service Line Improvements

Booth, Sharon Way, Monroe 24" Main Replacements

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	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.



Water Main-Distribution Service Line Improvements

South Virginia 24" Main (Kumle to Peckham)

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
2	Developer Fees	South Virginia 24" Main (Kumle-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.



Water Main-Distribution Service Line Improvements

North-East Sparks Tank Feeder Main Relocation

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	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: Design is scheduled for FY 2020 and the improvements will be constructed in FY 2021.



Water Main-Distribution Service Line Improvements

Spanish Springs - Spring Creek South Zone Conversion

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
2	Customer Rates	Spanish Springs - Spring Creek South Zone Conversion	50	650	—	—	—	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: Design is scheduled for FY 2019 and the improvements are scheduled for construction in FY 2020.



Water Main-Distribution Service Line Improvements

West Hidden Valley, Surge St., Piping Rock Main Replacements

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	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.



Water Main-Distribution Service Line Improvements

Spanish Springs Main Replacement

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
2	Customer Rates	Spanish Springs Main Replacement	300	1,000	—	—	—	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 2019-2020.



Water Main-Distribution Service Line Improvements

Bonnie Ln., Snow Flower, Main Extensions

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	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.



Water Main-Distribution Service Line Improvements

South Truckee Meadows Capacity Improvements

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
2	Developer Fees	South Truckee Meadows Capacity Improvements	400	—	—	—	—	400

PROJECT DESCRIPTION: The project consists of a 500 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.



Water Main-Distribution Service Line Improvements

Stead Golf Course Main Replacement

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
2	Developer Fees/Customer Rates	Stead Golf Course Main Replacement	—	—	—	90	2,160	2,250

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 2023.



Water Main-Distribution Service Line Improvements

General Waterline Extensions

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	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.



Water Main-Distribution Service Line Improvements

Verdi Main Extension

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
2	Developer Fees/Grants	Verdi Main Extension	2,500	—	—	—	—	2,500

PROJECT DESCRIPTION: The project involves construction of about 4,000 feet of 18-inch transmission main from the West Meadows subdivision to the Riverbelle MHP and further west on US 40 to the Verdi Mutual Water Company.

SCHEDULE: The project is scheduled for construction in FY2019 subject to acquisition of the necessary private easements.



Water Main-Distribution Service Line Improvements

Mount Rose Well 5 Distribution/Pressure Improvements

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
1	Developer Fees	Mount Rose Well 5 Distribution/Pressure Improvements	150	1,000	—	—	—	1,150

PROJECT DESCRIPTION: Improvements are intended as off-peak conjunctive use supply. The proposed improvements are intended to be consistent with future improvements to improve peaking supply to the Mt. Rose system and will reduce pressure in the high pressure pipeline downhill of Mt. Rose Well 5. It will also increase the off-peak pumping capacity of surface water into the Mt. Rose 1 and 4 tanks to 650 gpm from 400 gpm. Future phases are intended to increase system redundancy and further reduce high pressures in the system.

SCHEDULE: The improvements will be designed in FY 2019 and construction is scheduled for FY 2020.



Water Main-Distribution Service Line Improvements

Gordon Avenue Main Replacement

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
1	Customer Rates	Gordon Avenue Main Replacement	1,580	—	—	—	—	1,580

PROJECT DESCRIPTION: The project scope involves replacing approximately 5,300' of older (1912-1940) cast iron and steel water main ahead of the City of Reno's 2019 Neighborhood Street Rehabilitation Project.

SCHEDULE: Design was completed in FY 2018, construction is scheduled for FY 2019.



Water Main-Distribution Service Line Improvements

Boomtown Water System Improvements

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
1	Developer Fees	Boomtown Water System Improvements	1,990	—	—	—	—	1,990

PROJECT DESCRIPTION: If TMWA successfully acquires the Boomtown water system assets, the system will initially be operated as a stand-alone system that will be 100 percent dependent upon local groundwater resources. To insure reliable water service to existing Boomtown customers, several high priority improvements are necessary to bring the system into compliance with NAC 445A regulations and TMWA standards and to allow efficient operation and maintenance of the water facilities. The improvements consist of upgrades to two existing wells (pump to waste facilities, SCADA, new pumps, new motors, new starters and arc flash analyses), tank site improvements (grading, drainage, overflow, fencing, paving, sampling vault, SCADA) and tank access improvements (improved gravel road, bridge over Steamboat Ditch).

SCHEDULE: Assuming escrow closes in June 2018, the improvements will be designed and constructed in FY 2019.



Water Main-Distribution Service Line Improvements

Boomtown to TMWA Connection

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
1	Developer Fees	Boomtown to TMWA Connection	130	1,800	—	—	—	1,930

PROJECT DESCRIPTION: If TMWA successfully acquires the Boomtown water system assets, the system will initially be operated as a stand-alone system that will be 100 percent dependent upon local groundwater resources. Significant growth in the Boomtown area will require increased pumping of Boomtown wells. The additional groundwater pumping may result in deficiencies in water quality and quantity. To insure reliable water service to Boomtown and to protect the viability of the groundwater resource, TMWA plans to connect the Boomtown system to the TMWA system. The connection will provide an emergency backup source of supply and most importantly, an off-peak source of supply that will allow TMWA to implement conjunctive use management of surface water and groundwater resources within the Boomtown system. Assuming the Verdi Main has been extended to the Riverbelle mobile home park, the Boomtown connection consists of about 1,800 feet of 16” main, including a jack and bore crossing of the railroad tracks and a new booster pump station.

SCHEDULE: Assuming the Verdi Main is extended to Riverbelle in FY 2019 and that a suitable property can be acquired for the pump station, the construction of the facilities would occur in FY 2020.



Water Main-Distribution Service Line Improvements

Lemmon Valley Sand Yard

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
2	Customer Rates	Lemmon Valley Sand Yard	530	—	—	—	—	530

PROJECT DESCRIPTION: With continued growth in the area including the acquisition of the Lemmon Valley water system formerly owned by Washoe County, it is very inefficient for TMWA crews to respond to a main break or other major issue in the North Valleys and have to either return to the Truckee Meadows or call out a second crew to transport materials to the site to complete the repairs. To increase the efficiency of maintenance operations in the North Valleys, TMWA plans to improve the balance of the 1.25 acre lot surrounding Lemmon Valley Well #6 (near the intersection of Lemmon Drive and Arkansas Drive) to store the common materials such as sand and base rock normally used in water system maintenance. The improvements consist of import, grading, fencing, drainage, material storage bins, lighting and landscaping. The project has been designed and the building permit has been acquired.

SCHEDULE: Assuming flood water recede sufficiently, the project would be constructed in FY 2019.



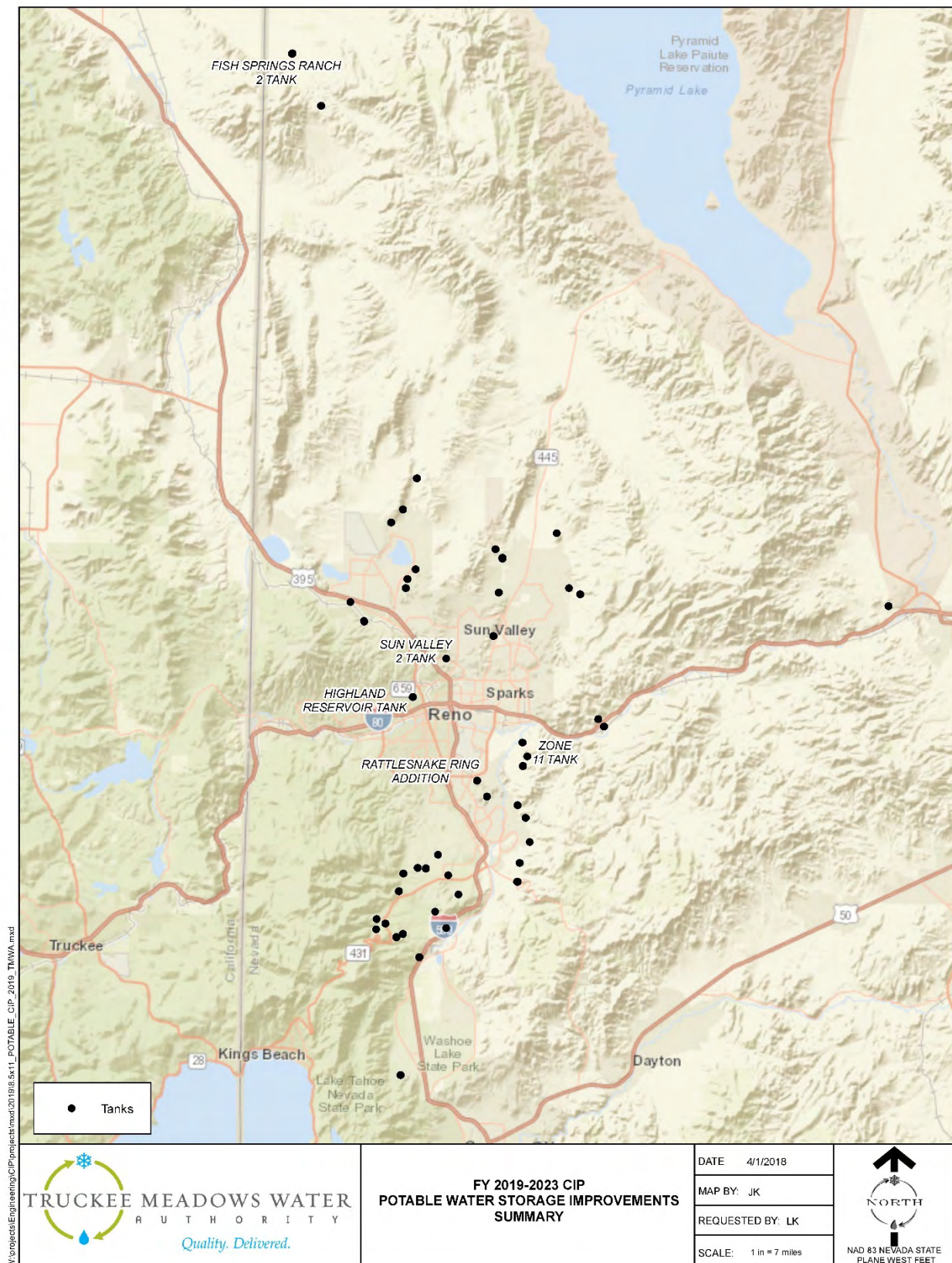
POTABLE WATER STORAGE IMPROVEMENTS

Summary

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
2	Customer Rates / Developer Fees	Sun Valley #2 Tank	50	100	1,750	—	—	1,900
2	Developer Fees	Rattlesnake Ring Addition	—	800	—	—	—	800
3	Developer Fees	Fish Springs Ranch #2 Tank	—	—	—	100	2,000	2,100
1	Customer Rates	Storage Tank Recoats; Access; Drainage Improvements	900	900	900	900	900	4,500
3	Customer Rates / Developer Fees	Highland Reservoir Tank	—	—	100	5,700	—	5,800
1	Developer Fees	STMGID Tank East (Zone 11 Tank)	50	3,075	—	—	—	3,125
Subtotal Storage Improvements			1,000	4,875	2,750	6,700	2,900	18,225

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

Truckee Meadows Water Authority FY 2019-2023 Capital Improvement Plan Attachment C



Potable Water Storage Improvements

Sun Valley #2 Tank

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
2	Developer Fees/ Customer Rates	Sun Valley #2 Tank	50	100	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 2020-2021 subject to successful acquisition of a suitable tank site which is elevation sensitive.



Potable Water Storage Improvements

Rattlesnake Ring Addition

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	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.



Potable Water Storage Improvements

Fish Springs Ranch #2 Tank

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	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 2022 with construction to follow in FY 2023. The actual schedule will be dependent upon the rate of growth in the North Valleys.



Potable Water Storage Improvements

Storage Tank Recoats; Access; Drainage Improvements

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
1	Customer Rates	Storage Tank Recoats; Access; Drainage Improvements	900	900	900	900	900	4,500

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.



Potable Water Storage Improvements

Highland Reservoir Tank

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	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 the tank may need to be a buried pre-stressed concrete tank, which is reflected in the project budget. 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 2021-2022.



Potable Water Storage Improvements

STMGID Tank East (Zone 11 Tank)

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
1	Customer Rates	STMGID Tank East (Zone 11 Tank)	50	3,075	—	—	—	3,125

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 design in FY 2019 and construction in FY 2020, subject to acquisition of the Special Use Permit and Bureau of Land Management (BLM) permitting.

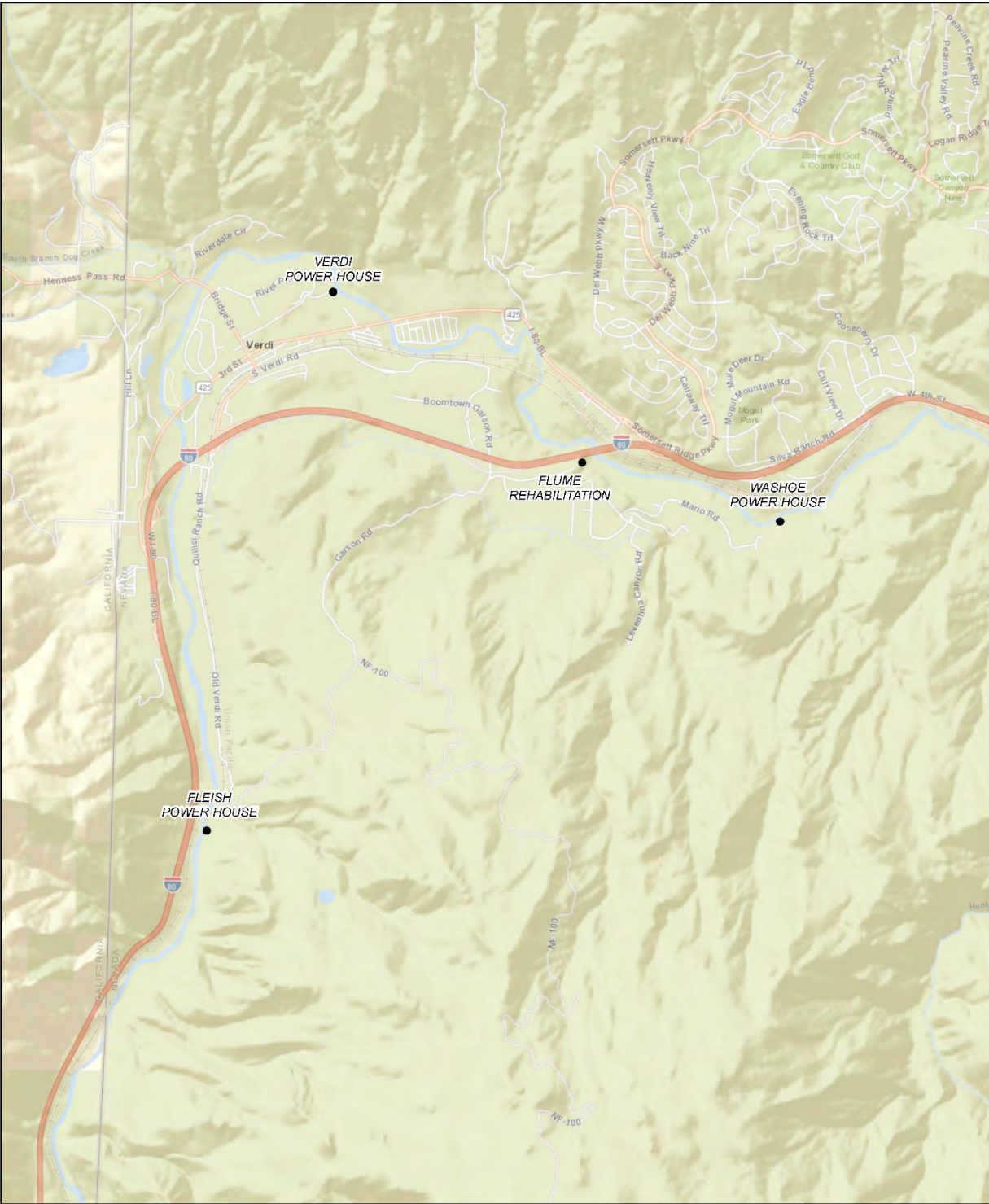


HYDROELECTRIC IMPROVEMENTS

Summary

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
2	Customer Rates	Forebay, Diversion, and Canal Improvements	55	50	50	50	50	255
1	Customer Rates	Flume Rehabilitation	600	—	350	350	—	1,300
3	Customer Rates	Hydro Plant Generator Rewinds	650	650	650	—	—	1,950
1	Customer Rates	Washoe Flume Reconstruction	—	2,200	—	—	—	2,200
1	Customer Rates	Fleish Overflow Reconstruction Design	1,400	—	—	—	—	1,400
Subtotal Hydroelectric Improvements			2,705	2,900	1,050	400	50	7,105

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



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 TRUCKEE MEADOWS WATER AUTHORITY <i>Quality. Delivered.</i>	FY 2019-2023 CIP HYDROELECTRIC IMPROVEMENTS SUMMARY		DATE 4/1/2018	 NORTH NAD 83 NEVADA STATE PLANE WEST FEET
			MAP BY: JK	
			REQUESTED BY: LK	
			SCALE: 1 in = 1 miles	

Hydroelectric Improvements

Forebay, Diversion, and Canal Improvements

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
1	Customer Rates	Forebay, Diversion, and Canal Improvements	55	50	50	50	50	255

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.



Hydroelectric Improvements

Flume Rehabilitation

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
1	Customer Rates	Flume Rehabilitation	600	—	350	350	—	1,300

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.



Hydroelectric Improvements

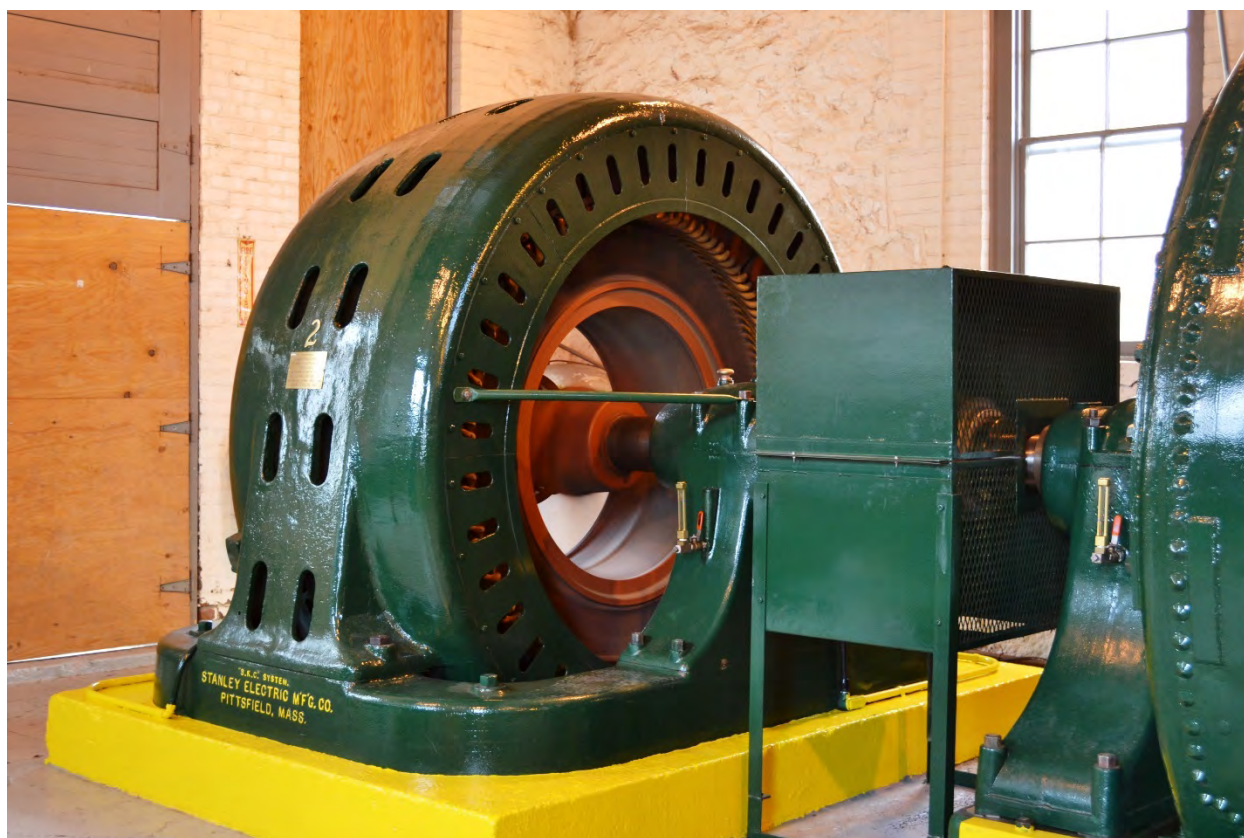
Hydro Plant Generator Rewinds

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
3	Customer Rates	Hydro Plant Generator Rewinds	650	650	650	—	—	1,950

PROJECT DESCRIPTION: The Fleish generator was last rewound 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 2019, 2020 & 2021.

SCHEDULE: Washoe Hydro Plant generators FY 2019 & FY 2020, Fleish Hydro Plant generator FY 2021. This schedule may be adjusted depending on river flows and generator condition evaluation.



Hydroelectric Improvements Washoe Flume Reconstruction

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
1	Customer Rates	Washoe Flume Reconstruction	—	2,200	—	—	—	2,200

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. Due to limited access of this project a larger section (84 box sections) of flume is scheduled to be replaced. This project requires us to use the flume alignment as access. We will demolish the old flume and build ourselves backwards out of the alignment. This section of flume is more than 30 years old.

SCHEDULE: This project is projected for the fall of 2019 when river flows are dropping off for the winter months, this will minimize the loss of generation.



Hydroelectric Improvements Fleish Overflow Reconstruction

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
1	Customer Rates	Fleish Overflow Reconstruction	1,400	—	—	—	—	1,400

PROJECT DESCRIPTION: This spill structure is utilized in the operation of the Fleish Hydroelectric plant and carries excess water back to the Truckee river during normal plant operations. When the plant trips offline then the entire canal capacity spills from this structure at about 325 cubic feet per second(CFS). This structure was last rebuilt sometime in the 1970s and the footings have become undermined from weather and runoff. It is located on a steep slope with limited access and it currently has unsupported wooden footings that will require concrete footings with rock anchors when reconstructed.

SCHEDULE: This project is projected for the fall of 2018 when river flows are dropping off for the winter months, this will minimize the loss of generation.



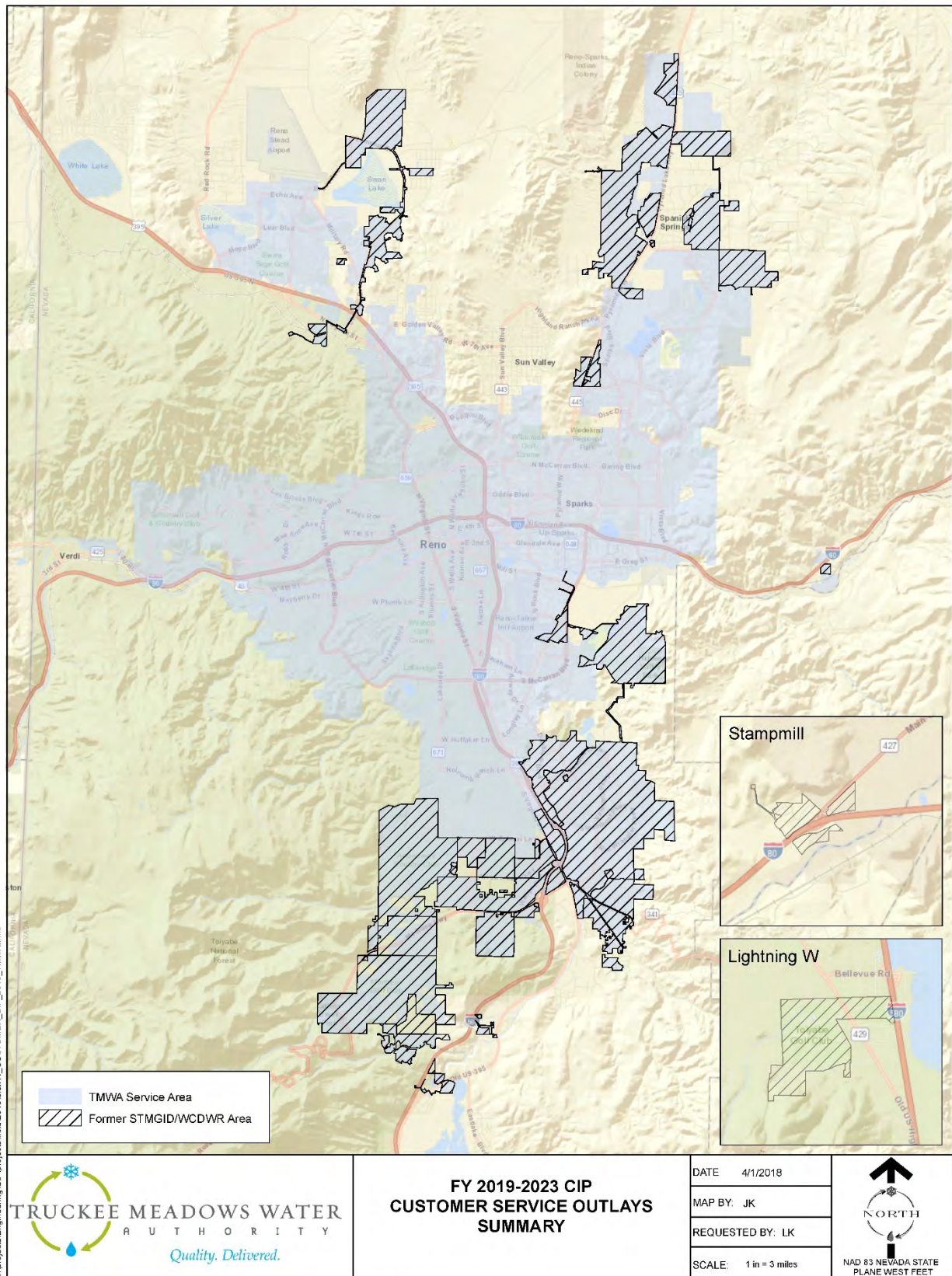
CUSTOMER SERVICE OUTLAYS

Summary

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
3	Customer Rates	Meter Reading Equipment	—	60	—	60	—	120
2	Developer Fees	New Business Meters	350	175	100	100	—	725
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
2	Customer Rates	Galvanized/Poly Service Line Replacements	400	400	400	—	—	1,200
1	Customer Rates	AMI Automated Meter Infrastructure	750	750	750	750	—	3,000
Subtotal Customer Service			2,875	2,760	2,625	2,285	1,375	11,920

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

Truckee Meadows Water Authority FY 2019-2023 Capital Improvement Plan Attachment C



Customer Service Outlays

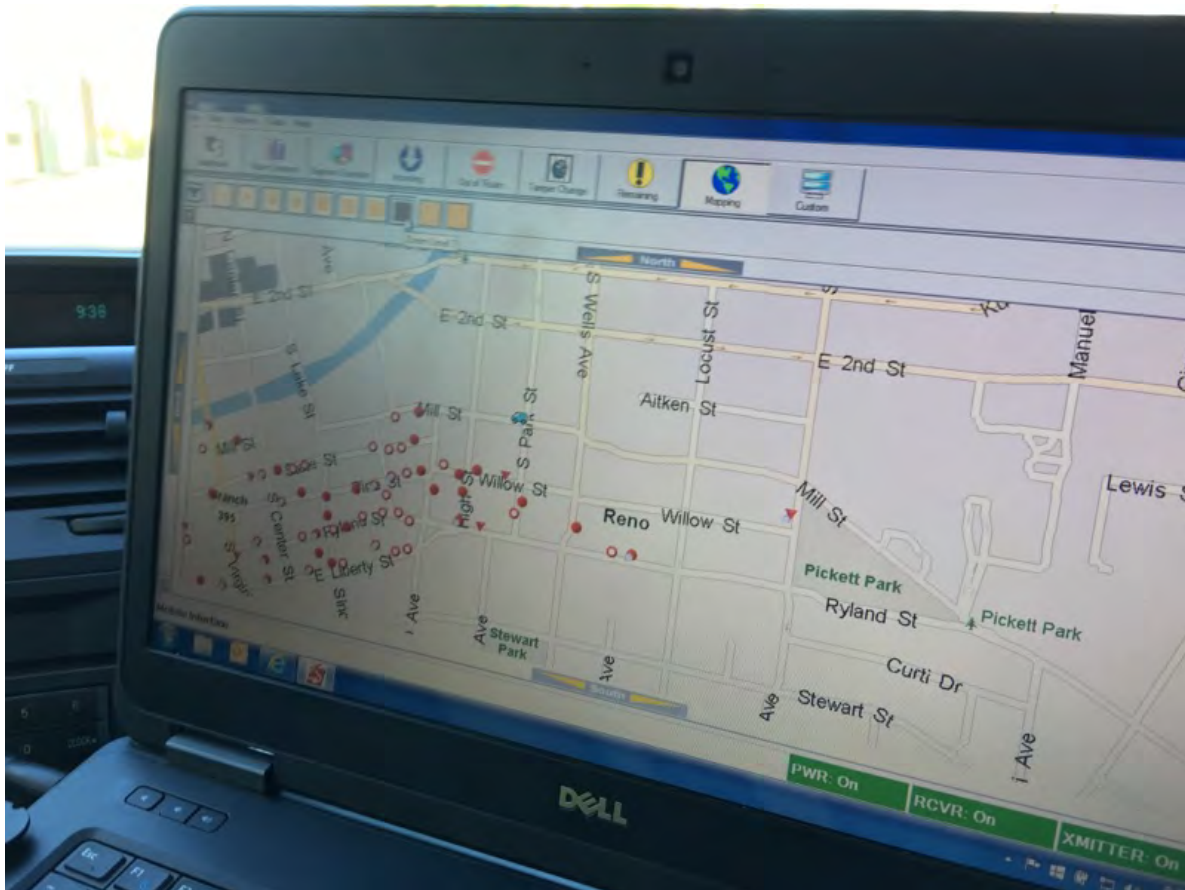
Meter Reading Equipment

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
3	Customer Rates	Meter Reading Equipment	—	60	—	60	—	120

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.



Customer Service Outlays

New Business Meters

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
2	Developer Fees	New Business Meters	350	175	100	100	—	725

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.



Customer Service Outlays

Mueller Pit Replacements Former Washoe County

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	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.



Customer Service Outlays

Meter-ERT-RTR Replacements

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	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.



Customer Service Outlays

Galvanized / Poly Service Line Replacements

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
2	Customer Rates	Galvanized/Poly Service Line Replacements	400	400	400	—	—	1,200

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.



Customer Service Outlays

AMI Automated Meter Infrastructure

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
1	Customer Rates	AMI Automated Meter Infrastructure	750	750	750	750	—	3,000

PROJECT DESCRIPTION: TMWA utilizes multiple meter reading systems in which the transmitters attached to the meters send a signal out to be collected by data collectors. We currently are utilizing two separate systems to collect this data. TMWA utilized a drive-by data collection system and Washoe County used a radio read system. The technology in these systems have improved vastly over the last couple of years and we are currently analyzing both systems, with the goal to move to one system. We are currently using a consultant to provide TMWA a cost and technology study to help guide us in the move to one data collection system.

SCHEDULE: Once identified this project would be staged and implemented over the next 4-5 years, the equipment to be replaced or upgraded in many instances is already scheduled for replacement in other budget items.

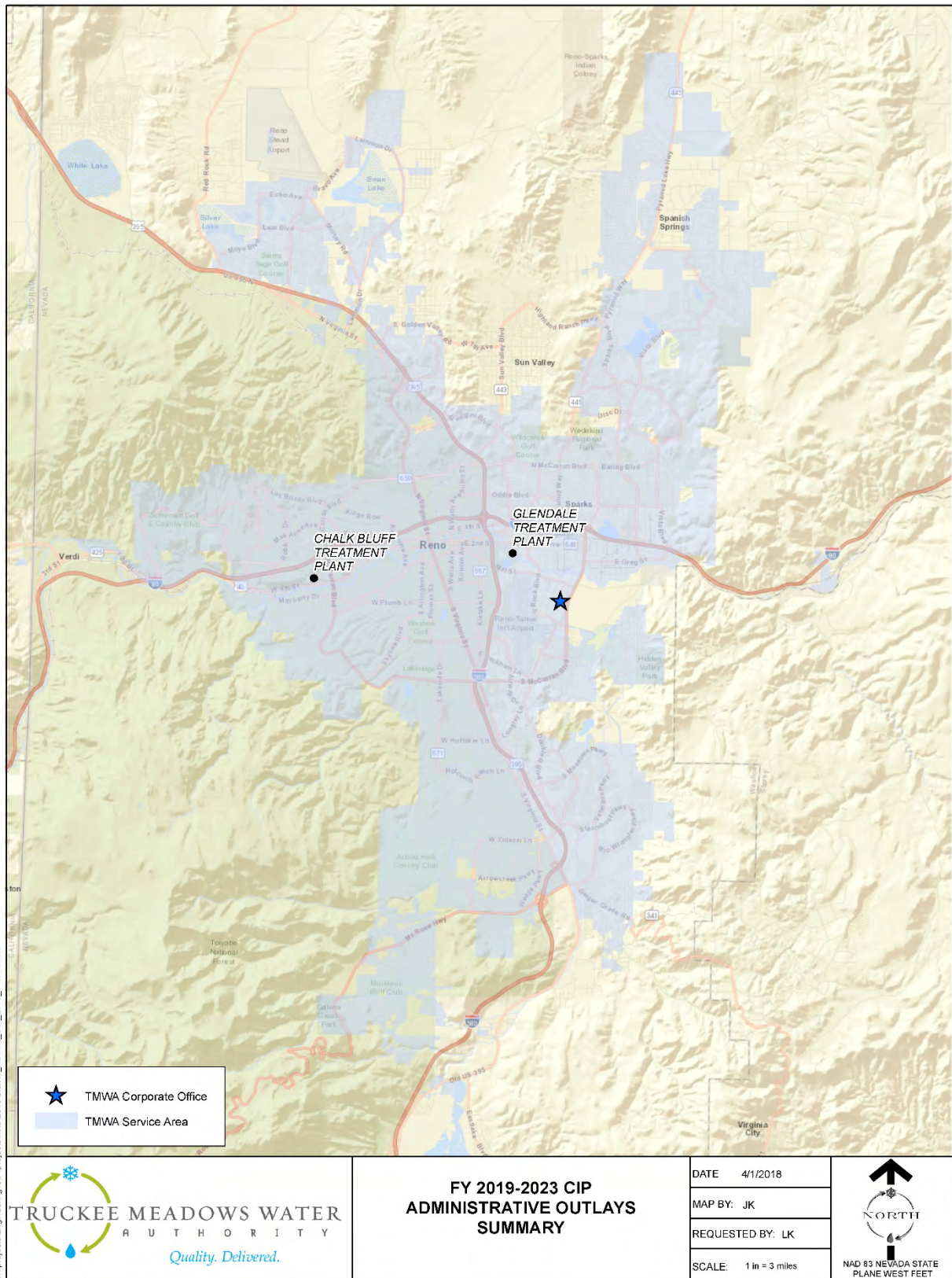


ADMINISTRATIVE OUTLAYS

Summary

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	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	275	275	1,075
2	Customer Rates	Network Security Upgrades	150	150	150	150	150	750
3	Customer Rates	Crew Trucks / Vehicles	1,270	585	650	600	600	3,705
1	Customer Rates	Security-ER Projects	150	150	150	150	150	750
1	Customer Rates	CIS System Replacement	100	3,200	—	—	—	3,300
1	Customer Rates	Emergency Operations Annex-Design	250	250	1,500	—	—	2,000
2	Customer Rates	System Wide Asphalt Rehabilitation	200	200	200	200	200	1,000
Subtotal Administrative Outlays			2,435	4,850	2,965	1,515	1,515	13,280

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



Administrative Outlays

GIS/GPS System Mapping Equipment

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	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.



Administrative Outlays

Desktop Computer Upgrades

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	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.



Administrative Outlays

Server/Storage/Operating System Software Upgrades

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
2	Customer Rates	Server/Storage/Operating System Software upgrades	175	175	175	275	275	1,075

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.



Administrative Outlays

Network Security Upgrades

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
2	Customer Rates	Network Security Upgrades	150	150	150	150	150	750

PROJECT DESCRIPTION: As a leading water purveyor for a major metropolitan area, TMWA is reliant on the internet for employee productivity enhancement and providing valuable customer information and outreach. Such dependency on the internet also carries a significant degree of risk, as it makes TMWA a major target for external security threats looming within globalized networks. To offset this risk and combat network threats, a variety of security specific hardware and software solutions are used, weaving them into a layered deployment strategy called Defense in Depth. In order to continually evolve and reinforce this Defense in Depth strategy and effectively fight new unforeseen threats, TMWA must continually acquire new security platforms that adapt to the continually changing security landscape.

SCHEDULE: The network security is constantly monitored and upgraded as needed.



Administrative Outlays

Crew Trucks/Vehicles

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
3	Customer Rates	Crew Trucks / Vehicles	1,270	585	650	600	600	3,705

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.



Administrative Outlays

Security-ER Projects

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	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 2019.

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



Administrative Outlays


CIS System Replacement

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
1	Customer Rates	CIS System Replacement	100	3,200	—	—	—	3,300

PROJECT DESCRIPTION: Software selection, consulting and purchase of new Customer Information (billing) system.

SCHEDULE: Project planning to begin FY19.



TRUCKEE MEADOWS WATER AUTHORITY
www.tmwa.com

John Doe

Service Address:
123 Corporate Drive
RENO, NV 89502

Page 1

Account No. 00000001

Billing Date 03/21/18

Next Meter Read Date 04/17/18

Previous Statement Balance	Payments	Balance Forward (=)	Additional Activity (+ or -)	New Water Charges (+)	NEW Charges Past Due On	New Balance (=)
\$24.11	\$24.11 CR	\$0.00	\$0.00	\$26.00	04/11/18	\$26.00

If "Balance Forward" is not a credit, this amount may be past due. Please pay immediately to avoid collection activity.

Previous Statement Balance \$24.11

Payments Payment - THANK YOU \$24.11 CR

Total Payments **\$24.11 CR**

Balance Forward **Total Balance Forward \$0.00**

New Water Charges Water Charges (see detail on back) \$24.41

Regional Water Mgmt Fee - 1.5% \$0.37

Right of Way Toll-Reno - 5% \$1.22

Total New Water Charges \$26.00

New Balance **\$26.00**


Have a new phone number? Please update your account contact number in case we have an emergency and need to contact you. Log into your account at www.tmwa.com or call us at (775) 834-8080.

Customer Service
775-834-8080
Monday - Friday
7:30 a.m. - 5:30 p.m.

Payment Options
Please visit www.tmwa.com
or call 775-834-8080.

Main Office and Payment Location
1355 Capital Blvd., Reno, NV 89502
Monday - Friday
8:00 a.m. - 5:00 p.m.

Please return this portion with your payment to ensure proper credit to your account.
Please write your account number on your check and make your check payable to TMWA. Thank you!



TRUCKEE MEADOWS WATER AUTHORITY
www.tmwa.com

Account No. 00000001 **Amount Due:** \$26.00

Past Due On: 04/11/18 **Amount Enclosed:** \$ _____

Truckee Meadows Water Authority
PO Box 70002
Prescott, AZ 86304-7002

John Doe
123 Corporate Drive
RENO, NV 89502

Administrative Outlays

Emergency Operations Annex-Design

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
1	Customer Rates	Emergency Operations Annex-Design	250	250	1,500	—	—	2,000

PROJECT DESCRIPTION: TMWA is currently in the planning and conceptual design phase for a Primary Emergency Operations Center (EOC) including 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.

SCHEDULE: DR improvements were completed in FY 2018. FY 2019 Project 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. Design and permitting to be completed in FY 2018. Construction planned for FY 2019. EOC construction planned for FY 2021.



Administrative Outlays

System Wide Asphalt Rehabilitation

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
2	Customer Rates	System Wide Asphalt Rehabilitation	200	200	200	200	200	1,000

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.



FORMER STMGID SYSTEM IMPROVEMENTS

Summary

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
2	Reserve	Well Bypass & Chlorine Room Improvements (former STMGID wells)	300	—	—	—	—	300
2	Reserve	STMGID Well Fix & Finish	150	150	150	150	150	750
1	Reserve	STMGID Conjunctive Use Facilities	1,800	2,100	—	—	—	3,900
1	Reserve	STMGID Tank Recoats	220	—	300	—	—	520
1	Reserve	STMGID Mueller Pit Replacements	50	50	50	—	—	150
1	Reserve	NAC Deficiencies-Saddlehorn, Upper Toll Road, STMGID East	250	600	2,000	350	—	3,200
Subtotal STMGID System Improvements			2,770	2,900	2,500	500	150	8,820

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

 <p>TRUCKEE MEADOWS WATER AUTHORITY</p> <p><i>Quality. Delivered.</i></p>	<p>FY 2019-2023 CIP FORMER STMGID SYSTEM IMPROVEMENTS SUMMARY</p>	<p>DATE: 4/1/2018</p> <p>MAP BY: JK</p> <p>REQUESTED BY: LK</p> <p>SCALE: 1 in = 1 miles</p>	 <p>NORTH</p> <p>NAD 83 NEVADA STATE PLANE WEST FEET</p>
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Ground Water Supply Improvements

Well Bypass & Chlorine Room Improvements (former STMGID wells)

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
2	Reserves	Well Bypass & Chlorine Room Improvements (former STMGID wells)	300	—	—	—	—	300

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.



Ground Water Supply Improvements

STMGID Well Fix & Finish

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	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.



Water Main-Distribution & Service Line Improvements

STMGID Conjunctive Use Facilities

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
1	Reserve	STMGID Conjunctive Use Facilities	1,800	2,100	—	—	—	3,900

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 which will be allocated to new development. The facilities will provide off-peak supply which will allow TMWA to implement conjunctive use in the STMGID West system.

SCHEDULE: Construction is scheduled to begin in FY 2019 and 2020.



Potable Water Storage Improvements

STMGID Tank Recoats

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
1	Reserve	Former STMGID Tank Recoats	220	—	300	—	—	520

PROJECT DESCRIPTION: The former STMGID system included a total of seven water 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.



Customer Service Outlays

Mueller Pit Replacements Former STMGID

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
1	Reserve	Mueller Pit Replacements former STMGID	50	50	50	—	—	150

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.



Distribution System Pressure Improvements

NAC Deficiencies-Saddlehorn, Upper Toll Road, STMGID East

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	CIP Total
1	Reserve	NAC Deficiencies-Saddlehorn, Upper Toll Road, STMGID East	250	600	2,000	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 2019. The new pressure zone on upper Toll Road will be constructed in FY 2021 subject to acquisition of the tank site property which may be private or on BLM property.





STAFF REPORT

TO: TMWA Board of Directors
THRU: Mark Foree, General Manager
FROM: Michele Sullivan, Chief Financial Officer
DATE: May 15, 2018
SUBJECT: Report and discussion on the results on TMWA's 2018 Refunding Bond Issue and Financial Update

SUMMARY

TMWA successfully priced the 2018 Series Bonds on April 25, 2018 to issue \$38,835,000 in Senior Lien debt with a premium of \$5,762,597 for total proceeds of \$44,597,597. Proceeds were used on May 15, 2018 to pay down outstanding commercial paper by \$44,200,000 and cover the expenses of the bond issuance. TMWA will have remaining commercial paper of \$30,000,000.

BACKGROUND

At the April 18, 2018 BOD meeting, a plan was presented to replace \$44.2 M of commercial paper with fixed rate senior lien bonds to mature in 2035-2042. This structure was proposed to keep the annual increase in senior lien debt service to a minimum to protect TMWA's debt service coverage (DSC) ratios, and effectually TMWA's credit ratings. Also, rates for long term debt in the 20-year range are still at historical lows, with short terms rates rising faster than long term.

TMWA priced the bonds with underwriter RBC Capital, financial advisors PFM, and attorneys Sherman and Howard on April 25, 2018. There was excellent interest in the offering, with current bondholders State Farm buying, as well as new investors like Travelers Insurance and Blackrock; however, the interest was all in the 2035-39 series bonds while the 2040-42 term bond remained unsold.

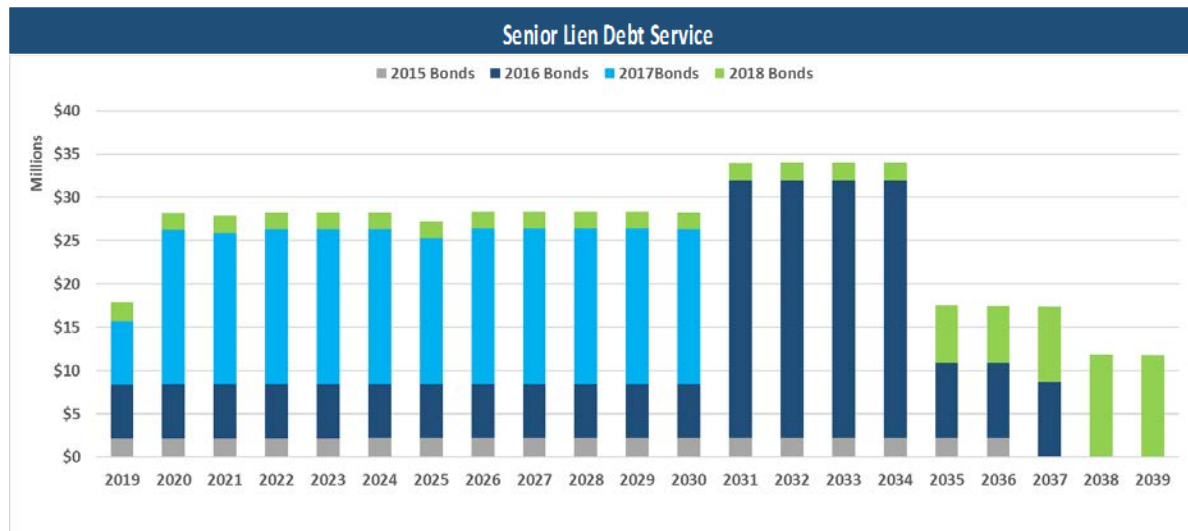
RBC underwriters asked State Farm if they had interest in buying the 2040-42 bonds as a serial offering, and they were willing to pick them up but at a higher return. The day of the offering, the 10-year treasury rate increased to the 3.0% level (a new high), which caused volatility in the market. After much discussion and recalculation of DSC ratios, it was determined that the best pricing could be obtained for TMWA by restructuring the deal to sell all the bonds in the 2035-39 timeframe since the bonds were oversold for those years. After restructuring the deal, RBC also agreed to better pricing for the 2035-36 bonds. Overall, the bonds were 2.4x oversold in 2035-39, with Travelers Insurance offering to buy the entire offering.

A schedule of the bond maturities and the yield to the investor is shown below:

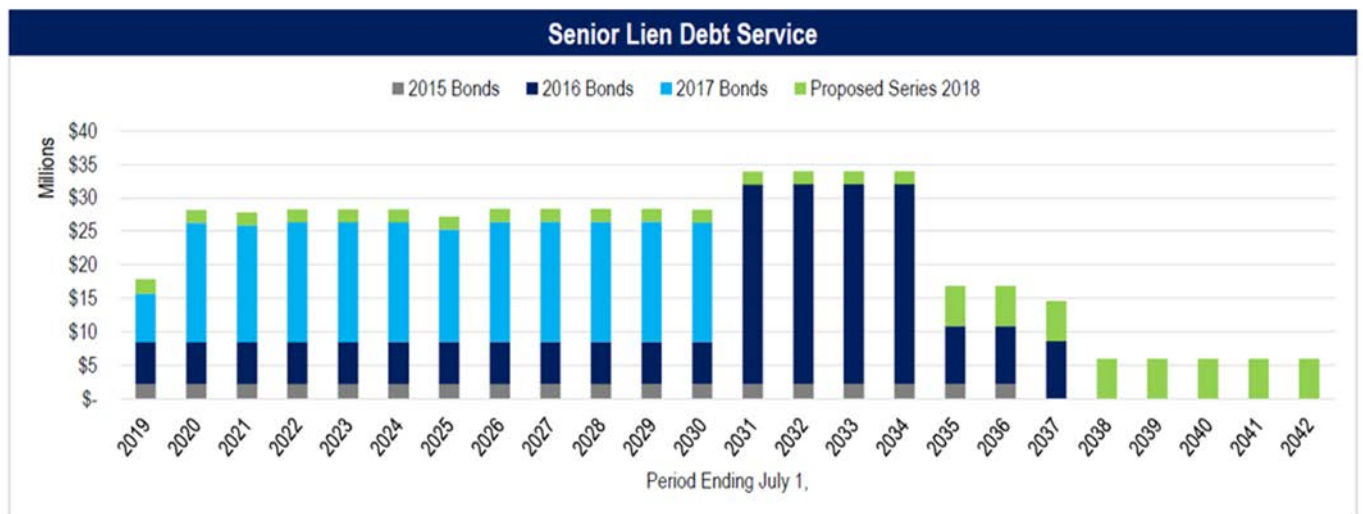
Maturity Date	Amount	Rate	Yield
07/01/2035	4,660,000	5.000%	3.170%
07/01/2036	4,890,000	5.000%	3.210%
07/01/2037	7,285,000	5.000%	3.260%
07/01/2038	10,750,000	5.000%	3.290%
07/01/2039	11,250,000	5.000%	3.310%
<hr/>			
	38,835,000		

Comparisons of the final vs original proposed annual senior lien debt service totals, and calculations of DSC are shown in the following graphs. DSC estimates remain the same with the final (vs proposed) structure, which was important for TMWA to maintain its credit ratings.

Final Senior Lien Annual Debt Service:



Proposed Senior Lien Annual Debt Service:



Comparison of DSC ratios:

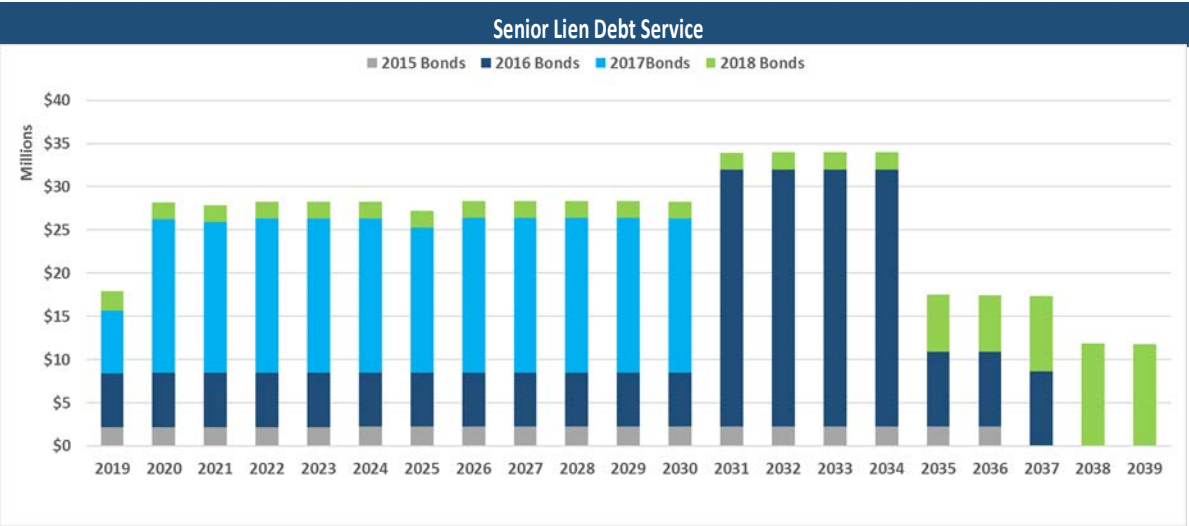
		TMWA 2018-2022 Funding Plan				
		FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
	Water Sales	\$96,257,822	\$100,491,309	\$103,514,259	\$106,447,040	\$109,424,371
	Other Operating Revenues	6,121,891	5,896,254	5,061,714	5,036,794	5,087,162
	Investment Income	1,342,692	1,536,900	1,706,360	1,883,277	2,063,774
	Total Gross Revenues	103,722,405	107,924,463	110,282,333	113,367,111	116,575,307
	Operation & Maintenance Expenses	54,576,379	57,611,474	59,926,899	61,920,554	63,688,345
	Net Revenues	49,146,026	50,312,989	50,355,434	51,446,557	52,886,962
Before 2018 Series Bonds	Senior Lien Annual Debt Service	15,696,200	15,700,800	26,243,800	25,888,000	26,333,500
	Senior Lien DSC	3.13x	3.20x	1.92x	1.99x	2.01x
	Net Revenue Change from FY18 for 1.5x ⁽¹⁾	-52.09%	-52.08%	-19.90%	-20.99%	-19.63%
	Maximum Annual Debt Service	32,014,250				
	MADS DSC for ABT (FY18 Revs) ⁽²⁾	1.54x				
With 2018 Series Bonds	Senior Lien Annual Debt Service	15,696,200	17,890,663	28,185,550	27,829,750	28,275,250
	Senior Lien DSC	3.13x	2.81x	1.79x	1.85x	1.87x
	Net Revenue Change from FY18 for 1.5x ⁽¹⁾	-52.09%	-45.40%	-13.97%	-15.06%	-13.70%
	Maximum Annual Debt Service	33,956,000				
	MADS DSC for ABT (FY18 Revs) ⁽²⁾	1.45x				
Original Proposed metrics pre-pricing	Senior Lien Annual Debt Service	15,696,200	17,879,644	28,180,550	27,824,750	28,270,250
	Senior Lien DSC	3.13x	2.81x	1.79x	1.85x	1.87x
	Net Revenue Change from FY18 for 1.5x ⁽¹⁾	-52.09%	-45.43%	-13.99%	-15.08%	-13.72%
	Maximum Annual Debt Service	33,951,000				
	MADS DSC for ABT (FY18 Revs) ⁽²⁾	1.45x				

* Revenues are net of System Development Charges

⁽¹⁾ Assumes change from FY18 Net Revenues needed to reach 1.5x coverage

⁽²⁾ Debt Service Coverage in Maximum Annual Debt Service Year (2032) using 2018 Net Revenues

Senior Lien Debt Service after pricing



Proposed debt service before pricing



Debt Service Coverage Comparison

		TMWA 2018-2022 Funding Plan				
		FY 2018	FY 2019	FY 2020	FY 2021	FY 2022
	Water Sales	\$96,257,822	\$100,491,309	\$103,514,259	\$106,447,040	\$109,424,371
	Other Operating Revenues	6,121,891	5,896,254	5,061,714	5,036,794	5,087,162
	Investment Income	1,342,692	1,536,900	1,706,360	1,883,277	2,063,774
	Total Gross Revenues	103,722,405	107,924,463	110,282,333	113,367,111	116,575,307
	Operation & Maintenance Expenses	54,576,379	57,611,474	59,926,899	61,920,554	63,688,345
	Net Revenues	49,146,026	50,312,989	50,355,434	51,446,557	52,886,962
Before 2018 Series Bonds	Senior Lien Annual Debt Service	15,696,200	15,700,800	26,243,800	25,888,000	26,333,500
	Senior Lien DSC	3.13x	3.20x	1.92x	1.99x	2.01x
	Net Revenue Change from FY18 for 1.5x ⁽¹⁾	-52.09%	-52.08%	-19.90%	-20.99%	-19.63%
	Maximum Annual Debt Service	32,014,250				
	MADS DSC for ABT (FY18 Revs) ⁽²⁾	1.54x				
With 2018 Series Bonds	Senior Lien Annual Debt Service	15,696,200	17,890,663	28,185,550	27,829,750	28,275,250
	Senior Lien DSC	3.13x	2.81x	1.79x	1.85x	1.87x
	Net Revenue Change from FY18 for 1.5x ⁽¹⁾	-52.09%	-45.40%	-13.97%	-15.06%	-13.70%
	Maximum Annual Debt Service	33,956,000				
	MADS DSC for ABT (FY18 Revs) ⁽²⁾	1.45x				
Original Proposed metrics pre-pricing	Senior Lien Annual Debt Service	15,696,200	17,879,644	28,180,550	27,824,750	28,270,250
	Senior Lien DSC	3.13x	2.81x	1.79x	1.85x	1.87x
	Net Revenue Change from FY18 for 1.5x ⁽¹⁾	-52.09%	-45.43%	-13.99%	-15.08%	-13.72%
	Maximum Annual Debt Service	33,951,000				
	MADS DSC for ABT (FY18 Revs) ⁽²⁾	1.45x				

* Revenues are net of System Development Charges

⁽¹⁾ Assumes change from FY18 Net Revenues needed to reach 1.5x coverage

⁽²⁾ Debt Service Coverage in Maximum Annual Debt Service Year (2032) using 2018 revenues



TO: Board of Directors
THRU: Mark Foree, General Manager
FROM: Michele Sullivan, Chief Financial Officer
Matt Bowman, Financial Controller
DATE: May 04, 2018
SUBJECT: Presentation of financial performance for the quarter ended March 31, 2018

Summary

Budget to Actual

	Actual YTD 2018	Budget YTD 2018	Variance \$	Variance %
CHANGE IN NET POSITION	22,915,135	8,052,126	14,863,009	185%

Change in net position (or overall P&L) for the nine months ended March 31, 2018 (3Q YTD 2018) continued to reflect positive financial performance compared to budget. Of the \$14.9m variance from budget, \$10.0m came in the first half of 2018 (1H 2018). Slightly higher revenue, lower operating expenses, higher non-operating revenue and higher developer contributions led to an additional \$4.9m increase from budget in the third quarter of 2018 (3Q 2018). Please refer to **Attachment A-1** for the full Statements of Revenues, Expenses and Changes in Net Position with budget to actual comparisons.

Year over Year

	Actual YTD 2018	Actual YTD 2017	Variance \$	Variance %
CHANGE IN NET POSITION	22,915,135	30,541,091	(7,625,956)	-25%

Change in net position for 3Q YTD 2018 was lower than 3Q YTD 2017 due to the second of two payments for the Farad settlement in Q3 2017 of \$11.8m which was recorded as a capital contribution. This was offset by higher operating and non-operating income in 3Q YTD 2018 than the same period in the prior year. Please refer to **Attachment A-2** for the full Statements of Revenues, Expenses and Changes in Net Position with year over year comparisons.

Cash Position

At March 31, 2018 total cash on hand was \$182.8m or approximately \$8.8m higher than at the beginning of the fiscal year but \$6.3m lower than the end of Q2 2018. Of the total cash on hand, \$137.3m was unrestricted to be used to meet upcoming and future operating/maintenance expenses, principal/interest payments, and construction project payments. The remaining \$45.5m

was restricted to pay for scheduled bond principal and interest payments as well as maintaining required reserves as stipulated in our bond indentures.

Revenue

Budget to Actual

	Actual YTD 2018	Budget YTD 2018	Variance \$	Variance %
OPERATING REVENUES				
Charges for water sales	\$ 72,626,813	\$ 70,540,254	\$ 2,086,559	3%
Hydroelectric sales	2,801,075	2,058,513	742,562	36%
Other operating sales	2,239,413	2,338,000	(98,587)	-4%
Total Operating Revenues	77,667,301	74,936,767	2,730,534	4%

The principal driver in the higher-than-budgeted 3Q YTD 2018 operating revenue was strong 1H 2018 Irrigation and Residential Metered sales (as discussed in the February 2018 Financial Performance Staff Report). Operating revenue in 3Q 2018 was principally in line with expectations coming in approximately 2.8% higher than budget. Water sales in 3Q 2018 (Jan-Mar) were less than 1% over budget, while hydroelectric generation continued to be strong ending up 250% over budget, or \$0.7m higher in the same period.

We expect Q4 2018 water sales to be less than budget due to a record month of precipitation in March and a continued mild and wet spring season which has impacted water use in April (Q4 2018) by 15% or \$0.9m.

Year over Year

	Actual YTD 2018	Actual YTD 2017	Variance \$	Variance %
OPERATING REVENUES				
Charges for water sales	\$ 72,626,813	\$ 70,708,051	\$ 1,918,762	3%
Hydroelectric sales	2,801,075	1,060,088	1,740,987	164%
Other operating sales	2,239,413	1,971,047	268,366	14%
Total Operating Revenues	77,667,301	73,739,186	3,928,115	5%

Driven by higher water sales and hydroelectric revenue, operating revenue continues to be higher than prior year. The 3% rate increase in Q4 2017 drove the increase in water sales, while the Fleish hydro facility was down for maintenance on the penstock in FY 2017, leading to higher revenue in FY 2018.

Operating Expenses

Budget to Actual

	Actual YTD 2018	Budget YTD 2018	Variance \$	Variance %
OPERATING EXPENSES				
Salaries and wages	13,569,619	14,240,409	(670,790)	-5%
Employee benefits	6,312,501	7,352,454	(1,039,953)	-14%
Services and supplies	17,642,851	21,755,923	(4,113,072)	-19%
Total operating expenses before depreciation	37,524,971	43,348,786	(5,823,815)	-13%
Depreciation	24,572,691	25,545,861	(973,170)	-4%
Total operating expenses	62,097,662	68,894,647	(6,796,985)	-10%

Approximately \$4.8m of the \$6.8m variance from budget in total operating expenses came from 1H 2018. As discussed in the previous staff report, this was due to decreased services and supplies costs and employees' salaries and wages. Driving the continued decrease was a reduction in depreciation expense in the quarter of \$1.0m due to expiration of asset lives. Also driving the decrease was continued savings in employee salaries and benefits and services and supplies. Comparing 3Q 2018 actual to budget, salaries and wages, employee benefits and services and supplies were down \$0.4m, \$0.3m and \$0.2m, respectively. Historically and in FY 2018, Q3 is the lowest cost quarter for all operating expenses due in part to less service requirements. The budget is generally developed using monthly averages, so a decrease here is expected.

Year over Year

	Actual YTD 2018	Actual YTD 2017	Variance \$	Variance %
OPERATING EXPENSES				
Salaries and wages	13,569,619	13,016,649	552,970	4%
Employee benefits	6,312,501	6,128,272	184,229	3%
Services and supplies	17,642,851	17,753,334	(110,483)	-1%
Total operating expenses before depreciation	37,524,971	36,898,255	626,716	2%
Depreciation	24,572,691	24,242,118	330,573	1%
Total operating expenses	62,097,662	61,140,373	957,289	2%

Operating expenses are slightly higher in FY 2018 compared to the prior year. This is due primarily to the wage increases that went into effect in January 2018.

Non-Operating Expenses

Budget to Actual

	Actual YTD 2018	Budget YTD 2018	Variance \$	Variance %
NONOPERATING REVENUES (EXPENSES)				
Investment earnings	1,578,519	1,007,019	571,500	57%
Net increase (decrease) in FV of investments	(787,620)	-	(787,620)	-
Gain (loss) on disposal of assets	657,795	-	657,795	-
Amortization of bond/note issuance costs	(344,970)	(351,468)	6,498	-2%
Interest expense	(8,392,127)	(10,036,521)	1,644,394	-16%
Other nonoperating revenue	-	-	-	-
Other nonoperating expense	-	-	-	-
Total nonoperating revenues (expenses)	(7,288,403)	(9,380,970)	2,092,567	-22%

Non-operating expenses continued to be less than budget in 3Q YTD 2018. Investment earnings are better than budget due to higher principal amounts as well as an increase in interest rates. Fair value of investments is down due to rising interest rates which lowers the fair value of fixed rate investments (non-cash expense). Gain on disposal of assets reflects the sale of water rights for \$1.1m (sold to Pyramid Lake Paiute Tribe) offset by \$0.5m of loss due to the demolition of the Peavine Storage Tank. Interest expense is lower due to interest costs accelerated to FY 2017 as part of the Series 2017 refunding (Q4 2017) and the recognition of effective interest (accelerated) bond premium amortization in FY 2018.

Year over Year

	Actual YTD 2018	Actual YTD 2017	Variance \$	Variance %
NONOPERATING REVENUES (EXPENSES)				
Investment earnings	1,578,519	1,966,545	(388,026)	-20%
Net increase (decrease) in FV of investments	(787,620)	(260,868)	(526,752)	202%
Gain (loss) on disposal of assets	657,795	305	657,490	215570%
Amortization of bond/note issuance costs	(344,970)	(411,341)	66,371	-16%
Interest expense	(8,392,127)	(12,403,460)	4,011,333	-32%
Other nonoperating revenue	-	-	-	-
Other nonoperating expense	-	(243,000)	243,000	-100%
Total nonoperating revenues (expenses)	(7,288,403)	(11,351,819)	4,063,416	-36%

Non-operating expenses continued to be less than the prior year principally due to lower interest expense due to the Series 2017 bond refunding in closed in FY 2017. Other increases include the net gain on asset disposal (discussed above) offset by decreases in investment earnings due to the release of forward delivery agreements paying higher rates on some cash reserves in 2017.

Capital Contributions

Budget to Actual

	Actual YTD 2018	Budget YTD 2018	Variance \$	Variance %
CAPITAL CONTRIBUTIONS				
Grants	217,994	150,003	67,991	45%
Water meter retrofit program	1,590,967	586,116	1,004,851	171%
Developer infrastructure contributions	-	-	-	-
Developer will-serve contributions (net of refunds)	4,152,543	3,776,058	376,485	10%
Developer capital contributions-other	4,125,855	3,258,972	866,883	27%
Developer facility charges (net of refunds)	4,546,540	3,619,827	926,713	26%
Contributions from others	-	-	-	-
Net capital contributions	14,633,899	11,390,976	3,242,923	28%

Capital contributions continue to be higher than budget in 3Q YTD 2018. Driven almost exclusively by significant development in the service area, we expect this increase to carry through the end of the fiscal year.

Year over Year

	Actual YTD 2018	Actual YTD 2017	Variance \$	Variance %
CAPITAL CONTRIBUTIONS				
Grants	217,994	1,191,168	(973,174)	-82%
Water meter retrofit program	1,590,967	171,041	1,419,926	830%
Developer infrastructure contributions	-	-	-	-
Developer will-serve contributions (net of refunds)	4,152,543	7,019,685	(2,867,142)	-41%
Developer capital contributions-other	4,125,855	5,180,851	(1,054,996)	-20%
Developer facility charges (net of refunds)	4,546,540	3,925,841	620,699	16%
Contributions from others	-	11,805,511	(11,805,511)	-100%
Net capital contributions	14,633,899	29,294,097	(14,660,198)	-50%

Capital contributions are down significantly from prior year due mostly to the Farad settlement payment received in FY 2017 of \$11.8m. This was the final payment of the settlement. Additionally, there was more development activity (will serves, engineering charges, etc.) in 3Q 2017 compared to 3Q 2018. This activity reduced in 4Q 2017.

Capital Spending

Spending on capital outlays and construction projects during 3Q YTD 2018 was approximately \$23.1m. Major project spend during the period included distribution main replacements at 4th and Prater (\$2.1m), SCADA (Control System) upgrades (\$1.5m), Mt Rose Water Treatment Facility (\$1.0m), Highland Canal upgrades (\$1.4m) and the Capital Boulevard Office Expansion (\$1.8m).

Cash Flow

	Actual YTD 2018	Budget YTD 2018	Variance \$	Variance %
Net cash from operating activities	41,285,678	34,196,127	7,089,551	21%
Net cash used for capital and relating financing activities	(33,380,311)	(50,078,916)	16,698,605	-33%
Net cash from investing activities	872,722	1,007,019	(134,297)	-13%
NET CHANGE IN CASH AND CASH EQUIVALENTS	8,778,089	(14,875,770)	23,653,859	-153%
CASH AND CASH EQUIVALENTS, END OF PERIOD	\$ 182,814,719	\$ 159,160,860	\$ 23,653,859	15%

Change in cash in 3Q YTD 2018 was significantly higher than budget due primarily to higher cash from operations and capital and related financing activities (for full Statement of Cash Flows, see **Attachment A-3**).

Cash from operations has been higher due mostly to more operating income (as discussed previously in the report). Further, in addition to increased revenue, cash from customers increased \$3.5m due to timing of accounts receivable and billing from fiscal year end 2017.

Cash used for capital and related financing was down from budget due mostly to less capital spend than budget (\$9.2m), less interest costs paid (\$3.0m), cash received from water right sales (\$1.1m) and more developer contributions (\$3.2m).

Cash from investing activities remained relatively flat during the period.

Attachments

- A-1 Statements of Revenues, Expenses and Changes in Net Position (budget to actual)
- A-2 Statements of Revenues, Expenses and Changes in Net Position (year over year)
- A-3 Statement of Cash Flows
- A-4 Statements of Net Position

TRUCKEE MEADOWS WATER AUTHORITY

Comparative Statements of Revenues, Expenses and Changes in Net Position
For the nine months ended March 31, 2018

	Actual YTD 2018	Budget YTD 2018	Variance \$	Variance %
OPERATING REVENUES				
Charges for water sales	\$ 72,626,813	\$ 70,540,254	\$ 2,086,559	3%
Hydroelectric sales	2,801,075	2,058,513	742,562	36%
Other operating sales	2,239,413	2,338,000	(98,587)	-4%
Total Operating Revenues	77,667,301	74,936,767	2,730,534	4%
OPERATING EXPENSES				
Salaries and wages	13,569,619	14,240,409	(670,790)	-5%
Employee benefits	6,312,501	7,352,454	(1,039,953)	-14%
Services and supplies	17,642,851	21,755,923	(4,113,072)	-19%
Total operating expenses before depreciation	37,524,971	43,348,786	(5,823,815)	-13%
Depreciation	24,572,691	25,545,861	(973,170)	-4%
Total operating expenses	62,097,662	68,894,647	(6,796,985)	-10%
OPERATING INCOME	15,569,639	6,042,120	9,527,519	158%
NONOPERATING REVENUES (EXPENSES)				
Investment earnings	1,578,519	1,007,019	571,500	57%
Net increase (decrease) in FV of investments	(787,620)	-	(787,620)	-
Gain (loss) on disposal of assets	657,795	-	657,795	-
Amortization of bond/note issuance costs	(344,970)	(351,468)	6,498	-2%
Interest expense	(8,392,127)	(10,036,521)	1,644,394	-16%
Other nonoperating revenue	-	-	-	-
Other nonoperating expense	-	-	-	-
Total nonoperating revenues (expenses)	(7,288,403)	(9,380,970)	2,092,567	-22%
Gain (Loss) before capital contributions	8,281,236	(3,338,850)	11,620,086	-348%
CAPITAL CONTRIBUTIONS				
Grants	217,994	150,003	67,991	45%
Water meter retrofit program	1,590,967	586,116	1,004,851	171%
Developer infrastructure contributions	-	-	-	-
Developer will-serve contributions (net of refunds)	4,152,543	3,776,058	376,485	10%
Developer capital contributions-other	4,125,855	3,258,972	866,883	27%
Developer facility charges (net of refunds)	4,546,540	3,619,827	926,713	26%
Contributions from others	-	-	-	-
Net capital contributions	14,633,899	11,390,976	3,242,923	28%
CHANGE IN NET POSITION	22,915,135	8,052,126	14,863,009	185%
NET POSITION, BEGINNING OF PERIOD	631,462,629	605,764,318	25,698,311	4%
NET POSITION, END OF PERIOD	\$ 654,377,764	\$ 613,816,444	\$ 40,561,320	7%

TRUCKEE MEADOWS WATER AUTHORITY
Comparative Statements of Revenues, Expenses and Changes in Net Position
For the nine months ended March 31, 2018

	Actual YTD 2018	Actual YTD 2017	Variance \$	Variance %
OPERATING REVENUES				
Charges for water sales	\$ 72,626,813	\$ 70,708,051	\$ 1,918,762	3%
Hydroelectric sales	2,801,075	1,060,088	1,740,987	164%
Other operating sales	2,239,413	1,971,047	268,366	14%
Total Operating Revenues	77,667,301	73,739,186	3,928,115	5%
OPERATING EXPENSES				
Salaries and wages	13,569,619	13,016,649	552,970	4%
Employee benefits	6,312,501	6,128,272	184,229	3%
Services and supplies	17,642,851	17,753,334	(110,483)	-1%
Total operating expenses before depreciation	37,524,971	36,898,255	626,716	2%
Depreciation	24,572,691	24,242,118	330,573	1%
Total operating expenses	62,097,662	61,140,373	957,289	2%
OPERATING INCOME	15,569,639	12,598,813	2,970,826	24%
NONOPERATING REVENUES (EXPENSES)				
Investment earnings	1,578,519	1,966,545	(388,026)	-20%
Net increase (decrease) in FV of investments	(787,620)	(260,868)	(526,752)	202%
Gain (loss) on disposal of assets	657,795	305	657,490	215570%
Amortization of bond/note issuance costs	(344,970)	(411,341)	66,371	-16%
Interest expense	(8,392,127)	(12,403,460)	4,011,333	-32%
Other nonoperating revenue	-	-	-	-
Other nonoperating expense	-	(243,000)	243,000	-100%
Total nonoperating revenues (expenses)	(7,288,403)	(11,351,819)	4,063,416	-36%
Gain (Loss) before capital contributions	8,281,236	1,246,994	7,034,242	564%
CAPITAL CONTRIBUTIONS				
Grants	217,994	1,191,168	(973,174)	-82%
Water meter retrofit program	1,590,967	171,041	1,419,926	830%
Developer infrastructure contributions	-	-	-	-
Developer will-serve contributions (net of refunds)	4,152,543	7,019,685	(2,867,142)	-41%
Developer capital contributions-other	4,125,855	5,180,851	(1,054,996)	-20%
Developer facility charges (net of refunds)	4,546,540	3,925,841	620,699	16%
Contributions from others	-	11,805,511	(11,805,511)	-100%
Net capital contributions	14,633,899	29,294,097	(14,660,198)	-50%
CHANGE IN NET POSITION	22,915,135	30,541,091	(7,625,956)	-25%
NET POSITION, BEGINNING OF PERIOD	631,462,629	584,982,314	46,480,315	8%
NET POSITION, END OF PERIOD	\$ 654,377,764	\$ 615,523,405	\$ 38,854,359	6%

TRUCKEE MEADOWS WATER AUTHORITY

Statements of Cash Flows
For the nine months ended March 31, 2018

	Actual YTD 2018	Budget YTD 2018	Variance \$	Variance %
OPERATING ACTIVITIES				
Cash received from customers	\$ 81,449,878	\$ 74,936,767	\$ 6,513,111	9%
Cash paid to employees	(19,833,740)	(21,592,863)	1,759,123	-8%
Cash paid to suppliers	(20,330,460)	(19,147,777)	(1,182,683)	6%
Net cash from operating activities	41,285,678	34,196,127	7,089,551	21%
CAPITAL AND RELATED FINANCING ACTIVITIES				
Acquisition and construction of capital assets	(23,098,599)	(32,274,000)	9,175,401	-28%
Interest paid on financing	(13,958,071)	(17,007,136)	3,049,065	-18%
Principal paid on financing	(2,654,898)	(2,637,285)	(17,613)	1%
Proceeds from refunding bonds	-	-	-	-
Issuance of commercial paper notes	-	-	-	-
Redemption of commercial paper notes	(9,200,000)	(9,200,000)	-	0%
Proceeds transferred to refunding escrow	-	-	-	-
Proceeds from capital debt issuance	-	-	-	-
Proceeds from capital asset disposal	1,142,860	-	1,142,860	-
Contributions for water meter retrofit program	1,590,967	586,116	1,004,851	171%
Contributions from developers-will-serve letters	4,152,543	3,776,058	376,485	10%
Contributions from developers-other	4,125,855	3,258,972	866,883	27%
Contributions from developers-facility charges	4,546,540	3,619,827	926,713	26%
Contributions from others	-	-	-	-
Grants	217,994	150,000	67,994	45%
Bond/Note issuance costs	(245,502)	(351,468)	105,966	-30%
Net cash used for capital and relating financing activities	(33,380,311)	(50,078,916)	16,698,605	-33%
INVESTING ACTIVITIES				
Cash received in connection with WCWU transfer of operations	-	-	-	-
Cash received from STMGID subsequent to merger	-	-	-	-
Verdi Business Park receivable	-	-	-	-
Payments received on Verdi Business Park receivable	18,238	-	18,238	-
Interest received	854,484	1,007,019	(152,535)	-15%
Net cash from investing activities	872,722	1,007,019	(134,297)	-13%
NET CHANGE IN CASH AND CASH EQUIVALENTS	8,778,089	(14,875,770)	23,653,859	-159%
CASH AND CASH EQUIVALENTS, BEGINNING OF PERIOD	174,036,630	174,036,630	-	0%
CASH AND CASH EQUIVALENTS, END OF PERIOD	\$ 182,814,719	\$ 159,160,860	\$ 23,653,859	15%

TRUCKEE MEADOWS WATER AUTHORITY

Statements of Net Position
For the nine months ended March 31, 2018

	Actual Mar-18	Actual Jun-17	Variance \$	Variance %
ASSETS				
CURRENT ASSETS				
Cash and investments	\$ 137,314,680	\$ 132,203,954	\$ 5,110,726	4%
Accounts receivable, net	10,945,457	14,803,390	(3,857,933)	-26%
Due from others	316,451	333,417	(16,966)	-5%
Due from other governments	198,617	9,559	189,058	1978%
Interest receivable	531,576	595,161	(63,585)	-11%
Prepaid assets and other assets	983,394	1,222,604	(239,210)	-20%
	150,290,175	149,168,085	1,122,090	1%
RESTRICTED CURRENT ASSETS				
Cash and investments				
Water meter retrofit program	3,757,797	2,369,793	1,388,004	59%
Current bond debt service	8,290,600	6,250,183	2,040,417	33%
	12,048,397	8,619,976	3,428,421	40%
Total current assets	162,338,572	157,788,061	4,550,511	3%
RESTRICTED NONCURRENT ASSETS				
Cash and investments				
Future bond debt service	3,272,078	3,242,632	29,446	1%
Operations and maintenance	9,440,056	8,797,778	642,278	7%
Renewal and replacement	20,239,508	20,672,290	(432,782)	-2%
Water rate stabilization	500,000	500,000	-	0%
Hydro asset purchase	-	-	-	-
	33,451,642	33,212,700	238,942	1%
NONCURRENT ASSETS				
Capital assets, not depreciated	169,381,562	150,655,018	18,726,544	12%
Capital assets, depreciated	767,296,326	791,037,884	(23,741,558)	-3%
Prepaid bond insurance and other assets	512,420	510,360	2,060	0%
	937,190,308	942,203,262	(5,012,954)	-1%
Total noncurrent assets	970,641,950	975,415,962	(4,774,012)	0%
Totals assets	1,132,980,522	1,133,204,023	(223,501)	0%
DEFERRED OUTFLOW OF RESOURCES				
Deferred amount on bond refundings	2,993,290	3,154,276	(160,986)	-5%
Deferred amount on net pension liability	14,239,295	14,239,295	-	0%
Total deferred outflow of resources	17,232,585	17,393,571	(160,986)	-1%
TOTAL ASSETS AND DEF OUTFLOW OF RES	\$ 1,150,213,107	\$ 1,150,597,594	\$ (384,487)	0%
LIABILITIES				
CURRENT LIABILITIES PAYABLE FROM UNRESTRICTED CURRENT ASSETS				
Accounts payable	\$ 2,713,115	\$ 3,028,060	\$ (314,945)	-10%
Contracts and retention payable	249,549	3,305,406	(3,055,857)	-92%
Accrued liabilities	3,944,184	3,912,374	31,810	1%
Due to other governments	1,279,592	3,738,649	(2,459,057)	-66%
Accrued interest payable	265,416	384,147	(118,731)	-31%
Current portion of long-term debt	76,053,799	85,205,701	(9,151,902)	-11%
Customer deposits and amounts due to developers	2,826,698	2,729,962	96,736	4%
	87,332,353	102,304,299	(14,971,946)	-15%
CURRENT LIABILITIES PAYABLE FROM RESTRICTED CURRENT ASSETS				
Current portion of long-term debt	885,000	850,000	35,000	4%
Interest payable	3,539,513	5,400,183	(1,860,670)	-34%
	4,424,513	6,250,183	(1,825,670)	-29%
Total current liabilities	91,756,866	108,554,482	(16,797,616)	-15%
NONCURRENT LIABILITIES				
Net pension liability	35,783,246	35,783,246	-	0%
Long-term debt, net of current portion	365,772,612	372,259,981	(6,487,369)	-2%
Total noncurrent liabilities	401,555,858	408,043,227	(6,487,369)	-2%
Total liabilities	493,312,724	516,597,709	(23,284,985)	-5%
DEFERRED INFLOW OF RESOURCES				
Deferred amount on net pension liability	2,410,007	2,410,007	-	0%
Deferred amount on bond refundings	112,613	127,250	(14,637)	-12%
Total deferred inflow of resources	2,522,620	2,537,257	(14,637)	-1%
Total liabilities and deferred inflow of resources	495,835,344	519,134,966	(23,299,622)	-4%
NET POSITION				
Net investment in capital assets	506,700,472	506,700,472	-	0%
Restricted for water meter retrofit program	2,369,793	2,369,793	-	0%
Restricted for debt service	850,000	850,000	-	0%
Restricted for operations and maintenance reserve	4,197,778	4,197,778	-	0%
Restricted for renewal and replacement reserve	20,672,290	20,672,290	-	0%
Restricted for water rate stabilization	500,000	500,000	-	0%
Unrestricted	119,087,430	96,172,295	22,915,135	24%
Total net position	654,377,763	631,462,628	22,915,135	4%
TOTAL LIABILITIES, DEF INFLOW OF RES, AND NET POSITION	\$ 1,150,213,107	\$ 1,150,597,594	\$ (384,487)	0%



STAFF REPORT

TO: Board of Directors
THRU: Mark Foree, General Manager
FROM: Andy Gebhardt, Operations and Water Quality Director
Marlene Olsen and Cammy Elquist LoRé, GoodStanding
DATE: April 9, 2018
SUBJECT: **Presentation on proposed Conservation, Communication and Outreach Plan for 2018, discussion, and possible direction to staff**

Report Highlights:

- *This plan combines all outreach activities of TMWA into one comprehensive communication plan (Summer Campaign, Water Leadership, and General/Internal Communications) and identifies all TMWA stakeholders. It anticipates all forms of communication: multimedia advertising, news coverage, direct customer messages in bills, social media, digital media, and website content.*
- *With water storage at capacity this year, a standard summer conservation plan will be in effect, according to the Water Resource Plan, with particular focus and emphasis on smart water use. See Smart About Water Summer Campaign Brief on page 9.*
- *The long-term goal of this Strategic Communications Plan is to establish high levels of regional water system and water resource management knowledge among all stakeholders.*

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TMWA Strategic Communications Plan Summer 2018 - Spring 2019

Overview

Through an effective combination of regional governance, community ownership and operational expertise, TMWA plays a primary leadership role for the management of water resources in the Truckee Meadows. Although the recognition has served TMWA well, this strategic communications plan seeks to more intently fill this role by working collaboratively with other agencies on water management topics and issues. Through this dedicated focus, TMWA is committing to a communication strategy that provides needed education, elevates local stewardship, and encourages organizational collaborations that will enrich our community's knowledge of its water supply and our region's water resource management.

The 'Smart About Water' Framework

In 2017 the **Smart About Water** (SAW) communication framework was introduced with a summer campaign, fall event (*Smart About Water Day*), and winter exhibits that continue to circulate and that will serve as an educational message bridge into the 2018 summer campaign.

This year, message positioning within the SAW framework continues to focus on perceived issues identified in public research projects such as community growth, safeguards to our supply via the Truckee River Operating Agreement (TROA), and long-term water resource management. Accordingly, the long-term goal of this activity is to establish high levels of regional water-management knowledge among civic, political, and public stakeholders.

With continued education, stewardship and collaboration, four outreach focus areas have been identified. Each have tailored "Smart About Water" messaging to support, promote, and reinforce.

Outreach Focus

Smart About Water - Messaging Objectives

Leadership Network

To further inform the region's leaders, civic organizations, and engaged citizen groups about TMWA's water resource management and infrastructure stewardship from a community-level perspective

Conservation

To encourage smart water use that aligns with the region's demand-side projections at a user-level perspective





Employee Core

To ensure that workforce members are informed about water issues and recognized for their roles, their dedication, and the ownership applied as TMWA team members

Customers-as-Consumers

To make sure that customers know about the factors that may affect their bill statements, water rates, water service, or water quality

Annual Overview of Communication Tactics by Season

Engagement Tactics and Outreach Focus Areas		Core	Customer	Conserve	Leaders
	Advertising campaign: <i>Smart About Water</i>	√	√	√	√
	Electronic distributions: <i>From the Source</i> Employee newsletter (monthly) <i>Quality.Delivered.</i> Customer e-newsletter (quarterly) Social Media Posts Facebook (weekly)	√	√ √	√ √	√
	Info guide: Create onboarding guide and/or briefing for local candidates with information on TMWA and regional water resource management.				√
	Bill inserts / envelope backers: Monthly distribution will add an employee-focused <i>Snapshots of Service</i> info-element (# of service calls, etc.)	√	√	√	
	Workshops & tours: Sprinkler upkeep, landscape/garden tours		√	√	
	Owned event: <i>Smart About Water</i> community event		√	√	√
	Electronic distributions: Newsletters and social media	√	√	√	√
	Info guide: Update new employee onboarding and continued training with customer FAQs and resource management information	√			
	Program: Begin quarterly <i>Employee Recognition Program</i> (e.g. award a person from each department for going above and beyond in <i>mission-oriented</i> service	√			
	Bill inserts/envelope backers: Monthly distribution will add an employee-focused <i>Snapshots of Service</i> info element (# of service calls, etc.)	√	√	√	
	Workshops & tours: Winterization, Chalk Bluff Plant tour, hydro plants		√	√	√
	Exhibit: <i>Smart About Water</i> year-in-review exhibits placed in high-traffic public areas		√		√
	Electronic distributions: Newsletters and social media	√	√	√	√
	Program: Establish media partnership for conservation educational programs			√	√
	Bill inserts / envelope backers: Monthly distribution will add an employee-focused <i>Snapshots of Service</i> info-element (# of service calls, etc.)	√	√	√	
	Program: <i>Employee Recognition Program</i>	√			
	Civic presentations: Topics include water supply outlook, infrastructure projects		√	√	√
	Electronic distributions: Newsletters and social media	√	√	√	√
	Workshops & tours: Irrigation, landscape, drip systems, Glendale tour		√	√	√
	Community events: Earth Day			√	
	Info guides: Updates of employee training and elected officials guides	√			√
	Bill inserts / envelope backers: Monthly distribution will add an employee-focused <i>Snapshots of Service</i> info-element (# of service calls, etc.)	√	√	√	
	Program: <i>Employee Recognition Program</i>	√			

Tactics and Messaging: Leadership Network

Partners ■ Gov't Agencies ■ Elected Officials ■ Civic and Professional Orgs ■ Schools

Further inform regional leaders, civic organizations, and engaged citizen groups about TMWA's water resource management and infrastructure stewardship from a community-level perspective.

Tactics and Deployment Examples

- **Paid advertising:** Include a creative brief for the 2018 Summer Campaign with "Smart About Water" messaging from a community resource management perspective.
- **Group presentations:** Demonstrate more complex topics or important seasonal updates to civic and professional groups.
- **Direct outreach:** When needed, information is sent direct to leaders in the community.
- **Owned events:** Leverage events such as Smart About Water Day in the fall and a potential smaller spring start-up event to educate the community.
- **Educational exhibits:** Display an annual recap of activity within the plan framework and overarching commentary.
- **Partnership coordination:** Engage with key community partners to distribute messaging and materials on partner-owned channels.
- **Elected official info guide:** Provide up-to-date information about TMWA such as customer service area, planned capital improvements, rate payer comparisons, conservation programs, water resource management strategies, drought contingency plans, and other relevant aspects.
- **Elected official tours:** Provide tours of water treatment facilities and hydroelectric generation plants.

Message Points to Reinforce

1. **TROA and drought contingency:** Plan for the worst (climate change) and TMWA is prepared to provide consistency in service.
2. **Growth and conservation:** As the service area expands, conservation helps the overall conjunctive-use strategy (e.g. delivering surface water to places previously more reliant on groundwater, letting aquifers recharge and allowing for more longer-term storage options.)
3. **Long-term planning:** Solid choices and negotiations of past community and utility leaders/leaders have made possible present-day water resource management strategies.

Media Frequency

Monthly Features	Quarterly or Seasonal Features	One-Time Feature
Newsletter	Paid summer campaign Group presentations Educational exhibits Events	Media publicity As-needed direct communication

Tactics and Messaging: Conservation

Residential Customers ■ Commercial Customers

Encourage smart water use (from a user-level ecology perspective) that aligns with the region's water resource projections.

Tactics and Deployment Examples

- **Paid advertising:** Include a creative brief for the 2018 Summer Campaign, with "Smart About Water" messaging from an individual user perspective.
- **Owned channels:** Use to raise awareness about events, videos, tours, workshops and programs.
- **Owned events:** Produce informative events such as Smart About Water Day in the fall, spring workshops, and tours.
- **Community events:** Create interactive opportunities at appropriate large community events (e.g., Earth Day).
- **Partner program:** Consider a community organization and media partnership to educate the public about conservation programs.
- **Publicity leverage:** Invite a media or high-profile personality to fix something in their home by using one of TMWA's videos.

Message points to reinforce

1. **Smart water use is commonplace:** Regardless of record snow years or "Miracle March" months, smart water use is not a seasonal phenomenon: it's "how we roll."
2. **Smart water use is our expression of stewardship:** Celebrate how the community continually has stepped up over the years.
3. **TMWA conservation programs help customers stay resourceful:** There's always something to learn about or fix within the home to make it water efficient.

Media Frequency

Monthly Features	Quarterly or Seasonal Features	One-Time Feature
Social media Bill Inserts/envelope backers Partner program—TBD	Paid summer campaign Workshops and tours Owned events Community events YouTube channel	Media publicity—TBD

Tactics and Messaging: Customers-As-Consumers

Residential Customers ■ Commercial Customers

Ensure that customers know about factors that may affect their bill statements, water service, or water quality.

Tactics and Deployment Examples

- **Owned events:** Ensure that billing and water quality information are available at owned public events. Inform customers regarding infrastructure status and needed forthcoming investments.
- **Owned channels—bill inserts:** Use to communicate details of planned infrastructure projects and educate on programs and tactics that can help customers conserve and save. Provide link access to water quality reports.
- **Owned channels—e-newsletters:** Use to communicate details on infrastructure projects, supply updates, and events. Educate on programs and tactics that can help customers conserve and save. Inform customers regarding infrastructure status and needed forthcoming investments. Provide link access to water quality reports.
- **Owned channels—social media:** Use to inform customers about workshops, tours, infrastructure projects, and employee highlights. Leverage digital format to provide helpful links to water quality update map and reports.
- **Direct email or phone call:** Use to update customers on unplanned water service interruptions and/or upgrades.

Message Points to Reinforce

1. **System upkeep is a normal part of any utility operation.** As in any system with moving parts, regular maintenance and infrastructure investment normally keep everything running smoothly. Sometimes, temperatures or unexpected forces can cause unexpected breakdowns.
2. **TMWA crews ready 24/7, 365 days a year.** Our teams get there as soon as possible after we are notified of problems and will work until all customers have water service restored.
3. **Water quality through diligence.** Reinforce TMWA's diligence in delivering high-quality water (i.e., 1,000 tests per month).

Media Frequency

Monthly Features	Quarterly or Seasonal Features	As Needed Feature
Bill inserts	E-newsletters	Social media
Envelope backer	Events	Direct email or phone call
Bill copy messages		New customer packets

Tactics and Messaging: Employee Core

Staff ■ Management ■ Bargaining Leaders

Ensure that the workforce is informed about water issues and is recognized for their roles, their dedication, and the ownership applied as a team member of TMWA.

Tactics and Deployment Examples

- **Owned channels:** Give monthly, casual recognition of those who are excelling in their performance or coming upon key professional milestones. Feature in *From the Source* employee newsletter and system wide-emails.
- **Recognition Program:** Formalize quarterly organization-wide recognition of employees who go above and beyond for *Quality. Delivered.*
- **Internal operational materials:** Ensure that on-boarding and training materials include common community concerns for Customers-As-Consumers; Resource Conservation; Water Resource Management.
- **Owned channels:** Include information on employee service levels in a stylized info bite (## service calls, ## breaks fixed, etc.). Feature in *external* newsletters or envelope backers.

Message Points to Reinforce

1. **TMWA's employees directly contribute to our community's quality of life.** TMWA's employee base provides the 24/7 dedication and grit that dependably delivers high-quality water to homes and businesses around the Truckee Meadows.
2. **TMWA's workforce has a solid legacy of doing the right thing.** TMWA's employees (current and past) know that the region is a special place to live and that work done over the years has helped ensure it stays this way through innovative solutions, foresight, and prudent investments.
3. **TMWA's workforce skillset is robust.** From engineers to scientists to maintenance and machinery technicians, TMWA's work force has the right skills to get the job done.

Media Frequency

Monthly Features	Quarterly or Seasonal Features	One-Time Feature
Internal newsletters Customer billing	Paid Summer Campaign Employee recognition	Video interviews Media publicity

The 2018 Summer Campaign

Employee Core ■ Conversation ■ Water Leadership

"Smart About Water" Key Themes and Facts

The campaign weaves together messages from each outreach focus area with recurring themes:

- **Water supplies are sufficient.** Reassure the community that our supplies are sufficient in accordance with the Water Resource Plan and reinforce the resiliency of our water system.
- **Conservation is timeless.** With successful assigned-day watering since the mid-1980s, community stewardship helps our system respond to extreme weather realities. Our established conservation programs further empower customers to keep home systems efficient and water bills low.
- **Growth is in sight.** Considering growth projections, increased water demand, and snowpack fluctuation, water resource management is an important part of TMWA operations. Leveraging TROA storage and conjunctive use strategies together offers a solid approach for serving the region.
- **Reinforce 'Smart About Water' facts.** Watering days & times, water-quality testing, drought planning, reserves stored, hydroelectric benefits, growth/water rights, and key infrastructure projects.

Deliverable Formats and Channels: *Print, Radio, TV, Social, Web, Distributed Collateral*

The campaign will rotate a series of ads to reach our target audiences: Web formats will be most varied, followed by print, radio, and TV. Distributed collateral will be unique to each format (e.g., monthly bill stuffer copy, e-newsletter). The media buy will integrate paid space and sponsorships with added value requirements for each buy (addl. space, website content, on-air contests, etc.).

Target Audiences: *Customers 25+, Community Leader Network*

In addition to traditional advertising, we will continually refine demographic targeting for our online ad buy. Channels may include news websites, high-impact local news videos, geo-tagged search engine advertising, and online activity categories via social media.

Tone: *Neighborly, responsive, unassuming, collaborative, capable, prudent*

We have established high levels of trust with our customers, not only through consistent levels of service over the years, but also through a proactive, responsive approach to managing customer relationships. The direct connection of water to residents' quality of life is important and an underlying tenet of stakeholder expectations and interaction. We will build on the Smart About Water Facts campaign and creative from 2017.

Timing of Campaign Deliverables

Conservation exhibits: May 30–July 2

Paid space: May 28–September 14

Bill stuffers/envelope backers: May, June, July, August, September

E-Newsletter: July

TMWA Internal and External Stakeholders Map and Matrix

The Stakeholder Map below is a categorized list of TMWA’s stakeholder community. This graphic, subject to change over time, is intended to reasonably and comprehensively represent the internal and external stakeholders we serve, affect, and interact with. The blue dividing line is meant to bring additional context to “Critical Affiliation” stakeholder groups (above the line) and “Relative Affiliation” stakeholder groups (below the line).

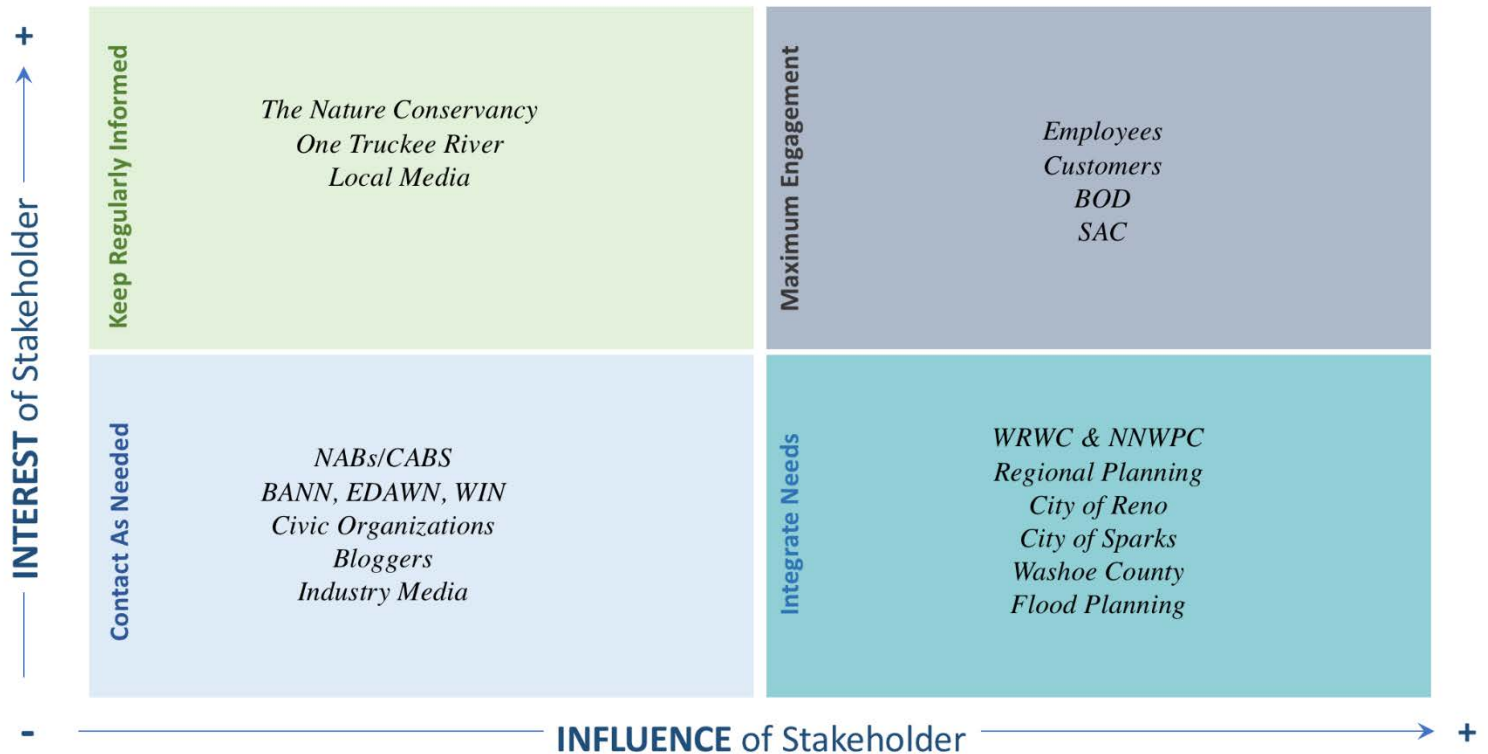


This map is a visual guide to comprehensively assess and prioritize audiences and their requirements of TMWA, as water communication needs shift with the seasons and years. The context of water-year realities, demand-side expansions, infrastructure updates, TMWA operations, and community sentiment will help guide how this map applies to our communication needs. A communications plan to address all *critical and relative affiliation* stakeholder groups on this graphic would certainly exceed the time, funds, and energy available nor would it be necessary to try. Therefore, we will instead update a Prioritization Matrix to help guide engagement strategies.

Prioritization Matrix of Key Stakeholder Audiences for 2018

In the context of the 2018 Communication Plan, the following matrix identifies key stakeholder groups that will help TMWA assign outreach prioritization that are important to stay closely connected to for establishing high levels of regional water-management knowledge among civic, political, and public stakeholders.

These stakeholder groups below may be partners in community events, presentations, or audiences of paid campaigns, or focus groups for other public relations efforts.



For example, beyond paid campaigns and direct mail outreach, we will continue to employ the following types of tactics to stay engaged with high-priority stakeholder groups:

- We will invite WRWC, NNWPC, the Nature Conservancy, and similar partners to display and present during the October Smart About Water Day.
- We will continue to present spring water-year updates to our SAC and local NABs/CABs.
- The General Manager will continue to prioritize direct correspondence with SAC and BOD members regarding TMWA's community outreach events.
- Local media is and will continue to be an ongoing relationship.

In 2018, we will employ similar and expanded levels of inclusion to explore ways to include and/or integrate our priority stakeholders into TMWA's activities.

Overview of TMWA's Marketing Channels

The following are TMWA's current inventory of controlled marketing channels, in order of distribution frequency. Content structure will be adjusted to accommodate tactical shifts in communication objectives or in the way the public utilizes the channel itself.

TMWA Facebook Page

Audience: Community
Frequency: Weekdays
Distribution: Facebook
Content: + Links to educational or informational content
+ Links to workshop information and signup pages
+ Promotion of TMWA and community partner events
+ Employee highlights

From the Source Newsletter

Audience: Employee
Frequency: Monthly
Distribution: Email
Content: + Updates from Board of Directors meeting
+ Spotlight from a mid-level-manager perspective on interesting projects or service calls
+ Employee milestones section to announce upcoming retirements, promotions, or other types of recognition warranted

Quality.Delivered Newsletter

Audience: Customers
Frequency: Monthly
Distribution: In billing statements and online
Content: + Updates from Board of Directors meeting
+ Features Employee *Snapshots In Service*
+ Updates on snowpack and water storage
+ Notices about upcoming workshops
+ Updates on Water Quality Reports
+ Updates on large-scale projects and improvements
+ Tips on conservation and lowering bills
+ In-depth topic education and/or analysis when needed
+ Pertinent community news or partner announcements
+ Contact information, hours, and planned holiday closures

Bill Envelope Backers

Audience: Customers

Frequency: Monthly

Distribution: With bill statements

Content: + Quick spotlight on key topics

+ Reinforcing call-to-action when needed (e.g. Start of 3x per week watering)

YouTube Channel

Audience: Community

Frequency: Topic-dependent

Distribution: Social media, newsletters, TMWA websites

Video Content: + Do-it-yourself home water system projects

+ Spotlight on major infrastructure accomplishments

+ In-depth analysis on key topics or relevant historical perspectives

'Smart About Water' Website

Audience: Community

Frequency: Updated with Summer Campaign

Distribution: n/a

Content: + A quick-consumption complement to information featured on TMWA.com

+ Home of "Smart Facts" for summer campaign

-> Water quality

-> Water system

-> River operations (TROA)

-> Water use

-> Assorted fun facts



STAFF REPORT

TO: TMWA Standing Advisory Committee
THRU: Mark Foree, General Manager
FROM: John Zimmerman, Water Resources Manager
DATE: May 30, 2018
SUBJECT: Discussion and possible action regarding changing purpose of Water Meter Retrofit Fee to drought resiliency and water resource sustainability projects.

Summary

In February, the Standing Advisory Committee (SAC) adopted staff's recommendation to reserve the current amount in the meter retrofit fund for future retrofits and to change the purpose of the fee going forward to projects that enhance and improve TMWA's drought resiliency and water resource sustainability. The TMWA Board adopted staff and the SAC's recommendation to reserve the amount in the meter retrofit fund for future retrofits and directed staff to continue to collect the fee until the purpose of the fund is formally changed through a rule change. The Board also directed staff to describe options for using the fund for drought resiliency and water resource sustainability projects and seek SAC input regarding the same before bringing a formal rule change request to the Board.

Staff seeks input regarding the following purposes of the fee and the proposed public engagement plan and rule change.

Meter Retrofit Fee Background

The meter retrofit fee was created to satisfy Section 29 of the May 23, 1989 Preliminary Settlement Agreement (PSA), which required TMWA to adopt a plan for financing and installing water meters. The purpose of installing meters was to allow the utility and customers to better-track water usage and promote efficient water use. Under TMWA Rule 7(H)(3), applicants for water service (except those relying on domestic well conversion credits issued by the Nevada State Engineer, imported water resources, or groundwater rights for their dedication) must pay \$1,830 per acre-foot of their estimated water demand. TMWA's legal counsel, Gordon DePaoli, has advised staff that TMWA has satisfied the metering requirement set forth in the PSA because nearly all services have been metered. Of the 253 services that are not metered, TMWA staff estimates 82 could feasibly be retrofitted and that 50% of those services are likely to request to be metered in the next 10 years. The total cost to retrofit 41 of the services would be approximately \$3M based on TMWA's preliminary engineering cost estimate. The fund balance as of April 30, 2018 was \$3.9M so there should be enough to retrofit at least 50% of the feasible services if the fee is changed and used for other purposes going forward.

Proposed New Use of Fee

Staff recommends the Board change and broaden the fee purpose to allow the use of funds for projects such as expanded conjunctive use, aquifer storage and recovery, demonstration and validation of exceptional quality reclaimed water uses, and future water resource identification and acquisition and other projects that enhance water resource sustainability and drought resiliency. Similar to metering, these projects promote efficient water use and will lead to increased drought resiliency and water resource sustainability.

TMWA's Fiscal Year 2019 – 2023 Capital Improvement Plan (CIP) includes seven drought resiliency and water resource sustainability projects, including the Mt. Rose Water Treatment Plant, Donner Lake Outlet Improvements (Phase 2), Bedell Flat Water Bank, Indirect Potable Reuse, NDEP Monitoring Wells, Wellhead TTHM mitigation and Spring Creek Well 7 Recharge Main, totaling more than \$24 million over the next five years. A substantial portion of these projects is presently funded by Customer Rates; however, it is appropriate to allocate a portion of these project costs to Development, as growth places an added burden and operational stress on the overall water system. Similar to the CIP individual project cost allocation between Customer Rates and Development, the cost allocation to "Drought Resiliency and Water Resource Sustainability" would be determined on a case-by-case basis. Staff would report to the Board annually regarding the fund balance and the status of projects that have received monies from the fund.

Attached is a redlined version of TMWA's current Rule 7 that shows the proposed revisions necessary to change the Water Meter Retrofit Fee. If the Board directs staff to proceed with the rule change, then staff will conduct the following public outreach before bringing the proposed rule change back to the Board for adoption:

TMWA Standing Advisory Committee

Builders Association of Northern Nevada

Public open house at TMWA's offices

Lastly, if the Board directs staff to proceed with the rule change as described above, then staff will also analyze whether the current fee amount (\$1,830) should be changed. Any proposed fee change will be part of the public outreach process described above and described in the final report when the rule is brought back to the Board for two readings and potential adoption.

Truckee Meadows Water Authority

RULE 7

REQUIREMENTS FOR WILL-SERVE COMMITMENT LETTERS

A. Applicability

This Rule applies to and sets forth the responsibilities and requirements of a Person applying to the Authority for a Will-Serve Commitment letter from the Authority for the delivery of water to a new Service or Modified Service.

B. Definitions

1. Terms not defined in this Section shall have the meaning set forth in Rule 1.
2. As used in this Rule:
 - a. "Applicant" shall mean the Person applying for a Will-Serve Commitment letter.
 - b. "Authority Water Resources" shall mean water resources owned by the Authority and previously held within the Will-Serve Commitment Inventory.
 - c. "Current Usage" shall mean the annual quantity of water actually delivered to a Service Property based on most recent usage data as determined by Authority pursuant to Section 1.2, generally expressed in acre-feet per annum or acre-feet per year.
 - d. "Dedicated Water Resource" shall mean water resource credits, water rights, or water rights and necessary facilities accepted for dedication by an Applicant prior to the issuance of a Will-Serve Commitment letter, in order to meet the actual Demand of a new Service or Modified Service and/or Deficit Demand.
 - e. "Deficit Demand" shall mean the difference, as determined by the Authority pursuant to Section 1.2, between the Current Usage at the Service Property and the Demand recognized in the Will Serve Commitment letter or Historic Demand, if any, to a Service Property.
 - f. "Demand" shall mean the estimated annual quantity of water to be delivered to a Service Property, generally expressed in acre-feet per annum or acre-feet per year.
 - g. "Historic Demand" shall mean the estimated annual quantity of water, as determined by Authority, historically delivered by Authority or Authority's predecessor to a Service Property.
 - h. "Permitted Water Right" shall mean a water right for which the Authority has been issued a permit by the Nevada Division of Water Resources to use for municipal purposes in the Authority's place of use and to be diverted at the Authority's points of diversion.
 - i. "Will-Serve Inventory" shall mean the inventory of uncommitted water resources owned by the Authority which may be made available to Applicants to support an Applicant's Will-Serve Commitment pursuant to this Rule.

Truckee Meadows Water Authority

RULE 7

REQUIREMENTS FOR WILL-SERVE COMMITMENT LETTERS

- j. "Truckee Meadows Resource Area ("TMRA")" shall mean the portion of the Service Area within which the Authority will accept for dedication, subject to Section F.3, any Truckee River water source/right for the delivery of water to the Service Property.

C. Will-Serve Commitment Letter Required

1. When Required. All Applicants for new Service or Modified Service must file an Application with the Authority for, and if the Authority determines that water resources are required to service the Demand of the new Service or Modified Service, a Will-Serve Commitment letter must be obtained for such service.
2. Methods to Obtain. A Will-Serve Commitment letter may be obtained from the Authority by the dedication to the Authority of Dedicated Water Resources as provided in Section F or by purchase from the Authority as provided in Section G.

D. Responsibilities and Requirements of Applicant

1. The Applicant shall submit, at the time of application for a Will-Serve Commitment letter, plans and specifications sufficient for the Authority to estimate Demand of the new Service or Modified Service as follows:
 - a. Subdivision plat or parcel map with square footages of lots, including landscaping plans for common irrigation areas showing turf areas with square footage and drip areas with water use calculations; and/or
 - b. Site plan(s) with layout of project, including plumbing and mechanical plans, and landscaping plans showing turf areas with square footage and drip areas with water use calculations; and/or
 - c. Any other information that the Authority may reasonably require to estimate annual Demand.
2. An Applicant with project(s) requiring Irrigation Service(s) must furnish with the application a written determination by the Local Government with jurisdiction over the sale of Reclaimed Water as to the extent to which the Local Government will commit to provide Reclaimed Water to the Applicant for some or all of the Irrigation Service Demand.

Use of Reclaimed Water is subject to the requirements of the Authority and NAC 445A to protect and separate the Authority's Potable supplies from Non-Potable water sources. If Applicant project(s) cannot be served by Reclaimed water or backflow protection devices do not meet Authority's Standards, the Applicant must supply water resources pursuant to Section F or G of this Rule sufficient to meet the Irrigation Service(s) Demand for the project(s).

Truckee Meadows Water Authority

RULE 7

REQUIREMENTS FOR WILL-SERVE COMMITMENT LETTERS

E. Methodology for Calculating Demand and Water Resources Requirement

1. The Applicant's Demand for new Service or Modified Service within the TMRA shall be computed as follows:

<u>Type of Unit</u>	<u>Demand</u> (Acre Feet Per year)
Single family residential lot based on square foot lot size, with a minimum Demand of .12 acre feet per lot	$\frac{1}{1.1 + (10,000 / \text{Lot size})}$
Mobile home parks with separate irrigation (per space)	0.25
Demand per unit for apartments, duplexes, condominiums, or townhouse units (excluding outside, utility room, laundry room and/or recreation uses)	0.12
Commercial or Industrial Services (including residential utility room/ recreation areas)	The best available data and estimating procedures as determined by the Authority shall be used or estimated average annual Demand as furnished by the Applicant or Customer and accepted by the Authority shall be used.
Irrigation	3.41 acre feet per acre, or, for drip systems, the Demand as calculated by a landscape architect or other qualified professional and verified by the Authority.

The Applicant's Demand for new Service or Modified Service outside the TMRA shall be estimated using best available data and estimating procedures as determined by the Authority.

2. The acre feet required for a new Service or Modified Service will be computed as follows:

Total Acre Feet Required (AFA) = Total Project Demand x Multiplier

Multiplier = (a) for mainstream Truckee River Rights the multiplier shall be 1.11.

(b) for groundwater rights, the multiplier shall be 1.00.

Truckee Meadows Water Authority

RULE 7

REQUIREMENTS FOR WILL-SERVE COMMITMENT LETTERS

(c) for all other water resources listed in Section F, the multiplier shall be such other number and/or other water sources/rights sufficient to provide an acceptable water supply, including but not limited to return-flow requirements, as determined by the Authority on a case by case basis.

F. Obtaining a Will-Serve Commitment Letter by Dedication of Water Rights

1. Requirement. When an Applicant seeks issuance of a Will-Serve Commitment letter from Dedicated Water Resources, the Applicant must dedicate to the Authority water rights sufficient to meet the Demand of the new Service or Modified Service as calculated pursuant to this Rule. Dedication of water rights will typically occur through conveyance to the Authority of title to the water rights. Under limited circumstances consistent with the Authority's discretion set forth in Section F.3, the Authority may consider acquisition of water rights for dedication through exchanges, leases, future purchases, or other acquisition agreements. Except in the case where the Authority has expressly agreed to accept a temporary dedication or except as provided in Section I, dedication of water rights is irrevocable.
2. Types of Water Rights Eligible for Dedication. Water rights acceptable for dedication to the Authority may be comprised of one or a combination of the following. For purposes of calculating the quantity of water rights required for dedication, different multipliers may apply as set forth in this Rule to different types of water rights and/or water sources.
 - a. Mainstream Truckee River rights with a multiplier as set forth in Section E.2 of this Rule.
 - b. Other water rights of acceptable quantity and quality to the Authority with a multiplier as set forth in Section E.2 of this Rule.
 - c. Credits associated with the conversion of a domestic well to the Authority's water system as allowed by the Nevada Division of Water Resources.
 - d. Groundwater rights permitted for the Authority's use by the Nevada Division of Water Resources with a multiplier as set forth in Section E.2 of this Rule.
 - e. Imported or other water sources/rights and additional facilities/treatment necessary to implement or utilize these water sources which the Authority determines provide a sufficient water supply to meet the Demands of the new Service or Modified Service with a multiplier as set forth in Section E.2 of this Rule.

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- f. Credits established pursuant to this Section I of this Rule.

The Authority may require analysis of drought-year supply or yield of the water right(s), Nevada Division of Water Resources approval of transfer, and/or special conveyance to the Authority's facilities as conditions of accepting dedication of the aforementioned water rights.

3. Acceptance or Rejection of Water Rights. The Authority shall have the right, in its sole discretion, to accept or reject any water right(s) offered for dedication based upon its application of Section F.2 and its consideration of the following:
 - a. Whether the priority, quantity, ability to put the water right(s) to beneficial use, drought-year supply, yield, and quality of the water right(s) is sufficient to meet the Demand of the project for new Service or Modified Service;
 - b. Whether the water right(s) can be successfully changed under applicable law to allow their use by the Authority for municipal and industrial purposes, at the Authority's place of use, and for diversion at the Authority's points of diversion; and
 - c. Whether the Applicant can show unencumbered and clear title to ownership of the water right(s).

G. Obtaining a Will-Serve Commitment Letter by Purchase from the Authority

1. The Authority may maintain and make available from its Will-Serve Inventory of water resources available for commitment to support a Will-Serve Commitment letter to an Applicant's Project within the TMRA as provided in this Section. The Authority shall determine the price of purchasing a Will-Serve Commitment based on a weighted averaged of all direct and indirect costs associated with the acquisition of water rights held in the Will-Serve Inventory, which shall include, but not be limited to:
 - a. The actual purchase or lease price of the water rights;
 - b. The cost or value of water rights determined through exchanges or trades of different various types of water rights or water resources identified in Section F.2 of this Rule;
 - c. The Authority's cost to research, verify and acquire title to the water rights;

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- d. The Authority's cost to change the point of diversion, place and manner of use of the water rights through the Nevada Division of Water Resources;
 - e. An annual carrying charge pursuant to the weighted average interest on the Authority's debt calculated and applied on a daily basis; and
 - f. Miscellaneous fees and office expenses associated with acquiring the water rights.
2. Will-Serve Commitment letters utilizing Will-Serve Inventory can only be purchased to the extent of the demand of Applicant's project and to the extent sufficient inventory exists in the Will-Serve Inventory. Only Applicants eligible under Section G.4 may purchase Will-Serve Commitment letters. Priority among eligible Applicants to purchase Will-Serve Commitment letters shall be on a first come, first served basis determined by the date Authority has received a complete application for the New or Modified Service. The Authority will notify an Applicant with priority in writing of the availability of sufficient inventory to serve the demand of Applicant's project certified mail, hand delivery, fax, or email, and will reserve such inventory until 5:00 PM PST of the tenth full business day following delivery of such notice. In the event the Applicant does not purchase the Will-Serve Commitment letter by 5:00 PM PST of the tenth full business day following such notice, the Authority will release the inventory to the next eligible Applicant, and the Applicant electing not to purchase the Will-Serve Commitment letter shall forfeit its priority and move to the end of the line of all then eligible Applicants.
 3. The price of purchasing a Will-Serve Commitment letter utilizing the Will-Serve Inventory will be established by the Authority in the following manner:
 - a. Within fifteen (15) days of the end of each month, the Authority will calculate the general price associated with the acquisition of water rights in the Will-Serve Inventory by dividing the costs associated with the acquisition of water rights by the remaining balance of water rights in inventory. The resulting price shall be effective on the first business day of the following week; or
 - b. In the event additional water rights are acquired, the Authority shall determine a new price by dividing the costs associated with the acquisition of water rights by the remaining balance of water rights in inventory. The resulting price shall become effective on the first business day of the following week,

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4. The Applicant may purchase a Will-Serve Commitment letter sufficient to meet the Demand for the Applicant's Project within the TMRA from the Authority only if the following conditions are met:
 - a. No water rights are appurtenant to the location at which new Service or Modified Service is being sought; or
 - b. The Applicant does not have any water rights banked with or previously conveyed to the Authority or other Local Government which remain uncommitted to a Project but could be available for Applicant's Project; or
 - c. The Applicant does not own any water rights that could be dedicated to the Authority pursuant to Section F of this Rule; and
 - d. The Authority has a sufficient inventory of water rights in the Will-Serve Inventory to meet the Demand for the Applicant's Project.

Where the Applicant is a Local Government or State agency seeking New or Modified Service, the Applicant may be granted an exemption to Section G.4(c) if Applicant's Water Resource(s) are committed to current or future water quality purposes, return flow requirements, effluent reuse, recharge, drought reserve, protection against demand fluctuations or such other appropriate water resource management or public use purposes approved by the Board.

Where the Applicant is a Wholesale Service applying for New or Modified Service on behalf of the owner of a retail project within the Wholesale Service's retail service area, Section G.4 shall apply to the owner of the of retail project as if the owner of the retail project were the Applicant.

H. Fees and Issuance of Will-Serve Commitment Letter

1. Fees Related to Dedication of Water Rights. Prior to the acceptance of Dedicated Water Resources to the Authority, Applicants will pay fees provided in Rate Schedule BSF to research and verify title, and the Applicant shall provide the Authority all documents and maps evidencing the water rights, including but not limited to (i) Nevada Division of Water Resources Application to Change and supporting Map and/or Report of Conveyance, and Abstract of Title; and (ii) copies of permits and/or certificates issued by the Nevada Division of Water Resources evidencing water rights, and Applicant is responsible for the costs as determined by the Nevada Division of Water Resources for the submission of a Report of Conveyance, Abstract of Title and all related documents as part of the application process with the Nevada Division of Water Resources.

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2. Fees for Issuance of Will-Serve Commitment letter. In addition to any other fees in this Rule, Applicants shall pay fees provided in Rate Schedule BSF to prepare the documents necessary to issue each Will-Serve Commitment letter.
3. Water ~~Resource Sustainability~~~~Meter Retrofit~~ Fund Fees. Applicants for New or Modified Service within the TMRA relying on any water right other than the conversion of domestic well, imported water sources or groundwater rights for a Will-Serve Commitment letter will pay to the Authority's water ~~resource sustainability~~~~meter retrofit~~ fund the sum of \$1,830.00 per AF of Demand related to the new Service or Modified Service and to Deficit Demand prior to the issuance of the Will-Serve Commitment letter. Funds collected under this fee must be used for projects that improve the Authority's drought resiliency and water resource sustainability.
4. The Applicant is responsible for delivery of the Authority-issued Will-Serve Commitment letter and accompanying documentation to appropriate government entities.
5. Banking Water Rights. The Authority may, in its sole discretion, allow any Person to bank water rights with the Authority for future use by any Person. In the event an individual, any joint venture, partnership, corporation or other entity desires to dedicate water rights to the Authority for the Authority to hold or bank for the future use by the Applicant, or Applicant's designated successor, for a Will-Serve Commitment letter, the Applicant, or Applicant's designated successor, will pay applicable fees set forth in this Section and execute a banking agreement with the Authority. The Applicant, or Applicant's designated successor, shall be billed by the Authority for any fees such as Extension of Time associated with maintaining banked water rights in good standing with the Nevada Division of Water Resources.
6. Issuance of Will-Serve Commitment Letter After Dedication of Water Rights. After the Applicant has satisfied the requirements of Section F and paid the fees under Section H, and the Authority has accepted the Dedicated Water Resource, the Authority shall:
 - a. Prepare the necessary documentation to deed the Dedicated Water Resource to the Authority or Local Government;
 - b. Record such deed at the County Recorder; and
 - c. Upon execution of such deed and acceptance of the Dedicated Water Resource by the Authority, issue a Will-Serve Commitment letter to the Applicant for new Service or Modified Service at the location requested by Applicant.

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7. Issuance of Will-Serve Commitment Letter After Purchase. After an Applicant has satisfied the requirements of Section G, paid the price determined in Section G, and paid the fees under Section H, the Authority will issue a Will-Serve Commitment letter to the Applicant for new Service or Modified Service at the location requested by the Applicant.
8. Obligation to Serve. Until such time as the Authority has issued a Will-Serve Commitment letter to an Applicant and facilities are installed pursuant to the Authority's rules to delivery water to the Project, the Authority is not obligated to provide the new Service or Modified Service.
9. Will-Serve Commitments Appurtenance. Will-Serve Commitment letters issued by the Authority and Historic Demand are appurtenant to the Service Property.

I. Project Cancellation, Expiration or Termination and Adjustments

1. A Will-Serve Commitment letter is automatically revoked and shall be null and void without further notice from the Authority on the date (i) Applicant provides written notice to the Authority that Applicant's project is canceled; or (ii) approval for Applicant's project expires or is terminated by the applicable governing body. In such event and upon written request of the Applicant:
 - a. The Authority shall reconvey to the Applicant any water rights dedicated by the Applicant pursuant to Section F of this Rule for the revoked Will-Serve Commitment Letter; or
 - b. In the Authority's sole discretion, the Authority may hold or bank Dedicated Water Resources or Authority Water Resources in connection with the revoked Will-Serve Commitment letter for the use by the Applicant, or Applicant's designated successor or assign, for a new Will-Serve Commitment letter for another project(s); or
 - c. The Authority shall refund to the Applicant, without interest, the full amount paid to the Authority by the Applicant under Sections H.3 and G as applicable provided (i) the Applicant submits a written request for such a refund to the Authority within ninety (90) days of the issuance of the Will-Serve Commitment letter, or (ii) the total amount eligible for refund is \$100,000 or less. In the event the Authority grants a refund under this subsection, the Authority will return the Authority Water Resources supporting the revoked Will-Serve Commitment Letter to the Will-Serve Inventory; or

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- d. The Authority shall credit (credit in acre feet) the Applicant, or Applicant's designated successor or assign, the amount of Water Resources purchased by Applicant under Section G, which credit can be applied to Application(s) for new Service and Modified Service within the Authority's TMRA as directed in writing by the Applicant, or Applicant's designated successor or assign.
2. Will-Serve Commitment Adjustments and Issuance of Water Resource Credits. Adjustments to the quantity of water resources committed to a Service Property may be made pursuant to this Section where:
- a. An existing building(s) or facility(ies) has been demolished or removed and service to the Service Property is disconnected. A water resource credit (credited in acre-feet) will be issued to the owner of the Service Property under this Section 1.2.a equal to the Demand in the Will-Serve Commitment letter or Historic Demand, if:

- (1) The owner of the Service Property on which service is to be disconnected records a deed restriction with the County Recorder in form acceptable to Authority declaring that there is no entitlement to water resources and/or water service from the Authority benefiting such parcel(s) at the Service Property; and

- (2) Service at the Service Property is retired in accordance with Rule 6.

After completion of the requirements of Section 1.2.a(1) and 1.2.a(2) the Authority's commitment to deliver water to the Service Property shall be deemed revoked and any Applicant for the delivery of water to the Service Property must submit an Application for new Service and satisfy all requirements in this Rule, including supplying water resources pursuant to Section F or G prior to issuance of a Will-Serve Commitment letter for the new Service at the Service Property.

- b. The projected Demand of a new Service or Modified Service at the Service Property is less than the Demand in the Will-Serve Commitment letter or the Historic Demand at the Service Property, in which event a water resource credit (credited in acre-feet) will be issued to the owner of the Service Property under this Section 1.2.b equal to the difference. If the projected Demand of the new Service or Modified Service is greater than the Demand in the Will-Serve Commitment letter or the Historic Demand at the Service Property, no adjustment will be made or water resource credit issued, and the Applicant must dedicate sufficient water resources to the Authority in accordance with this Rule equal to the projected increase in Demand plus any Deficit Demand at the Service Property prior to the issuance of a new or revised Will-Serve Commitment letter for any new Service or Modified Service at the Service Property.

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- c. The owner(s) of a Service Property requests an adjustment of Demand based on Current Usage at the Service Property and:
- (1) The Service Property is not located on a parcel created by subdivision plat (or map) pursuant to NRS Chapter 278;
 - (2) The Demand being adjusted is not a Residential Service;
 - (3) The person(s) requesting the adjustment owns all real property at the Service Property benefitted by the quantity of water committed to the Service Property; and
 - (4) There is at least three (3) or more years of continuous metered water use data or other historic Demand data as determined by the Authority to establish the Current Usage for the Service Property being adjusted.

If the Service Property satisfies the requirements of Section I.2.c and Demand in the Will-Serve Commitment letter or Historic Demand is greater than the Current Usage, Authority shall issue a water resource credit (credited in acre-feet) to the owner of the Service Property equal to the difference and issue a revised Will-Serve Commitment letter to the Service Property. If a Deficit Demand exists at the Service Property no adjustment will be made or water resource credit issued.

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3. Water resources supporting any water resource credits issued by the Authority to the owner of a Service Property are owned by the Authority and shall be held for the benefit of the owner(s) of the Service Property, or his designated successor or assign subject to the terms and conditions set forth in Authority's water resource banking agreement. Water resource credits:
 - a. Shall be issued in acre feet and shall state quantity in terms of Demand;
 - b. May be used in connection with an application for new Service or Modified Service and is acceptable to meet the Demand under this Rule;
 - c. Must be used in the Authority's Service Area;
 - d. In areas where sewer flows are returned to the Truckee River, additional resources must be supplied pursuant to Sections F or G for sufficient for return flows;
 - e. Shall be issued to the owner of the Service Property;
 - f. May be sold, assigned or transferred to other parties upon notification to and written approval from the Authority and only to the extent the water resource credits exceed one acre foot. The Authority may assist with such sales on request.

J. General Provisions

1. Nothing in this Rule shall be construed to usurp the planning functions of the Local Governments. Applicants shall be deemed in compliance with the provisions of this Rule if the Applicant causes the Local Government(s) to sell or lease to the Authority, pursuant to such Local Government(s) Ordinances, sufficient resources from resources held by the Cities or County, if such procedure is required by local Ordinance.