



STANDING ADVISORY COMMITTEE AGENDA

Tuesday, April 4, 2017 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 before the meeting date.
3. 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.
4. Asterisks (*) denote non-action items.
5. Public comment is limited to three minutes and is allowed during the public comment periods. The public may sign-up to speak during the public comment period or on a specific agenda item by completing a "Request to Speak" card and submitting it to the clerk. In addition to the public comment periods, the Chairman has the discretion to allow public comment on any agenda item, including any item on which action is to be taken.
6. In the event the Chairman and Vice-Chairman are absent, the remaining 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 March 7, 2017 meeting (**For Possible Action**)
5. Water Supply Update — Bill Hauck*
6. Update on the 2017 Legislative Session — John Zimmerman and Steve Walker*
7. Presentation on 2017 Bond Refunding results — Michele Sullivan*
8. Presentation of the tentative FY 2018 budget and funding sources for capital improvement projects in the Draft Capital Improvement Plan for Fiscal Years 2018 through 2022 — Michele Sullivan (**For Possible Action**)

9. Discussion and possible direction to staff regarding agenda items for future meetings (**For Possible Action**)
10. Staff Items* (Unless otherwise listed with a topic description, this portion of the agenda is limited to announcements)
11. Committee Items* (Unless otherwise listed with a topic description, this portion of the agenda is limited to announcements)
12. Public Comment — limited to no more than three minutes per speaker*
13. Adjournment (**For Possible Action**)



STANDING ADVISORY COMMITTEE

DRAFT MINUTES

March 7, 2017

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 3:03 p.m.

1. ROLL CALL

Primary Members and Voting Alternates Present: Bob Chambers, Harry Culbert, Bruce Gescheider, Colin Hayes, Don Kowitz, Carol Litster, Neil McGuire, Ken McNeil, Mike Pidlypchak, Fred Schmidt, and Jerry Wager.

Alternates Present: Fred Arndt, Ken Becker, Jordan Hastings, Karl Katt, Scot Munns, and Dale Sanderson.

Primary Members and Alternates Absent: Kevin Haddock, Bill Hughes, Mike Schulewitch, Jim Smith and Jonnie Pullman.

Staff Present: Jack Byrom, Tabitha Carlisle, Robert Charpentier, Laine Christman, John Enloe, Scott Estes, Andy Gebhardt, Sonia Folsom, Bill Hauck, Joe Petrelli, Lauren Roaldson, Michele Sullivan, Randy Van Hoozer, Marci Westlake, John Zimmerman, and Legal Counsel Debbie Leonard.

2. PUBLIC COMMENT

There was no public comment.

#. APPROVAL OF THE AGENDA

Upon motion by Member Gescheider and second by Member Hayes, and carried by unanimous consent of the members present, the Committee approved the agenda.

4. APPROVAL OF THE MINUTES OF THE FEBRUARY 7, 2017 MEETING

Debbie Leonard, TMWA Legal Counsel, noted future agenda items under agenda item #12 should be changed to say “March” meeting not February.

Upon motion by Member Wager and second by Member Litster, carried by unanimous consent of the members present, the Committee approved the minutes of the February 7, 2017 meeting with the correction that future agenda items be changed to the March meeting.

5. WATER SUPPLY UPDATE

Bill Hauck, TMWA Senior Hydrologist, reported that both precipitation and snowpack are about 200% above normal; 13.12 inches of precipitation/snow has fallen to date in Reno; Lake Tahoe is almost four feet above the natural rim; and projections are for 230% above average streamflow runoff. Mr. Hauck stated precautionary releases have occurred at Lake Tahoe, Stampede and Lahontan reservoirs, and 2017 is the largest recovery year with regards to gains in reservoir storage.

Vice Chair Schmidt inquired about the risk of Lake Tahoe overfilling. Mr. Hauck replied the Federal Water Master ensures it does not exceed the legal limit of 6,229.1 feet.

Member Litster inquired about the excess run off at Washoe Lake. Mr. Hauck replied there is an outlet at Steamboat Creek.

6. INFORMATIONAL REPORT ON GROUNDWATER AQUIFERS

Randy Van Hoozer, TMWA Senior Hydrogeologist, and Lauren Roaldson, TMWA Associate Hydrogeologist, presented on groundwater activities and water levels in monitoring wells near production wells in the various basins in TMWA’s service area since 2001. The report indicated that conjunctive use is beneficial for a number of reasons: active recharge; active management; well resting; and use of treated creek water to supplement groundwater sources. It also helps TMWA understand how water level response depends on soil material and permeability between ground surface and the water table; how aquifer material controls vertical and lateral movement of water once precipitation reaches the groundwater; and how precipitation may become runoff instead of recharging the groundwater source.

Discussion followed regarding the groundwater basins in TMWA’s service territory, location of wells and the monitoring of Fish Springs Ranch.

7. DISCUSSION AND POSSIBLE RECOMMENDATION REGARDING BILLS IN THE 2017 LEGISLATIVE SESSION THAT MAY AFFECT TMWA

John Zimmerman, TMWA Water Resources Manager, presented on the status of the 2017 Legislative Bill Draft Requests (BDRs) and the new bills introduced as of March 3.

Discussion followed on proposed bills AB193, which would require fluoridation of the water system in Washoe County. TMWA had a third party conduct a cost-estimate study, which concluded that the bill would require TMWA to spend \$67 million to equip TMWA’s system for fluoridation and an additional

\$3 million for ongoing costs. This would result in an approximately 9% rate increase for customers. Mr. Zimmerman also mentioned SB47, which would increase the amount of water allowed for an inter-basin transfer from 213 acre feet to 1,000 acre feet.

Vice Chair Schmidt inquired if unrestricted cash could be used to pay the \$67 million cost to rehabilitate the water system. Michele Sullivan, TMWA Chief Financial Officer, replied that to use that amount of unrestricted cash would jeopardize TMWA's credit ratings with Moody's and Standard & Poor's.

8. PRESENTATION OF PUBLIC OPEN HOUSE RESULTS FOR PROPOSED RATE ADJUSTMENT

Andy Gebhardt, TMWA Director of Operations and Water Quality, reported that four open houses were held and a total of 32 people attended, including five SAC members. The majority of those who attended were not in favor of the rate adjustments, but had all their questions answered and left with a better understanding of how TMWA operates and the reasons behind the rate proposal.

Member Becker commented that TMWA staff did a great job at the open house he attended.

Chair McGuire inquired if the conservation education and communication programs would continue. Mr. Gebhardt replied yes, as part of the Truckee River Operating Agreement (TROA), conservation messaging (i.e. that customers should not waste water and should use water responsibly, etc.) would continue.

Member Wager noted that at the November meeting, when the rate adjustment was first proposed, it was tied to the Customer Price Index (CPI). Ms. Sullivan replied yes, but the option to use CPI would be revisited after this 5-year rate adjustment period.

Vice Chair Schmidt inquired about the implementation schedule. Ms. Sullivan replied the TMWA Board would have the first reading at its March 15 meeting and vote on April 19th for final implementation in the first billing cycle in May, and with the flexibility to revisit the rate adjustments in years 3, 4, and 5.

9. PRESENTATION OF THE TMWA TENTATIVE BUDGET FOR FISCAL YEAR ENDING JUNE 30, 2018 AND DRAFT CAPITAL IMPROVEMENT PLAN FOR FISCAL YEARS 2018 THROUGH 2022

Ms. Sullivan presented the tentative FY 2018 budget and draft FY 2018-2022 Capital Improvement Plan (CIP). She reported that the hydroelectric power plants will be online and generating revenue due to the high river flows; health benefits for retirement are lower because of GASB75; investment earnings are lower due to the bond refunding and release of agreements with banks to provided 5.5% interest on reserve funds; and TMWA finalized the Farad settlement and received \$11.8 million in cash. A study is being conducted to consider bringing the Farad dam back online.

Vice Chair Schmidt inquired about the water sales. Ms. Sullivan replied water sales are currently \$5 million ahead of the budget, but it is still too early in the season to predict final water sales revenue.

Member Becker inquired about the impact of GASB75 on health benefit plans. Ms. Sullivan replied that an average of \$1 million in contributions is budgeted every year, and the main OPEB was fully funded last year. An actuarial analysis was just performed, and due to a 20% increase in health care premiums, the program is now funded in the 80th percentile.

Member Wager inquired about the projects the Truckee River Fund (TRF) supports. John Enloe, TMWA Director of Natural Resources, replied that the TRF supports public education and awareness, river clean-up, erosion control, and treatment of wildfire in the watershed. For example, the One Truckee River Initiative has been embraced by multiple local agencies and is an aggressive program to address the ongoing issues along the Truckee River. A similar program, the aquatic invasive species, was initially supported by the TRF and it has been an established program for a long time that no longer needs TRF funding.

Member Wager requested that the spring TRF request for proposals be emailed to the SAC for informational purposes.

Member Pidlypchak inquired if the electric power generated offset TMWA's usage. Ms. Sullivan replied yes.

Member Gescheider inquired about the substantial increase in funding for projects in FY 2018. Ms. Sullivan replied the current budget is \$42 million, which includes projects from all funding sources, whereas the capital projects identified in the funding plan are funded by customer rates only. Also, several projects scheduled for FY 2017 have been delayed due to the weather and permitting, and therefore, pushed into FY 2018.

Vice Chair Schmidt inquired about the corporate office expansion project, and the Mt. Rose Water Treatment Plant and what type of water it would treat. Ms. Sullivan replied it is due to the overcrowding in the engineering/new business areas. Scott Estes, TMWA Director of Engineering, added it is a 5,000-square foot addition. Mr. Enloe replied the Mt. Rose Water Treatment Plant is developer funded and would treat creek water, not groundwater.

It was requested that the tentative budget be brought back at the April meeting to better understand the funding sources, priorities of the capital projects and reason for the substantial increase in FY 2018.

**Member Hastings left at 4:17 p.m.*

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

April meeting:

1. Water supply update
2. Update on the 2017 Legislative Session
3. Presentation on the 2017 Bond Refunding results
4. Presentation on the tentative FY 2018 Budget and Draft Capital Improvement Plan for Fiscal Years 2018 through 2022, and funding sources

Upon motion by Member Culbert and second by Member Chambers, carried by unanimous consent of the members present, the Committee approved the agenda items for future meetings.

11. STAFF ITEMS

Sonia Folsom, TMWA SAC Liaison, noted that SAC members received a final contact list for members in their packets. Also, there were no applications for the vacant alternate irrigation customer representative position so that position will remain vacant until further notice.

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 4:37 p.m.

Approved by the Standing Advisory Committee in session on _____.

Sonia Folsom, Recording Secretary

**Member Hastings was present for agenda items 1 through 9 only.*



TO: TMWA Standing Advisory Committee
FROM: John R. Zimmerman, Manager, Water Resources
DATE: March 31, 2017
SUBJECT: **Update on the 2017 Legislative Session**

TMWA staff, General Counsel, and lobbyist continue to review and monitor bills as they are introduced at the Legislature this session. The TMWA Legislative Subcommittee met on March 24 and 31, 2017 to review and provide direction to staff on all newly-introduced bills and staff will update the SAC regarding the Subcommittee's direction on these bills, which is attached to this report. Additionally, TMWA lobbyist Steve Walker will provide a brief overview of potentially significant bills and answer any questions regarding the legislative process or specific bills.

Content	Description	Sponsor	Tags	*Initial/Committee Position	StatusRecentHistory	StatusLastMeeting	StatusNextMeeting
AB271	Revises provisions governing collective bargaining by local government employers. (BDR 23-290)	Carrillo	Human Resources	3/22: OPPOSE	Status/Location: Government Affairs	Last Meeting:Assembly Committee on Government Affairs Last Meeting Date:3/23/2017 8:30 AM Last Meeting Action:Heard	
AB276	Revises provisions relating to employment practices. (BDR 53-289)	Assemblymen Spiegel, Joiner, Diaz, Bilbray-Axelrod, Carlton, Cohen, Miller, Swank and Thompson; Senators Parks and Manendo	Human Resources	3/16: WATCH	Status/Location: Judiciary	Last Meeting:Assembly Committee on Judiciary Last Meeting Date:3/20/2017 8:30 AM Last Meeting Action:Heard	
AB280	Revises provisions relating to preferences in bidding for certain contracts for businesses based in this State. (BDR 27-1060)	Assemblymen Frierson, Carrillo, Monroe-Moreno, Sprinkle, Neal, Araujo, Benitez-Thompson, Bilbray-Axelrod, Carlton, Cohen, Daly, Fumo, Jauregui, Joiner, McCurdy II, Miller, Ohrenschall, Spiegel, Thompson, Watkins and Yeager; Senators Ford and Cannizzaro	Public Works	3/29: WATCH	Status/Location: Government Affairs		Next Meeting:Assembly Committee on Government Affairs Next Meeting Date:4/5/2017 8:00 AM
AB290	Makes various changes relating to collective bargaining. (BDR 23-35)	Wheeler, Kramer, Hambrick and Ellison	Human Resources	3/16: WATCH	Status/Location: Government Affairs		
AB298	Revises provisions relating to water. (BDR 48-735)	Committee on Natural Resources, Agriculture, and Mining	Water Rights (Resources, Conservation)	3/16: WATCH	Status/Location: Natural Resources, Agriculture, and Mining	Last Meeting:Assembly Committee on Natural Resources, Agriculture, and Mining Last Meeting Date:3/14/2017 1:30 PM Last Meeting Action:Discussed as BDR	Next Meeting:Assembly Committee on Natural Resources, Agriculture, and Mining Next Meeting Date:4/4/2017 1:30 PM
AB334	Prohibits a driver from operating a motor vehicle in the extreme left lane of a highway under certain circumstances. (BDR 43-154)	Ellison	Emergency Mgmt, Safety, Motor Vehicles	3/20: WATCH	Status/Location: Transportation	Last Meeting:Assembly Committee on Transportation Last Meeting Date:3/28/2017 3:15 PM Last Meeting Action:Heard	
AB375	Allows the imposition of certain taxes in a county to fund flood management projects of a flood management authority based on the recommendations of a flood control project needs committee and voter approval. (BDR S-473)	Sprinkle, Benitez-Thompson, Joiner and Daly	Emergency Mgmt, Safety, Motor Vehicles; Governance; Water Rights (Resources, Conservation)	3/20: WATCH	Status/Location: Taxation		Next Meeting:Assembly Committee on Taxation Next Meeting Date:4/4/2017 4:00 PM
AB379	Amends provisions relating to general improvement districts created for the purpose of furnishing recreational facilities. (BDR 25-211)	Joiner	Water Rights (Resources, Conservation)	3/21: WATCH	Status/Location: Government Affairs	Last Meeting:Assembly Committee on Government Affairs Last Meeting Date:3/28/2017 9:00 AM Last Meeting Action:Heard	

Content	Description	Sponsor	Tags	*Initial/Committee Position	StatusRecentHistory	StatusLastMeeting	StatusNextMeeting
AB380	Revises provisions relating to real property. (BDR 10-340)	Elliot Anderson	Property	3/21: WATCH	Status/Location: Judiciary		Next Meeting:Assembly Committee on Judiciary Next Meeting Date:4/5/2017 8:00 AM
AB384	Revises provisions governing the consideration of the criminal history of an applicant for employment by the State or a county or city. (BDR 23-33)	Assemblymen Thompson, McCurdy II, Flores, Araujo, Carrillo, Bilbray-Axelrod, Brooks, Bustamante Adams, Carlton, Daly, Frierson, Fumo, Miller, Monroe-Moreno, Neal, Ohrenschall, Sprinkle and Yeager; Senators Ford, Atkinson, Spearman, Cancela, Parks, Denis, Segerblom and Woodhouse	Human Resources	3/21: WATCH	Status/Location: Government Affairs		
AB403	Revises various provisions relating to governmental administration. (BDR 17-573)	Daly, Frierson, Diaz, Benitez-Thompson, Araujo, Brooks, Carrillo, McCurdy II and Monroe-Moreno	Governance	3/21: WATCH*	Status/Location: Legislative Operations and Elections		Next Meeting:Assembly Committee on Legislative Operations and Elections Next Meeting Date:4/4/2017 1:30 PM
AB404	Creates the Nevada Office of the Inspector General. (BDR 18-740)	Miller, McCurdy II, Benitez-Thompson, Brooks and Fumo	Governance	3/21: OPPOSE*	Status/Location: Government Affairs		Next Meeting:Assembly Committee on Government Affairs Next Meeting Date:4/5/2017 8:00 AM
AB406	Revises provisions relating to certain construction. (BDR 28-781)	Daly, Benitez-Thompson, Brooks, Carrillo, Bilbray-Axelrod, Frierson, Joiner, McCurdy II and Monroe-Moreno	Financial, Risk Management; Human Resources	3/21: OPPOSE*	Status/Location: Government Affairs	Last Meeting:Assembly Committee on Government Affairs Last Meeting Date:3/29/2017 8:30 AM Last Meeting Action:Heard	
AB433	Revises provisions relating to public works. (BDR 28-1013)	Brooks	Public Works	3/28: WATCH	Status/Location: Government Affairs		
AB458	Revises provisions governing industrial insurance. (BDR 53-489)	Committee on Commerce and Labor	Human Resources	3/29: WATCH	Status/Location: Commerce and Labor	Last Meeting:Assembly Committee on Commerce and Labor Last Meeting Date:3/29/2017 1:30 PM Last Meeting Action:Heard	
AB479	Revises provisions governing the retention of records by a local government. (BDR 19-900)	Committee on Government Affairs	Open Meeting, Records, Boards and Elections	3/28: WATCH	Status/Location: Government Affairs		

Content	Description	Sponsor	Tags	*Initial/Committee Position	StatusRecentHistory	StatusLastMeeting	StatusNextMeeting
SB239	Revises provisions relating to common-interest communities. (BDR 10-471)	Harris	Governance; Water Rights (Resources, Conservation)	3/15: WATCH	Status/Location: Judiciary	Last Meeting:Senate Committee on Judiciary Last Meeting Date:3/15/2017 1:30 PM Last Meeting Action:Heard, No Action	Next Meeting:Senate Committee on Judiciary -- Work Session Item Next Meeting Date:4/3/2017 1:00 PM
SB246	Revises provisions relating to public works. (BDR 28-667)	Manendo	Public Works	3/16: WATCH	Status/Location: Government Affairs	Last Meeting:Senate Committee on Government Affairs -- Work Session Item (ws) Last Meeting Date:3/29/2017 1:00 PM Last Meeting Action:Amend, and do pass as amended	
SB253	Establishes the Nevada Pregnant Workers' Fairness Act to provide protections to employees who are affected by any condition relating to pregnancy, childbirth or a related medical condition. (BDR 53-773)	Cannizzaro, Ratti, Woodhouse, Cancela, Ford, Denis, Farley, Manendo, Parks, Segerblom and Spearman	Human Resources	3/21: WATCH; SUPPORT	Status/Location: Commerce, Labor and Energy	Last Meeting:Senate Committee on Commerce, Labor and Energy Last Meeting Date:3/27/2017 8:30 AM Last Meeting Action:Heard, No Action	
SB269	Revises provisions relating to groundwater management plans. (BDR 48-367)	Committee on Natural Resources	Water Rights (Resources, Conservation)	3/16: WATCH	Status/Location: Natural Resources		
SB270	Revises provisions relating to water. (BDR 48-359)	Committee on Natural Resources	Water Rights (Resources, Conservation)	3/16: WATCH	Status/Location: Natural Resources	Last Meeting:Senate Committee on Natural Resources Last Meeting Date:3/30/2017 1:00 PM Last Meeting Action:Amend, and do pass as amended	
SB271	Makes various changes relating to water. (BDR 48-357)	Committee on Natural Resources	Water Rights (Resources, Conservation)	3/16: WATCH	Status/Location: Natural Resources	Last Meeting:Senate Committee on Natural Resources Last Meeting Date:3/28/2017 1:00 PM Last Meeting Action:Heard, No Action	
SB272	Makes various changes relating to water. (BDR 48-358)	Committee on Natural Resources	Water Rights (Resources, Conservation)	3/16: WATCH	Status/Location: Natural Resources	Last Meeting:Senate Committee on Natural Resources Last Meeting Date:3/28/2017 1:00 PM Last Meeting Action:Heard, No Action	

Content	Description	Sponsor	Tags	*Initial/Committee Position	StatusRecentHistory	StatusLastMeeting	StatusNextMeeting
SB289	Requires certain policies of health insurance to cover services provided by an out-of-network physician. (BDR 57-675)	Hardy	Human Resources	3/21: WATCH	Status/Location: Commerce, Labor and Energy		Next Meeting:Senate Committee on Commerce, Labor and Energy Next Meeting Date:4/3/2017 8:00 AM
SB297	Revises provisions governing public employees' retirement. (BDR 23-843)	Roberson, Settelmeyer, Goicoechea, Gustavson, Hardy and Harris	PERS, PEBS	3/21: WATCH	Status/Location: Government Affairs		
SB312	Revises provisions relating to driving under certain conditions. (BDR 43-94)	Manendo	Emergency Mgmt, Safety, Motor Vehicles	3/20: WATCH	Status/Location: Transportation		Next Meeting:Senate Committee on Transportation Next Meeting Date:4/4/2017 8:00 AM
SB317	Revises provisions relating to preferences in bidding for certain contracts for businesses based in this State. (BDR 27-936)	Senators Cannizzaro, Ford, Segerblom, Parks, Manendo, Atkinson, Cancela, Denis, Farley, Ratti, Spearman and Woodhouse; Assemblyman Brooks	Public Works	3/29: WATCH	Status/Location: Government Affairs	Last Meeting:Senate Committee on Government Affairs Last Meeting Date:3/22/2017 1:00 PM Last Meeting Action:Heard, No Action	
SB330	Enacts the Right to Earn a Living Act. (BDR 54-849)	Roberson	Human Resources	3/22: WATCH	Status/Location: Commerce, Labor and Energy		
SB335	Establishes provisions authorizing public-private partnerships for certain projects. (BDR 22-1146)	Roberson and Hardy	Public Works	3/29: WATCH	Status/Location: Government Affairs		
SB357	Revises provisions governing the use of apprentices on public works. (BDR 53-534)	Atkinson, Segerblom, Spearman, Denis, Parks, Cancela, Cannizzaro, Ford, Manendo and Woodhouse	Public Works	3/21: WATCH	Status/Location: Commerce, Labor and Energy		
SB384	Provides for the confidentiality of certain information in the records and files of public employers and public employee retirement systems. (BDR 19-506)	Ratti	Human Resources	3/21: SUPPORT	Status/Location: Government Affairs	Last Meeting:Senate Committee on Government Affairs Last Meeting Date:3/31/2017 12:00 PM Last Meeting Action:Heard, No Action	
SB395	Makes various changes relating to the cybersecurity of critical infrastructure. (BDR 19-794)	Senators Spearman, Cannizzaro, Denis, Manendo, Parks, Cancela, Ford, Ratti, Segerblom and Woodhouse; Assemblymen Araujo, Frierson and Thompson	Information Tech	3/21: WATCH	Status/Location: Government Affairs		

Content	Description	Sponsor	Tags	*Initial/Committee Position	StatusRecentHistory	StatusLastMeeting	StatusNextMeeting
SB397	Revises provisions relating to employment. (BDR 18-14)	Senators Spearman, Segerblom, Ford, Parks, Cancela, Cannizzaro, Denis, Manendo, Ratti and Woodhouse; Assemblymen Diaz, Araujo, Swank and Thompson	Human Resources	3/21: WATCH	Status/Location: Government Affairs	Last Meeting:Senate Committee on Government Affairs Last Meeting Date:3/31/2017 12:00 PM Last Meeting Action:Heard, No Action	
SB404	Revises provisions relating to health insurance coverage of certain cancer treatment drugs. (BDR 57-467)	Senators Parks, Segerblom, Spearman, Woodhouse, Cannizzaro, Denis, Farley, Ford, Goicoechea, Manendo and Ratti; Assemblymen Ohrenschall, Sprinkle, Joiner, Carlton and Bustamante Adams	Human Resources	3/22: WATCH	Status/Location: Commerce, Labor and Energy		
SB460	Revises provisions governing the membership of the Local Government Employee-Management Relations Board. (BDR 23-556)	Committee on Government Affairs	Human Resources	3/28: WATCH	Status/Location: Government Affairs		
SB462	Authorizes a board of county commissioners to create a committee to review general improvement districts. (BDR 20-496)	Committee on Government Affairs	Governance	3/28: WATCH	Status/Location: Government Affairs		Next Meeting:Senate Committee on Government Affairs Next Meeting Date:4/3/2017 1:00 PM
SB469	Revises provisions relating to collective bargaining between a local government employer and a recognized employee organization. (BDR 23-685)	Committee on Government Affairs	Human Resources	3/28: WATCH	Status/Location: Government Affairs		
SB494	Revises provisions relating to grants for water conservation and capital improvements to certain water systems. (BDR 30-356)	Committee on Government Affairs	Water Rights (Resources, Conservation)	3/28: SUPPORT	Status/Location: Government Affairs	Last Meeting:Senate Committee on Government Affairs Last Meeting Date:3/31/2017 12:00 PM Last Meeting Action:Heard, No Action	
SB502	Makes various changes relating to the Public Employees' Benefits Program and the Public Employees' Deferred Compensation Program. (BDR 18-979)	Committee on Government Affairs	PERS, PEBS	3/28: WATCH	Status/Location: Government Affairs		
SB513	Increases the limit on the assessment for water distribution expenses. (BDR 48-905)	Committee on Natural Resources	Financial, Risk Management; Water Rights (Resources, Conservation)	3/28: WATCH	Status/Location: Natural Resources		
SJR9	Urges Congress to enact legislation requiring the transfer of lands available for disposal under the Recreation and Public Purposes Act and other public lands by the Federal Government. (BDR R-190)	Senators Goicoechea, Gansert, Hardy, Kieckhefer and Settlemeyer; Assemblymen Ellison and Kramer	Property	3/21: WATCH*	Status/Location: Natural Resources		



To: Standing Advisory Committee
 From: Michele Sullivan, Chief Financial Officer
 Date: March 28, 2017
 Subject: **Presentation on 2017 Bond Refunding Results**

Summary

TMWA successfully refinanced (refunded) its Series 2007 Refunding Bonds with a new bond issue, the Series 2017 Refunding Bonds. The refunding accomplished many significant goals which are very beneficial to TMWA customers. These achievements are a direct result of attaining specific milestones, which are related to attaining certain credit ratings.

Discussion

TMWA's General Manager, Chief Financial Officer/Treasurer, and Director of Natural Resources, along with other members of the financing team, met with two credit rating agencies, Moody's and Standard and Poors in advance of the refunding. The results of these meetings were reaffirmation of the "AA2 stable outlook" credit rating from Moody's, and an upgrade in credit rating from "AA stable outlook" to "AA+ stable outlook" from Standard and Poors. Strong operational and financial management metrics underpinned the credit ratings, and include strong liquidity and strong debt service coverage, as well as manageable capital needs. Credit rating agencies also cited that small, additional rate increases are expected over the next five years to maintain financial metrics. The credit rating reports are attached.

With the credit ratings in hand and after rewriting the bond offering documents, TMWA approached the bond market and specific institutional bond investors with a tremendous story of recent successes. The investors responded with the following excellent results:

- Replaced \$202.9 million in Series 2007 Refunding Bonds with \$147.4 million in Series 2017 Refunding Bonds, using debt service reserve funds to reduce debt by \$32 million and essentially eliminating \$23.5 million in outstanding principal by virtue of the issue premium in the refunding transaction.
- Achieved \$15.9 million in savings in today's dollars (net present value savings), or 7.8%, on refunded principal – an excellent result and well above the minimum 3% threshold as disclosed in TMWA's Debt Management Policy.
- The Series 2017 Refunding Bond offering was overwhelmed with an oversubscription of approximately 5 to 1. This oversubscription is in contrast to a bond offering on the same day as TMWA's by the Los Angeles Department of

Water and Power which only sold about half of its offering. TMWA was able to achieve additional savings on the day of bond pricing because of demand for its bonds.

- The majority of the savings occur between 2020 and 2029 and reduce debt service payments by \$4.2 million annually.

This refunding allows TMWA to avoid a negative impact on customers when principal payments commence on these bonds in 2020. A successful result from this refunding was projected in the funding plan used to determine the current proposed rate increases. Because TMWA has a consistently strong financial profile, and is able to negotiate premium interest rates on debt, and customer rate increases can remain moderate.



STAFF REPORT

TO: TMWA Standing Advisory Committee (SAC)
THRU: Mark Foree, General Manager
FROM: Michele Sullivan, Chief Financial Officer/Treasurer
DATE: March 29, 2017
SUBJECT: **Presentation of the Tentative FY 2018 Budget and funding sources for capital improvement projects in the Draft Capital Improvement Plan for Fiscal Years 2018 through 2022**

Recommendation

The tentative budget was approved at the March 15, 2017 meeting of the TMWA board of directors, and will be filed with the Nevada Department of Taxation by April 15, 2017 in compliance with statutory requirements. Comments from the board are included in this report. Questions from the March 7, 2017 SAC meeting related to the five-year CIP plan are also addressed in this report. This allows the SAC to provide additional input and direction to TMWA management in advance of the public hearing on the budget and CIP on Wednesday, May 17, 2017.

Schedule of Revenues and Expenses-Attachment A

No changes were made to the tentative budget after discussion with the Board. The Board will be revisiting the budget at their April meeting to discuss continued funding of:

- Truckee River Fund-currently funded at \$850,000 annually
- Fire Hydrant maintenance agreements for City of Sparks and City of Reno
- Cloud seeding -currently funded at \$210,000 annually

The board also requested a breakdown of the increase in salaries and wages in the 2018 budget of \$705,089 and 3.85% which is presented below:

Increase of 2.5%:	\$457,990
Step Increase:	57,099
Headcount Increase:	<u>190,000</u>
Total Increase	\$705,089

Step increases occur when an employee moves to a more experienced level in their position. Two Scada technicians are projected to be added to headcount in fiscal year 2018 to facilitate the consolidation of the water delivery control system onto a single platform.

Draft Capital Improvement Plan for Fiscal Years 2018-2022-Attachment B

TMWA currently plans to spend \$172.8 million (slightly more than the preliminary CIP presented in March of \$169.5 million) over the next five years on a variety of construction projects. Capital outlays of which \$43.0 million are expected to be spent in fiscal year 2018. As was discussed at the March SAC meeting, \$69.4 million and 40.2% of the total budget, will be spent on the distribution system. Spending on water treatment facilities is expected to be \$25.7 million and 14.9% of the total budget, with the construction of the Mt. Rose/Galena Fan Water Treatment Facility included at \$10 million to be spent in fiscal year 2018 and 2019. For a full breakdown of construction projects and funding sources refer to *Attachment B*.

A comparison of capital improvements funded by customer rates in the 2018 preliminary CIP to the 2017 funding plan presented in relation to the rate adjustment request is shown below. This schedule shows that total projected spending on customer funded projects over the period has not changed.

Capital Improvements Funded by Customer Rates	2017	2018	2019	2020	2021	2022	Total
2017 Funding Plan	36,348	30,818	23,570	21,272	21,207	20,000	153,215
2018 Preliminary Plan (with 2017 estimate)	23,680	33,223	26,798	25,205	23,845	20,464	153,214

TRUCKEE MEADOWS WATER AUTHORITY
SCHEDULE OF REVENUES, EXPENSES
AND CHANGES IN NET POSITION
FOR THE FISCAL YEARS ENDED JUNE 30, 2018 v JUNE 30, 2017

	Proposed Tentative Fiscal Year 2018 Total	Presented Amended Final Fiscal Year 2017 Total	Increase (Decrease)
OPERATING REVENUES			
Charges for water sales	\$ 94,303,278	\$ 88,833,746	\$ 5,469,532
Hydroelectric sales	2,990,391	1,755,890	1,234,501
Other operating sales	3,131,500	2,471,500	660,000
Total Operating Revenues	100,425,169	93,061,136	7,364,033
OPERATING EXPENSES			
Salaries and wages	19,024,704	18,319,615	705,089
Employee benefits	8,708,062	9,332,796	(624,734)
Services and supplies	26,662,211	26,078,715	583,496
Total Operating Expenses before Depreciation	54,394,977	53,731,126	663,851
Depreciation	34,061,148	33,247,620	813,528
Total Operating Expenses	88,456,125	86,978,746	1,477,379
Operating Income	11,969,044	6,082,390	5,886,654
NONOPERATING REVENUES (EXPENSES)			
Investment earnings	1,342,692	2,231,304	(888,612)
Unrealized gain on investments	-	-	-
Gain (Loss) on disposal of assets	-	-	-
Amortization of bond/note issuance costs	(468,624)	(474,444)	5,820
Interest expense	(13,687,272)	(16,930,176)	3,242,904
Other non-operating revenue	-	-	-
Other non-operating expenses	-	-	-
Total Nonoperating Revenues (Expenses)	(12,813,204)	(15,173,316)	2,360,112
Income (Loss) before Capital Contributions	(844,160)	(9,090,926)	8,246,766
CAPITAL CONTRIBUTIONS			
Grants	200,004	150,000	50,004
Water meter retrofit program	781,488	1,619,256	(837,768)
Developer infrastructure contributions	-	-	-
Developer will-serve contributions (net of refunds)	5,034,744	4,615,656	419,088
Developer capital contributions-other	4,345,296	3,165,144	1,180,152
Developer facility charges (net of refunds)	4,826,436	4,509,144	317,292
Contributions from others	-	-	-
Contributions from other governments	-	-	-
Net Capital Contributions	15,187,968	14,059,200	1,128,768
Change in Net Position	14,343,808	4,968,274	9,375,534
NET POSITION , BEGINNING OF YEAR	\$ 589,950,588		
NET POSITION, END OF YEAR	\$ 604,294,396		

**CAPITAL IMPROVEMENT PLAN
FOR FISCAL YEARS ENDING JUNE 30, 2018 THROUGH JUNE 30, 2022
(Amounts in thousands of dollars)**

SUMMARY OF PROJECTS				Estimate to	FY	FY	FY	FY	FY	Five Year
Page #	Priority			Complete	2018	2019	2020	2021	2022	CIP Total
				FY 2017						
Raw Water Supply Improvements										
1	1	CR ¹	Highland Canal-Upgrades-Downstream		\$ 225	\$ 225	\$ 225	\$ 225	\$ 225	\$ 1,125
2	1	CR	Highland Canal-Upgrades-Diversion to CB		100	100	100	1,000	100	1,400
3	1	CR	Donner Dam Improvements		300	-	-	-	-	300
4	2	CR	Independence Lake Permitting Study		100	-	-	-	-	100
5	2	CR	Indirect Potable Reuse		100	100	100	100	100	500
6	1	CR	TROA Drought Storage/Implementation		150	150	150	150	150	750
7	1	CR	Mesa Park Drainage		1,900	-	-	-	-	1,900
Subtotal -Raw Water Supply					2,875	575	575	1,475	575	6,075
Ground Water Supply Improvements										
8	1	CR	Well Rehabilitation Improvements		1,050	725	925	925	925	4,550
9	2	DF	Double Diamond (#4 Equip)		-	-	-	-	-	-
10	2	CR	Campello Capacity Increase		-	-	150	-	-	150
11	2	DF	Callamont Well Equip		-	-	-	1,000	-	1,000
12	2	CR	Air Guard Well Replacement		-	-	1,000	-	-	1,000
13	1	CR	Sunrise #3 Replacement		500	900	-	-	-	1,400
14	3	CR	Bedell Flat Water Bank		50	100	100	100	100	450
15	2	CR	Lemmon Valley Well #8 Replacement		-	-	-	-	1,000	1,000
16	1	CR	Well Fix & Finish		150	150	150	150	150	750
17	2	CR	Well Plugging / Conversion		110	-	-	-	-	110
18	1	CR	NDEP Monitoring Wells		110	-	-	-	-	110
19	2	CR	Thomas Creek Well Replacement		-	-	1,250	1,000	-	2,250
20	1	CR	Spanish Springs Nitrate Treatment		400	-	-	-	-	400
21	2	CR	Fish Springs Ranch Monitoring Well Rehabs FY 2018		25	-	-	-	-	25
22	2	CR	Well Head TTHM Mitigation FY 2018		200	-	-	-	-	200
23	2	CR	Spring Creek Well 7 Recharge FY 2019		-	500	-	-	-	500
24	1	DF	Callamont Well North Equipment FY 2022		-	-	-	-	-	-
25	1	GR	Desert Springs 1 & 2 and Spring Creek 5 ASR Retrofit (Bureau of Reclamation Grant)		710	10	-	-	-	720
Subtotal-Groundwater Development					3,305	2,385	3,575	3,175	2,175	14,615
Water main										
Treatment Plant WQ Improvements										
26	2	CR	Chalk Bluff Treatment Plant - Fix & Finish		845	780	600	360	355	2,940
27	2	CR	Glendale Treatment Plant - Fix & Finish		405	485	1,250	210	65	2,415
28	2	CR	Longley Lane Treatment Plant - Fix & Finish		145	-	-	-	-	145
29	2	CR	Chalk Bluff Pump Building Air Handler		850	-	-	-	-	850
30	2	CR	Chalk Bluff Lighting Upgrade		-	-	-	350	-	350
31	2	CR	Glendale Lighting Upgrade		-	250	-	-	-	250
32	2	CR	Eagle Canyon Transmission Main Phase 2		-	100	1,800	-	-	1,900
33	2	DF	Truckee Canyon Water Treatment Improvements		65	35	60	60	35	255
34	2	DF	Lightening W Treatment Improvements		60	60	10	60	160	350
35	1	CR	SCADA Rehab/Plant Operating Software		1,339	1,257	867	755	474	4,692
36	1	DF	Mount Rose Surface Water Treatment Plant		6,000	4,000	-	-	-	10,000
37	2	CR	Longley Lane Water Treatment Plant Assessment / Retrofit		55	-	600	-	-	655
38	2	DF	Sparks Groundwater Treatment Plant		-	-	-	-	-	-
39	1	DF	Terminal Tank PH Adjustment		290	-	-	-	-	290
40	1	CR	Glendale Diversion Emergency Flood Repairs		600	-	-	-	-	600
Subtotal Treatment Improvements					10,654	6,967	5,187	1,795	1,089	25,692
Distribution System Improvements										
Pressure Improvements										
41	1	CR	Pressure Regulator Rehabilitations		400	350	500	500	500	2,250
42	1	CR	Pressure Reducing Valve (Roll Seal) Removal & Replace (25% RSRV)		400	400	400	400	400	2,000
43	2	CR	Land Acquisitions		250	250	250	250	250	1,250
44	2	CR	Desert Springs Pressure Improvements		-	400	-	-	-	400
45	1	CR	Paloma BPS/PRS/Main		1,000	-	-	-	-	1,000
46	2	DF	Longley/BPS/Double R Capacity		-	500	-	-	-	500
47	3	CR	Pump Station Oversizing		250	100	100	100	100	650
48	1	CR	Pump Station Rebuilds Rehabilitations		900	1,000	1,000	1,000	1,000	4,900
49	1	DF	D'Andrea #3 Pump station		619	-	-	-	-	619
50	3	DF	Truckee River Highlands PS # 1		-	-	-	1,000	-	1,000
51	2	CR	Mount Rose Well #3 Pump Station Replacement		-	50	250	-	-	300
52	3	CR	Standby Generator Replacements		150	800	150	150	150	1,400
53	1	CR	Generator Additions - Lightening W, Sunrise Estates, and Old Washoe		79	-	-	-	-	79
54	2	CR	Idlewild BPS Improvements		-	-	-	100	1,200	1,300
55	1	CR	Mogul Booster Pump Station		500	-	-	-	-	500
56	3	CR	Parkridge Circle Conversion FY 2022		-	-	-	-	300	300
57	3	DF	SW Reno Pump Zone Consolidation Phase 1		-	-	-	-	300	300
58	3	CR	Spanish Springs #1 Pressure Zone Intertie		-	-	-	600	-	600
59	2	DF	STMGLD Tank 4 Booster Pump Station / Transmission Line		-	-	2,450	550	-	3,000
60	1	CR	Yellow Pine Main Pressure Regulating Station		330	-	-	-	-	330
61	3	DF	Wildwood Pressure Regulating Station Scada Control		-	-	-	50	-	50
62	3	DF	Truckee River Highlands Pump Station # 2		-	-	-	-	900	900
63	3	CR	Old Virginia Regulation Station		-	-	330	-	-	330
Sub-Total Pressure Improvements					4,878	3,850	5,430	4,700	5,100	23,958
Water Main-Distribution-Service line Improvements										
64	1	CR	Street & Highway Main Replacements		3,000	5,000	5,000	5,000	5,000	23,000
65	1	CR	4th and Prater Replacement / Modification		2,000	-	-	-	-	2,000
66	1	CR	South Virginia / Midtown Main Plumb to Liberty		1,100	500	-	-	-	1,600
67	1	DF	Pyramid Way Transmission Main		800	-	-	-	-	800
68	1	CR	California-Marsh 24" Main Replacement		100	1,200	-	-	-	1,300
69	2	CR	Booth, Sharon Way, Monroe 24" Main Replacements		-	-	100	3,100	-	3,200
70	2	DF	South Virginia 24" Main (Kumle to Peckham)		-	100	900	-	-	1,000
71	2	CR	NE Sparks Feeder Main Relocation		-	-	50	950	-	1,000
72	2	CR	Spanish Springs -SC South Zone Conversion		-	700	-	-	-	700
73	2	CR	West Hidden Valley, Surge St., Piping Rock Main Replacements		-	-	1,000	230	500	1,730
74	2	CR	Spanish Springs Main Replacement		-	650	650	-	-	1,300
75	3	DF	Bonnie Ln., Snow Flower, Main Extensions		-	-	-	620	900	1,520
76	2	DF	South Truckee Meadows Capacity Improvements		-	400	-	-	-	400
77	2	CR & DF	Stead Golf Course Main Replacement		-	-	-	-	90	90
78	1	CR	Arrowcreek-Mt. Rose Conjunctive Use Ph 2		400	-	-	-	-	400
79	1	CR	Arc Flash Improvements		100	-	-	-	-	100
80	3	DF	General Waterline Extensions		100	100	100	100	-	400
81	2	CR	Galv/Poly Service Line Replacements		400	400	400	400	-	1,600
82	2	DF	Verdi Main		2,200	-	-	-	-	2,200
83	3	DF	Goldenrod Main		-	-	-	1,100	-	1,100
84	1	DF	Mount Rose 5 Distribution / Pressure Improvements		-	-	-	-	-	-
Subtotal Main-Distribution Improvements					10,200	9,050	8,200	11,500	6,490	45,440

Potable Water Storage Improvements										
85	1	CR	Peavine Tank Replacement	2,500	-	-	-	-	2,500	
86	2	CR/DF	Sun Valley #2 Tank (67/33)	-	150	1,750	-	-	1,900	
87	2	DF	Rattlesnake Ring Addition	-	-	800	-	-	800	
88	1	CR	Zone 11 Tank	150	3,000	-	-	-	3,150	
89	3	DF	Fish Springs Ranch #2	-	-	100	2,000	-	2,100	
90	1	CR	Storage Tank Recoats; Access; Drainage Improvements	860	800	800	800	800	4,060	
91	3	CR/DF	Highland Reservoir Tank (4MG) (50/50)	-	-	-	100	5,700	5,800	
Subtotal Storage Improvements				-	3,510	3,950	3,450	2,900	6,500	20,310
Hydroelectric Improvements										
92	1	CR	Forebay, Diversion, and Canal Improvements FY 2018 - FY 2022	45	55	50	50	50	250	
93	2	CR	Flume Rehabilitation FY 2018 - FY 2022	300	650	600	600	600	2,750	
94	3	CR	Hydro Plant Generator Rewinds FY 2019 - FY 2021	-	350	350	350	-	1,050	
Subtotal Hydroelectric Improvements				-	345	1,055	1,000	1,000	650	4,050
Customer Service Outlays										
95	3	CR	Meter Reading Equipment	60	-	60	-	60	180	
96	2	DF	New Business Meters	350	350	175	100	100	1,075	
97	1	CR	Mueller Pit Replacements former Washoe County	125	125	125	125	125	625	
98	1	CR	Meter -ERT-RTR Replacements	1,250	1,250	1,250	1,250	1,250	6,250	
Subtotal Customer Service				-	1,785	1,725	1,610	1,475	1,535	8,130
Administrative Outlays										
99	2	CR	GIS / GPS System Mapping Equipment FY 2018 - FY 2022	40	40	40	40	40	200	
100	2	CR	Desktop Computer Upgrades FY 2018 - FY 2022	100	100	100	100	100	500	
101	2	CR	Network Server / Storage Upgrades FY 2018 - FY 2022	175	175	175	175	275	975	
102	2	CR	Network Security Upgrades FY 2018 - FY 2022	150	150	150	150	150	750	
103	1	CR	Disaster Recovery Improvements FY 2018	215	-	-	-	-	215	
104	2	CR	Furniture - Office Equipment FY 2018 - FY 2022	50	50	50	50	50	250	
105	3	CR	Crew Trucks / Vehicles FY 2018 - FY 2022	825	570	585	650	600	3,230	
106	1	CR	Security-ER Projects FY 2018 - FY 2022	150	150	150	150	150	750	
107	1	CR	Emergency Operations Annex Design / Construction FY 2018 - FY 2019	500	1,500	-	-	-	2,000	
108	2	CR	Corporate Office Expansion- Design / Construction FY 2018	1,800	-	-	-	-	1,800	
109	2	CR	System Wide Asphalt Rehabilitation	250	100	100	100	100	650	
Subtotal Administrative-Outlays				4,255	2,835	1,350	1,415	1,465	11,320	
Subtotal Construction Projects and Capital Outlays				-	41,807	32,392	30,377	29,435	25,579	159,590
Special Projects Funded by Development										
110	2	DF	Water Meter Retrofits	300	300	300	300	300	1,500	
111	3	DF	Water Right Purchases	150	150	150	150	150	750	
Sub Total Special Projects Funded by Development				-	450	450	450	450	2,250	
Total Construction Expenditures and Capital Outlays				\$ -	\$ 42,257	\$ 32,842	\$ 30,827	\$ 29,885	\$ 26,029	\$ 161,840
Former STMGID System Improvements										
112	2	Reserve	Well Bypass and Chlorine Room Improvements (former STMGID)	400	100	-	-	-	500	
113	3	Reserve	STMGID Well #1 Replacement	-	850	900	-	-	1,750	
114	2	Reserve	STMGID Well Fix & Finish	150	150	150	150	150	750	
115	1	Reserve	STMGID Conjunctive Use Facilities	150	1,800	2,100	-	-	4,050	
116	1	Reserve	Former STMGID Tank Recoats	-	220	-	300	-	520	
117	1	Reserve	Mueller Pit Replacements former STMGID	75	50	50	50	-	225	
118	2	Reserve	NAC Deficiencies-Saddlehorn, Upper Toll Road, STMGID East	-	350	100	2,400	350	3,200	
Sub Total Former STMGID Improvement Projects				\$ 775	\$ 3,520	\$ 3,300	\$ 2,900	\$ 500	\$ 10,995	
Total Construction Expenditures and Capital Outlays Including STMGID - Allocated Funding				\$ 43,032	\$ 36,362	\$ 34,127	\$ 32,785	\$ 26,529	\$ 172,835	

1) Funding Sources "CR" Customer Rates; "DF" Developer funded; "GR" Grant; "Reserve" is the South Truckee Meadows General Improvement District transferred cash

Attachment B

DRAFT

FY 2018 – 2022

Capital Improvement Plan



Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan**Table of Contents**

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Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan**INTRODUCTION**

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

DEFINITIONS

Capital Improvement Program Definitions

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan**Definition of Capital Outlays**

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

PRIORITIZATION OF PROJECTS/OUTLAYS

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan**FUNDING OF CAPITAL SPENDING****Funding Sources**

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

Developer Contributions

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

Bonds and Other Financing/Funding Tools

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

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

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

Rule 5 and Rule 7 Fees

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

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

Water Meter Retrofit Fees

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

Capital Contributions from Other Governments

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

Reserves from the Water Utility Consolidation

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

Other Resources

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

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

FISCAL YEAR 2018 CAPITAL SPENDING-THE CAPITAL BUDGET

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan**SUMMARY OF PROJECTS FOR THE FISCAL YEAR 2018 BUDGET**

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

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

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

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

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

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

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

Category 4 Distribution-Improvements \$15,078,000:**Pressure Improvements Subtotal \$4,878,000**

- Pressure Regulator Rehabilitation – \$400,000
- Pressure Reducing Valve (Roll Seal) Removal & Replacement– \$400,000

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- Land Acquisitions – \$250,000
- Paloma Pressure Regulating Station/Main - \$1,000,000
- Pump Station Oversizing – \$250,000
- Pump Station Rehabilitation – \$900,000
- D'Andrea #3 Pump Station (developer reimbursed) – \$619,000
- Standby Generators – \$150,000
- Generator Additions – Lightning W, Sunrise Estates, and Old Washoe - \$79,000
- Mogul Booster Pump Station - \$500,000
- Yellow Pine Main Pressure Regulating Station - \$330,000

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

- Street & Highway Main Replacements – \$3,000,000
- 4th and Prater Replacement / Modification - \$2,000,000
- South Virginia / Midtown Main Plumb to Liberty - \$1,100,000
- Pyramid Way Transmission Main - \$800,000
- California-Marsh 24" Main Replacement – \$100,000
- Arrowcreek-Mt Rose Conjunctive Use Phase 2 – \$400,000
- Arc Flash Improvements – \$100,000
- General Waterline Extensions – \$100,000
- Galvanized/Polybutylene Service Replacements – \$400,000
- Verdi Main Extension – \$2,200,000
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Category 5 Storage–Improvements \$3,510,000:

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

Category 6 Hydroelectric – Improvements \$345,000:

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

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

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

Category 8 Administrative \$4,255,000:

- GIS/GPS System Mapping Equipment - \$40,000
- Desktop Computer Upgrades – \$100,000
- Network Server / Storage Upgrades – \$175,000
- Network Security Upgrades – \$150,000
- Disaster Recovery Improvements - \$215,000
- Furniture, Office Equipment – \$50,000
- Crew Trucks-Vehicles – \$825,000

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- Security-Emergency Response (ER) Projects – \$150,000
- Emergency Operations Annex (Design) – \$500,000
- Corporate Office Expansion– \$1,800,000
- System Wide Asphalt Rehabilitation - \$250,000

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

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

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

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

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

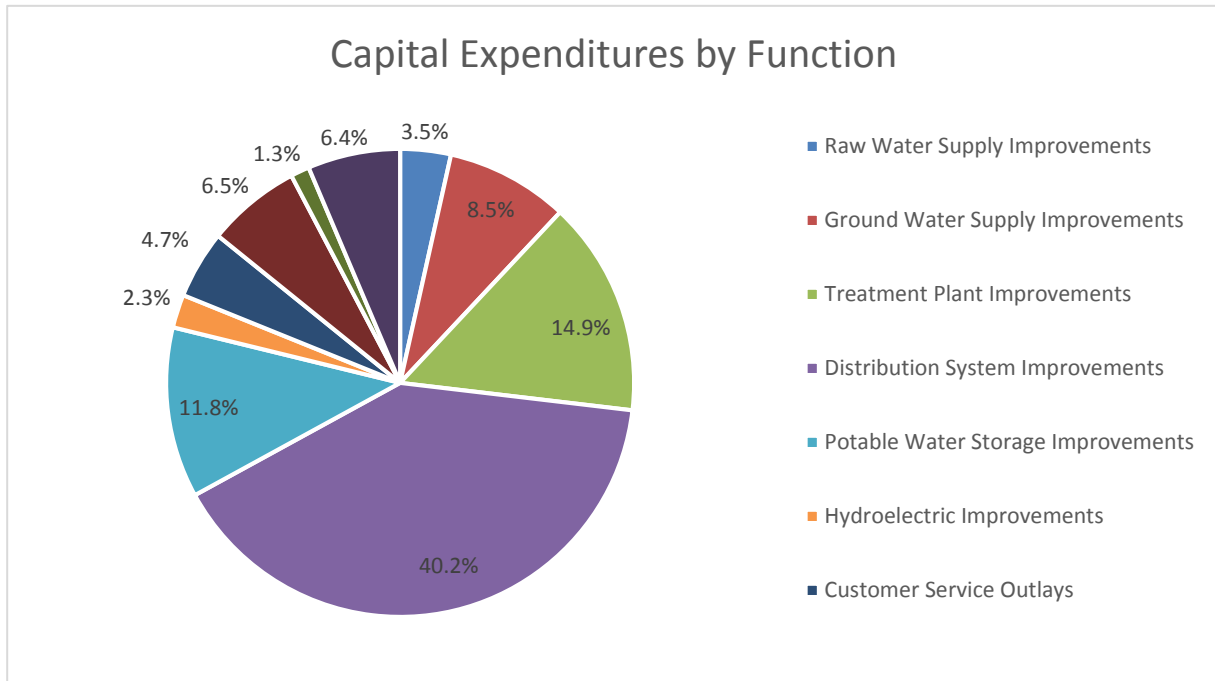
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CAPITAL EXPENDITURES BY FUNCTION
(Amounts in thousands of dollars)

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

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Total Projected Capital Spending, Including STMGID	43,032	36,362	34,127	32,785	26,529	172,835
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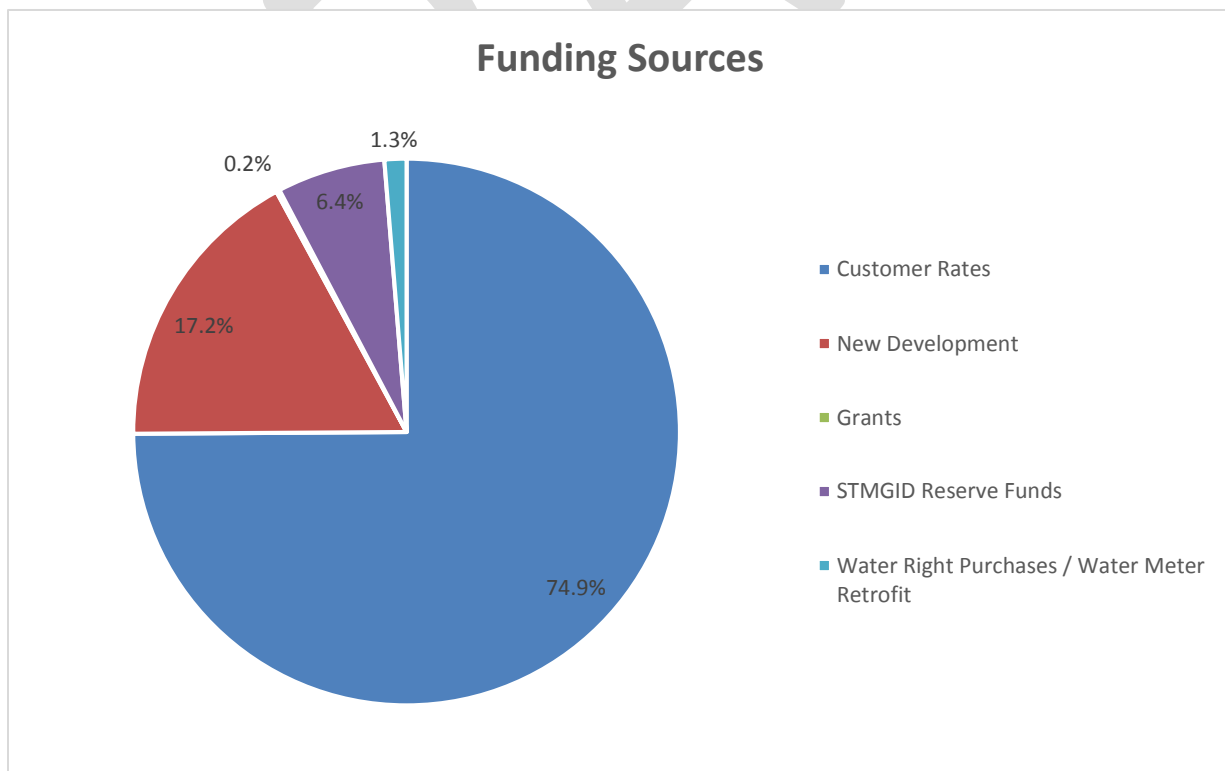


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**PRELIMINARY FUNDING PLAN
FUNDING SOURCES
(Amounts in thousands of dollars)**

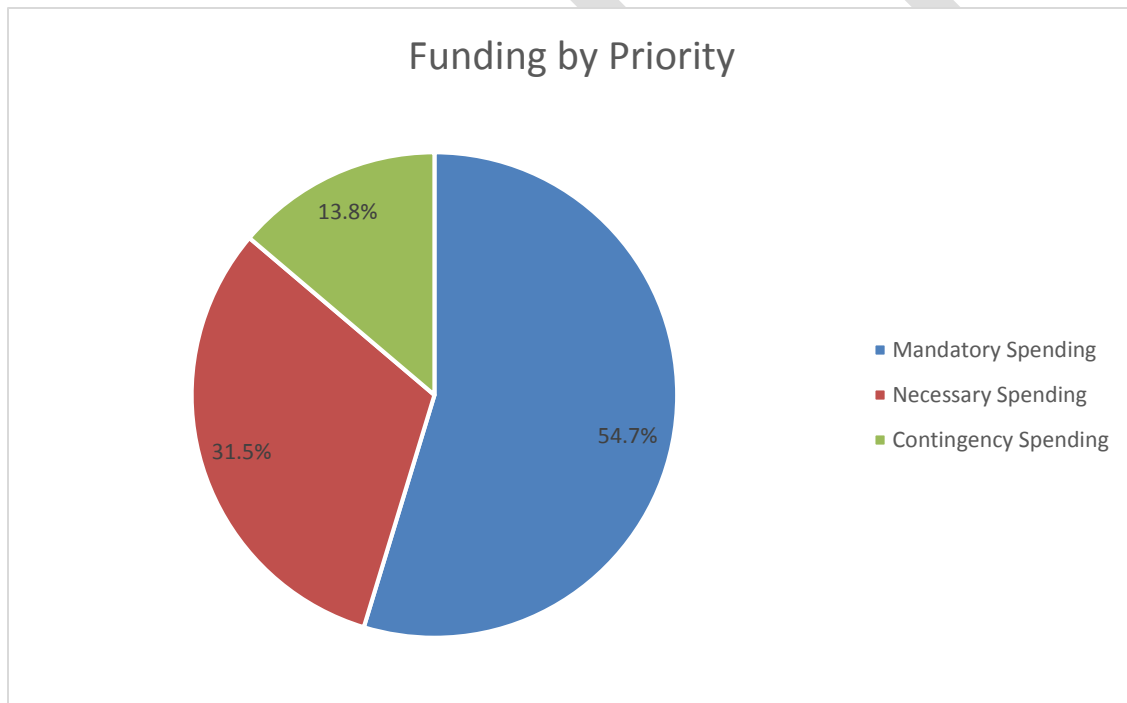
Summary of Funding Sources	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	Five Year CIP Total
Capital Improvements Funded by Customer Rates	33,223	26,798	25,205	23,845	20,464	129,534
Capital Improvements Funded by Development	8,284	5,595	5,173	5,590	5,115	29,756
Capital Improvements Funded by Grants	300	-	-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



Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

FUNDING BY PRIORITY
(Amounts in thousands of dollars)

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



Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan**PROJECT FUNCTIONS AND DESCRIPTIONS****RAW WATER SUPPLY IMPROVEMENTS****Summary**

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

Raw Water Supply Improvements

Highland Canal-Upgrades-Downstream FY 2018 – 2022

FUNDING TIMELINE:

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

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

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

Raw Water Supply Improvements

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

FUNDING TIMELINE:

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

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

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

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Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

Raw Water Supply Improvements Donner Dam Improvements FY 2018

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

Raw Water Supply Improvements

Independence Lake Permitting Study FY2018

FUNDING TIMELINE:

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

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

SCHEDULE: Permitting strategy to be developed in FY 2018.

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

Raw Water Supply Improvements Indirect Potable Reuse FY 2018 – 2022

FUNDING TIMELINE:

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

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

Raw Water Supply Improvements

TROA Drought Storage/Implementation FY2018 - 2022

FUNDING TIMELINE:

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

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

Raw Water Supply Improvements

Mesa Park Drainage FY2018

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

GROUND WATER SUPPLY IMPROVEMENTS

Summary

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

1	Grant	Desert Springs 1 & 2 and Spring Creek 5 ASR Retrofit	710	10	-	-	-	720
Subtotal			3,305	2,385	3,575	3,175	2,175	14,615

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Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

Ground Water Supply Improvements

Well Rehabilitation Improvements FY 2018 – 2022

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

Ground Water Supply Improvements

Campello Capacity Increase FY 2020

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

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

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

Ground Water Supply Improvements

Air Guard Well Replacement FY 2020

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

Ground Water Supply Improvements

Sunrise #3 Replacement FY 2018 - 2019

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

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

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

Ground Water Supply Improvements
Lemmon Valley Well #8 Replacement FY2022

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

Ground Water Supply Improvements

Well Fix & Finish FY 2018 – 2022

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

Ground Water Supply Improvements Well Plugging / Conversion FY 2018

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

Ground Water Supply Improvements

NDEP Monitoring Wells FY 2018

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

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

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

Ground Water Supply Improvements

Spanish Springs Nitrate Treatment FY 2018

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

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

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

Ground Water Supply Improvements Well Head TTHM Mitigation FY 2018

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

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

FUNDING TIMELINE:

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

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

SCHEDULE: Construction will occur in FY 2019.

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan**Ground Water Supply Improvements****Desert Springs 1 & 2 and Spring Creek 5 ASR Retrofit FY 2018 -2019****FUNDING TIMELINE:**

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

TREATMENT PLANT IMPROVEMENTS

Summary

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

Treatment Plant Improvements

Chalk Bluff Treatment Plant Fix & Finish FY 2018 - 2022

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

Treatment Plant Improvements Glendale Treatment Plant Fix & Finish FY 2018 – 2022

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

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

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

Treatment Plant Improvements
Chalk Bluff Pump Building Air Handler FY 2018

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

Treatment Plant Improvements
Chalk Bluff Lighting Upgrade FY 2021

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

Treatment Plant Improvements
Glendale Lighting Upgrade FY 2019

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan**Treatment Plant Improvements****Eagle Canyon Transmission Main Phase 2 FY 2019 – 2020****FUNDING TIMELINE:**

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan**Treatment Plant Improvements****Truckee Canyon Water Treatment Improvements FY 2018 - 2022****FUNDING TIMELINE:**

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

Treatment Plant Improvements
Lightning W Treatment Improvements FY 2018 – 2022

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

Treatment Plant Improvements

SCADA Rehab/Plant Operating Software FY 2018 - 2022

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan**Treatment Plant Improvements****Mt. Rose Surface Water Treatment Plant FY 2018 - 2019****FUNDING TIMELINE:**

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan**Treatment Plant Improvements****Longley Lane Water Treatment Plant Retrofit FY 2018 - 2020****FUNDING TIMELINE:**

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

PROJECT DESCRIPTION:

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

Treatment Plant Improvements

Terminal PH Adjustment FY 2018

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

Treatment Plant Improvements
Glendale Diversion Emergency Flood Repairs FY 2018

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

DISTRIBUTION SYSTEM IMPROVEMENTS – PRESSURE IMPROVEMENTS

Summary

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

1	Customer Rates	Generator Additions – Lightning W, Sunrise Estates, and Old Washoe Systems	79	-	-	-	-	79
2	Customer Rates	Idlewild Booster Pump Station Improvements	-	-	-	100	1,200	1,300
1	Customer Rates	Mogul Booster Pump Station	500	-	-	-	-	500
3	Customer Rates	Parkridge Circle Conversion	-	-	-	-	300	300
3	Developer Fees	SW Reno Pump Zone Consolidation Phase 1	-	-	-	-	300	300
3	Customer Rates	Spanish Springs #1 Pressure Zone Intertie	-	-	-	600	-	600
2	Developer Fees	STMGID Tank 4 Booster Pump Station/ Transmission Line	-	-	2,450	550	-	3,000
1	Customer Rates	Yellow Pine Main/Pressure Regulating Station	330	-	-	-	-	330
3	Developer Fees	Wildwood Pressure Regulating Station /Scada Control	-	-	-	50	-	50
3	Developer Fees	Truckee River Highland Pump Station #2	-	-	-	-	900	900
3	Customer Rates	Old Virginia Regulation Station	-	-	330	-	-	330
Sub-Total Pressure Improvements			4,878	3,850	5,430	4,700	5,100	23,958

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

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

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

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

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

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

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

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

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

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

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

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

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

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

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

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

FUNDING TIMELINE:

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

PROJECT DESCRIPTION: TMWA has over 120 pump stations in service. An amount is budgeted annually for rehabilitation of TMWA’s older pump stations. Other pump stations may require pump, motor, and electrical upgrades. Budget for future years will allow TMWA to complete up to one above ground replacement project per year if suitable sites can be acquired. Otherwise, normal rehabilitation work will be performed per the priorities established by the study at a lower overall annual cost.

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

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

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

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

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

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

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

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

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

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

FUNDING TIMELINE:

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

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

SCHEDULE: Construction is scheduled to begin in FY 2018.

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

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

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan**Distribution System Improvements – Pressure Improvements****Mogul Booster Pump Station FY 2018****FUNDING TIMELINE:**

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan**Distribution System Improvements – Pressure Improvements****Parkridge Circle Conversion FY 2022****FUNDING TIMELINE:**

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan**Distribution System Improvements – Pressure Improvements****SW Reno Pump Zone Consolidation Phase 1 FY 2022****FUNDING TIMELINE:**

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan**Distribution System Improvements – Pressure Improvements****Spanish Springs #1 Pressure Zone Intertie FY 2021****FUNDING TIMELINE:**

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan
Distribution System Improvements – Pressure Improvements
STMGID Tank #4 Booster Pump Station / Transmission Line FY 2020-2021

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan**Distribution System Improvements – Pressure Improvements****Yellow Pine Main / Pressure Regulating Station FY 2018****FUNDING TIMELINE:**

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

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

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

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

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan**Distribution System Improvements – Pressure Improvements****Truckee River Highlands Pump Station #2 FY 2022****FUNDING TIMELINE:**

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan**Distribution System Improvements – Pressure Improvements****Old Virginia Regulation Station FY 2020****FUNDING TIMELINE:**

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

1	Customer Rates	Arc Flash Improvements	100	-	-	-	-	100
3	Developer Fees	General Waterline Extensions	100	100	100	100	-	400
2	Customer Rates	Galvanized/Poly Service Line Replacements	400	400	400	400	-	1,600
2	Developer Fees	Verdi Main Extension	2,200	-	-	-	-	2,200
3	Developer Fees	Goldenrod Main	-	-	-	1,100	-	1,100
Subtotal Main-Distribution Improvements			10,200	9,050	8,200	11,500	6,490	45,440

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Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan**Distribution System Improvements – Water Main-Distribution-
Service Line Improvements****Street & Highway Main Replacements FY 2018 - 2022****FUNDING TIMELINE:**

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan**Distribution System Improvements – Water Main-Distribution-
Service Line Improvements****4th and Prater Way Replacement/Modification FY 2018****FUNDING TIMELINE:**

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan**Distribution System Improvements – Water Main-Distribution-
Service Line Improvements****South Virginia/Midtown Main Plumb to Liberty FY 2018 – 2019****FUNDING TIMELINE:**

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan**Distribution System Improvements – Water Main-Distribution-
Service Line Improvements****Pyramid Way Transmission Main FY 2018****FUNDING TIMELINE:**

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan**Distribution System Improvements – Water Main-Distribution-
Service Line Improvements****California-Marsh 24" Main Replacement FY 2018 – 2019****FUNDING TIMELINE:**

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan**Distribution System Improvements – Water Main-Distribution-
Service Line Improvements****Booth, Sharon Way, Monroe 24" Main Replacements FY 2020 – 2021****FUNDING TIMELINE:**

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan**Distribution System Improvements – Water Main-Distribution-
Service Line Improvements****South Virginia 24" Main (Kumle to Peckham) FY 2019 – 2020****FUNDING TIMELINE:**

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan**Distribution System Improvements – Water Main-Distribution-
Service Line Improvements****North-East Sparks Tank Feeder Main Relocation FY 2020 – 2021****FUNDING TIMELINE:**

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

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

SCHEDULE: The improvements will be constructed in FY 2021.

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan**Distribution System Improvements – Water Main-Distribution-
Service Line Improvements****Spanish Springs – Spring Creek South Zone Conversion FY 2019****FUNDING TIMELINE:**

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan**Distribution System Improvements – Water Main-Distribution-
Service Line Improvements****West Hidden Valley, Surge St., Piping Rock Main Replacements
FY 2020– 2022****FUNDING TIMELINE:**

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan**Distribution System Improvements – Water Main-Distribution-
Service Line Improvements****Spanish Springs Main Replacement FY 2019 - 2020****FUNDING TIMELINE:**

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan**Distribution System Improvements – Water Main-Distribution-
Service Line Improvements****Bonnie Ln., Snow Flower, Main Extensions FY 2021 – 2022****FUNDING TIMELINE:**

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan**Distribution System Improvements – Water Main-Distribution-
Service Line Improvements****South Truckee Meadows Capacity Improvements FY 2019****FUNDING TIMELINE:**

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan**Distribution System Improvements – Water Main-Distribution-
Service Line Improvements****Stead Golf Course Main Replacement FY 2022****FUNDING TIMELINE:**

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

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

SCHEDULE: The project is scheduled for construction in 2022.

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan**Distribution System Improvements – Water Main-Distribution-
Service Line Improvements****Arrowcreek-Mt. Rose Conjunctive Use Phase 2 FY 2018****FUNDING TIMELINE:**

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan**Distribution System Improvements – Water Main-Distribution-
Service Line Improvements****Arc Flash Improvements FY 2018****FUNDING TIMELINE:**

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

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

General Waterline Extensions FY 2018 – 2022

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan**Distribution System Improvements – Water Main-Distribution-
Service Line Improvements****Galvanized/Poly Service Line Replacements FY 2018 – 2021****FUNDING TIMELINE:**

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan**Distribution System Improvements – Water Main-Distribution-
Service Line Improvements****Verdi Main Extension FY 2018****FUNDING TIMELINE:**

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan**Distribution System Improvements – Water Main-Distribution-
Service Line Improvements****Goldenrod Main FY 2021****FUNDING TIMELINE:**

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

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

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

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Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

POTABLE WATER STORAGE IMPROVEMENTS
Summary

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

Potable Water Storage Improvements

Peavine Tank Replacement FY 2018

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

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

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

Potable Water Storage Improvements Rattlesnake Ring Addition FY 2020

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

Potable Water Storage Improvements
Zone 11 Tank FY 2018 - 2019

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

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

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

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

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

Potable Water Storage Improvements
Highland Reservoir Tank FY 2021 - 2022

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

HYDROELECTRIC IMPROVEMENTS

Summary

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

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

FUNDING TIMELINE:

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

PROJECT DESCRIPTION:

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

Hydroelectric Improvements

Flume Rehabilitation FY 2018 – 2022

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

Hydroelectric Improvements

Hydro Plant Generator Rewinds FY 2019 – 2021

FUNDING TIMELINE:

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

PROJECT DESCRIPTION:

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

CUSTOMER SERVICE OUTLAYS
Summary

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

Customer Service Outlays
Meter Reading Equipment FY 2018 - 2022

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

Customer Service Outlays
New Business Meters FY 2018 – 2022

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan**Customer Service Outlays****Mueller Pit Replacements Former Washoe County FY 2018 – 2022****FUNDING TIMELINE:**

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan**Customer Service Outlays****Meter - ERT-RTR Replacements FY 2018 - 2022****FUNDING TIMELINE:**

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

ADMINISTRATIVE OUTLAYS

Summary

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan**Administrative Outlays****GIS/GPS System Mapping Equipment FY 2018 – 2022****FUNDING TIMELINE:**

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

Administrative Outlays

Desktop Computer Upgrades FY 2018 - 2022

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

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

FUNDING TIMELINE:

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

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

SCHEDULE: Spending occurs only on an as needed basis.

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

Administrative Outlays

Network Security Upgrades FY 2018 – 2022

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Customer Rates	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.

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

Administrative Outlays

Disaster Recovery Improvements FY 2018

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

Administrative Outlays
Furniture – Office Equipment FY 2018 – 2022

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

Administrative Outlays

Crew Trucks/Vehicles FY 2018 – 2022

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

Administrative Outlays

Security-ER Projects FY 2018 – 2022

FUNDING TIMELINE:

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

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

Administrative Outlays

Emergency Operations Annex-Design FY 2018- 2019

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

Administrative Outlays

Corporate Office Expansion FY 2018

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	CIP Total
2	Customer Rates	Corporate Office Expansion	1,800					1,800

PROJECT DESCRIPTION: Due to anticipated growth in the Truckee Meadows, it will be necessary to expand engineering, mapping/GIS, new business and possibly customer service staff, which is currently located in somewhat cramped quarters. To accommodate additional staff, a 5,000 square foot office space addition is necessary.

SCHEDULE: Anticipated construction will occur in FY 2018.

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

Administrative Outlays

System Wide Asphalt Rehabilitation FY 2018 – 2022

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

FORMER STMGID SYSTEM IMPROVEMENTS
Summary

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

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

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

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

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

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

FUNDING TIMELINE:

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

PROJECT DESCRIPTION: Equipment improvements are expected to bring existing wells up to modern standards, including antiquated equipment replacements and improvements for water quality purposes. This projects 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.

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan**Distribution System Improvements – Water Main-Distribution-
Service Line Improvements****STMGID Conjunctive Use Facilities FY 2018 – 2020****FUNDING TIMELINE:**

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

Potable Water Storage Improvements

STMGID Tank Recoats FY 2019 - 2021

FUNDING TIMELINE:

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan**Customer Service Outlays****Mueller Pit Replacements Former STMGID FY 2018 – 2021****FUNDING TIMELINE:**

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

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

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

Truckee Meadows Water Authority **DRAFT** FY 2018-2022 Capital Improvement Plan

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

FUNDING TIMELINE:

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

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

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