

TRUCKEE MEADOWS WATER AUTHORITY Board of Directors

AGENDA

NEW DAY: Thursday, May 23, 2019 at 10:00 a.m. Sparks Council Chambers, 745 4th Street, Sparks, NV

Board Members

Chair Vaughn Hartung Member Neoma Jardon Member Jenny Brekhus Member Paul Anderson Vice Chair Kristopher Dahir Member Jeanne Herman Member Naomi Duerr

NOTES:

1. 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 (775) 834-8002 at least 24 hours before the meeting date.

3. Staff reports and supporting material for the meeting are available at TMWA and on the TMWA website at http://www.tmwa.com/meeting/ or you can contact Sonia Folsom at (775) 834-8002. Supporting material is made available to the general public in accordance with NRS 241.020(6).

4. The Board may elect to combine agenda items, consider agenda items out of order, remove agenda items, or delay discussion on agenda items. Arrive at the meeting at the posted time to hear item(s) of interest.

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

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

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

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

- 1. Roll call*
- 2. Pledge of allegiance*
- 3. Public comment limited to no more than three minutes per speaker*
- 4. Recognition of TMWA Vice Chair Ron Smith for his years of service Vaughn Hartung*

¹The Board may adjourn from the public meeting at any time during the agenda to receive information and conduct labororiented discussions in accordance with NRS 288.220 or receive information from legal counsel regarding potential or existing litigation and to deliberate toward a decision on such matters related to litigation or potential litigation.

- 5. Approval of the agenda (For Possible Action)
- 6. Approval of the minutes of the April 17, 2019 meeting of the TMWA Board of Directors (For Possible Action)
- Discussion and possible action, and direction to staff regarding 2019 legislative activities, current bills, and TMWA recommended positions on legislative proposals— John Zimmerman and Steve Walker, Walker & Associates (For Possible Action)

8. PUBLIC HEARING ON RATE AMENDMENT

- A. Introduction and first reading of amendments to TMWA Rate Schedule WSF Water System Facility Charges revising area fee, supply and treatment, and storage unit costs and to TMWA Rate Schedule BSF - Business Services Fees — Scott Estes (For Possible Action)
- B. Public comment limited to no more than three minutes per speaker*

CLOSE PUBLIC HEARING

- 9. Presentation of financial performance for the quarter ended March 31, 2019 Matt Bowman*
- 10. PUBLIC HEARING ON ADOPTION OF BUDGET

A. Discussion and action on request for adoption of Resolution No. 274: A resolution to adopt the final budget for the Fiscal Year ending June 30, 2020 and the 2020-2024 Five-Year Capital Improvement Plan — Matt Bowman and Joe Petrelli (**For Possible Action**)

B. Public comment — limited to no more than three minutes per speaker*

CLOSE PUBLIC HEARING

- 11. General Manager's Report*
- 12. Public comment limited to no more than three minutes per speaker*
- 13. Board comments and requests for future agenda items*
- 14. Adjournment (For Possible Action)

TRUCKEE MEADOWS WATER AUTHORITY MINUTES OF THE APRIL 17, 2019 DRAFT MEETING OF THE BOARD OF DIRECTORS

The Board of Directors met on Wednesday, April 17, 2019, at Sparks Council Chambers., 745 4th Street, Sparks, Nevada. Chair Hartung called the meeting to order at 10:00 a.m.

1. ROLL CALL

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

Members Absent: Paul Anderson

A quorum was present.

*Member Jardon arrived at 10:01 a.m.

**Member Lawson left at 11:03 a.m.

***Member Dahir left at 11:28 a.m.

2. PLEDGE OF ALLEGIANCE

The Pledge of Allegiance was led by Member Lawson.

3. PUBLIC COMMENT

There was no public comment.

4. APPROVAL OF THE AGENDA

Member Lawson requested to move agenda item #11 up and Chair Hartung suggested it be heard after item #6.

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

5. APPROVAL OF THE MINUTES OF THE MARCH 20, 2019 MEETING

Upon motion by Member Herman, second by Member Duerr, which motion duly carried by unanimous consent of the members present, the Board approved the March 20, 2019 minutes.

6. INTRODUCTION OF TMWA'S NEW INTERNATIONAL BROTHERHOOD ELECTRICAL WORKERS 1245 REPRESENTATIVE, MIKE VENTURINO

Jessica Atkinson, TMWA Human Resources Manager, introduced Mike Venturino as TMWA's new International Brotherhood Electrical Workers 1245 representative.

Mr. Venturino thanked the Board and expressed his pleasure to work with TMWA and continue a positive relationship.

11. DISCUSSION, POSSIBLE ACTION, AND DIRECTION TO STAFF AND AUTHORIZATION TO GENERAL MANAGER REGARDING NEGOTIATION AND EXECUTION OF POSSIBLE OPTION AGREEMENT WITH STATE OF NEVADA FOR PURCHASE OF WATER FROM MARLETTE LAKE WATER SYSTEM, INCLUDING THE RIGHT TO USE 3,090 ACRE FEET FOR OPTION FEE OF \$250,000

John Enloe, TMWA Director of Natural Resources, informed the Board the Nevada Department of Administration approached staff in late 2018, to determine TMWA's interest in purchasing wholesale water supplies from the Marlette Lake Water System, which would include the right to use 3,090 acre feet for option fee of \$250,000. A long-term contract could prove beneficial for TMWA customers for possible uses of the water including return flow augmentation for Truckee Meadows Water Reclamation Facility (TMWRF) and drought storage augmentation without impacting customers in Virginia City or Carson City that also receive water from that system. The proposed option agreement includes a 2-year Standstill period to allow time for TMWA to work with the Nevada Department of Administration, Carson City, Virginia City, the State Engineer, the Federal Watermaster and other parties on how the water could be used.

Ward Patrick, State of Nevada Public Works, informed the Board the state is in support of this item. Mr. Patrick also informed the Board that it has been difficult to come to an agreement with Carson City over the years and the state needs to look at other options to sell water in order to close a budget deficiency.

Discussion followed regarding the \$250,000 option payment (a one-time payment to cover the state's current O&M budget shortfall); financial responsibility for future infrastructure improvements; the amount of water potentially directed for return flow for TMWRF's reclaimed water operations has not been determined. Staff will bring the decision on whether to exercise the option back to the Board prior to the end of the 3-year option period, and many Board members agreed this was a great opportunity to secure future water resources at a reasonable cost.

Member Brekhus requested the Board be given more time to review the material, go back to their respective entities to speak with their public works directors, and not vote today.

Member Duerr supported Member Brekhus' request for additional information, however did not see a need to delay voting on this item but looked to staff to do further due diligence during the option period and report back to the Board.

Upon motion by Member Dahir, second by Member Herman, which motion duly carried six to one with Member Brekhus dissenting, the Board approved to give authorization to the general manager regarding negotiation and execution of possible option agreement with State of Nevada for purchase of water from Marlette Lake Water System, including the right to use 3,090 acre feet for an option fee of \$250,000.

7. DISCUSSION AND POSSIBLE ACTION AND DIRECTION TO STAFF REGARDING 2019 LEGISLATIVE ACTIVITIES, CURRENT BILLS, AND TMWA RECOMMENDED POSITIONS ON LEGISLATIVE PROPOSALS

Steve Walker, TMWA Lobbyist, informed the Board the TMWA Legislative Subcommittee met on April 12 and approved staff recommendation for all new bills introduced and provided updates on existing bills: AB30 (3M planning, bill was rewritten, now Watch); AB62 (extend time to complete construction of projects to divert water, oppose); SB250 (water rights tied to parcel map or permit, amendment accepted by the state engineer and bill sponsor, going to a vote on the Senate floor today); SB287 (creates a penalty regarding public records requests, watch); and SB358 (revision to definition of what qualifies as a renewable energy system, oppose unless amended).

Michael Pagni, TMWA General Counsel, informed the Board with the change in definition on SB358, TMWA no longer opposes the bill. Senator Brooks had no intention of excluding TMWA's hydroelectric facilities, which would negate the power purchase agreement and have a \$3.7 million fiscal impact on TMWA and its customers.

Vice Chair Dahir thanked staff and recommended not convening the legislative subcommittee again unless there is new development.

No action taken.

8. WATER SUPPLY UPDATE

Bill Hauck, TMWA Senior Hydrologist, updated the Board on the status of the TMWA's water supply: Squaw Valley received approximately six feet of snow in February; the Truckee River and Tahoe Basins are at 175% and 250% of average, respectively; expect two-three feet of water to flow into Tahoe and therefore started pre-cautionary releases in the third week in February; Lake Tahoe is 1.2 feet from the rim; Pyramid Lake is expected to rise about five feet; Lahontan Reservoir is also conducting pre-cautionary releases; expect river flows to taper off in July to mid-August;

Member Duerr requested for Mr. Hauck to provide historical data. Mr. Hauck replied he can provide up to 100 years of historical data for the Mt. Rose snow measuring site which he can send to the Board.

Member Herman inquired about Fish Springs. Mr. Hauck replied it is starting to be used as a resource, running two of the five production wells (approximately 2 million gallons per day each), which is providing water to our customers in the North Valleys.

9. DISCUSSION AND POSSIBLE ACTION, AND DIRECTION TO STAFF ON ADOPTION OF A NEW CONFLICT OF INTEREST POLICY RELATED TO PROCUREMENT

Michele Sullivan, TMWA Chief Financial Officer, informed the Board that because TMWA receives federal grants they have to be in compliance with the uniform grant guidance from the federal government, and they have changed some of the requirements. TMWA has a conflict of interest policy for all employees, but things specifically related to any employee or board member involved with the selection of a vendor for a TMWA contract would require more specific conflict of interest disclosure, which includes conflicts related to family members, specifics around gifts and gratuities; everyone who is involved in the procurement process has to sign this every year to affirm they have no conflict of interest.

Mr. Pagni stated the intention is to the extent the Board is awarding a contract at the Board level, then they would need it on that specific contract, but these generally do not come before the Board.

Discussion followed to ensure the process is streamlined and efficient for the Board, so they are compliant at all times. Mr. Pagni confirmed this form is limited to those involved in the procurement process and if such a contract would go before the Board for approval, they would need to sign the form for that project at that time. Otherwise, the Board has delegated that authority to the general manager, and as such the staff involved in the award of such procurement contracts would be filling out the form.

Ms. Sullivan added the policy can be edited to say the Board would only sign this form if they were involved in an award of a contract related to procurement.

Upon motion by Member Dahir, second by Member Herman, which motion duly carried by unanimous consent of the members present, the Board approved the adoption of a new conflict of interest policy related to procurement with the clarification the Board obligation to sign the conflict of interest only at the time the Board awards a contract.

10. PRESENTATION ON PROPOSED CONSERVATION, COMMUNICATIONS AND OUTREACH PLAN FOR 2019, DISCUSSION AND POSSIBLE DIRECTION TO STAFF

Andy Gebhardt, TMWA Director of Operations and Water Quality, presented the agenda item. Mr. Gebhardt informed the Board of TMWA's second Smart About Water Day on May 4th.

Member Jardon inquired if there was information about Board decisions benefiting the community, such as establishing the rate stabilization fund, and there was no rate increase in 2019. Mr. Gebhardt replied no, except for delaying the rate increase, but would include all these items for next year's event.

Upon motion by Member Brekhus, second by Member Jardon, which motion duly carried by unanimous consent of the members present, the Board approved the Conservation, Communications and Outreach Plan for 2019. 12. DISCUSSION AND ACTION ON APPOINTMENTS TO THE STANDING ADVISORY COMMITTEE (SAC) TO FILL THE IRRIGATION CUSTOMER REPRESENTATIVE ALTERNATE POSITION, FOR TERM ENDING DECEMBER 31, 2020, AND THE AT-LARGE 2 CUSTOMER REPRESENTATIVE ALTERNATE POSITION FOR TERM BEGINNING MAY 1, 2019 TO DECEMBER 31, 2021 FROM THE FOLLOWING POOL OF CANDIDATES LISTED IN ALPHABETICAL ORDER: SUSAN HOOG AND KARL KATT

Sonia Folsom, TMWA Standing Advisory Committee Liaison, presented this agenda item.

Upon motion by Member Brekhus, second by Member Duerr, which motion duly carried by unanimous consent of the members present, the Board approved the appointments to the Standing Advisory Committee (SAC) of Karl Katt to fill the irrigation customer representative alternate position, for term ending December 31, 2020, and Susan Hoog to fill the at-large 2 customer representative alternate position for term beginning May 1, 2019 to December 31, 2021.

13. GENERAL MANAGER'S REPORT

Mark Foree, TMWA General Manager, informed the Board TMWA has not received any comments from the Truckee Donner Land Trust regarding TMWA's draft of a Statement of Interest related to the Farad property, but would have an update either in May or June. Also, attached is the summary of the Walker Lake case for which TMWA is filing an amicus brief.

Member Brekhus inquired if the Farad Hydro building will remain a historic building and would like to know the case schedule for the Walker Lake case. Staff indicated that we will discuss the building with the Truckee Donner Land Trust and report back to the Board and also keep the Board informed of the case schedule.

14. PUBLIC COMMENT

There was no public comment.

15. BOARD COMMENTS AND REQUESTS FOR FUTURE AGENDA ITEMS

There was no board comment.

16. ADJOURNMENT

With no further discussion, Chair Hartung adjourned the meeting at 11:40 a.m.

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

Sonia Folsom, Recording Secretary

Member Jardon was present for agenda items 3 thru 16 only.

Member Lawson was present for agenda item 1 thru 7 and 11 only.

Vice Chair Dahir was present for agenda items 1 thru 9 and 11 only.



STAFF REPORT

TO:	Chairman and Board Members
THRU:	Mark Foree, General Manager
FROM:	John Zimmerman, Manager of Water Resources
DATE:	April 9, 2019
SUBJECT:	Discussion and possible action and direction to staff regarding 2019
	legislative activities, current bills, and TMWA recommended positions on
	legislative proposals

No new bills have been introduced since the last Board meeting that staff considers relevant or worthwhile to monitor. Accordingly, the TMWA legislative subcommittee has not needed to meet since April 12th. Staff, TMWA lobbyist Steve Walker, and General Counsel Michael Pagni will update the Board regarding the status of all water-related bills and other noteworthy legislation the Board has already directed TMWA to support or oppose. There has been considerable work done by staff, TMWA lobbyists, and Mr. Pagni on several water-related bills, including Senate Bill 250 and Assembly Bills 30 and 62. As of the date of this report, there has been no final action on those bills so staff will update the Board at the meeting. Attached is a list of all bills TMWA has adopted a position on and all water-related bills.

2019 Legislative Deadlines:

February 4-----Session Begins February 11----Legislators' BDR Requests March 18------Committees' Bill Introductions March 25------Committee Passage (1st House) April 23------First House Passage May 17------Committee Passage (2nd House) May 24------Second House Passage June 3------Session Ends

Sponsor	Status / Location	Last Meeting and Action	Next Meeting	Tags	Board/Committee Position
AB30	Revises provisions governin	g water. (BDR 48-214)			
Committee on Natural Resources, Agriculture, and Mining	Natural Resources	Senate Committee on Natural Resources 5/14/2019 4:00 PM	Senate Committee on Natural Resources - Work Session Item 5/17/2019 4:00 PM	Water Rights (WR-rights, resources, conservation)	OPPOSE
		Mentioned Not Agendized			
AB34	Revises provisions governin	g the investment of money held by the State	e or certain political subdivisions	s of the State. (BDR 31-476)	
Committee on Government Affairs	General File	Senate Committee on Government Affairs 5/10/2019 1:00 PM Do pass		Financial, Risk Management	SUPPORT
AB51	Revises provisions governin	g the management of water. (BDR 48-213)			
Committee on Natural Resources, Agriculture, and Mining	Failed Deadline:4/12/201914.3.1	Assembly Committee on Natural Wai Resources, Agriculture, and Mining reso 2/27/2019 4:00 PM Heard		Water Rights (WR-rights, resources, conservation)	WATCH
AB62	Revises provisions related to	o water. (BDR 48-215)			
Committee on Natural Resources, Agriculture, and Mining	Natural Resources	Senate Committee on Natural Resources 5/16/2019 4:00 PM Amend, and do pass as amended		Water Rights (WR-rights, resources, conservation)	OPPOSE
AB84	Provides for the issuance of	state general obligation bonds to protect, p	reserve and obtain the benefits	of the property and natural and o	cultural resources of the State of
Committee on Ways and Means	Ways and Means	Senate Committee on Government Affairs 3/15/2019 1:00 PM Mentioned No Jurisdiction		Property	SUPPORT
AB86	Revises provisions relating t	to governmental purchasing. (BDR 27-182)			
Committee on Government Affairs	Government Affairs	Senate Committee on Government Affairs 5/17/2019 1:00 PM		Financial, Risk Management	SUPPORT
AB95	Revises provisions relating t	to water. (BDR 48-504)			
Committee on Natural Resources, Agriculture, and Mining	General File	Senate Committee on Natural Resources 5/9/2019 4:00 PM Do pass		Water Rights (WR-rights, resources, conservation)	WATCH

Sponsor	Status / Location	Last Meeting and Action	Next Meeting	Tags	Board/Committee Position
AB101	Authorizes a private plaintif	f to bring an action for a declaratory judgme	nt regarding a violation of state	e law or a local ordinance by certa	ain governmental entities. (BDR 3-26)
Daly	Failed Deadline:4/12/201914.3.1	Assembly Committee on Judiciary 2/14/2019 8:00 AM		Financial, Risk Management, Open Meeting, Records, Boards, Elections, Public Works	OPPOSE
17100					
AB132	Revises provisions governin	g employment practices. (BDR 53-29)			000005
Neal, McCurdy and Flores	Commerce and Labor	Labor 5/15/2019 1:30 PM Amend, and do pass as amended		Human Resources	OPPOSE
AB136	Makes various changes rela	ting to public construction. (BDR 28-145)			
Frierson, Benitez-Thompson, Carlton, McCurdy, Daly, Assefa, Backus, Bilbray-Axelrod, Carrillo, Cohen, Duran, Flores, Fumo, Gorelow, Jauregui, Martinez, Miller, Monroe-Moreno, Munk, Neal, Nguyen, Peters, Spiegel, Swank, Thompson, Torres, Watts and Yeager	General File	Senate Committee on Government Affairs 5/15/2019 1:00 PM		Public Works	OPPOSE
-		Do pass			
AB138	Revises provisions governing	g workers' compensation. (BDR 53-708)			
Sprinkle, Carrillo, Flores, Monroe- Moreno, Frierson, Assefa, Backus, Benitez-Thompson, Bilbray-Axelrod, Cohen, Daly, Duran, Fumo, Gorelow, Martinez, Miller, Munk, Neal, Nguyen, Peters, Swank and Yeager	Failed Deadline:4/12/201914.3.1			Human Resources	OPPOSE
AB163	Revises provisions governing	g water conservation. (BDR 48-798)			
Assemblymen Watts, Cohen, Nguyen, Peters and Swank; Senators Brooks and Scheible	General File	Senate Committee on Natural Resources 5/9/2019 4:00 PM		Water Rights (WR-rights, resources, conservation)	WATCH
		Amend, and do pass as amended			

Sponsor	Status / Location	Last Meeting and Action	Next Meeting	Tags	Board/Committee Position				
AB220	B220 Requires the issuance of bonds for environmental improvement projects in the Lake Tahoe Basin. (BDR S-435)								
Committee on Ways and Means	General File	Senate Committee on Government Affairs 5/15/2019 1:00 PM		Financial, Risk Management, Water Quality (NDEP), Water Rights (WR- rights, resources, conservation)	SUPPORT				
AD 333	Dovisos provisions related to	Do pass							
AB233	Revises provisions related to	Sanata Committee on Natural		Dreparty Mater Dights (MD	MATCH				
Assemblymen Kramer, Hardy and Hafen; Senators Goicoechea, Parks and Settelmeyer	Natural Resources	Senate Committee on Natural Resources 5/16/2019 4:00 PM Do pass		rights, resources, conservation)	WATCH				
AB265	Requires the Desert Researc	ch Institute to conduct a study concerning wa	ater treatment and recycling. (I	3DR S-901)					
Assemblymen Peters, Swank and Watts; Senators Brooks, Goicoechea and Scheible	Failed Deadline:4/23/201914.3.2	Assembly Committee on Natural Resources, Agriculture, and Mining 4/3/2019 4:00 PM Amend, and do pass as amended		Water Quality (NDEP), Water Rights (WR-rights, resources, conservation)	SUPPORT, if amended				
AB371	Temporarily requires the re	porting of certain information relating to requ	lests for public records by certa	ain governmental entities. (BDR S	5-16)				
Daly	Government Affairs	Senate Committee on Government Affairs 5/8/2019 1:00 PM Heard, No Action		Open Meeting, Records, Boards, Elections	OPPOSE				

Sponsor	Status / Location	Last Meeting and Action	Next Meeting	Tags	Board/Committee Position
SB42	Repeals provisions requiring	certain fleets of motor vehicles to use altern	native fuels, clean vehicles or ve	ehicles that use alternative fuels.	(BDR 43-361)
Committee on Growth and Infrastructure	Growth and Infrastructure	Assembly Committee on Growth and Infrastructure 5/16/2019 1:30 PM Do pass		Emergency Mgmt, Safety, Motor Vehicles	SUPPORT
SB54	Revises provisions governing	g the annual reporting requirements of the T	ahoe Regional Planning Agency	. (BDR 22-205)	
Committee on Natural Resources	General File	Assembly Committee on Government Affairs 5/14/2019 8:30 AM Do pass		Governance	WATCH
SB136	Revises the provisions of the	e Tahoe Regional Planning Compact. (BDR 2	2-736)		
Committee on Government Affairs	General File	Assembly Committee on Government Affairs 5/14/2019 8:30 AM Do pass		Governance	WATCH
SB140	Revises provisions relating t	o the use of groundwater in certain basins. ((BDR 48-541)		
Committee on Natural Resources	Natural Resources, Agriculture, and Mining	Assembly Committee on Natural Resources, Agriculture, and Mining 5/15/2019 4:00 PM Amend, and do pass as amended		Water Rights (WR-rights, resources, conservation)	WATCH
SB207	Revises provisions governing	g apprentices. (BDR 28-740)			
Atkinson, Denis, Cannizzaro, Brooks, Cancela, Dondero Loop, Harris, Ohrenschall, Parks, Ratti, Scheible, Spearman and Woodhouse	Government Affairs	Assembly Committee on Government Affairs 5/16/2019 9:30 AM		Human Resources, Public Works	OPPOSE
		Amend, and do pass as amended			
SB231	Revises provisions relating t	o certain construction. (BDR 28-910)			
Brooks, Cannizzaro, Parks, Atkinson, Cancela, Denis, Harris, Ohrenschall, Ratti, Scheible and Woodhouse	General File	Senate Committee on Government Affairs 5/15/2019 1:00 PM		Financial, Risk Management, Public Works	OPPOSE
		After Passage Discussion			
SB232	Revises certain provisions re	elated to irrigation districts. (BDR 48-644)			
Settelmeyer	Governor	Assembly Committee on Natural Resources, Agriculture, and Mining 5/6/2019 4:00 PM Do pass		Governance, Water Rights (WR-rights, resources, conservation)	WATCH

Sponsor	Status / Location	Last Meeting and Action	Next Meeting	Tags	Board/Committee Position
SB236	Establishes provisions relation	ng to a change in the place of diversion of w	vater for certain wells. (BDR 48-	635)	
Goicoechea, Brooks and Hansen	Natural Resources, Agriculture, and Mining	Assembly Committee on Natural Resources, Agriculture, and Mining 5/17/2019 Upon Adjournment		Water Rights (WR-rights, resources, conservation)	SUPPORT
		Amend, and do pass as amended			
SB245	Revises provisions relating t	to civil actions. (BDR 3-965)			
Ohrenschall, Cannizzaro, Ratti, Parks, Pickard, Brooks, Cancela, Denis, Dondero Loop, Spearman and Woodhouse	Finance	Senate Committee on Judiciary 4/12/2019 8:00 AM		Financial, Risk Management, Governance	OPPOSE
		Amend, and do pass as amended			
SB250	Revises provisions relating t	to the dedication of water rights. (BDR 48-66	64)		
Settelmeyer, Goicoechea, Hardy, Hansen and Seevers Gansert	Natural Resources, Agriculture, and Mining	Assembly Committee on Natural Resources, Agriculture, and Mining 5/15/2019 4:00 PM Amend, and do pass as amended		Water Rights (WR-rights, resources, conservation)	OPPOSE, unless amended
SB280	Revises provisions relating t	to state lands. (BDR 26-975)			
Settelmeyer, Kieckhefer and Goicoechea	Failed Deadline:4/12/201914.3.1	Senate Committee on Natural Resources 4/4/2019 4:00 PM Heard, No Action		Property, Water Rights (WR- rights, resources, conservation)	OPPOSE, as written
SB287	Revises provisions governing	g public records. (BDR 19-648)			
Parks, Hansen, Spearman, Denis and Woodhouse	Finance	Senate Committee on Government Affairs 4/12/2019 Upon Adjournment Re-refer		Governance, Open Meeting, Records, Boards, Elections	OPPOSE

Sponsor	Status / Location	Last Meeting and Action	Next Meeting	Tags	Board/Committee Position
SB334	Establishes provisions relation	ng to net neutrality. (BDR 27-68)			
Senator Cannizzaro; Assemblywoman Bilbray-Axelrod	Finance	Senate Committee on Government Affairs (Floor Meeting) 4/10/2019 11:45 AM Re-refer		Financial, Risk Management, Governance, Information Tech	OPPOSE
SB340	Revises provisions relating t	to public works. (BDR 28-808)			
Dondero Loop, Parks, Brooks, Cancela, Cannizzaro, Ratti and Woodhouse	Finance	Senate Committee on Government Affairs 4/12/2019 Upon Adjournment Amend, and do pass as amended		Public Works	OPPOSE
SB358	Revises provisions relating t	to the renewable energy portfolio standard.	(BDR 58-301)		
Brooks, Cannizzaro, Denis, Spearman, Woodhouse, Ohrenschall, Parks, Scheible and Washington	Governor	Assembly Committee on Growth and Infrastructure 5/9/2019 1:30 PM		Energy	OPPOSE, unless amended
		Mentioned no jurisdiction			
SB499	Creates the Advisory Board	on Water Resources Planning and Drought F	Resiliency. (BDR 48-1243)		
Committee on Finance	Natural Resources	Senate Committee on Finance and Assembly Committee on Ways and Means, Subcommittees on General Government 4/25/2019 8:00 AM Mentioned No Jurisdiction		Governance, Water Rights (WR-rights, resources, conservation)	WATCH
SCR1	Directs the Legislative Comr 117)	mittee on Energy to conduct an interim study	y concerning the development of	of renewable energy and clean er	nergy resources in this State. (BDR R-
Spearman, Brooks, Denis, Parks, Harris, Ohrenschall, Ratti and Woodhouse	Legislative Operations and Elections	Senate Committee on Legislative Operations and Elections 4/17/2019 3:30 PM		Energy	WATCH
		Heard, No Action			



STAFF REPORT

TO:Board of DirectorsTHRU:Mark Foree, General ManagerFROM:Scott Estes, Director of EngineeringDATE:13 May 2019SUBJECT:Introduction and First Reading of Amendments to TMWA Rate Schedule
WSF- Water System Facility Charges Revising Area Fee, Supply and
Treatment, and Storage Unit Costs and to TMWA Rate Schedule BSF –
Business Services Fees

RECOMMENDATION

Staff submits for the Board's consideration for First Reading the attached redline of TMWA's Rate Schedule WSF-Water System Facility Charges to revise and update Area Fee, Supply and Treatment, and Storage Unit Costs based on current collection of revenues and cost information. In addition, staff submits for the Board's consideration for First Reading the attached redline of TMWA's Rate Schedule BSF-Business Services Fees to revise and update application fees, engineering review fees and inspection fees based on current collection of revenues and cost information. The Second Reading and adoption of these rate adjustments is scheduled for the Board's June 19, 2019 meeting with changes, if adopted, to be effective July 1, 2019.

DISCUSSION

Rate Schedule WSF contains Area Fee and Facility Charge Unit Costs which are used to calculate fees that TMWA collects from new development to reimburse the utility for facility improvements required to meet the demands of new growth. Area Fee Unit Costs, Supply and Treatment Facility Unit Costs, and Storage Facility Unit Costs apply only to developers applying for new or expanded water service, and <u>do not</u> affect the costs or rates to serve existing customers. In other words, pursuant to prior Board direction on customer rates: growth pays for growth.

Area Fee Unit Costs are applied on a maximum day demand and geographic basis based on the cost to expand the capacity of the water system in specific areas where growth is occurring. Facility Charges is a collective term referring to Supply-Treatment Facility Charges and Storage Facility Charges (STS Charges) that generally apply to growth occurring anywhere in the TMWA system. The only change proposed to the current Area Fee boundaries is the addition of Area 7 (Verdi). A brief background and description of the methodology to calculate the new fees was provided in a separate slide show. Table 1 presents a summary of the proposed changes and provides a comparison with existing Fees and Facility Charges.

At face value, the proposed increases in the Area Fee Unit Costs shown in Table 1 appear to be extremely large; however, the WSF unit costs are only half the equation since the unit cost is multiplied by maximum day demand (MDD) to arrive at the actual fee and ultimately, the focus should be on the cost per residential unit. An explanation of the higher Area Fee unit costs begins

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with information presented in the last Water Resource Plan (WRP) update. Since the early 2000's, overall water production has been decreasing while population and service count has been increasing. These lower unit demands translate directly into lower future demand projections. The projections presented in the draft 2015-2035 Water Facility Plan (2035 WFP) indicate that new business demand factors should be modified going forward. Existing and proposed demand factors are presented in Table 2. Also included in Table 2 is a comparison of MDD based on the existing and proposed single family residential (SFR) MDD equation.

Future demand projections (growth) are the denominator in the calculation of WSF unit costs. If the numerator (facility costs) remains constant, a lower denominator will result in the calculation of a higher unit cost. However, as mentioned above, these higher unit costs are moderated somewhat by the new lower demand factors that are used to generate the maximum day demand (MDD) for new business projects. The actual fees paid by growth are a result of the unit costs multiplied by the MDD. The actual cost of TMWA fees for a SFR unit on a typical 6000 square foot (SF) lot is shown in Table 3. Considering that finance charges have been accruing for six years and the cost of construction has also increased, an increase per SFR was expected.

Review of historical construction costs and recent construction bids received by TMWA indicate that pipeline costs have not changed significantly; pumping facility and well construction costs have increased significantly; and water storage tank costs are in-line with engineering estimates. The proposed increases in the Area Fees and STS Charges are primarily a result of replacing estimated costs with actual costs; incorporating new facility costs that were not contained in the WFP during the last revision cycle; and the addition of finance charges.

The facility cost increases are needed to ensure that TMWA is reimbursed for the cost to construct improvements to provide additional capacity to serve growth. If adopted, the new Area Fees and STS Charges will apply only to applications for new or expanded water service, and do not affect the cost to serve existing customers. Based on the latest demand projections, construction of many of the future projects recommended in the WFP are still required but will be delayed as compared to previous WFP projections. Staff will continue to review and incorporate opportunities to delay WFP improvements if service levels are not reduced.

The proposed rate changes were presented to a meeting of the Infrastructure & Planning Committee of BANN on April 18, 2019 and during a public workshop conducted on April 24, 2019. No suggestions or significant comments resulted from those discussions. A similar presentation will be made to TMWA's Standing Advisory Committee (SAC) on June 4, 2019. In addition, a separate workshop focusing on the 2035 WFP will be conducted on May 29, 2019.

This is the First Reading of staff's proposed revisions to TMWA's WSF and BSF rates. The Second Reading public hearing is scheduled for the Board's June 19, 2019 meeting, with revisions, if adopted at that time, to be effective the start of business day July 1, 2019. Any comments, written or otherwise, that may be submitted to staff for the Board's further consideration on these proposed rule changes will be brought to the Board at the Second Reading in June. In addition, at the second reading, staff will request formal Board approval/adoption of the 2035 WFP including the new demand factors. With approval, the WFP will be provided to the Health Authority.

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TABLE 1

PROPOSED TMWA AREA FEE AND FACILITY CHARGE UNIT COSTS

		(1)	(2)		
		Existing	New	Change	%
Area	Description	Fee	Fee	\$\$	Change
1	South Truckee Meadows	\$ 958	\$ 1,677	\$ 719	75%
2	Sparks-East Reno	\$ 1,711	\$ 2,627	\$ 916	54%
2A	Sparks-Inside McCarran Ring	\$ 856	\$ 1,313	\$ 457	53%
3	NW Reno-Northgate/Mogul	\$ 1,575	\$ 3,679	\$ 2,104	134%
4	Sparks-Spanish Springs	\$ 2,877	\$ 4,483	\$ 1,606	56%
5	Sparks-The Vistas	\$ 4,555	\$ 7,167	\$ 2,612	57%
6	Sun Valley-Sullivan	\$ 1,309	\$ 2,311	\$ 1,002	77%
7	NW Reno-Verdi	n/a	\$ 7,916	n/a	n/a
8	Sierra-North Virginia	\$ 4,142	\$ 9,260	\$ 5,118	124%
9	Southwest Reno	\$ 1,838	\$ 3,290	\$ 1,452	79%
10	Stead-Silver Lake-Lemmon Valley	\$ 5,057	\$ 6,279	\$ 1,222	24%
11	Southeast Truckee Meadows	\$ 2,828	\$ 4,232	\$ 1,404	50%
12	Spanish Springs ⁽³⁾	\$ 5,789	\$ 9,384	\$ 3,595	62%
13A	Heppner Subdivision	\$ 1,011	\$ 2,085	\$ 1,074	106%
14	STMGID West/Thomas Creek	\$ 655	\$ 815	\$ 160	24%
15	Arrowcreek/Mt Rose	\$12,568	\$12,942	\$ 374	3%
	Truckee Canyon ⁽⁴⁾	n/a	\$ 8,036	n/a	n/a
	Supply-Treatment Facility Charge	\$ 4,163	\$ 6,328	\$ 2,165	52%
	Storage Facility Charge	\$ 772	\$ 1,658	\$ 886	115%

Notes to Table:

- Unit Costs are multiplied by maximum day demand to yield the actual fee. Existing unit costs for TMWA Areas became effective on 7/1/13 and were based on demands added and fees collected through 6/30/12. Existing TMWA fees included Finance Charges in Areas 3, 4, 5, 6, 8, 9 & 10 and STS Facility Charges. Existing unit costs for former County Areas became effective on 1/1/15 and included some finance charges (interest paid on bonds). Changes to Areas 14 and 15 were made in 6/1/15 and the consolidated Area 10 unit cost was established 6/16/16.
- Unit Costs are multiplied by maximum day demand to yield the actual fee. The proposed unit costs are based on demands added and fees collected through 6/30/18. Proposed unit costs are scheduled to go into effect on July 1, 2019 subject to the approval of the TMWA Board of Directors.
- 3. The Area 12 unit cost includes the Area 4 unit cost.
- 4. Truckee Canyon is a satellite system (located at Lockwood) where the water treatment plant capacity was expanded in 2016. There are no other improvements planned at any of the other satellite systems (Stampmill, Sunrise Estates, Old Washoe Estates, Lightning W) at this time.

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TABLE 2

Rate Code	Description	Old Max Day Demand (gpm)	Proposed Max Day Demand (gpm)	MD:AD Peaking Factor
GMWS	Commercial	AFA x 1.17	AFA x 1.08	1.58
MIS	Metered Irrigation	AFA x 0.38	AFA x 1.73	2.54
MMWS	Metered Multi-Unit Residential	0.15 gpm/unit	0.14 gpm/unit	1.37
RMWS	Metered Residential	see below	see below	2.13

MDD & PEAKING FACTORS BY RATE CLASS

Notes:

1. AFA = Acre Feet Annually; AFA x Multipliers above yield a value in GPM.

2. All results include a 10% Non-Revenue Water factor. Irrigation not included in C&I and MFR results.

3. Max Day Demands are based on Average Day of Max Month x 1.15 Peaking Factor.

4. Residential MDD is calculated on a lot-size basis to account for domestic + irrigation.

SFR MDD EQUATION

SFR Demand Equation is in the form: (Regression Constant) x SQRT(Lot Size, SF)

Old Equation: MDD (gpm) = 0.0090 x SQRT(Lot Size, SF) New Equation: MDD (gpm) = 0.0066 x SQRT(Lot Size, SF)

<u>New Equation Constant</u> =	<u>0.0066</u>	=	0.73
Old Equation Constant	0.0090		

Acre	SF	OLD	NEW	
Lot Size	Lot Size	MDD	MDD	<u>RATIO</u>
	6000	0.7	0.5	0.73
	7000	0.8	0.6	0.73
	8000	0.8	0.6	0.73
	9000	0.9	0.6	0.73
	10000	0.9	0.7	0.73
0.25	10890	0.9	0.7	0.73
	12000	1.0	0.7	0.73
	13000	1.0	0.8	0.73
	14000	1.1	0.8	0.73
0.33	14520	1.1	0.8	0.73
0.50	21780	1.3	1.0	0.73

Due to significant deviation from the curve (data scatter) for lot sizes greater than about 1.25 acres, the MDD for SFR uses will be capped at 1.5 GPM.

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TABLE 3

WSF FEES PER SFR UNIT ON 6000 SF LOT (MDD = 0.5 GPM)

		Storage		Total WSF	
Location	Area Fees	Fee	S-T Fee	Fees	Comment
NW Reno – Area 3	\$1,840	\$829	\$3,164	\$5,833	
Kiley Ranch – Area 4	\$2,242	\$829	\$3,164	\$6,235	
No. Valleys – Area 10	\$3,140			\$3,140	w/Vidler Resource
Double Diamond – Area 11	\$2,116		\$3,164	\$5,280	
Spanish Springs – Area 12	\$4,692		\$3,164	\$7,856	
Mt Rose - Area 15	\$6,471			\$6,471	

CHANGE IN FEES PER SFR UNIT ON 6000 SF LOT (vs Existing Fees)

Location	Change in Cost Per SFR Unit	% Change
NW Reno – Area 3	\$1,276	28%
Kiley Ranch – Area 4	\$766	14%
No. Valleys – Area 10	(\$3,314)	(51%)
Double Diamond – Area 11	\$386	8%
Spanish Springs – Area 12	\$889	13%
Mt Rose - Area 15	(\$2,327)	(26%)

RATE SCHEDULES

WSF – WATER SYSTEM FACILITY CHARGES

APPLICABILITY

Pursuant to procedures set forth in Rule 5, Applicants for new Service or Modified Service to a Service Property(ies) are subject to Water System Facility (WSF) Charges. WSF Charges are based on the Maximum Day Demand estimated in gallons per minute (GPM) by the Authority to serve the Service Property(ies) multiplied by the following Unit Costs. WSF Charges will be assessed where applicable and as identified in the Water Service Agreement.

A. Area Facility Unit Cost by Charge Area

	Charge Area	Amount	
0	Central Reno	\$0.00	per GPM
1	South Truckee Meadows	\$9581,677.00	per GPM
2	Sparks-East Reno	1,7112,627.00	per GPM
2A	Sparks-Inside McCarran Blvd	8561,313.00	per GPM
3	Northwest Reno – Northgate/Mogul	1,5753,679.00	per GPM
4	Sparks – Pyramid/Spanish Springs	2,8774,483.00	per GPM
5	Sparks – The Vistas	4,5557,167.00	per GPM
6	Sun Valley-Sullivan Pump Zones	1,3092,311.00	per GPM
7	Verdi	TBD-7,916.00	per GPM
8	Sierra-North Virginia Pump System	4,1429,260.00	per GPM
9	Lakeridge-Plumas Pump System	1,8383,290.00	per GPM
10	Stead–Silver Lake–Lemmon Valley	5,057 <u>6,279</u> .00	per GPM
11	Southeast Truckee Meadows	2,8284,232.00	per GPM
12	Spanish Springs	5,7899,384.00	per GPM
13A	Heppner*	1,011 <u>1,349</u> .00	per GPM
14	STMGID West/Thomas Creek	655 <u>815</u> .00	per GPM
15	Arrowcreek/Mt. Rose**	12,56812,942.00	per GPM
	Truckee Canyon	8,036.00	per GPM

Where a Service Property is not located within an established Charge Area described above or where the Area Facility Unit Cost for that Charge Area has not been established, applicable Area Facility Unit Costs shall be determined by Authority on a case by case basis and may include charges for on-site and off-site improvements, including Oversizing Costs, to integrate new Water System Facilities or to connect to, expand, relocate or alter existing water Facilities, determined by the Authority as necessary to facilitate annexation of the Service Property into the Authority's Retail Service Area and/or development of the Charge Area or Charge Area Unit Cost to be established, as set forth in the Annexation Agreement or Water Service Agreement between Applicant and Authority.

* Charge Area 13A is subject to an additional charge of \$5,490.00 per lot for on-site distribution improvements.

** Component of fee includes estimated costs of acquiring supplemental resource supply. Fee may be reducd to \$7,618.00<u>\$8,641.00</u> upon Applicant dedication of an acceptable combination of groundwater and creek water rights to satisfy supplemental conjunctive use supply as determined by the Authority pursuant to its Rule 7.

Added: 06/18/03 Amended: 10/01/03; 01/21/04; 03/01/05; 10/18/06; 03/01/08; 05/21/09; 05/21/10; 06/19/13; 10/15/14; 01/01/15; 05/21/15; 06/16/16, 07/01/19

RATE SCHEDULES

WSF – WATER SYSTEM FACILITY CHARGES

B. Supply and Treatment Facility Unit Cost By Charge Area

"Supply and Treatment Facility Unit Cost" is the unit cost in dollars per GPM of Maximum Day Demand, representing the cost to construct and finance supply/treatment improvements identified in the Authority's facility plan.

	Charge Area	Amount	
0	Central Reno	\$4,1636,328.00	per GPN
1	South Truckee Meadows	4,1636,328.00	per GPN
2	Sparks-East Reno	4,1636,328.00	per GPN
2A	Sparks-Inside McCarran Blvd	4,1636,328.00	per GPN
3	Northwest Reno – Northgate/Mogul	4,1636,328.00	per GPN
4	Sparks – Pyramid/Spanish Springs	4,1636,328.00	per GPN
5	Sparks – The Vistas	4,1636,328.00	per GPN
6	Sun Valley-Sullivan Pump Zones	4,1636,328.00	per GPN
7	Verdi	TBD6,328.00	per GPN
8	Sierra-North Virginia Pump System	4,1636,328.00	per GPN
9	Lakeridge-Plumas Pump System	4,1636,328.00	per GPN
10	Stead-Silver Lake-Lemmon Valley*	4,1636,328.00	per GPN
11	Southeast Truckee Meadows	4,1636,328.00	per GPN
12	Spanish Springs	4,1636,328.00	per GPN
13A	Heppner	0.00	per GPN
14	STMGID West/Thomas Creek	4,1636,328.00	per GPN
15	Arrowcreek/Mt. Rose	0.00	per GPN
	Satellite Systems**	6,328.00	per GPN

* For Area 10 growth dedicating Fish Springs groundwater resources, the Supply-Treatment Facility Unit Cost is 0 (zero).

** Satellite Systems include Truckee Canyon, Stampmill, Sunrise Estates, Old Washoe Estates and Lightning W.

Added: 06/18/03 Amended: 10/01/03; 01/21/04; 03/01/05; 10/18/06; 03/01/08; 05/21/09; 05/21/10; 06/19/13; 10/15/14; 01/01/15; 05/21/15; 06/16/16, 07/01/19

RATE SCHEDULES

WSF - WATER SYSTEM FACILITY CHARGES

C. Storage Facility Unit Cost By Charge Area

"Storage Facility Unit Cost" is the unit cost in dollars per GPM of Maximum Day Demand, representing the cost to construct and finance storage improvements identified in the Authority's facility plan.

	Charge Area	Amount	
0	Central Reno	\$7721,658.00	per GPN
1	South Truckee Meadows	7721,658.00	per GPN
2	Sparks-East Reno	7721,658.00	per GPN
2A	Sparks-Inside McCarran Blvd	7721,658.00	per GPN
3	Northwest Reno – Northgate/Mogul	7721,658.00	per GPN
4	Sparks – Pyramid/Spanish Springs	7721,658.00	per GPN
5	Sparks – The Vistas	7721,658.00	per GPN
6	Sun Valley-Sullivan Pump Zones	7721,658.00	per GPN
7	Verdi	TBD0.00	per GPN
8	Sierra-North Virginia Pump System	7721,658.00	per GPN
9	Lakeridge-Plumas Pump System	7721,658.00	per GPN
10	Stead–Silver Lake-Lemmon Valley	0.00	per GPN
11	Southeast Truckee Meadows	0.00	per GPN
12	Spanish Springs	0.00	per GPN
13A	Heppner	0.00	per GPN
14	STMGID West/Thomas Creek	0.00	per GPN
15	Arrowcreek/Mt. Rose	0.00	per GPN
	Satellite Systems	0.00	per GPN

NOTE: The following map depicts only approximate boundaries of the Charge Areas because the Authority's distribution system undergoes frequent modification, Charge Area boundaries are subject to frequent adjustment and the exact boundaries of the Charge Areas shall be maintained by and may be adjusted from time to time by the General Manager of the Authority. The Authority attempts to keep a current map posted on its website, at www.tmwa.com; however, this map may not show sufficient detail to depict Charge Areas precisely. Pursuant to Rule 5 the Authority will determine the Charge Area and associated Area Facility charges to serve the Applicant's Service Property(ies) at the time of application based on the most current Charge Area boundary information maintained by the General Manager of the Authority.

Added: 06/18/03 Amended: 10/01/03; 01/21/04; 03/01/05; 10/18/06; 03/01/08; 05/21/09; 05/21/10; 01/01/15; 05/21/15; 06/16/16, 07/01/19

RATE SCHEDULES

WSF - WATER SYSTEM FACILITY CHARGES



RATE SCHEDULES

WSF - WATER SYSTEM FACILITY CHARGES



TRUCKEE MEADOWS WATER AUTHORITY

DEVELOPER FACILITY CHARGE & NEW BUSINESS FEES UPDATE

April 2019



Page 1 of 13

History of TMWA Facility Charges Attachment 2

TMWA Board established a policy that no customer class shall be subsidized by another class and that growth should pay for growth.

- March 2002: Feeder Main Fees implemented.
- June 2003: Supply/Treatment and Storage Facility Charges implemented
- Facility Charges were revised in March 2005, November 2006, March 2008 and July 2013.
- For the November 2006 revisions, BANN hired consultants (engineering & accounting) to review the fee calculations and with minor corrections, approved of TMWA methodology.
- Proposed Effective Date of these revisions 7/1/19.

O5-23-19 BOARD Agenda Item 8 How Does Growth Pay for Growth at TMWA? Attachment 2

- Supply/Treatment Facility Charges
 - This charge pays for facilities such as wells, raw water supply improvements and treatment plant costs. S-T facilities and costs are included in some Area Fees at locations at the periphery of the system (Mt Rose, North Valleys).
- Storage Facility Charges
 - This charge pays for storage facility improvements needed to provide the emergency and operational storage requirements of growth. In many cases, new development will design, build and dedicate new storage facilities in lieu of paying Storage Facility Charges. Storage facilities and costs are included in some Area Fees at locations at the periphery of the system.
- Area Fees
 - Area fees pay for water main capacity and pumping systems to transmit the additional demand through the existing distribution system. Area Fees vary depending on the location of the new development – different improvements are required for different areas.
- Facility Charges and Area Fees are applied on a maximum day demand (GPM) basis.
- Facility Charges and Area Fees are not paid by existing customers and are not included in water rates.

WHY ARE REVISIONS NECESSARY?

- Facility cost estimates are not adjusted for inflation, so it is necessary to update the cost estimates on a regular basis.
- Comprehensive planning for former Washoe County systems had not been performed until recently. The original Area Fees for these systems were based on merger due diligence analyses and the calculations used available supply as a proxy for growth.
- Actual expenditures for major supply system projects could be significantly more or less than the estimated costs used to calculate the current Fees and Facility Charges depending on the economy and market prices.
- Significant under-collection of costs in some areas and categories have been carried by TMWA for the last six years and this situation will likely continue for the foreseeable future; thus application of a finance or "carrying" charge is necessary.
- Since the last update, unit water demands have decreased primarily due to the following factors:
 - Conversion to a 3-day per week irrigation schedule in 2010
 - Conversion of all residential flat rate customers to a metered rate in 2015
 - Demand hardening as a result of conservation during the drought of 2014-15

The combined result of these factors is a decrease in the demand of future growth. This is the denominator in the Fee calculations – a smaller denominator yields a larger result.

RECENT FACILITY COSTS

- Average water main cost = \$19/in-LF
 - Current estimates generally utilize \$20 per in-LF but can range between \$16-\$22 per in-LF depending on whether it is new construction in the dirt or within existing pavement with extensive traffic control.
- Average pump station cost = \$1.3M (w/generator)
 - Current estimates utilize \$1.2M per station (no generator). Most new pump stations are paid for directly by new development.
- Average well cost = \$2.0M
 - Total cost depends on drilling costs (diameter, depth) but well costs have gone up considerably in the last six years.
- Average tank cost = \$1.01 per gallon
 - Current estimates utilize \$1.00/gallon for steel and \$2.00 for concrete.

UPDATE METHODOLOGY

- TMWA has just completed an update of its Water Facility Plan for the 2015-2035 planning period. Given latest demand projections and considering where growth will occur, staff determines if previous WFP improvements are still applicable and/or if new improvements are required.
- Given the latest construction bid results and considering historical costs, determine if facility cost estimates are still valid, or if modifications are appropriate.
- Update estimated costs with actual costs as necessary.
- Update the facility charges collected in each area.
- Update GPM added/sold in each area.
- Total costs less developer charges paid, divided by GPM remaining to be sold = new/revised Area Fee or Facility Charge.

AREA FEE/FACILITY CHARGE SUMMARY:

<u>Area</u>	Description	E	xisting <u>Fee</u>	P	roposed <u>Fee</u>	Ir	ncrease <u>\$\$</u>	Increase <u>%</u>
1	South Truckee Meadows	\$	958	\$	1,677	\$	719	75%
2	Sparks-East Reno	\$	1,711	\$	2,627	\$	916	54%
2A	Sparks-East Reno - A	\$	856	\$	1,313	\$	457	54%
3	Northwest Reno-Northgate/Mogul	\$	1,575	\$	3,679	\$	2,104	134%
4	Sparks-Pyramid/Spanish Springs	\$	2,877	\$	4,483	\$	1,606	56%
5	Sparks-The Vistas	\$	4,555	\$	7,167	\$	2,612	57%
6	Sun Valley-Sullivan	\$	1,309	\$	2,311	\$	1,002	77%
7	Northwest Reno-Verdi	\$		\$	7,916	\$	n/a	n/a
8	Sierra-North Virginia	\$	4,142	\$	9,260	\$	5,118	124%
9	Lakeridge-Plumas	\$	1,838	\$	3,290	\$	1,452	79%
10	Stead-Silver Lake	\$	5,057	\$	6,279	\$	1,222	24%
11	Southeast Truckee Meadows	\$	2,828	\$	4,232	\$	1,404	50%
12	Spanish Springs	\$	5,789	\$	9,384	\$	3,595	62%
13A	Heppner Subdivision	\$	1,011	\$	2,085	\$	1,074	106%
14	STMGID West/Thomas Creek	\$	655	\$	815	\$	160	24%
15	Arrowcreek/Mt Rose	\$	12,568	\$	12,942	\$	374	3%
	Supply-Treatment Fee	\$	4,163	\$	6,328	\$	2,165	52%
	Storage Fee	\$	772	\$	1,658	\$	886	115%

In practice, the higher Area Fee unit costs are moderated by a reduction in maximum day demand (MDD). Based on a typical 6000 SF residential lot, the old equation (MDD as a function of lot size) yields a MDD of 0.70 GPM but the new equation yields a MDD of only 0.50 GPM for the same size lot.

The SFR dema	nd vs. lot s	ize curve is	s in the forn	n: Regress	sion Consta	ant x (Lot S	Size, SF) ^{0.5}
New Equation:	0.0066 x	SQRT(Lot S	Size, SF)				
Old Equation:	Equation: 0.0090 x SQRT(Lot Size, SF)						
Unit Demand Ad	ljustment:	New SFR	Equation C	onstant =	<u>0.0066</u>	=	0.73
		Old SFR E	Equation Co	onstant =	0.0090		
Acre	SF	NEW	OLD				
Lot Size	Lot Size	<u>MDD</u>	<u>MDD</u>	<u>RATIO</u>			
	6000	0.5	0.7	0.73			
	7000	0.6	0.8	0.73			
	8000	0.6	0.8	0.73			
	9000	0.6	0.9	0.73			
	10000	0.7	0.9	0.73			
0.25	10890	0.7	0.9	0.73			
	12000	0.7	1.0	0.73			
	13000	0.8	1.0	0.73			
	14000	0.8	1.1	0.73			
0.33	14520	0.8	1.1	0.73			
0.50	21780	1.0	1.3	0.73			

05-23-19 BOARD Agenda Item 8 FEE IMPACT TO A TYPICAL SUBDIVISION LOT Attachment 2

The actual fee paid is the MDD x Area Fee Unit Cost. The overall impact of the new facility charges and area fees on the cost of a house on a typical 6000 SF lot:

	Total TMWA	Change in
	Fees Per	Cost Per
Location	SFR Unit	SFR Unit
Area 4 – Kiley Ranch	\$6,235	\$ 766
Area 10 – North Valleys	\$3,140	\$(3,314)
Area 11 – Double Diamond	\$5,280	\$ 386
Area 12 – Spanish Springs	\$7,856	\$ 889
Area 15 – Mt Rose	\$6,471	\$(2,327)

The decrease in Area 10 is primarily due to elimination of the Supply-Treatment Fee since it is assumed that the Vidler Resource will be used.

The decrease in Area 15 is primarily due to the new/lower unit demand factor.

TYPICAL FACILITY CHARGE WORKSHEET

NORTH VALLEYS AREA FACILITY CHARGE

Updated thru 6/30/18 Revision Date 12/22/18

		Total	Exist.	New	Cost to	
Project	<u>FY</u>	<u>Cost</u>	Cust.	Growth	Growth	<u>Comments</u>
Silver Lake Main Imp.	2005	\$ 985,208	0.000	1.000	\$ 985,208	actual costs
Stead/Peavine Mains - 395 Bore	2005	\$ 965,659	0.780	0.220	\$ 212,445	actual costs
Raleigh-Stead Tie (Trading Post)	2007	\$ 1,524,433	0.000	1.000	\$ 1,524,433	actual costs
Stead-N.Virginia Backbone	2008	\$ 29,584,852	0.220	0.158	\$ 4,679,367	actual costs
Horizon Hills BPS Land	2003	\$ 193,000	0.000	1.000	\$ 193,000	actual costs
Horizon Hills Tank #2	2008	\$ 1,744,000	0.000	1.000	\$ 1,744,000	actual costs
Silver Lake Parallel Main	2010	\$ 331,347	0.000	1.000	\$ 331,347	actual costs
Lemmon Valley Well #9	2003	\$ 530,000	0.000	1.000	\$ 530,000	actual costs
Lemmon Valley Water Mains	2008	\$ 441,000	0.000	1.000	\$ 441,000	actual costs
Raleigh Heights #3	2008	\$ 3,722,356	0.000	0.500	\$ 1,861,178	50% of costs to Area 8
Well #9 Electrical Power	2015	\$ 52,000	0.000	1.000	\$ 52,000	actual costs
Bravo Intertie (Fish Springs)	2014	\$ 721,125	0.000	1.000	\$ 721,125	actual costs
Lemmon Drive Main	2016	\$ 9,635,646	0.140	0.820	\$ 7,901,230	actual costs
N.Virginia 18" (Lemmon-GV Dr)	2016	\$ 798,328	0.220	0.158	\$ 126,136	actual costs
Raleigh-Stead Gravity Main	2017	\$ 3.251.300	0.780	0.220	\$ 715.286	actual costs
pH Adjustment Facilities	2017	\$ 2.021.966	0.000	1.000	\$ 2.021.966	actual costs
Previous Expenditures		\$ 56,502,220			\$24.039.721	
Previous Finance Charges	;	+ , ,			\$ 1,577,417	
Finance Charge for This Per	iod				\$ 6,234,723	
Subtotal - Previous Costs	lou				\$31 851 861	
					¢01,001,001	
Raleigh-Fish Springs BPS	2023	\$ 1 900 000	0.000	1 000	\$ 1 900 000	
Stead Golf Course Main Rent	2023	\$ 2,470,000	0.000	0.220	\$ 543,400	assumes 1/" rent
Fish Springs Tank #2	2024	\$ 2,470,000	0.700	1 000	\$ 2,000,000	2 5MG tank on ovist nad
Poaking Wolls	2025	\$ 2,000,000	0.000	1.000	\$ 2,000,000	2 wolls at 900 GPM oach
Feaking Weils	2011	\$ 10 370 000	0.000	1.000	\$ 9 443 400	2 wens at 500 GPW each
Future Experiatures		\$ 10,370,000			\$ 0,443,400	
Total Expanditures					\$40 205 261	
	od				\$40,295,201	(thrus 6/20/12)
Less rees rieviously collect	ieu. ied:				\$ (4,400,307)	(III U 6/30/12) 7/4/42 three 6/20/48
Less rees Collected This Per	100:				\$ (040,000) \$25,490,449	//1/12 thru 6/30/18
Balance Remaining:					\$35,162,446	
Growth		5,727	GPM		20-yr growth =	5727 GPM (6449 - 722)
Less Previous Sales		0				
Less Sales This Period		<u>(124)</u>			7/1/15 thru 6	/30/18
Net Remaining GPM		5,603	GPM			
AREA 10 FEE	=	<u>\$35,182,448</u>	=		\$6279 /GPM	
UNIT COST		5603 GPM				
The Area Fee Includes a	Finance	Component of:			\$1394 /GPM	22.2%

Estimated

New Business Fees

- New Business Fees such as application fees, design review fees and inspection fees have not been updated since 2012.
- New Business Fees pay for the time of Project Coordinators, Engineers and Inspectors who are directly involved in the new business process.
- TMWA is a not-for-profit organization, so we are only concerned with covering our actual costs to provide necessary new business services.
- A comparison of new business costs vs. new business fees collected for calendar year 2018 show the following:

	Costs	Fees	Collections
<u>Category</u>	Incurred	<u>Collected</u>	From New Fees
Inspection	\$1,342,403	\$1,135,530	\$1,222,400
Engineering	\$1,023,267	\$ 445,258	\$ 956,380
Water Rights	<u>\$ 158,685</u>	<u>\$ 64,400</u>	\$ not est.
Totals	\$2,524,355	\$1,645,188	
Proposed New Business Fees

	Engineering	Lands or Water	Inspection
Application Type &/Or New Business Service	Analysis/Review	Resources	&/or Crew
A. Residential – Single Service including separation of shared	\$300	\$150	\$200
service into single metered services (each additional	+\$30 per POI		+\$50 per POI
separate service is a POI)			
D. Osmannish Osmiss with up to 0 semiss tens/semiss lines/	¢700	¢450	¢200
B. Commercial Service with up to 3 service taps/service lines/	\$700	\$450	\$300 + \$450 man DOI
meter facilities (Domestic, Fire & Irrigation) – applies to	+\$30 per POI		+\$150 per POI
C Residential – Subdivision or Multi-Family	\$2 400	\$450	\$300
- Design Review - per final man or phase	+\$30 per POI	 	+\$150 per POI
D. Tenant Improvement with New or Deficit Demand with	\$150	\$300	
no new water facilities required			
E. Main Extensions – Alone or with any service	\$1,800		\$300, +\$2/LF
	+\$30 per POI		+\$150 per POI
F. Fire Hydrant or Fire Service (alone – tapping existing main)	\$300	\$150	\$200
G. Additional Engineering Review – per hour	\$150		
H. Retirements and Domestic Well Conversions	\$300	\$150	\$200

1. Hot taps up to 2" – by Authority			\$300
- Hot taps >2" up to 12" - by Authority			\$000
- Hot taps >12" - Licensed Specially Contractor hired by Applicant			\$200
L Brossuro Bogulating Stations	\$1 500	¢150	\$7 200
	\$1,500	\$150	\$7,200
K Annexation (includes Discovery)	\$2 400	\$300	
- Discovery – Level 1	\$2,400	<i></i>	
- Discovery – Level 2	\$3,600		
- Water Service Acknowledgement Letter	\$200		
- Hardship Letter – Parcel <500' from water system	\$200		
- Hardship Letter – Parcel >500' from water system	\$150		
L. Property & Water Rights Research & Documents			
- Research/verify title of non-permitted water rights, per parcel		\$450	
- Research/verify title of permitted water rights, per parcel		\$300	
- Research and establish easements, rights-of-way		\$300	
or tee property dedications, per parcel		A4	
- Document Preparation Including Will-Serve Letter, No Water		\$150	
Rights Required Letter, Banking Agreements, Deeds, etc.		per accument	
M. Deferred WRE Face (aubdivisions only). Setur & Decumentation	\$200		
Motor Sot Poquest, per request, groups or single	\$300		
- meter set request, per request, groups or single			
N II A Audit Fee per Res. Comm. or Main Project	\$100		
(applies to Items A, B, C, E and F)	<i>ψ</i>100		

END OF PRESENTATION

- QUESTIONS?
- DISCUSSION?
- FOLLOW UP CONTACT SCOTT ESTES AT 775-834-8033 OR <u>SESTES@TMWA.COM</u>
- NEXT STEPS:
 - Water Facility Plan Workshop Wed., May 29, 5:30 p.m., 1355 Capital Blvd.
 - TMWA Standing Advisory Committee (SAC) Meeting Tuesday, June 4, 2019,
 3:00 p.m. at TMWA's corporate office building 1355 Capital Blvd.
 - Second Hearing of proposed fees TMWA Board of Directors Meeting, Wednesday, June 19, 2019, 10:00 a.m. at the City of Sparks Council Chambers
 - With Board approval, new rates and fees go into effect on Monday, July 1, 2019.

Truckee Meadows Water Authority

RATE SCHEDULES

BSF - BUSINESS SERVICES FEES

APPLICABILITY

In order to provide delivery of water to a particular Service Property(ies) due to the addition of new Service or Modified Service to existing water system Facilities, an Applicant is subject to the following business services fees. Business services shall mean services provided by the Authority for the benefit of Applicants for new Service or Modified Service and may include, but are not limited to, modification of an existing Service(s), system planning; design review; permitting; right-of-way or easement acquisition; water rights review; inspection; and document preparation.

SPECIAL DEFINITIONS

"Annexation" is the development of the minimum water system facility plan along with required improvements and required agreements in order to annex single family residence parcels or commercial and multi-family parcels.

_"Design or Drafting" is the design or drafting by Authority staff of a new or modification to a service for the expansion of a single residential or existing commercial structure, and a construction drawing that will be approved by an Authority engineer exclusive of on-site or off-site water system Facility improvements.

"Design Report for NAC Compliance" shall mean the engineering analysis of existing and proposed water system Facilities for new subdivisions, water system planning, and/or expansion. Findings and conclusions from said studies shall be presented in report form to the Washoe County District Health Department District (WCHD) for their approval in compliance with NAC 445A.6666 and 445A.66695. In November 2018, the Authority. NDEP and WCHD entered into an Interlocal Agreement giving Authority the responsibility for design reviews for NAC Compliance. Authority continues to perform hydraulic modeling, supply and storage capacity calculations, etc. but those results are no longer presented to WCHD unless the project is selected for audit.

"Discovery Level 1" is the development of preliminary, major off-site water system Facility requirements along with key assumptions and costs where engineering staff time will be limited to less than twelve (12) hours. Discovery 1 scope of work will be limited to projects and site locations in the Authority's retail service area, and where extensive engineering planning and design is not required. The Applicant will receive a written description of preliminary off-site requirements and costs. In the event a project application exceeds the minimal planning/design scope of work requirements for Discovery 1, or the site is outside the Authority's retail service area, the Authority may reclassify and treat the project as a Discovery 2.

Added:06/18/03 Amended: 10/01/03; 07/19/06

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Truckee Meadows Water Authority

RATE SCHEDULES

BSF - BUSINESS SERVICES FEES

"Discovery Level 2" is the same as Discovery 1, but planning and design may require over twelve (12) hours of Authority's engineering staff time.

"Hardship Letters" shall be provided upon request by an Applicant for submittal to the State Engineer responding to the Authority's ability to serve the Service Property. The letter only provides an estimate of the costs for the Authority to serve the Service Property. For Service Properties less than 500-feet from the Authority's water system Facilities, the approximate main size, length and cost will be provided. For Service Properties greater than 500-feet from Authority's water system Facilities, the letter will state that the Service Property is over 500-feet from the Authority's water system without an estimate of the costs for the Authority to serve the Service Property.

"Point of Inspection" is water system Facilities and associated fittings that attach to a feeder or project main for main connections, Service Taps, Service Pipes, Meter Facilities, valves, trench and backfill requirements.

Applicant shall pay the Authority the applicable Business Service Fees for processing the Application and the installation of water system Facilities necessary to serve the Applicant, shown in the following table.

SPECIAL CONDITIONS

 Applicant's designs of water system Facilities shall be prepared by or under the direction of and wet-stamped by a Professional Engineer registered in the State of Nevada. After two submittals by Applicant to correct the designs of water system Facilities to Authority's satisfaction, Authority can charge additional, applicable Engineering and Planning Review Fees contained in this Rate Schedule.

Added: 06/18/03 Amended: 10/01/03; 07/19/06

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Attachment 3

		BSF - BUSINESS SERVICES	FEES	Server Sec.	
			Engineering and <u>Resources</u>	Design or Drafting of <u>"W-1" Plan</u>	Inspection of Distribution Crew
1	Desi	gn report or letter for NAC compliance			/
1	1	Final map per phase	\$1,500.00	na	na
	2.	Tentative Map	One Horn F		
		a. Discovery Fee		na	10
		b. Water Service Acknowledgement Letter	\$100.00	IIa	114
	3.	Other new or Modified water system Facilities:	1		
		a. Commercial	\$1,100.00	na	n
		 B. Multi-tenant Ecodor or project multiple 	\$1 100.00	na	na na
		c. Peeder of project man	\$1,100.00	na	i la
	Engii Facil	neering and planning review, approval, and inspection of water system ities	6 C		
	1.	New Service or, Modified Service for:			
		 Residential: single service tap with service pipe and meter facility (non-subdivision) 	\$150.00	\$500.00	\$150.00
		Residential: subdivisions, multi-tenant, and commercial/industrial with main	\$720.00	na	\$150.0
		i. Add for each point of inspection	\$15.00	na	\$150.00
		 Commercial, industrial, tenant improvements, irrigation, fire protection or non-potable (includes up to three service taps with service pipes and/or meter facilities) 	\$300.00	\$750.00	\$150.00
		i. Add for each additional service tap	\$150.00	\$250.00	\$150.00
	2.	Fire hydrant	\$150.00	\$500.00	\$150.00
	3.	Feeder or project main only	\$720.00	na	\$150.00
		a. Add per lineal foot	na	ná	\$1.00
		b. Add for each point of inspection along main	\$15.00	na	\$150.00
	4.	Retirements and domestic well disconnections	na	na	\$150.00
	Insta comr	llation of a Service Tap by Authority personnel on a pressurized pipe, nonly peterred to as a "hot tap"			b.
	1.	Tapping up to 2 inch hot tap ("Light" or 2-man crew)	na	na	\$400.00
	2.	Tapping greater than 2 to 12 inch hot tap ("Heavy" or 4-man crew)	na	na	\$500.00
	3	Tapping greater than 12 inches are subject to Authority rules, construction standards, and costs are the responsibility of Applicant	na	na	\$500.00
/		construction standards, and sould are the responsibility of Applicant	iia	iia	\$55510

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				1	Attachment 3
		Truckee Meadows Water Au RATE SCHEDULES	ithority		
2		BSF - BUSINESS SERVICES F	EES		
0	Press	ure regulating station design review and inspection (includes set-up of n)	\$430.00	na	\$2380.00
E.	Due d	liligence fees for water projects:		/	
	1, <i>I</i>	Annexation	\$1,500.00	na	na
	2. [Discovery – Level 1	\$720.00	na	na
	3. E	Discovery – Level 2	\$1440.00	na	na
	4. 1	Hardship Letters:			
	a	 For parcel or lot less than 500 ft from the Authority's water system facilities 	\$150.00	na	na
	t	5. For parcel or lot greater than 500 ft from the Authority's water system facilities	\$50.00	na	na
F.	Due d	iligence for property and water resources			
	1, C r	Due diligence fees to research and verify title of non-permitted water ights, per parcel	\$250.00	na	na
	2. C P	Due diligence fees to research and verify title of permitted water rights, per parcel	\$100.00	na	na
	3. E	Due diligence fees for tenant improvement or water resource credit(s) per parcel	\$150.00	na	na
	4. C	Due diligence fees for easement, right-of-way or fee property dedications ber parcel	\$150.00	na	na
	5, F C a	Preparation of documents including but not limited to Will-Serve Commitment Letter, No Water Rights Required Letter, deeds, banking agreements, state required applications, or Report of Conveyance, per locument (fee does not include State, county or other regulatory agency	\$100.00	na	na

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Truckee Meadows Water Authority RATE SCHEDULES BSF – NEW BUSINESS SERVICES FEES

Application Type &/Or New Business Service	Engineering Analysis/Review	Lands or Water <u>Resources</u>	Inspection <u>&/or Crew</u>
 Residential – Single Service including separation of shared service into single metered services (each additional separate service is a POI) 	\$300 +\$30 per POI	\$150	\$200 +\$50 per POI
B. Commercial Service with up to 3 service taps/service lines/ meter facilities (Domestic, Fire & Irrigation) – applies to applications for Industrial, Irrigation, Construction Water	\$700 +\$30 per POI	\$450	\$300 +\$150 per POI
C. Residential – Subdivision or Multi-Family - Design Review – per final map or phase	\$2,400 +\$30 per POI	\$450	\$300 +\$150 per POI
D. Tenant Improvement with New or Deficit Demand with no new water facilities required	\$150	\$300	
E. Main Extensions – Alone or with any service	\$1,800 +\$30 per POI		\$300, +\$2/LF +\$150 per POI
F. Fire Hydrant or Fire Service (alone – tapping existing main)	\$300	\$150	\$200
G. Additional Engineering Review – per hour	\$150		
H. Retirements and Domestic Well Conversions	\$300	\$150	\$200
 I. Hot taps up to 2" - by Authority - Hot taps >2" up to 12" - by Authority - Hot taps >12" - Licensed Specialty Contractor hired by Applicant 			\$300 \$550 \$200
J. Pressure Regulating Stations	\$1,500	\$150	\$7,200
 K. Annexation (includes Discovery) Discovery – Level 1 Discovery – Level 2 Water Service Acknowledgement Letter Hardship Letter – Parcel <500' from water system Hardship Letter – Parcel >500' from water system 	\$2,400 \$2,400 \$3,600 \$200 \$200 \$150	\$300	
 L. Property & Water Rights Research & Documents Research/verify title of non-permitted water rights, per parcel Research/verify title of permitted water rights, per parcel Research and establish easements, rights-of-way or fee property dedications, per parcel Document Preparation including Will-Serve Letter, No Water Rights Required Letter, Banking Agreements, Deeds, etc. 		\$450 \$300 \$300 \$150 per document	
 M. Deferred WSF Fees (subdivisions only), Setup & Documentation Meter Set Request, per request, groups or single 	\$300 \$200		
N. ILA Audit Fee, per Residential, Commercial or Main Project (applies to Items A, B, C, E and F)	\$100		



STAFF REPORT

SUBJECT:	Presentation of financial performance for the third quarter ended March 31, 2019
DATE:	May 14, 2019
	Matt Bowman, Financial Controller
FROM:	Michele Sullivan, Chief Financial Officer
THRU:	Mark Foree, General Manager
TO:	Board of Directors

Summary

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

Budget to Actual

	Actual	Budget		
	YTD 2019	YTD 2019	Variance \$	Variance %
CHANGE IN NET POSITION	25,151,783	14,400,498	10,751,285	75 %

Change in net position (or overall P&L) for the first three quarters of FY 2019 was \$10.8m more than budget. This is due to higher than budgeted operating revenues (\$1.3m), lower than budget operating expenses (\$3.0m), lower than budget nonoperating expense (\$2.5m) and higher than budget capital contributions (\$4.0m). These variances will be discussed in further detail in the sections below.

Year over Year

	Actual	Actual	Variance \$	Variance %
	110 2013	110 2010	Variance y	Variance /0
CHANGE IN NET POSITION	25,151,783	22,895,014	2,256,768	10%

Year over year, change in net position was \$2.3m more in the first three quarters of FY 2019 compared to the same period in FY 2018. This is due to higher operating revenues (\$4.3m), lower nonoperating expenses (\$1.7m), higher capital contributions (\$1.9m) offset by higher operating expenses (\$5.6m). These variances will be discussed in further detail in the sections below.

Revenue

Budget to Actual

	Actual	Budget		
	YTD 2019	YTD 2019	Variance \$	Variance %
OPERATING REVENUES				
Charges for Water Sales	77,831,631	76,031,074	1,800,557	2%
Hydroelectric Sales	1,862,429	2,110,284	(247,855)	(12_)
Other Operating Sales	2,254,287	2,543,500	(289,213)	(11)
Total Operating Revenues	81,948,347	80,684,858	1,263,489	2%

Operating revenue was \$1.3m higher than budget due to \$1.8m (2%) more in water sales offset by lower hydroelectric and other operating sales of \$0.5m.

Through the first half of FY 2019, water sales were \$2.0m (3%) over budget driven by additional services (growth) and higher usage by customers. However, during the third quarter, we saw water sales come in slightly lower than budget, \$0.2m (1.5%) less due to lower water usage by customers. Hydroelectric revenue remains under budget due to ongoing maintenance at the Fleish plant.

Year over Year

	Actual	Actual		
	YTD 2019	YTD 2018	Variance \$	Variance %
OPERATING REVENUES				
Charges for Water Sales	77,831,631	72,626,814	5,204,817	7 %
Hydroelectric Sales	1,862,429	2,801,076	(938,646)	(34)%
Other Operating Sales	2,254,287	2,239,413	14,874	1 %
Total Operating Revenues	81,948,347	77,667,302	4,281,045	6 %

Total operating revenues is \$4.3m (6%) higher than prior year through the third quarter. This is due mostly to higher water sales, offset by lower hydroelectric sales. Water sales increased due to the 3% rate increase in May 2018, additional service connections of 1.6% and increased water use of 2.9%. Hydroelectric sales are lower than prior year due mostly to the ongoing maintenance at Fleish.

Operating Expenses

Budget to Actual

	Actual	Budget		
	YTD 2019	YTD 2019	Variance \$	Variance %
OPERATING EXPENSES				
Salaries and Wages	15,625,043	15,769,462	(144,419)	(1)%
Employee Benefits	6,943,366	7,594,490	(651,124)	(9)%
Services and Supplies	20,710,162	21,948,732	(1,238,570)	(6)%
Total Operating Expenses Before Depreciation	43,278,570	45,312,683	(2,034,113)	(4)%
Depreciation	24,450,327	25,396,857	(946,531)	(4)%
Total Operating Expenses	67,728,897	70,709,540	(2,980,643)	(4)%

Total operating expenses are \$3.0m under budget. \$0.9m of this is non-cash depreciation. Employee benefit costs are under budget by \$0.7m, however this is expected to catch up to budget by the end of the fiscal year due to year-end OPEB and PERS adjustments. Services and supplies costs are \$1.2m under budget due largely to lower electric power and water treatment chemical costs which are under budget by approximately \$0.8m. Electrical power costs are lower due to Fish Springs coming online later than expected and chemical costs are lower due to lower treatment requirements in the surface water treatment plants than budgeted.

Year over Year

	Actual	Actual		
	YTD 2019	YTD 2018	Variance \$	Variance %
OPERATING EXPENSES				
Salaries and Wages	15,625,043	13,569,619	2,055,423	15%
Employee Benefits	6,943,366	6,312,501	630,866	10%
Services and Supplies	20,710,162	17,662,974	3,047,188	17%
Total Operating Expenses Before Depreciation	43,278,570	37,545,093	5,733,477	15%
Depreciation	24,450,327	24,572,690	(122,364)	—%
Total Operating Expenses	67,728,897	62,117,784	5,611,113	9%

Operating expenses through the third quarter 2019 were \$5.6m more than prior year. Increases in salaries and wages and employee benefits were caused by additions to headcount along with step and cost of living increases. Employee headcount has risen by approximately 10% since March 2018, much of which is temporary increases to backfill upcoming expected retirements where training is required. Services and supplies were higher due to several factors including general price increases in supplies and labor and also additional workload caused by continued growth in the service area. Specific increases year over year include an increased contribution to the Truckee River Fund of \$850k in FY 2019 compared to \$450k in FY 2018, higher chemical costs of approximately \$0.5m due principally to price increases, higher electric power costs of \$0.3m due to the start up of Fish Springs, higher cost for asphalt patches

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of \$0.2m, and a property tax assessment related to the acquisition of Donner Lake water rights of \$0.2m. The remaining variance is made up of several smaller increases in services and supplies costs.

Non-Operating Expenses

Budget to Actual

	Actual	Budget		
	YTD 2019	YTD 2019	Variance \$	Variance %
NONOPERATING REVENUES (EXPENSES)				
Investment Earnings	3,254,997	2,125,161	1,129,836	53 %
Net Increase (Decrease) in FV of Investments	1,543,887	_	1,543,887	— %
Gain (Loss) on Disposal of Assets	(81,847)	—	(81,847)	— %
Amortization of Bond/note Issuance Costs	(172,341)	(161,811)	(10,530)	7 %
Interest Expense	(9,926,913)	(10,077,390)	150,477	(1)%
Other Nonoperating Revenue	19	—	19	— %
Other Nonoperating Expense	(222,801)	_	(222,801)	— %
Total Nonoperating Revenues (Expenses)	(5,604,998)	(8,114,040)	2,509,042	(31)%

Nonoperating expenses are \$2.5m less than budget due mostly to higher investment earnings than budgeted. Higher than budgeted investment earnings are the result of more maturities at increased rates than budgeted. In FY 2018 and early in FY 2019, due to the expected continued rise in rates, and the flat yield curve, TMWA focused investment strategy on short term maturity bonds to allow for flexibility in cash flow and investment options. Regarding increase in the fair value of investments (or unrealized gains) TMWA took advantage of increased rates in the early months of FY 2019, with ten year treasury rates passing 3%. As these rates have fallen in the recent months, TMWA recognizes unrealized gains by holding investments at rates higher than market. These unrealized gains, can fluctuate as rates increase or decrease and may not result in actual cash gains.

Year over Year

	Actual	Actual		
	YTD 2019	YTD 2018	Variance \$	Variance %
NONOPERATING REVENUES (EXPENSES)				
Investment Earnings	3,254,997	1,578,519	1,676,478	106 %
Net Increase (Decrease) in FV of Investments	1,543,887	(787,620)	2,331,507	(296)%
Gain (Loss) on Disposal of Assets	(81,847)	657,795	(739,641)	(112)%
Amortization of Bond/note Issuance Costs	(172,341)	(344,970)	172,629	(50)%
Interest Expense	(9,926,913)	(8,392,127)	(1,534,786)	18 %
Other Nonoperating Revenue	19	—	19	— %
Other Nonoperating Expense	(222,801)	—	(222,801)	— %
Total Nonoperating Revenues (Expenses)	(5,604,998)	(7,288,403)	1,683,405	(23)%

Nonoperating expenses are lower than prior year by \$1.7m due to several factors. First, both realized and unrealized investment income increased by a total of \$4.0m due primarily to the reasons discussed above. This is offset primarily by more interest expense incurred following the bond refunding in April 2018 (see Agenda Item 7 from May 2018 BOD Meeting for additional information on the Refunding).

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This bond refunding decreased the principal of commercial paper which is effectively variable rate debt, while increasing principal on fixed rate debt. While this transaction increased interest expense in the short term, it reduced risk by fixing a portion of the debt at a reasonable rate and limiting exposure to interest rate fluctuations in future years.

Capital Contributions

Budget to Actual

	Actual	Budget		
	YTD 2019	YTD 2019	Variance \$	Variance %
CAPITAL CONTRIBUTIONS				
Grants	331,116	1,275,000	(943,884)	(74)%
Water Meter Retrofit Program	994,706	507,015	487,691	96 %
Water Resource Sustainability Program	319,026	—	319,026	— %
Developer Infrastructure Contributions	161,233	—	161,233	— %
Developer Will-serve Contributions (Net of Refunds)	3,930,146	2,602,674	1,327,472	51 %
Developer Capital Contributions - Other	4,375,211	4,441,500	(66,289)	(1)%
Developer Facility Charges (Net of Refunds)	6,425,893	3,713,031	2,712,862	73 %
Net Capital Contributions	16,537,330	12,539,220	3,998,110	32 %

Capital contributions were \$4.0m more than budget through the third quarter. This was driven by higher water rights will-serve sales and higher developer contributions offset by lower grant revenue. Grant revenue is less than budget due to timing of expenses incurred and reimbursement from both FEMA and non-FEMA federal awards. The remaining line items are mainly over budget and reflect the continued pace of growth and development in the service area. These items each have predictable rates, but volume is difficult to predict as it's tied to development projects in the service area which can fluctuate period to period. Budgets are generally conservative as is the case for FY 2019.

Year over Year

	Actual	Actual		
	YTD 2019	YTD 2018	Variance \$	Variance %
CAPITAL CONTRIBUTIONS				
Grants	331,116	217,994	113,122	52 %
Water Meter Retrofit Program	994,706	1,590,967	(596,261)	(37)%
Water Resource Sustainability Program	319,026	_	319,026	— %
Developer Infrastructure Contributions	161,233	_	161,233	— %
Developer Will-serve Contributions (Net of Refunds)	3,930,146	4,152,543	(222,397)	(5)%
Developer Capital Contributions - Other	4,375,211	4,125,854	249,356	6 %
Developer Facility Charges (Net of Refunds)	6,425,893	4,546,540	1,879,353	41 %
Net Capital Contributions	16,537,330	14,633,898	1,903,432	13 %

Year over year, capital contributions are \$1.9m more through three quarters of FY 2019 compared to FY 2018. Overall, contributions other than grants have trended higher beginning with the second half FY 2018 and continuing through Q3 2019. The largest increase between second half FY 2018 and first half FY 2019 came in developer facility charges due to timing of large projects. For example, one project alone in July, yielded facility charges of \$1.7m. This increase was offset by decreases across the other categories.

Capital Spending

Spending on capital outlays and construction projects through three quarters was approximately \$27.5m. Top 5 project spend during the first three quarters were -

- Mount Rose Water Treatment Plant \$5.3m
- Paloma PRS & Pipeline Improvements \$1.8m
- California Marsh Main Replacement \$1.7m
- Chalk Bluff Pump Building Air Handler \$1.6m
- South Virginia Street Main Replacement \$1.6m

Total capital spend is estimated to be between \$35m and \$40m for FY 2019.

Cash Position

At March 31, 2019, total cash on hand was \$197.0m or \$3.6m higher than at the beginning of the fiscal year. Of the total cash on hand, \$151.5m was unrestricted to be used to meet upcoming and future operating/maintenance expenses, principal/interest payments and construction project payments. The remaining \$45.5m was restricted to pay for scheduled bond principal and interest payments as well as maintaining required reserves as stipulated in our bond covenants.

Truckee Meadows Water Authority

Comparative Statements of Revenues, Expenses and Changes in Net Position For the nine months ended March 31, 2019

	Actual	Budget		
	YTD 2019	YTD 2019	Variance \$	Variance %
OPERATING REVENUES				-
Charges for Water Sales	\$ 77,831,631	\$ 76,031,074	\$ 1,800,557	2 %
Hydroelectric Sales	1,862,429	2,110,284	(247,855)	(12)%
Other Operating Sales	2,254,287	2,543,500	(289,213)	(11)%
Total Operating Revenues	81,948,347	80,684,858	1,263,489	2 %
OPERATING EXPENSES				
Salaries and Wages	15,625,043	15,769,462	(144,419)	(1)%
Employee Benefits	6,943,366	7,594,490	(651,124)	(9)%
Services and Supplies	20,710,162	21,948,732	(1,238,570)	(6)%
Total Operating Expenses Before Depreciation	43,278,570	45,312,683	(2,034,113)	(4)%
Depreciation	24,450,327	25,396,857	(946,531)	(4)%
Total Operating Expenses	67,728,897	70,709,540	(2,980,643)	(4)%
OPERATING INCOME	14,219,450	9,975,318	4,244,133	43 %
NONOPERATING REVENUES (EXPENSES)				
Investment Earnings	3,254,997	2,125,161	1,129,836	53 %
Net Increase (Decrease) in FV of Investments	1,543,887	—	1,543,887	— %
Gain (Loss) on Disposal of Assets	(81,847)	—	(81,847)	— %
Amortization of Bond/note Issuance Costs	(172,341)	(161,811)	(10,530)	7 %
Interest Expense	(9,926,913)	(10,077,390)	150,477	(1)%
Other Nonoperating Revenue	19	_	19	— %
Other Nonoperating Expense	(222,801)	—	(222,801)	— %
Total Nonoperating Revenues (Expenses)	(5,604,998)	(8,114,040)	2,509,042	(31)%
Gain (Loss) Before Capital Contributions	8,614,453	1,861,278	6,753,175	363 %
CAPITAL CONTRIBUTIONS				
Grants	331,116	1,275,000	(943,884)	(74)%
Water Meter Retrofit Program	994,706	507,015	487,691	96 %
Developer Infrastructure Contributions	161,233	_	161,233	— %
Developer Will-serve Contributions (Net of Refunds)	3,930,146	2,602,674	1,327,472	51 %
Developer Capital Contributions - Other	4,375,211	4,441,500	(66,289)	(1)%
Developer Facility Charges (Net of Refunds)	6,425,893	3,713,031	2,712,862	73 %
Net Capital Contributions	16,537,330	12,539,220	3,998,110	32 %
CHANGE IN NET POSITION	25,151,783	14,400,498	10,751,285	75 %

Truckee Meadows Water Authority

Comparative Statements of Revenues, Expenses and Changes in Net Position For the nine months ended March 31, 2019

		Actual	Actual		
	1	YTD 2019	YTD 2018	Variance \$	Variance %
OPERATING REVENUES					
Charges for Water Sales	\$	77,831,631	\$ 72,626,814	\$ 5,204,817	7 %
Hydroelectric Sales		1,862,429	2,801,076	(938,646)	(34)%
Other Operating Sales		2,254,287	2,239,413	14,874	1 %
Total Operating Revenues		81,948,347	77,667,302	4,281,045	6 %
OPERATING EXPENSES					
Salaries and Wages		15,625,043	13,569,619	2,055,423	15 %
Employee Benefits		6,943,366	6,312,501	630,866	10 %
Services and Supplies		20,710,162	17,662,974	3,047,188	17 %
Total Operating Expenses Before Depreciation		43,278,570	37,545,093	5,733,477	15 %
Depreciation		24,450,327	24,572,690	(122,364)	— %
Total Operating Expenses		67,728,897	62,117,784	5,611,113	9 %
OPERATING INCOME		14,219,450	15,549,519	(1,330,068)	(9)%
NONOPERATING REVENUES (EXPENSES)					
Investment Earnings		3,254,997	1,578,519	1,676,478	106 %
Net Increase (Decrease) in FV of Investments		1,543,887	(787,620)	2,331,507	(296)%
Gain (Loss) on Disposal of Assets		(81,847)	657,795	(739,641)	(112)%
Amortization of Bond/note Issuance Costs		(172,341)	(344,970)	172,629	(50)%
Interest Expense		(9,926,913)	(8,392,127)	(1,534,786)	18 %
Other Nonoperating Revenue		19	_	19	— %
Other Nonoperating Expense		(222,801)	_	(222,801)	— %
Total Nonoperating Revenues (Expenses)		(5,604,998)	(7,288,403)	1,683,405	(23)%
Gain (Loss) Before Capital Contributions		8,614,453	8,261,116	353,337	4 %
CAPITAL CONTRIBUTIONS					
Grants		331,116	217,994	113,122	52 %
Water Meter Retrofit Program		994,706	1,590,967	(596,261)	(37)%
Developer Infrastructure Contributions		161,233	_	161,233	— %
Developer Will-serve Contributions (Net of Refunds)		3,930,146	4,152,543	(222,397)	(5)%
Developer Capital Contributions - Other		4,375,211	4,125,854	249,356	6 %
Developer Facility Charges (Net of Refunds)		6,425,893	4,546,540	1,879,353	41 %
Net Capital Contributions		16,537,330	14,633,898	1,903,432	13 %
CHANGE IN NET POSITION		25,151,783	22,895,014	2,256,768	10 %



STAFF REPORT

TO:	Board of Directors
THRU:	Mark Foree, General Manager
FROM:	Michele Sullivan, Chief Financial Officer
	Matt Bowman, Financial Controller
	Joe Petrelli, Principal Financial Analyst
DATE:	May 14, 2019
SUBJECT:	Discussion and action on request for adoption of Resolution No. 274: A resolution to adopt the final budget for the Fiscal Year ending June 30, 2020 and the 2020-2024 Five-Year Capital Improvement Plan

Recommendation

That the TMWA Board approve the proposed Final Budget for the fiscal year ending June 30, 2020 and direct staff to file the adopted Final Budget and related 2020-2024 Capital Improvement Plan with the State of Nevada Department of Taxation as required by statute.

Summary

TMWA has prepared the proposed Final Budget for consideration and approval by the TMWA Board. Changes to the tentative budget presented originally at the March 20, 2019 board meeting result in a favorable increase in the change in net position of \$0.3m. This is due to an increase in hydroelectric revenue estimates. CIP spending for 2020-2024 increased slightly from \$213.4m to \$213.7m. Changes to FY 2020 are discussed in more detail below.

Discussion

A comparison of the proposed Final Budget to the original approved Tentative Budget is accompanying this report in *Attachments A and B*. Higher optimization (less downtime) is expected at the hydroelectric plants, which led to an increased revenue projection of \$0.3m in FY 2020. Regarding cash flow, an additional \$2.3m in capital spending was identified in FY 2020 which is discussed in more detail below. Finally, the beginning cash balance was revised lower by \$10.0m to reflect the actual cash on hand as of March 31, 2019.

A draft CIP document was presented at the March 20, 2019 board meeting. The final CIP document is accompanying this report in *Attachment C*. FY 2020 changes in the accompanying CIP document are listed below and result in a net increase of \$2.23m:

Additions:

Gear, Vine, Washington Main Replacement	\$2.00m
Street & Highway Main Replacements	1.00m
Stonebrook West Main Oversizing	.45m
• South Virginia 24" Main (Kumle to Peckham)	.16m
 Deletions: California Marsh 24" Main Replacement Longley Booster Pump Station / Double R Capacity Increase 	-1.20m 18m \$2.23m

Total spending in the five year CIP plan increased \$0.3m.

Based on inquiries from Board Members related to employee headcount, the following section outlines additions to headcount and overstaffing for retirements included in TMWA's FY2020 salaries budget.

Additions to Headcount

Electrical Engineer

Engineering desires to add an electrical engineer to our in-house staff to provide focused, standardized design of power, lighting and control systems for TMWA facilities that span approximately 350 energized sites. This individual would also provide support to Operations for ongoing arc flash electrical safety analyses and on an as-needed basis. TMWA has found it very difficult to obtain timely, professional electrical engineering designs for our facilities from local consultants. Not only is there a shortage of qualified electrical engineers, but the engineers who are interested in working on TMWA projects have such a high workload that we don't get the level of participation and quality that we desire.

GIS Analyst

An additional GIS analyst is needed to build upon, expand and modernize the current GIS platform, and for asset management and project tracking purposes. Improvements to the training and support of users is also desired.

Associate MIS analyst

This position would allow Business Information Systems to achieve and maintain the strategic transformation of the existing team from a reactionary to a more proactive approach for application configurations, business process creation, support and maintenance.

Network Analyst

TMWA currently outsources the management of its networking equipment, and will instead hire a full time position in order to meet IT's goals and objectives in terms of security updates and hardware replacement to secure TMWA's networks from vulnerabilities.

Exceptional Quality Reclaimed Water Program Administrator

The Exceptional Quality Reclaimed Water Program Administrator will be responsible to initiate, manage and direct analyses and programs that strive to establish the feasibility and viability of Category A+ water resources for the Truckee Meadows. Under direction of the Director of Natural Resources, the incumbent will plan for the development and implementation of pilot studies and demonstration projects, which may eventually include full scale facilities; including groundwater augmentation and recharge programs.

Overstaffing for Retirements

The Distribution Maintenance, Inspection, Facilities Maintenance, Hydro and Field & Meter Services groups currently have five (5) supervisory positions that will be eligible for retirement in 3 years or less. One Supervisor position will have his 30 years in PERS in about a year. This is the **Supervisor** we will Overstaff in the 2020 Budget. The Facilities Coordinator is eligible for retirement now.

In addition to the above, the represented employees from these same groups that are eligible for retirement in the next 3 years, (and a number of them have verbally indicated their intent to retire include):

- 3 Foreman 2 have indicated retirement in 2021.
- 3 Inspectors All 3 are currently eligible.
- 3 Equipment operators (This is the Equipment Operator overstaff position).
- 1 Service Utility worker Has indicated 2020

These departments saw 3 Inspectors and 2 Foreman retire this last year and with the potential of 15 more employees eligible in the next 3 years, this would be a 25% turnover of journeyman level positions. The current journeyman level employees left to back fill these positions is insufficient (2 fitters & 2 Fitter Welders). The additional overstaffing with the **Helper**, is designed to feed into the apprentice fitter program which is a 2-year program. We will have 4 employees finish the apprentice program this year and 4-6 more the following year. We will continue to feed into this program as positions are available. This will provide us with a base of employees with some level of experience to fill the vacated positions.

Meter Specialist –This temporary position will provide additional help in implementing a new customer information and billing system and the Sensus meter conversion. These are two major projects occurring over the next 2-5 years.

TRUCKEE MEADOWS WATER AUTHORITY (TMWA)

RESOLUTION NO. 274

A RESOLUTION ADOPTING THE FINAL BUDGET FOR THE FISCAL YEAR ENDING JUNE 30, 2020 AND THE 2020-2024 CAPITAL IMPROVEMENT PLAN FOR THE TRUCKEE MEADOWS WATER AUTHORITY AFTER PUBLIC HEARING

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

WHEREAS, pursuant to NRS 354.596, TMWA scheduled and held a public hearing on the tentative budget and Capital Improvement Plan as prescribed on May 23, 2019, the fourth Thursday in May; and

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

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

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of the Truckee Meadows Water Authority to adopt the tentative budget as the final budget for the fiscal year ending June 30, 2020 and adopt the 2020-2024 Capital Improvement Plan and to direct staff to submit the final budget and Capital Improvement Plan to the State of Nevada Department of Taxation.

Upon motion of ______, seconded by ______, the foregoing Resolution was passed and adopted on May 23, 2019 by the following vote of the Board:

Ayes:_____

Nays:_____

Abstain: _____ Absent: _____

Approved:					

Vaughn Hartung, Chairman

Truckee Meadows Water Authority Resolution 274 (continued)

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

On this 23rd day of May, 2019, Vaughn Hartung, Chairman of the Board of Truckee Meadows Water Authority, personally appeared before me, a Notary Public in and for said County and State, and acknowledged that he executed the above instrument freely and voluntarily and for the purposes therein mentioned.

Notary Public

Attachment A

TRUCKEE MEADOWS WATER AUTHORITY

Comparative Statements of Revenues, Expenses and Changes in Net Position

	P	roposed Final	nal Tentative Budget			
	E	Budget 2020		2020	Variance \$	Variance %
OPERATING REVENUES						
Charges for Water Sales	\$	102,508,086	\$	102,508,086	\$-	0%
Hydroelectric Sales		3,664,180		3,343,517	320,663	10%
Other Operating Sales		3,518,950		3,518,950	-	0%
Total Operating Revenues	┢	109,691,216	┢	109,370,553	320,663	0%
OPFRATING EXPENSES						
Salaries and Wages		23,183,489		23,183,489	-	0%
Employee Benefits		12,324,771		12,324,771	-	0%
Services and Supplies		31,125,499		31,125,499	-	0%
Total Operating Expenses Before Depreciation		66,633,759		66,633,759	-	0%
Depreciation		33,136,227		33,136,227		0%
				22 762 206		00/
Total Operating Expenses	┨──	99,769,986	┨──	99,769,986	-	0%
OPERATING INCOME		9,921,230		9,600,567	320,663	3%
NONOPERATING REVENUES (EXPENSES)		2 400 815		2 400 815		0%
Investment Earnings		3,409,815		3,409,813	-	U70
Net Increase (Decrease) in EV or investments		-		-	-	-
Gain (Loss) on Disposal of Assets		-		- (100,800)	-	- 0%
AMORTIZATION OF BOND/HOLE ISSUANCE COSTS		(130,000)		(130,000)	-	0%
Other Nononerating Payanua		(13,032,442)		(13,032,442)	-	070
Other Nonoperating Expense		-		_	-	-
			┢─		-	
Total Nonoperating Revenues (Expenses)		(9,833,427)		(9,833,427)	-	0%
Gain (Loss) Before Capital Contributions		87,803		(232,860)	320,663	-138%
		,	┢	(=,		
CAPITAL CONTRIBUTIONS						
Grants		1,937,500		1,937,500	-	0%
Resource Sustainability/Water Meter Retrofit		926,425		926,425	-	0%
Developer Infrastructure Contributions		15,768,318		15,768,318	-	0%
Developer Will-serve Contributions (Net of Refunds)		5,067,536		5,067,536	-	0%
Developer Capital Contributions - Other		6,697,000		6,697,000	-	0%
Developer Facility Charges (Net of Refunds)		8,517,248		8,517,248	-	0%
Contributions from Others		-		-	-	-
Net Capital Contributions		38,914,027		38,914,027	-	0%
CHANGE IN NET POSITION		39,001,830		38,681,167	320,663	1%
NET POSITION, BEGINNING PERIOD		620,493,077		620,493,077	0	0%
NET POSITION, END OF PERIOD	\$	659,494,907	\$	659,174,244	\$ 320,663	0%

05-23-19 BOARD Agenda Item 10

Attachment B

TRUCKEE MEADOWS WATER AUTHORITY

Statements of Cash Flows

	Proposed Final	Tentative Budget		
	Budget 2020	2020	Variance \$	Variance %
OPERATING ACTIVITIES				
Cash Received From Customers	\$ 109,691,216	\$ 109,370,553	\$ 320,663	0%
Cash Paid to Employees	(35,508,260)	(35,508,260)	-	0%
Cash Paid to Suppliers	(31,125,499)	(31,125,499)	-	0%
Net Cash From Operating Activities	43,057,457	42,736,794	320,663	1%
CAPITAL AND RELATED FINANCING ACTIVITIES				
Acquisition & Construction of Capital Assets	(58,466,000)	(56,181,000)	(2,285,000)	4%
Interest Paid on Financing	(17,765,145)	(17,765,145)	-	0%
Principal Paid on Financing	(2,829,056)	(2,829,056)	-	0%
Proceeds from Capital Debt Issuance	-	-	-	-
Redemptions of Commercial Paper Notes	(5,000,000)	(5,000,000)	-	0%
Proceeds from Refunding Bonds	-	-	-	-
Proceeds Transferred to Refunding/Redemption Escrow	-	-	-	-
Proceeds (Spending) from (on) Capital Asset Disposal	-	-	-	-
Contributions for Water Meter Retrofit Program	926,425	926,425	-	0%
Contributions From Developers-Will-Serve Letters	5,067,536	5,067,536	-	0%
Contributions from Developers - Other	6,697,000	6,697,000	-	0%
Contributions from Developers - Facility Charges	8,517,248	8,517,248	-	0%
Grants	1,937,500	1,937,500	-	0%
Bond/Note Issuance Costs	(190,800)	(190,800)	-	0%
Net Cash Used For Capital & Relating Financing Activities	(61,105,292)	(58,820,292)	(2,285,000)	4%
INVESTING ACTIVITIES				
Interest Received	3,409,815	3,409,815	-	0%
Net Cash From Investing Activities	3,409,815	3,409,815	-	0%
NET CHANGE IN CASH AND CASH EQUIVALENTS	(14,638,020)	(12,673,683)	(1,964,337)	15%
CASH AND CASH EQUIVALENTS, BEGINNING PERIOD	197,000,000	207,000,000	(10,000,000)	-5%
CASH AND CASH EQUIVALENTS, END OF PERIOD	\$ 182,361,980	\$ 194,326,317	\$ (11,964,337)	-6%



June 2019



Photo By: Eric Rasmussen, TMWA Mechanic Specialist

Photo Of: Pyramid - Point View Booster Pump Station Electronic Motor Bearing Replacement

Five Year Capital Improvement Plan Fiscal Year 2020 - 2024

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



June 2019



Photo By: Eric Rasmussen, TMWA Mechanic Specialist

Photo Of: Pyramid - Point View Booster Pump Station Electronic Motor Bearing Replacement

Five Year Capital Improvement Plan Fiscal Year 2020 - 2024

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

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INTRODUCTION

The Truckee Meadows Water Authority's (TMWA's) Five-Year Capital Improvement Plan 2020-2024 (CIP), describes all infrastructure construction and major capital outlays that will take place between July 1, 2019 and June 30, 2024. Guidance for identifying and scheduling projects in the CIP is provided by TMWA's 2010-2030 Water Facility Plan (WFP) and the 2016-2035 Water Resource Plan (WRP). The WRP Plan was formally updated in calendar year 2016 and the WFP will be updated in calendar year 2019. The updated Plans will reflect a fully consolidated utility including the former Washoe County Water Utility (WCWU) and the former South Truckee Meadows General Improvement District (STMGID) and will be the cornerstone of future CIPs.

TMWA is a joint powers authority formed in November 2000, pursuant to a Cooperative Agreement (as amended and restated as of February 3, 2010, the "Cooperative Agreement") among the City of Reno, Nevada ("Reno"), the City of Sparks, Nevada ("Sparks") and Washoe County, Nevada (the "County"). The Authority owns and operates a water system (the "Water System") and develops, manages and maintains supplies of water for the benefit of the Truckee Meadows communities. On January 1, 2015, TMWA, the WCWU and STMGID consolidated to create a regional water system under TMWA. TMWA has a total of 158 square miles of service area, which includes the cities of Reno and Sparks and other surrounding populated areas of the County (except certain areas in the vicinity of Lake Tahoe and other small areas bordering California). TMWA has no authority to provide water service outside of its service area; however, may provide service in the future to developments that are annexed into its service area.

The CIP incorporates a comprehensive compilation of water system improvements for TMWA. A major feature of the CIP is the construction of several projects that will expand the conjunctive use of the region's water resources. The philosophy behind conjunctive use of local water resources is to maximize the use of surface water while preserving the integrity of groundwater resources which are drawn upon during periods of persistently dry weather. Another aspect of the CIP is to expand the Aquifer Storage and Recovery Program (ASR Program) which is the recharge of groundwater basins with treated surface water. In addition, this CIP includes several major projects to extend limited water service to the Verdi area, made possible by cost effective oversizing of developer main extensions and Nevada Drinking Water State Revolving Fund (DWSRF) contributions for consolidation of small community water systems. The projects include acquisition of the Boomtown water system assets and a connection to the Boomtown system. This connection will provide a conjunctive use supply to a system that relies 100 percent on local groundwater that will experience increased pumping to serve growth in the area. Full capacity water service for the entire Verdi area will not be available until an additional \$17.0 million of new backbone water facilities are constructed.

The CIP constitutes an essential component in TMWA's system of planning, monitoring and managing the activities of purveying water and generating hydroelectric power. The CIP is incorporated into a broader, constantly-updated Five-Year Funding Plan (FP) for a comparable period. This Funding Plan (FP) will determine adequate levels and sources of funding for projects contained in the CIP.

The 2019-2023 FP indicates that TMWA can fund the CIP in light of a significant funding gap. This situation is the result of substantial reductions in water demands resulting from the drought that ended in the spring of 2017. Otherwise there appears to be adequate treasury and revenues from various sources to fund operations, pay principal and interest on existing debt, and capital improvements as presented in the CIP.

The CIP includes total spending of \$213.7 million with approximately 68.6% or \$146.6 million dedicated to upgrades or replacement of existing infrastructure, and approximately 22.1% or \$54.4 million allocated to construction of new water system capacity projects, conjunctive use construction projects, retrofit of remaining unmetered services, and potential opportunistic acquisition of water rights. Construction and capital outlays associated with the former STMGID service area are estimated to be approximately 0.7% or \$1.6 million of total spending over fiscal years 2020-2024. 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 5.4% or \$11.5 million is considered contingency spending which is dependent on certain events occurring to trigger spending. The \$213.7 million in projected spending is grouped into broad categories of improvements and spending outlays. These categories are described below with detailed project descriptions to be found in the Project Description Section.

Raw Water Supply Improvements contains 1.8% or approximately \$4.0 million of total spending in the CIP. Projects focus on improvements to the Highland Canal/Siphon raw water conveyance infrastructure, upstream storage improvements for Donner and Independence Lakes where TMWA stores its Privately-Owned Stored Water (POSW) and expenses associated with the storage and implementation of the Truckee River Operating Agreement (TROA). Implementation of TROA is invaluable to TMWA as it allows for the modification of river operations to expand upstream storage in the federal reservoir system for increased drought storage. TROA was implemented on December 1, 2015. TMWA is now storing water in the federal reservoir system under this new river operating regime.

Ground Water Supply Improvements contains 9.3% or approximately \$19.9 million of total spending in the CIP. These projects focus on preserving existing well capacities, drilling and equipping of new wells and at times complete replacement of existing wells.

Treatment Plant Improvements contains 17.1% or approximately \$36.6 million of total spending in the CIP. The principal spending in this category is construction of the Mt. Rose Surface Water Treatment Plant which will provide additional critical conjunctive use water supplies on the Mt. Rose/Galena Fan with water sourced from local creeks, and the Glendale Diversion for emergency flood repairs. Additionally, spending targets fix and finish projects with the primary focus on the Chalk Bluff and Glendale Surface Water Treatment Plants located on the Truckee River. Other improvements focus on satellite water system treatment upgrades and a complete upgrade of the Supervisory Control and Data Acquisition (SCADA) system which provides centralized automated system control and data storage for the distribution system.

Distribution System Pressure Improvements contains 18.5% or approximately \$39.6 million of total spending and is the most significant spending category in the CIP. This spending is bifurcated into pressure improvements and water main and service line improvements. Pressure improvements include pump station rebuilds and new construction, such as Kings Row 1 and Stonegate Booster Pump Stations, correction of pressure or fire flow deficiencies, pressure regulating station rebuilds and new construction of pressure regulating valves.

Water Main Distribution & Service Line Improvements contains 24.8% or approximately \$53.0 million of total spending in the CIP. These improvements include replacement of aged water mains reaching end of service life, installation of new mains for new and expanded service, water main oversizing and extensions, Boomtown water system improvements and connection to TMWA, Spanish Springs Main Replacement, and the remaining two of three major conjunctive use projects to extend surface water supplies to the areas that rely heavily on year round groundwater pumping. The last set of projects furthers the conjunctive use philosophy of water resource management.

Potable Water Storage Improvements contains 10.3% or approximately \$22.0 million of total spending in the CIP. These projects are comprised mainly of new treated water storage tank construction to serve new and expanded service (STMGID Tank East Zone 11 Tank), some replacement of existing treated water tank capacity as well as systematic recoating of treated water tank interiors and exteriors to extend service life of these facilities.

Hydroelectric Improvements contains 2.6% or approximately \$5.7million of total spending in the CIP. These improvements center on the three run-of-river hydroelectric facilities currently owned by TMWA. Efforts on these facilities focus primarily on flume, forebay, diversion and canal improvements as well as equipment upgrades.

Customer Service Outlays contains 6.0% or approximately \$12.8 million of total spending in the CIP. Spending in this category focuses on meter reading device replacements and meter replacement if required. The principal spending in this category focuses on consolidating the meter system to one format which will provide more frequent and automatic meter reading, and meter data management. Also in this category is a spending provision for new business meters which is funded by development.

Administrative Outlays contains 5.5% or approximately \$11.7 million of total spending in the CIP. These outlays are primarily for Information Technology equipment, licenses, and hardware replacements as required. Included in this category of spending are fleet upgrades for heavy and light vehicles as well as excavation equipment. A significant portion of the spending in this category will be updating the Customer Information Services (CIS) system replacement in FY20 and FY21, including a customer portal for water usage information and bill payment.

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. These projects comprise 0.7% or approximately \$1.6 million of total spending in the CIP. These outlays are for water meter retrofit, and opportunistic water right purchases.

Former STMGID System Improvements, are separated from a presentation standpoint because projects in this category are funded by the STMGID reserve, which TMWA acquired through the acquisition of former STMGID. It contains 3.2% or approximately \$6.9 million of total spending in the CIP. Improvements in this category focus on conjunctive use, well replacement and improvements, and tank recoats. Also as meter pit failures occur in the former STMGID water system service areas those meter pits are converted to TMWA material standards.

DEFINITIONS

Capital Improvement Program Definitions

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

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

Definition of Capital Outlays

"Capital Outlays," which are in TMWA's capital budget, include such things as 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 infrastructure, and acquiring meter reading equipment.

PRIORITIZATION OF PROJECTS/OUTLAYS

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

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

- * **PRIORITY 1 MANDATORY:** These are considered absolutely required, and are the highest priority of all capital projects. Mandatory projects include those in final design or already under construction, or those required by legislation or regulation for protection of public health and safety. These projects are generally found in the first fiscal year of the 2020-2024 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 2020-2024 CIP. External factors such as the pace of new development or the condition of existing infrastructure may delay or accelerate the timing of project construction. A rate of return may not be applicable to projects whose economic/financial benefits cannot be easily quantified.
- * **PRIORITY 3 CONTINGENCY:** These projects or capital outlays are not immediately critical to the operation of the water system. Expenditures in this category generally require a business case study or specific criteria to be met before spending can occur. If such criteria are not met, then spending may or may not be justified. Also, some projects are deferrable if spending is required in an area of higher priority. Even though these projects and outlays are in the 2020-2024 CIP the likelihood that spending will occur may be remote and is based upon future conditions that are difficult to predict.

FUNDING OF CAPITAL SPENDING

Funding Sources

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

Developer Contributions

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

Financing Background

New money revenue bond issuance has been historically an integral part of funding construction spending. TMWA has also taken advantage of lower rate, subordinated debt financing obtained through the Drinking Water State Revolving Loan Fund (DWSRF) and
a tax-exempt commercial paper program (TECP) due to lower cost of capital and repayment subordination features of these funding vehicles. Customer water sales and various developer fees may not be immediately sufficient to pay for construction spending and capital outlays so there may be some reliance on new money debt and reliance on future tax-exempt commercial paper note sales. TMWA plans to avoid relying on additional debt whenever possible and reasonable.

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. During fiscal year 2005, TMWA was able to utilize a low cost (3.21%) DWSRF loan for \$4.7 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 were fully expended before the end of fiscal year 2008, primarily to construct the North Virginia-Stead pump station and transmission pipelines. TMWA inaugurated a TECP 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 in TECP. 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 2011, TMWA completed a \$4.4 million Raw Water Diversion and Intake Structure at its Glendale Plant using a DWSRF loan with an interest rate of 3.25%. In the fourth quarter of fiscal year 2015, TMWA applied for a DWSRF Loan at 2.62% interest, to fund the North Valleys Integration Pipeline Project for \$8.9 million.

Due to recent and projected federal interest rate hikes, in 2018 TMWA successfully reduced \$44.2 million of its TECP with a new senior lien bond offering with fixed interest rate payments. In addition TMWA has applied for and received DWSRF loan forgiveness grants in the amount of \$0.6 million in conjunction with the Old 40 West Project and Riverbelle Consolidation Project in Verdi which will be completed in 2019 at no cost to TMWA.

Rule 5 and Rule 7 Fees

These fees are collected from the development community. Rule 5 fees are paid by developers to TMWA for the construction of new water feeder mains, new treatment/supply capacity, new storage capacity, and for new or rebuilt pump stations to meet demand resulting from new and expanded service. Rule 7 Fees are derived from will-serve sales to development. TMWA historically purchased water rights on the open market and reserves these rights for will-serve letters to be sold to development. TMWA also recovers a modest amount of administrative and financing costs with the sale of each will-serve. The title to water rights 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 stages. To accomplish this task TMWA has collected \$1,830 for each acre-foot of demand when will-serve commitments based on surface water right dedications are issued for new or expanded service. Proceeds from the fee are used to fund water meter retrofits. Pursuant to Resolution 272 passed by the Board of Directors on January 16, 2019, the fee was broadened to include other uses. The pre-January 16, 2019 balance of these fees will be used to complete any remaining water meter retrofits.

Water Resource Sustainability Fund Fees

Resolution 272, passed on January 16, 2019, broadened the purpose of the Water Meter Retrofit Fee to support projects such as expanded conjunctive use, aquifer storage and recovery, demonstration and validation of exceptional quality reclaimed water uses, future water resource identification and acquisition, and other projects that enhance water resource sustainability and drought resiliency. The fee has been reduced from \$1,830 to \$1,600 for each acre-foot of demand when will-serve commitments based on surface water right dedications are issued for new or expanded service.

Capital Contributions from Other Governments

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

Reserves from the Water Utility Consolidation

TMWA, the WCWU and STMGID consolidated on January 1, 2015. As a result of the consolidation, the respective treasuries of the WCWU and STMGID were transferred to TMWA. The WCWU treasury that was transferred to TMWA amounted to approximately \$43.4 million after the final transfer of funds (which was absorbed into TMWA's account) while the STMGID treasury transferred to TMWA was approximately \$15.7 million of which \$7.2 million remains. These cash and investment reserves will continue to be used to make necessary improvements in the former water utility service areas including conjunctive use enhancements.

Other Resources

One method of generating additional funds for capital improvements is to increase existing fees/charges or to add new fees/charges. However, future increases will be provisional if TMWA is able to meet revenue requirements and maintain bond coverage ratios that will suffice to maintain strong investment-grade credit ratings. TMWA has obtained many benefits of Aa2 and AA+ credit ratings from Moody's and S&P, respectively. The Board ultimately decided up through fiscal year 2009 to fore go any potential customer rate increases since the last rate increase that occurred in March 2005. The TMWA Board did approve a 4.5% general rate increase for fiscal year 2010 and another 4.4% general rate increase for fiscal year 2011. The TMWA Board has approved and implemented a 3.5% general rate increase that was put into effect February 1, 2012 and a 3.4% water rate increase in February 2014. As a consequence of the water utility consolidation any review of water rate adjustments was forestalled until TMWA had at least one full year of operating history as a consolidated water utility. Consequently an additional water rate increase of 3.0% was put into effect in May of 2017 and 2018. TMWA Board deferred the 2.5% rate increases scheduled for 2019 through 2021 to 2020 through 2022, effectively delaying the rate increase by one year. Water rate increases are essential for TMWA to maintain sound credit ratings and to preserve access to opportunities in the capital markets. TMWA also funds rehabilitative capital projects in a meaningful manner due to water delivery being an essential municipal service.

FISCAL YEAR 2020 CAPITAL SPENDING-THE CAPITAL BUDGET

TMWA expects to spend \$58.5 million for fiscal year 2020, the first year of the FY 2020-2024 CIP. Of this total \$33.3 million will be paid for by customer rates for water system rehabilitation, hydroelectric improvements, pressure system improvements, water main distribution service line improvements, and administrative and customer service outlays. While \$21.3 million will be paid for by developer fees, which includes \$1.9 million in grants, and will be dedicated to water system expansion, limited opportunistic acquisition of water rights and some water meter retrofit activities. Finally, STMGID treasury reserves account for \$2.8 million of improvements in the STMGID area.

SUMMARY OF PROJECTS FOR THE FISCAL YEAR 2020 BUDGET

Total construction spending, acquisition spending, and capital outlays are expected to be \$58.5 million for the fiscal year 2020. TMWA has established the following projects for the capital budget in fiscal year 2020 (Amounts presented in thousands of dollars):

Detailed project descriptions are provided for all projects in the CIP. These descriptions cover the fiscal year 2020 capital budget as well as the four additional years from 2021-2024.

Summary of Projects for FY 2020	Amount
Raw Water Supply Improvements	
Highland Canal-Upgrades-Downstream	225
Highland Canal-Upgrades-Diversion to Chalk Bluff	100
Independence Lake Permitting Study	50
Indirect Potable Reuse	200
TROA Drought Storage / Implementation	100
Donner Lake Outlet Improvements Phase 2	200
Total	875
Ground Water Supply Improvements	
Well Rehabilitation Improvements	400
Double Diamond #5 and Equipping	50
Campello Capacity Increase	70
Sunrise Well #3 Replacement	100
Bedell Flat Water Bank	500
Well Fix & Finish	200
NDEP Monitoring Wells	100
Thomas Creek Well Replacement and Spring Creek SC5	1,250
Truckee Canyon Well 3 Site Modifications	50
Well Head TTHM Mitigation	500
Spring Creek Well #7 Recharge	425
Kietzke, High, Morrill PCE Treatment	500
STMGID 6 Generator	281
Total	4,426

Treatment Plant ImprovementsChalk Bluff Treatment Plant Fix & Finish600Glendale Treatment Plant Fix and Finish400Chalk Bluff Filter Underdrains500Orr Ditch Pump Station Rehab100Truckee Canyon Water Treatment Improvements60Lightning W Treatment Improvements10SCADA Rehab / Plant Operating Software1,000Mount Rose Surface Water Treatment Plant11,000Longley Plant HV 3 and HV 4 Treatment Improvements40Glendale Diversion Emergency Flood Repairs (FEMA)1,600Spanish Springs Nitrate Treatment Facility200Total15,510Pressure Improvements400Chalk Acquisitions500Pressure Regulators Rehabilitation500Pressure Reducing Valve (Roll Seal) Removal400Land Acquisitions500Pump Station Oversizing100Pump Station Oversizing100Pump Station Oversizing100Pump Station Oversizing100Pump Station Oversizing100Pump Station Oversizing100Pump Station Packbilitation500Pump Station Oversizing100Pump Station Oversizing100Pump Station Oversizing100Pump Station Oversizing100Pump Station Oversizing100Pump Station Oversizing500Pump Station Oversizing500Pump Station Oversizing500Pump Station Oversizing500Pump Station Oversizing
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Pressure Regulators Rehabilitation500Pressure Reducing Valve (Roll Seal) Removal400Land Acquisitions500Longley Booster Pump Station / Double R Capacity Increase250Pump Station Oversizing100Pump Station Rehabilitations500
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Pump Station Oversizing100Pump Station Pabuilds, Pababilitations500
Dump Station Populida Populitations
Tump Station Rebuilds, Reliabilitations 300
Standby Generator Improvements 150
Spanish Springs #1 Pump Zone Intertie 600
STMGID Tank #4 Booster Pump Station/Transmission Line 150
Chalk Bluff Additional Backup Generator 700
Twin Lakes Booster Pump Station 400
Kings Row 1 Booster Pump Station 2,200
Common (Stonegate) Booster Pump Station 2,250
Total 8,700
Water Main-Distribution-Service Line Improvements
Street & Highway Main Replacements 4,000
Spring Creek South Zone Conversion850
Gear, Vine, Washington Main Replacement 2,000
Booth, Sharon Way, Monroe 24" Main Replacements100
South Virginia 24" Main - Kumle to Peckham 160
North East Sparks Feeder Main Relocation 50
Trademark 14" Main Tie 50
Spanish Springs Main Replacement 1,200
South Truckee Meadows Capacity Improvements 350 General Waterline Extensions 200
Mount Rose 5 Distribution/Pressure Improvements 400
Boomtown Water System Improvements 2 550
Boomtown to TMWA Connection 650

Project Summary for FY 2020 (continued)	Amount
Verdi Main Extension	500
Verdi Elementary Main Oversizing	200
Stonebrook West Main Oversizing	450
Total	13,810
Potable Water Storage Improvements	
Sun Valley Tank #2	420
Rattlesnake Ring Addition	100
Storage Tank Recoats; Access; Drainage Improvements	900
STMGID Tank East Zone 11 Tank	3,075
Tank Access Road Flood Repairs (FEMA)	350
Lightning W Tank #2	360
Total	5,205
Hydroelectric Improvements	
Forebay, Diversion, and Canal Improvements	100
Hydro Plant Generator Rewinds	650
Washoe Flume Reconstruction	250
Orr Ditch Hydro Facility	50
Total	1,050
Customer Service Outlays	
Meter Reading Equipment	60
New Business Meters	100
Mueller Pit Replacements former Washoe County	125
Galvanized / Poly Service Line Replacements	250
AMI Automated Meter Infrastructure	2,100
Total	2,400
Administrative Outlays	
GIS / GPS System Mapping Equipment	60
IT Server Hardware	370
IT Network Security Upgrades	30
IT Physical Access Security Upgrades	60
Printer / Scanner Replacement	40
TMWA Refueling Facility	500
Crew Trucks / Vehicles	585
Emergency Response Projects	150
CIS System Replacement	1,400
System Wide Asphalt Rehabilitation	200
Physical Access Control System Upgrade	75
Total	3,470

Truckee Meadows Water Authority FY 2020 - 2024 Capital Improvement Plan Attachment 3

Project Summary for FY 2020 (continued)	Amount
Special Projects Funded by Development	
Water Meter Retrofits	100
Water Right Purchases	150
Total	250
Former STMGID System Improvements	
Well Bypass & Chlorine Room Improvement	350
STMGID Well Fix & Finish	150
STMGID Conjunctive Use Facilities	1,500
STMGID Mueller Pit Replacements	50
STMGID NAC Deficiencies - Saddlehorn, Upper Toll, STMGID East	360
STMGID NAC Deficiencies - Phase 2 - Sioux Trail, Geiger Grade, Westwind Circle	360
Total	2,770

CAPITAL EXPENDITURES BY FUNCTION (Amounts in thousands of dollars)

Summary of Capital Expenditures by Function	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	Five Year CIP
Raw Water Supply Improvements	875	1,675	575	575	250	3,950
Ground Water Supply Improvements	4,426	3,510	1,690	4,620	5,690	19,936
Treatment Plant Improvements	15,510	6,520	6,655	5,490	2,390	36,565
Distribution System Pressure Improvements	8,700	6,160	9,100	10,530	5,090	39,580
Water Main Distribution Service Line Improvements	13,810	12,190	6,870	11,440	8,690	53,000
Potable Water Storage Improvements	5,205	4,780	6,070	2,200	3,790	22,045
Hydroelectric Improvements	1,050	3,300	1,100	100	100	5,650
Customer Service Outlays	2,400	2,575	2,635	2,575	2,650	12,835
Administrative Outlays	3,470	2,125	1,670	1,525	2,920	11,710
Water Meter Retrofit / Water Rights Purchases	250	250	250	400	400	1,550
Sub-Total TMWA Construction Spending & Outlays	55,696	43,085	36,615	39,455	31,970	206,821
Former STMGID System Improvements	2,770	3,020	500	450	150	6,890
Total Projected Capital Spending, Including STMGID	58,466	46,105	37,115	39,905	32,120	213,711



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

Summary of Funding Sources	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	Five Year CIP Total
Capital Improvements Funded by Customer Rates	33,338	33,829	27,007	28,419	23,972	146,565
Capital Improvements Funded by Developer Fees	13,677	8,206	8,558	9,961	6,923	47,325
Capital Improvements Funded by Developer Reimbursements	5,681	200	200	200	200	6,481
Capital Improvements Funded with former STMGID Reserve Funds	2,770	3,020	500	450	150	6,890
Water Meter Retrofit / Water Rights Purchases	250	250	250	400	400	1,550
Capital Improvements Funded by Sustainability Fees	813	600	600	475	475	2,963
Capital Improvements Funded by Grants	1,938					1,938
Total Projected Capital Spending	58,466	46,105	37,115	39,905	32,120	213,711



Summary of Funding by Priority	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	Five Year CIP Total
Priority 1 - Mandatory Spending, Projects in Progress, Regulatory	50,206	35,660	21,045	21,600	19,085	147,596
Priority 2 - Necessary Spending	5,675	7,895	13,260	16,605	11,210	54,645
Priority 3 - Contingency Spending	2,585	2,550	2,810	1,700	1,825	11,470
Total Projected Capital Spending	58,466	46,105	37,115	39,905	32,120	213,711

FUNDING BY PRIORITY (Amounts in thousands of dollars)



PROJECT FUNCTIONS AND DESCRIPTIONS RAW WATER SUPPLY IMPROVEMENTS Summary

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Customer Rates	Highland Canal- Upgrades-Downstream	225	225	225	225	_	900
2	Customer Rates	Highland Canal- Upgrades-Diversion to Chalk Bluff	100	1,000	100	100		1,300
2	Customer Rates	Independence Lake Permitting Study	50			_		50
2	Customer Rates / Sustainability Fees	Indirect Potable Reuse	200	200	200	200	200	1,000
1	Customer Rates	TROA Drought Storage / Implementation	100	50	50	50	50	300
2	Customer Rates	Donner Lake Outlet Improvements Phase 2	200	200	_	_	_	400
Subtotal			875	1,675	575	575	250	3,950

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



Raw Water Supply Improvements Highland Canal-Upgrades-Downstream

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Customer Rates	Highland Canal- Upgrades-Downstream	225	225	225	225		900

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

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



Raw Water Supply Improvements Highland Canal – Upgrades – Diversion to Chalk Bluff

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Customer Rates	Highland Canal-Upgrades- Diversion to Chalk Bluff	100	1,000	100	100		1,300

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

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



Raw Water Supply Improvements Independence Lake Permitting Study

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Customer Rates	Independence Lake Permitting Study	50	_	_	_	_	50

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 2020.

Raw Water Supply Improvements Indirect Potable Reuse

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Customer Rates / Sustainability Fees	Indirect Potable Reuse	200	200	200	200	200	1,000

PROJECT DESCRIPTION: In 2016, new regulations were adopted to permit use of "excdeptional quality reclaimed water," or advanced purified water, for groundwater augmentation. Advanced purified water is achieved through multiple water treatment steps and natural purification processes. Conceptually, an indirect potable reuse (IPR) project using advanced purified water might be well suited for areas such as the North Valleys or the South Truckee Meadows. IPR in these locations could help diversify the region's water portfolio by adding an option that is both sustainable and energy-efficient. 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: A unique feasibility study is underway over the next 2-3 years to evaluate and determine if advanced purified water can provide long-term benefits for our region's water future. Multiple field scale advanced water treatment demonstration projects have been developed, and several sites have been chosen for innovative research and exploration based on their geographic location and hydrogeologic characteristics. Additional funding support is provided from Reno, Sparks, Washoe County, and WRWC.



Raw Water Supply Improvements TROA Drought Storage/Implementation

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Customer Rates	TROA Drought Storage / Implementation	100	50	50	50	50	300

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

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



Raw Water Supply Improvements Donner Lake Outlet Improvements Phase 2

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Customer Rates	Donner Lake Outlet Improvements Phase 2	200	200	_	_	_	400

PROJECT DESCRIPTION: Dredging of a portion of the Donner Lake outlet channel was completed in FY2019. The project was scaled back to fit within the CEQA emergency permitting requirements. Additional work is required to extend and improve the outlet channel further into the lake, including possible bank stabilization improvements to minimize future dredging requirements.

SCHEDULE: Permitting and preliminary design will be conducted over the next two years. Construction of improvements is scheduled beyond FY 2024.



GROUND WATER SUPPLY IMPROVEMENTS Summary

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Customer Rates	Well Rehabilitation Improvements	400	400	400	400	400	2,000
1	Developer Fees	Double Diamond #5 Equipping & Blending Main	50	450		60	1,140	1,700
1	Developer Fees	Campello Capacity Increase	70				—	70
2	Developer Fees	Callamont Well South Equipping			60	1,140		1,200
2	Customer Rates	Air Guard Well Replacement				1,100		1,100
1	Customer Rates	Sunrise Well #3 Replacement	100					100
3	Customer Rates / Sustainability Fees	Bedell Flat Water Bank	500	500	500	250	250	2,000
2	Customer Rates	Lemmon Valley Well #8 Replacement					1,000	1,000
1	Customer Rates	Well Fix & Finish	200	200	200	200	200	1,000
2	Customer Rates	Well Plugging / Conversion		110				110
1	Customer Rates	NDEP Monitoring Wells	100	100				200
1	Customer Rates	Thomas Creek Well Replacement & Spring Creek SC #5	1,250	1,250				2,500
2	Customer Rates	Truckee Canyon Well #3 Site Modifications	50					50
1	Customer Rates / Sustainability Fees	Well Head TTHM Mitigation	500	500	500	500	500	2,500
1	Customer Rates / Sustainability Fees	Spring Creek Well #7 Recharge	425					425
1	Customer Rates	Kietzke, High, Morrill PCE	500					500
2	Customer Rates	Callamont Well North Equipping	_	—	—	60	1,140	1,200
1	Developer Reimbursement	STMGID #6 Generator	281					281
2	Developer Fees	Spring Creek Well #8 - Donovan			30	910	1,060	2,000
Subtotal			4,426	3,510	1,690	4,620	5,690	19,936

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



Ground Water Supply Improvements Well Rehabilitation Improvements

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Customer Rates	Well Rehabilitation Improvements	400	400	400	400	400	2,000

PROJECT DESCRIPTION: Funds are budgeted to rehabilitate TMWA production wells as required. Typically for subgrade rehabilitation efforts, six to eight wells are inspected, tested and evaluated every year to determine if rehabilitation is required. Typical subgrade rehab activities include but are not limited to: pump and pump column pipe replacements; rehabilitation of well casing and screen; and other enhancements to maintain well function and capacities. Spending in fiscal years 2020-2024 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 currently under contract for rehabilitation improvements in FY 2020 include Arrowcreek Well #1, STMGID Well #3, Sunrise Estates Well #3, Stampmill East (Stampmill #1) and Corbet Well.



Ground Water Supply Improvements Double Diamond #5 Equipping & Blending Main

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Developer Fees	Double Diamond #5 Equipping & Blending Main	50	450	_	60	1,140	1,700

PROJECT DESCRIPTION: Construct pumping facilities for the existing Double Diamond Well #5 including the pump house building, electrical power, pump/motor and valves and piping to provide an additional 1,200 gallons per minute of peak period supply to the Double Diamond area. The project also includes construction of a blending main between Double Diamond Wells #4 & #5.

SCHEDULE: Based on current growth rates, it is anticipated that the additional capacity from the new well will be needed in the summer of FY 2024.



Ground Water Supply Improvements Campello Capacity Increase

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Developer Fees	Campello Capacity Increase	70		_			70

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

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



Ground Water Supply Improvements Callamont Well South Equipping

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Developer Fees	Callamont Well South Equipping	_		60	1,140		1,200

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 2023, but may be constructed sooner (or later) depending on the actual schedule for the proposed 210 unit Callamont residential development.



Ground Water Supply Improvements Air Guard Well Replacement

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Customer Rates	Air Guard Well Replacement Equipping	_	_	_	1,100	_	1,100

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

SCHEDULE: The pumping facilities are scheduled for construction in FY 2023.



Ground Water Supply Improvements Sunrise #3 Replacement

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Customer Rates	Sunrise Well #3 Replacement	100	_	_	_	_	100

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

SCHEDULE: Septic tank relocation activities will begin during FY 2020.



Ground Water Supply Improvements Bedell Flat Water Bank

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
3	Customer Rates / Sustainability Fees	Bedell Flat Water Bank	500	500	500	250	250	2,000

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, Washoe County, and the U.S. Geological Survey (USGS) to evaluate the feasibility of expanding TMWA's conjunctive use program to include aquifer storage and recovery (ASR) in Bedell Flat. Bedell Flat is located in southern Washoe County, about 13 miles north of Stead and appears to have favorable hydrogeologic characteristics for a large-scale ASR program. Several water resource options are under consideration, including: injection of potable water using ASR wells near the existing Fish Springs pipeline; infiltration of highly treated reclaimed water along a natural drainage referred to as Bird Spring Wash; infiltration of highly treated reclaimed water through rapid infiltration basins (RIBs); or a combination of these. Water stored or banked in Bedell Flat could serve as a future non-Truckee River based drought or emergency water supply for the region. This project includes a joint funding agreement with the USGS to conduct water infiltration monitoring and assessments to determine the feasibility of ASR in Bedell Flat, and an NDEP grant for infiltration testing.

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



Ground Water Supply Improvements Lemmon Valley Well #8 Replacement

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	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 while producing at least 20 percent more capacity than the original Lemmon Valley 8 Well. The additional capacity will provide supply to support base load supplied from the Fish Springs groundwater system.



SCHEDULE: Well drilling will occur in FY 2023 and well equipping in FY 2024.

Ground Water Supply Improvements Well Fix & Finish

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Customer Rates	Well Fix & Finish	200	200	200	200	200	1,000

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

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



Ground Water Supply Improvements Well Plugging / Conversion

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	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 FY 2021.



Ground Water Supply Improvements NDEP Monitoring Wells

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Customer Rates	NDEP Monitoring Wells	100	100	_	_	_	200

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

SCHEDULE: New monitor well drilling and installation as well as old monitoring well plugging activities will occur in FY 2020-21.



Ground Water Supply Improvements Thomas Creek Well Replacement & Spring Creek SC5

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Customer Rates	Thomas Creek Well Replacement & Spring Creek SC #5	1,250	1,250				2,500

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 FY 2020 and well equipping in FY 2021.



Ground Water Supply Improvements Truckee Canyon Well 3 Site Modifications

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Customer Rates	Truckee Canyon Well #3 Site Modifications	50					50

PROJECT DESCRIPTION: Project includes minor site modifications in cooperation with an A&K Earthmovers project to expand their equipment yard by backfilling an existing drainage channel, relocating the Truckee Canyon Well 3 pump to waste discharge, and installing a security fence and gate. The improvements will provide a new TMWA access point to the well site that does not require travel through the A&K equipment yard.

SCHEDULE: Design was completed in FY 2019 and construction will be completed in FY 2020.



Ground Water Supply Improvements Well Head TTHM Mitigation

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Customer Rates / Sustainability Fees	Well Head TTHM Mitigation	500	500	500	500	500	2,500

PROJECT DESCRIPTION: Planning, permitting and implementation of tank mixers and ventilation equipment technologies to reduce disinfection by product (DBP) formation in recharged water and receiving groundwater.

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



Ground Water Supply Improvements Spring Creek Well #7 Recharge

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Customer Rates / Sustainability Fees	Spring Creek Well #7 Recharge	425	_	_	_	_	425

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

SCHEDULE: Construction will begin in FY 2020.



Ground Water Supply Improvements Kietzke, High, Morrill PCE Treatment

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Customer Rates	Kietzke, High, Morrill PCE Treatment	500	_	_		_	500

PROJECT DESCRIPTION: Currently, the raw water from these wells exceed the PCE limit, and pump-to-waste water discharges directly to the Truckee River without treatment. The project will study treatment alternatives, select a design and construct improvements to reduce PCE to acceptable levels prior to discharge into the Truckee River. It should be noted that discharge of untreated pump-to-waste water only occurs a few times per year and for very short durations since these facilities normally stay on-line for long periods once they are started up. Reimbursement for the project costs will be provided from the remediation district.

SCHEDULE: The improvements are scheduled for completion in FY 2020.


Ground Water Supply Improvements Callamont Well North Equipping

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Customer Rates	Callamont Well North Equipping	_	_	_	60	1,140	1,200

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

SCHEDULE: This project is currently scheduled for construction in FY 2024, but may be constructed sooner (or later) depending on the actual schedule for the proposed 210 unit Callamont residential development.



Ground Water Supply Improvements STMGID 6 Generator

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Developer Reimbursement	STMGID #6 Generator	281		_	_	_	281

PROJECT DESCRIPTION: The project involves installation of a backup power generator and associated electrical system improvements on STMGID Well #6 to insure fire flow requirements for the new Washoe County School District middle school at Thomas Creek Rd and Arrowcreek Pkwy can be delivered. The Washoe County School District is responsible for all project costs.

SCHEDULE: The improvements will be completed in FY 2020.



Ground Water Supply Improvements Spring Creek Well #8 - Donovan

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Developer Fees	Spring Creek Well #8 - Donovan	_	_	30	910	1,060	2,000

PROJECT DESCRIPTION: The project involves construction and equipping of a new production well located just south of Indian Sage Court in Spanish Springs Valley. TMWA owns a 6,000 square feet parcel at this location where a test well was previously constructed but will need access and pipeline/utility easements. It is anticipated that the new well will produce up to 500 gallons per minute of new supply for the area.

SCHEDULE: This project schedule assumes the new well is drilled and constructed in FY 2023 and the pumping facilities are constructed in FY 2024.



TREATMENT PLANT IMPROVEMENTS Summary

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Customer Rates	Chalk Bluff Treatment Plant Fix & Finish	600	450	350	350	350	2,100
1	Customer Rates	Glendale Treatment Plant Fix & Finish	400	400	100	100	1,000	2,000
1	Customer Rates	Chalk Bluff Filter Underdrains	500	1,000	1,000	1,000	1,000	4,500
3	Customer Rates	Chalk Bluff Lighting Upgrade	_		350			350
3	Customer Rates	Glendale Lighting Upgrade		250				250
2	Customer Rates	Orr Ditch Pump Station Rehabilitation	100	500	500	500		1,600
1	Customer Rates	Truckee Canyon Water Treatment Improvements	60	60	35	20	20	195
1	Customer Rates	Lightning W Treatment Improvements	10	60	20	20	20	130
1	Customer Rates	SCADA Rehab / Plant Operating Software	1,000	800	500	500		2,800
1	Customer Rates / Developer Fees	Mount Rose Surface Water Treatment Plant	11,000	2,000	_			13,000
2	Customer Rates	Longley Plant HV 3 & 4 Treatment Improvements	40	500	800			1,340
1	Grants	Glendale Diversion Emergency Flood Repairs (FEMA)	1,600	_	_	_	_	1,600
2 Subtotal	Customer Rates	Spanish Springs Nitrate Treatment Facility	200	500	3,000	3,000	2 300	6,700

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



Treatment Plant Improvements Chalk Bluff Treatment Plant Fix & Finish

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Customer Rates	Chalk Bluff Treatment Plant Fix & Finish	600	450	350	350	350	2,100

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/sludge removal improvements, treatment train isolation valves, flow meter improvements and safety improvements.

SCHEDULE: Major projects and timelines include: ice fighting improvements to maintain raw water supply via the Highland Canal will continue in FY 2019, instrumentation upgrades will continue within the next five years as obsolete instruments are no longer supported by suppliers, solids removal upgrades started in 2018 will wrap up in FY 2020. Work to isolate sections of the treatment plant influent trains will begin in FY 2019. Filter media replacement will occur when yearly filter media evaluation indicates that replacement will soon be necessary. Since the Chalk Bluff plant is operated year-round, most work will continue over the course of the five-year CIP and when system demands allow maintenance.



Treatment Plant Improvements Glendale Treatment Plant Fix & Finish

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Customer Rates	Glendale Treatment Plant Fix & Finish	400	400	100	100	1,000	2,000

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

SCHEDULE: The treatment plant maintenance shop and storage improvements are currently scheduled in FY 2024. Instrumentation upgrades will continue within the next five years as obsolete instruments are no longer supported by suppliers. Filter media replacement will occur when yearly filter media evaluation indicates that replacement will soon be necessary. Since the Glendale plant is used seasonally, most work will continue over the course of the five-year CIP and during the periods that the plant is not operating.



Treatment Plant Improvements Chalk Bluff Filter Underdrains

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Customer Rates	Chalk Bluff Filter Underdrains	500	1,000	1,000	1,000	1,000	4,500

PROJECT DESCRIPTION: The dual media filters at Chalk Bluff are nearing 25 years old and maintenance and/or repairs are needed on filters that have experienced recent underdrain performance issues. An engineering evaluation of the filters has been completed and an entire replacement of one or more filter underdrains is recommended.

SCHEDULE: Due to cost and operational complexities associated with taking a filter out of service, this will be a multi-year effort beginning with design and bidding in FY 2020 and construction taking place in at least FY's 2021-24.



Treatment Plant Improvements Chalk Bluff Lighting Upgrade

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
3	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 2022.



Treatment Plant Improvements Glendale Lighting Upgrade

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
3	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 2021.



Treatment Plant Improvements Orr Ditch Pump Station Rehab

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Customer Rates	Orr Ditch Pump Station Rehabilitation	100	500	500	500		1,600

PROJECT DESCRIPTION: This project will increase redundancy and reliability by enhancing the Truckee River source of supply to the Chalk Bluff Water Treatment Plant. Currently, there are very limited options to facilitate repairs or conduct preventative maintenance due to the location and arrangement of the intake structure and wet well. The project design may include modifying the existing proprietary wet well submersible pump design into a pedestal-style vertical turbine pump arrangement with non-submerged motors, may include the construction of a building over the top of the wet well to increase security and allow a safer means of performing maintenance activities and may also incorporate a system to eliminate silting issues within the intake structure.

SCHEDULE: Planning and design will be completed in FY 2020. Construction will commence in FY 2020-21 and scheduled to be completed by FY 2023.



Treatment Plant Improvements Truckee Canyon Water Treatment Improvements

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Customer Rates	Truckee Canyon Water Treatment Improvements	60	60	35	20	20	195

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 a new access to WEII #4 from Old Dominion, 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 2020 – 2024 are contingent spending related to treatment efficiency and for chemical changes in the raw water.



Treatment Plant Improvements Lightning W Treatment Improvements

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Customer Rates	Lightning W Treatment Improvements	10	60	20	20	20	130

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

SCHEDULE: The FY 2021 work includes miscellaneous building improvements.



Treatment Plant Improvements SCADA Rehab/Plant Operating Software

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Customer Rates	SCADA Rehab / Plant Operating Software	1,000	800	500	500		2,800

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 are 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 decided on a systematic approach to updating the equipment and operating software starting in fiscal year 2015 with telemetry improvement in the ensuing four years to convert to wireless transmission of data feeds where possible.

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



Treatment Plant Improvements Mt. Rose Surface Water Treatment Plant

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Customer Rates / Developer Fees	Mount Rose Surface Water Treatment Plant	11,000	2,000	_	_	_	13,000

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

SCHEDULE: Permitting, design, and bidding was completed in FY 2019. Construction began in FY 2019, and completion of construction in FY 2020.



Treatment Plant Improvements Longley Lane HV 3 and HV 4 Treatment

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Customer Rates	Longley Plant HV 3 & 4 Treatment Improvements	40	500	800	_	_	1,340

PROJECT DESCRIPTION: TMWA completed planning and preliminary design of an innovative UV disinfection / Arsenic blending water treatment process to treat the HV 3 and HV 4 groundwater wells that are out of service due to surface water influence and elevated arsenic. These wells were formerly treated at the Longley Lane WTP which is currently not being utilized as a treatment facility due to needed safety improvements on the chemical feed, membrane clean-in-place and the solids handling piping systems. An assessment of the plant was completed, and short-term improvements identified to modify the facility to serve as a booster pump station using either surface water or groundwater supply sources.

SCHEDULE: Planning and permitting to be completed in FY 2020. Design and construction to be performed in FY's 2021 through 2022.



Treatment Plant Improvements Glendale Diversion Emergency Flood Repairs

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Grants	Glendale Diversion Emergency Flood Repairs (FEMA)	1,600		_		_	1,600

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: Basic repairs were completed in FY 2018. Improvements to mitigate future failures is scheduled for completion in FY 2020 pending environmental permitting.



Treatment Plant Improvements Spanish Springs Nitrate Treatment Facility

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Customer Rates	Spanish Springs Nitrate Treatment Facility	200	500	3,000	3,000		6,700

PROJECT DESCRIPTION: Initiation of planning, permitting, site acquisition and design for a 3 MGD biological water treatment process to treat several groundwater wells in Spanish Springs that are out of service due to elevated nitrate and arsenic. Treatment is required to maintain and restore the service capacity of the wells.

TMWA completed the operation and testing of a 5 GPM pilot treatment plant in 2018. Biological treatment of nitrate in potable water is currently not permitted in Nevada. TMWA, working with Carollo Engineers, UNR and WaterStart, has evaluated this innovative technology and determined it to be a cost-effective treatment solution compared to traditional, high cost alternatives such as ion exchange.

SCHEDULE: Planning, permitting, site acquisition and design to be conducted in FY's 2020 through 2021.



DISTRIBUTION SYSTEM PRESSURE IMPROVEMENTS Summary

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Customer Rates	Pressure Regulators Rehabilitation	500	500	500	500	500	2,500
1	Customer Rates	Pressure Reducing Valve (Roll Seal) Removal	400	400	400	400	400	2,000
2	Customer Rates	Land Acquisitions	500	500	250	250	250	1,750
2	Customer Rates	Desert Fox Standby Generator		150				150
1	Developer Fees	Disc Drive Low Head Pump Station & Mains	_	130	3,170	_	_	3,300
1	Developer Fees	Longley BPS / Double R Capacity Increase	250		_		_	250
3	Customer Rates	Pump Station Oversizing	100	100	100	100	100	500
1	Customer Rates	Pump Station Rebuilds, Rehabilitations	500	1,500	1,000	1,000	1,000	5,000
1	Customer Rates / Developer Fees	Sullivan #2 BPS Replacement	_	80	1,150	_	_	1,230
1	Customer Rates	Mount Rose Well #3 Pump Station Improvements		250	_		_	250
3	Customer Rates	Standby Generator Improvements	150	150	150	150	150	750
2	Customer Rates	Idlewild BPS Improvements	_	100	1,200	_	_	1,300
1	Developer Fees	Raleigh to Fish Springs BPS Station			300	1,600	_	1,900
2	Customer Rates / Developer Fees	Southwest Pump Zone Consolidation Phase 1			330	6,330	_	6,660
2	Customer Rates	Spanish Springs #1 Pump Zone Intertie	600					600
1	Developer Fees	STMGID Tank #4 BPS / Transmission Line	150	2,300	550		_	3,000
3	Developer Fees	Wildwood Pressure Regulating Station Scada Control	_	_	_	50	_	50
2	Customer Rates / Developer Fees	Southwest Pump Zone Consolidation Phase 2				50	990	1,040

Truckee Meadows Water Authority FY 2020 - 2024 Capital Improvement Plan Attachment 3

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Customer Rates	Sierra Summit-Kohl's Zone Consolidation				50	400	450
1	Customer Rates / Developer Fees	Chalk Bluff Additional Backup Generator	700					700
2	Customer Rates	Wild Mustang Regulated Pressure Zone				50	380	430
1	Customer Rates	Twin Lakes BPS	400					400
2	Customer Rates	Thomas Creek #4 PRS					170	170
1	Customer Rates	Kings Row 1 BPS	2,200					2,200
2	Developer Fees	Spring Creek Tanks #3&4 BPS Modifications					600	600
2	Developer Fees	Lazy 5 Low Head Pump Station & Mains					150	150
1	Developer Fees	Common (Stonegate) BPS	2,250					2,250
Sub-Tota	Sub-Total Pressure Improvements			6,160	9,100	10,530	5,090	39,580

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



Distribution System Pressure Improvements Pressure Regulators Rehabilitation

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Customer Rates	Pressure Regulators Rehabilitation	500	500	500	500	500	2,500

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

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



Distribution System Pressure Improvements Pressure Reducing Valve (Roll Seal) Removal

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Customer Rates	Pressure Reducing Valve (Roll Seal) Removal	400	400	400	400	400	2,000

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

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



Distribution System Pressure Improvements Land Acquisitions

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Customer Rates	Land Acquisitions	500	500	250	250	250	1,750

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

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



Distribution System Pressure Improvements Desert Fox Standby Generator

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Customer Rates	Desert Fox Standby Generator		150		_		150

PROJECT DESCRIPTION: This project involves furnishing and installing a new standby generator and ATS to power one 50 Hp pump at the existing Desert Fox booster pump station. This alternative pumping capacity is needed when the existing 0.5 MG Spring Creek #5A Tank is out of service for recoating or other maintenance or if an extended power outage occurs in the area.

SCHEDULE: Improvements are scheduled for design in FY 2020 and construction in FY 2021.



Distribution System Pressure Improvements Disc Drive Low Head Pump Station and Mains

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Developer Fees	Disc Drive Low Head Pump Station & Mains	_	130	3,170	_	_	3,300

PROJECT DESCRIPTION: This involves construction of a new low head pump station located just north of the intersection of Disc Dr. and Sparks Blvd. in North-East Sparks/Spanish Springs Valley, along with suction and discharge mains. TMWA owns a 6,000 square foot parcel in this location and has obtained an easement out to Vista Blvd. A suction pipe must be extended from Disc Dr. to Sparks Blvd. The pump station is needed to maintain peak period distribution pressure in the area and to provide adequate suction pressure to the Vista #1 and Spanish Springs #2 pump stations. The low-head pumping option was determined to be more cost effective than oversizing of the Sparks Feeder Main projects.

SCHEDULE: Improvements are scheduled for design in FY 2021 and construction in FY 2022.



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

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Developer Fees	Longley BPS / Double R Capacity Increase	250	_	_		_	250

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 be replaced to provide the additional capacity without excessive friction losses.

SCHEDULE: The improvements are scheduled for FY 2020. The improvements are necessary when supply through the Double R Intertie must exceed 5,400 gallons per minute.



Distribution System Pressure Improvements Pump Station Oversizing

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
3	Customer Rates	Pump Station Oversizing	100	100	100	100	100	500

PROJECT DESCRIPTION: The FY 2020 project may consist of cash contributions towards construction of a new above ground booster pump station located off of W. 4th Street near Twin Lakes Blvd or one near the Comstock Tank to replace the existing Sierra Pump Station which is located in an underground vault and is in need of major rehabilitation. TMWA would normally expend approximately \$1 million to replace an existing underground pump station with a new above ground station.

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



Distribution System Pressure Improvements Pump Station Rebuilds, Rehabilitations

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Customer Rates	Pump Station Rebuilds, Rehabilitations	500	1,500	1,000	1,000	1,000	5,000

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 2020, TMWA plans to reconstruct the Kings Row #1 pump station above ground.



Distribution System Pressure Improvements Sullivan #2 Booster Pump Station Replacement

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Customer Rates / Developer Fees	Sullivan #2 BPS Replacement	_	80	1,150		_	1,230

PROJECT DESCRIPTION: The project involves construction of a new above grade pump station at the site of the existing Sullivan Tank on El Rancho. The new pump station will pump to the proposed Sun Valley #2 Tank tentatively located off of Dandini Drive near the TMCC/DRI complex. Completion of these facilities should allow the retirement of the existing Sun Valley #1 pump station.

SCHEDULE: Planning and design are scheduled for FY 2021. Construction is scheduled for FY 2022.



Distribution System Pressure Improvements Mt. Rose Well #3 Pump Station Improvements

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Customer Rates	Mount Rose Well #3 Pump Station Improvements		250		_		250

PROJECT DESCRIPTION: The project involves rehab of the building, removal of pipe and valves that will no longer be necessary following completion of the Mt. Rose Well #5 improvements and upgrades to electrical and control systems.

SCHEDULE: Construction is scheduled in FY 2021.

Distribution System Pressure Improvements Standby Generator Improvements

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
3	Customer Rates	Standby Generator Improvements	150	150	150	150	150	750

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 2020, a second generator will be installed pump at Chalk Bluff to allow more pumping and treatment processes to continue during a power failure. This project is contained in a stand alone line item as reflected in the budget above.



Distribution System Pressure Improvements Idlewild Booster Pump Station Improvements

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	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 FY2021 and construction should begin in FY 2022. This schedule may be moved based on system needs.



Distribution System Pressure Improvements Raleigh to Fish Springs Booster Pump Station

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Developer Fees	Raleigh to Fish Springs BPS Station	_	_	300	1,600	_	1,900

PROJECT DESCRIPTION: The project involves acquisition of property and construction of a new pump station to pump water from the Raleigh Heights zone to the Fish Springs terminal tank when the Fish Springs Wells are off-line or if a main break occurs on the Fish Springs transmission line. In the future, there will be a number of customers served directly from the Fish Springs terminal tank; therefore, it is necessary to provide a secondary supply to maintain continuous water service.

SCHEDULE: Implementation will begin in FY 2022 and construction in FY 2023.



Distribution System Pressure Improvements SW Pump Zone Consolidation Phase 1

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Customer Rates / Developer Fees	Southwest Pump Zone Consolidation Phase 1	_	_	330	6,330	_	6,660

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

SCHEDULE: Design of the improvements is scheduled to begin in FY 2022. Construction is scheduled for FY 2023.



Distribution System Pressure Improvements Spanish Springs #1 Pressure Zone Intertie

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Customer Rates	Spanish Springs #1 Pump Zone Intertie	600	_	_	_	_	600

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

SCHEDULE: The project is scheduled for FY 2020.


Distribution System Pressure Improvements STMGID Tank #4 Booster Pump Station / Transmission Line

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Developer Fees	STMGID Tank #4 BPS / Transmission Line	150	2,300	550		_	3,000

PROJECT DESCRIPTION: The project includes a new booster pump station located near the STMGID Tank 4/5 site and approximately 6,000 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 FY 2020.



Distribution System Pressure Improvements Wildwood Pressure Regulating Station/Scada Control

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
3	Developer Fees	Wildwood Pressure Regulating Station Scada Control	_	_	_	50	_	50

PROJECT DESCRIPTION: The project involves retrofitting an existing pressure regulating station to SCADA (remote) control to provide additional transfer capacity into the Mt Rose Tank #2 zone. It will be necessary to obtain electrical service to the existing vault; install a new PLC; and to equip the existing pressure regulating valve with solenoid control to allow the valve to be remotely operated from the Glendale control room.

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



Distribution System Pressure Improvements Southwest Pump Zone Consolidation Phase #2

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Customer Rates / Developer Fees	Southwest Pump Zone Consolidation Phase 2	_	_	_	50	990	1,040

PROJECT DESCRIPTION: The project is a continuation of Phase 1 and involves construction of additional water main to further integrate the new SW pump station and allow the retirement of one more existing underground pump station plus provide backup to two other pump zones.

SCHEDULE: Design of the construction is scheduled to begin in FY 2023. Construction is scheduled to start in FY 2024.



Distribution System Pressure Improvements Sierra Summit-Kohl's Zone Consolidation

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Customer Rates	Sierra Summit-Kohl's Zone Consolidation	_		_	50	400	450

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 950 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 and 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 2024.



Distribution System Pressure Improvements Chalk Bluff Additional Backup Generator

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Customer Rates / Developer Fees	Chalk Bluff Additional Backup Generator	700	_	_	_	_	700

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

SCHEDULE: Construction is scheduled to be completed in FY 2020.



Distribution System Pressure Improvements Wild Mustang Regulated Pressure Zone

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Customer Rates	Wild Mustang Regulated Pressure Zone				50	380	430

PROJECT DESCRIPTION: The project involves construction of a new pressure regulator station and approximately 750 LF of water main to create a new pressure zone in the Geiger Grade area of the South Truckee Meadows to reduce distribution system pressures in the area.

SCHEDULE: Design of the construction is scheduled to begin in FY 2023. Construction is scheduled to start in FY 2024.



Distribution System Pressure Improvements Twin Lakes Booster Pump Station

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Customer Rates	Twin Lakes BPS	400	_	_		_	400

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

SCHEDULE: Construction is planned to start in FY 2019 and go into FY 2020 with reimbursement planned in FY 2020.



Distribution System Pressure Improvements Thomas Creek #4 PRS

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Customer Rates	Thomas Creek #4 PRS		_	_		170	170

PROJECT DESCRIPTION: The project involves construction of a new PRS and approximately 160 LF of water main to increase capacity to the Moonrise pressure zone. The increase in capacity will help with replenishing storage in the STMGID Tank and increase fire flow within the zone.

SCHEDULE: The project is scheduled for FY 2024.



Distribution System Pressure Improvements Kings Row 1 Booster Pump Station

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Customer Rates	Kings Row 1 BPS	2,200					2,200

PROJECT DESCRIPTION: This project will replace the existing underground Kings Row #1 pump station with a new above ground pump station on TMWA property. The project is part of annual booster pump station rehabilitation/replacement program focused on reconstructing existing pump stations above grade.

SCHEDULE: Planning and design were completed in FY 2019. Construction will occur in FY 2020.



Distribution System Pressure Improvements Spring Creek Tanks #3 & #4 Booster Pump Station Modifications

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Developer Fees	Spring Creek Tanks #3&4 BPS Modifications					600	600

PROJECT DESCRIPTION: This project will replace an existing 200 GPM pump with a new pump/motor rated for 1800 GPM at the existing Spring Creek 3/4 Tanks site in Spanish Springs Valley. The existing regulated bypass will also be equipped for SCADA control. The improvements will provide redundant supply to the Desert Springs 3 and Spring Creek 6 tank zones.

SCHEDULE: Planning, design and construction will occur in FY 2024.

Distribution System Pressure Improvements Lazy 5 Low Head Pump Station & Mains

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Developer Fees	Lazy 5 Low Head Pump Station & Mains	_	_	_	_	150	150

PROJECT DESCRIPTION: The project involves construction of a new low head pump station located near the existing Lazy 5 Intertie in NE Sparks/Spanish Springs Valley along with suction and discharge mains. TMWA will need to acquire a parcel of land and pipeline easements out to the Pyramid Hwy. The project will increase TMWA's ability to transfer surface water to the Spanish Springs Valley and may defer more costly groundwater treatment options to increase capacity for growth.

SCHEDULE: Planning and design will occur in FY 2024 with construction scheduled in FY's 2024 - 2025.



Distribution System Pressure Improvements Common (Stonegate) Booster Pump Station

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Developer Fees	Common (Stonegate) Booster Pump Station	2,250	_	_	_	_	2,250

PROJECT DESCRIPTION: The project consists of design and construction of a new booster pump station to deliver the water supply for the proposed Stonegate development in Cold Springs. Suction and discharge pipelines on North Virginia and terminal storage facilities in Cold Springs will be constructed by Stonegate as applicant-installed projects. The pump station will be located on a parcel on North Virginia that has already been acquired by Stonegate. Stonegate is responsible for 100 percent of the project costs.

SCHEDULE: Design will be initiated in FY 2019 and construction will occur in FY 2020-2021.



WATER MAIN DISTRIBUTION & SERVICE LINE IMPROVEMENTS Summary

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Customer Rates	Street & Highway Main Replacements	4,000	5,000	5,000	5,000	5,000	24,000
2	Customer Rates	Spring Creek South Zone Conversion	850	750				1.600
1	Customer Rates	Gear, Vine, Washington Main Replacement	2,000		_		_	2,000
1	Customer Rates	Booth, Sharon Way, Monroe 24" Main Replacements	100	1,800	1,100	2,200		5,200
1	Developer Fees	South Virginia 24" Main - Kumle to Peckham	160	900				1,060
2	Customer Rates	North East Sparks Feeder Main Relocation	50	950	_			1,000
2	Customer Rates	Goldeneye Parkway Main & CV Tie		180				180
1	Developer Fees	Trademark 14" Main Tie	50	300	_			350
2	Customer Rates	Spanish Springs Main Replacement	1,200					1,200
2	Customer Rates	Mt. Rose Tank 1 Fire Flow Improvements		400	570			970
1	Developer Fees	South Truckee Meadows Capacity Improvements	350					350
2	Customer Rates / Developer Fees	Stead Golf Course Main Replacement			_	170	2,300	2,470
3	Developer Reimbursements	General Waterline Extensions	300	100	100	100	100	700
1	Developer Fees	NE Sparks Feeder Main Phase 8			50	2,050		2,100
1	Developer Fees	Mount Rose 5 Distribution / Pressure Improvements	400					400
1	Developer Fees	Goldenrod Main			50	1,200		1,250
1	Developer Fees	Boomtown Water System Improvements	2,550				_	2,550
1	Developer Fees	Boomtown to TMWA Connection	650	1,280				1,930
2	Customer Rates	Lemmon Valley Sand Yard		530			_	530
1	Developer Fees	Wildwood 2 PRS SCADA Control				100		100
2	Customer Rates / Developer Fees	Sullivan #1 Main Tie & PRS	_	_	_	620		620

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Truckee Meadows Water Authority FY 2020 - 2024 Capital Improvement Plan Attachment 3

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Customer Rates	Montreux High Pressure ACP Replacment	_	_			520	520
2	Customer Rates	Galena Creek Main Crossing					40	40
2	Customer Rates	Off-River Supply Improvements - STM				_	50	50
2	Customer Rates	Off-River Supply Improvements - NVS Pump Station		_			400	400
2	Customer Rates	Somersett #6 Main Tie & PRS		_			280	280
1	Customer Rates	Verdi Main Extension	500					500
1	Developer Reimbursements	Verdi Elementary Main Oversizing	200					200
1	Developer Fees	Stonebrook West Main Oversizing	450					450
Subtotal	Subtotal Water Main Distribution Improvements			12,190	6,870	11,440	8,690	53,000



Water Main-Distribution Service Line Improvements Street & Highway Main Replacements

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Customer Rates	Street & Highway Main Replacements	4,000	5,000	5,000	5,000	5,000	24,000

PROJECT DESCRIPTION: Provision is made each year for water main replacements in conjunction with repaving efforts by the City of Reno, City of Sparks, Washoe County and RTC. In addition to repaving projects, TMWA coordinates water main replacements with sewer main replacements in areas where TMWA also has older water lines. TMWA plans for approximately \$5.0 million annually for these efforts, so that TMWA can capitalize on repaving projects planned by other entities. The FY 2019 budget reflects that three large projects totaling \$1.8 million have already been identified and are listed separately in the CIP. Anticipated spending in the out years is reflective of historical activity. Levels of spending can vary year to year and are difficult to predict. These efforts by far are the largest expenditure in the water system rehabilitation category.



Water Main-Distribution Service Line Improvements Spring Creek South Zone Conversion

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Customer Rates	Spring Creek South Zone Conversion	850	750			_	1,600

PROJECT DESCRIPTION: The project involves construction of approximately 2,800 LF of various size water mains, several interties, retirement of several mains and facilities including the existing Spring Creek Tanks. New water mains include 2060 LF of 12" on Pyramid Highway and 300 LF of 8" main across Pyramid Highway at Spring Ridge.

SCHEDULE: Implementation and construction will be completed by FY 2021.



Water Main-Distribution Service Line Improvements Gear, Vine, & Washington Main Replacements

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Customer Rates	Gear, Vine, Washington Main Replacement	2,000					2,000

PROJECT DESCRIPTION: This project includes replacement of approximately 2,500 linear feet of older cast iron and steel water main along Gear Street and Vine Street ahead of the City of Reno's 2020 Neighborhood Street Rehabilitation Project. It also includes replacing approximately 2,100 linear feet of old steel water main in Washington Street. This main was identified in a 2015 main replacement prioritization report as being once of the most costly and leaky mains in the system.

SCHEDULE: Design is anticipated through summer of 2019 with the construction being completed by February 2020 ahead of the City of Reno street project.



Water Main-Distribution Service Line Improvements Booth, Sharon Way, Monroe 24'' Main Replacements

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Customer Rates	Booth, Sharon Way, Monroe 24" Main Replacements	100	1,800	1,100	2,200		5,200

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



Water Main-Distribution Service Line Improvements South Virginia 24" Main (Kumle to Peckham)

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Developer Fees	South Virginia 24" Main - Kumle to Peckham	160	900	_	_	_	1,060

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: Construction is scheduled to be completed in FY 2021 subject to adjustment for actual growth or coordination with road improvements.



Water Main-Distribution Service Line Improvements North-East Sparks Tank Feeder Main Relocation

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Customer Rates	North East Sparks 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 3,000 feet of the 18-inch tank feeder main out into the public right-of-way in South Los Altos Parkway.

SCHEDULE: Design is scheduled for FY 2020 and the improvements will be constructed in FY 2021.



Water Main-Distribution Service Line Improvements Goldeneye Parkway Main & CV Tie

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Customer Rates	Goldeneye Parkway Main & CV Tie	_	180	_			180

PROJECT DESCRIPTION: The project involves construction of approximately 450 LF of 8" water main with a Check Valve from the Eagle Canyon PRS to Longspur Way to provide a secondary supply to the Nightingale Regulated Zone and avoid customer outages when maintenance of the Nightingale pressure reguator station is required.

SCHEDULE: Implementation and construction will be completed in FY 2021.



Water Main-Distribution Service Line Improvements Trademark 14" Main Tie

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Developer Fees	Trademark 14" Main Tie	50	300	_			350

PROJECT DESCRIPTION: This project involves construction of approximately 350 LF of 14" water main from Trademark to South Meadows Parkway, including crossing of an existing major drainage channel. The project will increase transmission capacity in the Double Diamond system to meet the needs of growth.

SCHEDULE: Planning and design will be completed in FY20. Construction will occur in FY's 2020 - 2021.



Water Main-Distribution Service Line Improvements Spanish Springs Main Replacement

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Customer Rates	Spanish Springs Main Replacement	1,200		_			1,200

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 scheduled to be completed in FY 2020.



Water Main-Distribution Service Line Improvements Mt. Rose Tank 1 Fire Flow Improvements

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Customer Rates	Mt. Rose Tank 1 Fire Flow Improvements	_	400	570	_	_	970

PROJECT DESCRIPTION: The project involves reconstruction of an existing PRS at Mt. Rose Tank #1, a new PRS on Blue Spruce and approximately 3100 LF of 10" water main on Blue Spruce and Douglas Fir to increase system pressure and fire flow capacity to existing customers in Galena Forest Estates. Existing fire flows are currently less than 1,000 GPM in the area.

SCHEDULE: Planning and design will be completed in FY 2021. Construction will occur in FY's 2021- 2022.



Water Main-Distribution Service Line Improvements South Truckee Meadows Capacity Improvements

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Developer Fees	South Truckee Meadows Capacity Improvements	350					350

PROJECT DESCRIPTION: The project consists of a 2,500 foot long extension of a 12-inch main on Offenhauser and a new SCADA controlled intertie to the Double Diamond 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 occurring.

SCHEDULE: The improvements are scheduled for construction in FY 2020.



Water Main-Distribution Service Line Improvements Stead Golf Course Main Replacement

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Customer Rates / Developer Fees	Stead Golf Course Main Replacement				170	2,300	2,470

PROJECT DESCRIPTION: The project consists of replacement of about 10,000 feet of 14inch 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 FY 2024.



Water Main-Distribution Service Line Improvements General Waterline Extensions

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
3	Developer Reimbursements	General Waterline Extensions	300	100	100	100	100	700

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

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



Water Main-Distribution Service Line Improvements North-East Sparks Feeder Main Ph. 8

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Developer Fees	NE Sparks Feeder Main Phase 8			50	2,050		2,100

PROJECT DESCRIPTION: The project involves construction of approximately 6400 LF of 14" water main on Satellite Drive from Vista Blvd to Sparks Blvd to increase capacity for growth in Spanish Springs and maintain adequate suction pressure at the Satellite Hills booster pump station.

SCHEDULE: Design is scheduled for FY 2022 and the improvements will be constructed in FY 2023.



Water Main-Distribution Service Line Improvements Mount Rose 5 Distribution / Pressure Improvements

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Developer Fees	Mount Rose 5 Distribution / Pressure Improvements	400	_				400

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

SCHEDULE: Construction is scheduled for FY 2020.



Water Main-Distribution Service Line Improvements Goldenrod Main

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Developer Fees	Goldenrod Main	_		50	1,200		1,250

PROJECT DESCRIPTION: The project involves construction of approximately 4,500 LF of 12" water main from the Tessa West Well to the intersection of Goldenrod and Mountain Meadows Lane. This project will provide additional capacity between the Arrowcreek and Mt Rose systems for Mt Rose 2 tank fills and for on-peak supply from the Mt Rose Water Treatment Plant.

SCHEDULE: Design is planned in FY 2022 and construction is planned in FY 2023.



Water Main-Distribution Service Line Improvements Boomtown Water System Improvements

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Developer Fees	Boomtown Water System Improvements	2,550					2,550

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

SCHEDULE: Assuming escrow closes in March 2019, the improvements will be designed and constructed in FY 2020.



Water Main-Distribution Service Line Improvements Boomtown to TMWA Connection

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Developer Fees	Boomtown to TMWA Connection	650	1,280				1,930

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

SCHEDULE: Assuming the Verdi Main is extended to Riverbelle in FY 2019 and that a suitable property can be acquired for the pump station, the construction of the facilities would occur in FY 2020-21 pending railroad permitting.



Water Main-Distribution Service Line Improvements Lemmon Valley Sand Yard

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Customer Rates	Lemmon Valley Sand Yard	_	530	_	_	_	530

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

SCHEDULE: Assuming flood water recede sufficiently, the project would be constructed in FY 2021.



Water Main-Distribution Service Line Improvements Wildwood 2 PRS SCADA Control

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Developer Fees	Wildwood 2 PRS SCADA Control				100		100

PROJECT DESCRIPTION: The project involves the addition of SCADA control to an existing pressure regulator system on Wildwood Drive to increase capacity for Mt Rose Tank 2 filling and the proposed Ascente residential development.

SCHEDULE: This project is scheduled for completing in FY 2023.



Water Main-Distribution Service Line Improvements Sullivan #1 Main Tie & PRS

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Customer Rates / Developer Fees	Sullivan #1 Main Tie & PRS			_	620		620

PROJECT DESCRIPTION: The project involves construction of about 1,300 LF of 10" main on El Rancho and a new PRS to supply the Sullivan #1 zone. The project timeline assumes that the proposed Sun Valley #2 Tank and Sullivan #2 pump station are in service.

SCHEDULE: Implementation and construction will be completed in FY 2023.


Water Main-Distribution Service Line Improvements Montreux High Pressure ACP Replacement

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Customer Rates	Montreux High Pressure ACP Replacment					520	520

PROJECT DESCRIPTION: The project involves replacement of approximately 6500 LF of existing 10" transite water main between Mt Rose Well #5 and Joy Lake Road. The existing ACP pipe installed in the 1970's is currently operated at pressures between 120-250 psi.

SCHEDULE: Implementation will occur in FY 2024.



Water Main-Distribution Service Line Improvements Galena Creek Main Crossing

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Customer Rates	Galena Creek Main Crossing					40	40

PROJECT DESCRIPTION: The project involves construction of approximately 2,200 LF of 10" ductile iron water main between Breithorn Cir. and Piney Creek Parklet including a crossing of Galena Creek. The existing 10" ACP pipe that crosses Galena Creek is currently the only tie between well sources and storage tanks.

SCHEDULE: Design will occur in FY 2024.



Water Main-Distribution Service Line Improvements Off-River Supply Improvements - South Truckee Meadows

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Customer Rates	Off-River Supply Improvements - STM	_				50	50

PROJECT DESCRIPTION: The project involves construction of four SCADA controlled, pressure reducing bypass stations in strategic locations in the South Truckee Meadows to allow excess well capacity and excess Mt. Rose Water Treatment Plant capacity to be provided to the Highland gravity zone in case of loss supply from the Truckee River. Two additional bypasses (Arrowcreek BPS & future Veteran's BPS) will be constructed separately under the budget for those facilities.

SCHEDULE: Planning and design will occur in FY 2024.



Water Main-Distribution Service Line Improvements Off-River Supply Improvements - North Virginia-Stead Pump Station

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Customer Rates	Off-River Supply Improvements - NVS Pump Station			_	_	400	400

PROJECT DESCRIPTION: The project involves construction of a SCADA controlled, pressure reducing bypass station at the North Virginia-Stead booster pump station to allow excess Fish Springs well capacity to be provided to the Highland gravity zone in case of loss supply from the Truckee River.

SCHEDULE: Project implementation and construction will occur in FY 2024.



Water Main-Distribution Service Line Improvements Somersett #6 Main Tie & PRS

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Customer Rates	Somersett #6 Main Tie & PRS	_	_	_	_	280	280

PROJECT DESCRIPTION: The project involves construction of about 600 LF of 10" main within improved paved pathway and a new pressure regulator station to provide a secondary source (looping) to Somersett Village 6.

SCHEDULE: Project implementation and construction will occur in FY24.



Water Main-Distribution Service Line Improvements Verdi Main Extension

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Customer Rates	Verdi Main Extension	500	_				500

PROJECT DESCRIPTION: The project involves construction of about 4,900 feet of 18-inch transmission main from the West Meadows subdivision to the Riverbelle MHP and further west on US 40 to the Verdi Mutual Water Company. The project involves a river crossing utilizing an existing casing installed when the Lawton Sewer Interceptor project was constructed. The project is also the first leg in completing a tie to the Boomtown water system. The project has been approved for a DWSRF principle forgiveness loan.

SCHEDULE: The project is scheduled for construction in FY 2019.and may extend into FY 2020 depending on weather delays and river flows.



Water Main-Distribution Service Line Improvements Verdi Elementary Main Oversizing

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Developer Reimbursements	Verdi Elementary Main Oversizing	200			_	_	200

PROJECT DESCRIPTION: This project involves expenditures to oversize approximately 1900 feet of 10-inch water main to be extended from the end of TMWA's current Verdi Water Main Extension project to the Verdi Elementary school. Verdi Elementary is currently served from groundwater that must be treated for arsenic. The Washoe County School District has obtained a DWSRF Loan to finance a portion of the project.

SCHEDULE: Assuming that TMWA completes construction of the Verdi Main Extension in FY 2019 or early FY 2020, the oversizing expenditures will occur in FY 2020.



Water Main-Distribution Service Line Improvements Stonebrook West Main Oversizing

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Developer Fees	Stonebrook West Main Oversizing	450	_	_	_	_	450

PROJECT DESCRIPTION: The project involves oversizing of about 7000 LF of 12" water main on Wingfield Hills Rd and Tierra Del Sol Prkwy to 16" diameter pipe as part of an Applicant-Installed new business project (Stonebrook West, PLL 19-6695 Annex.)

SCHEDULE: This project will be completed by FY 2020.



Truckee Meadows Water Authority FY 2020 - 2024 Capital Improvement Plan Attachment 3

POTABLE WATER STORAGE IMPROVEMENTS Summary

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Customer Rates / Developer Fees	Sun Valley Tank #2	420	2,980	_	_	_	3,400
1	Developer Fees	Rattlesnake Ring Addition	100	800		_		900
2	Developer Fees	Fish Springs Ranch Tank #2					160	160
1	Customer Rates	Storage Tank Recoats; Access; Drainage Improvements	900	900	900	900	900	4,500
2	Customer Rates / Developer Fees	Highland Reservoir Tank		100	5,000	700	_	5,800
1	Customer Rates / Developer Fees	STMGID Tank East Zone 11 Tank	3,075	_	_	_	_	3,075
1	Customer Rates / Grant	Tank Access Road Flood Repairs (FEMA)	350	_	_	_	_	350
1	Customer Rates	Lightning W Tank #2	360					360
1	Customer Rates / Developer Fees	US 40 Tank & Feeder Main			170	300	2,730	3,200
2	Customer Rates / Developer Fees	Spanish Springs Altitude Valves				300		300
Subtotal	Storage Improve	ments	5,205	4,780	6,070	2,200	3,790	22,045

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



Potable Water Storage Improvements Sun Valley #2 Tank

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Customer Rates / Developer Fees	Sun Valley Tank #2	420	2,980	_	_		3,400

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 2021 subject to successful acquisition of a suitable tank site which is elevation sensitive.



Potable Water Storage Improvements Rattlesnake Ring Addition

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Developer Fees	Rattlesnake Ring Addition	100	800				900

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 scheduled for construction in FY 2021.



Potable Water Storage Improvements Fish Springs Ranch #2 Tank

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Developer Fees	Fish Springs Ranch Tank #2	_	_			160	160

PROJECT DESCRIPTION: Ultimately, a second 2.5 MG 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 2024 with construction to follow in FY 2025. The actual schedule will be dependent upon the rate of growth in the North Valleys.



Potable Water Storage Improvements Storage Tank Recoats; Access; Drainage Improvements

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Customer Rates	Storage Tank Recoats; Access; Drainage Improvements	900	900	900	900	900	4,500

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

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



Potable Water Storage Improvements Highland Reservoir Tank

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Customer Rates / Developer Fees	Highland Reservoir Tank		100	5,000	700		5,800

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

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



Potable Water Storage Improvements STMGID Tank East (Zone 11 Tank)

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Customer Rates / Developer Fees	STMGID Tank East Zone 11 Tank	3,075	_	_	_	_	3,075

PROJECT DESCRIPTION: The project involves construction of a 3.7 MG above ground welded steel storage tank in the South Truckee Meadows area off of Geiger Grade 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. The tank will replace an existing 0.75 MG tank providing a net increase in storage of about 3 MG.

SCHEDULE: The project is currently scheduled for construction in FY 2020, subject to acquisition of the Special Use Permit and Bureau of Land Management (BLM) permitting.



Potable Water Storage Improvements Tank Access Road Flood Repairs (FEMA)

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Customer Rates / Grant	Tank Access Road Flood Repairs (FEMA)	350					350

PROJECT DESCRIPTION: Repair of flood damage resulting from heavy snow and rain over the 2016/2017 winter to twelve tank access roads. Repairs include earthwork, grading, cleaning of culverts, and ditch repairs. Also included is mitigation work to protect the roads from future damage.

SCHEDULE: Repair and mitigation work will be conducted in FY 2020.



Potable Water Storage Improvements Lightning W Tank 2

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Customer Rates	Lightning W Tank #2	360	_	_	_	_	360

PROJECT DESCRIPTION: Construct a new 0.25 MG steel tank to provide redundancy, system reliability, and alleviate Washoe County Health District concerns related to service in the satellite systems.

SCHEDULE: This project will be completed in FY 2020.



Potable Water Storage Improvements US 40 Tank & Feeder Main

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Customer Rates / Developer Fees	US 40 Tank & Feeder Main			170	300	2,730	3,200

PROJECT DESCRIPTION: The project involves construction of two 800,000 gallon steel tanks with site improvements, utilities, drain line and access road including about 2,100 LF of 20" feeder main. The project will improve reliability and hydraulic performance in the zone which experiences a lot of surge issues due to cycling of the Mae Anne pump train and the closed system on the Mogul end. This situation is only expected to worsen when pumping to Verdi begins.

SCHEDULE: The project is currently scheduled for design in FY 2022 - 2023 and construction in FY 2023 - 2024.



Potable Water Storage Improvements Spanish Springs Altitude Valves

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Customer Rates / Developer Fees	Spanish Springs Altitude Valves	_	_	_	300	_	300

PROJECT DESCRIPTION: The project involves the construction of altitude valves in underground vaults at the Desert Springs Tank #3 and at Spring Creek Tank #6. The altitude valves will keep the existing tanks from overflowing when well recharge operations are conducted in Spanish Springs Valley.

SCHEDULE: Implementation and construction will occur in FY 2023.



Summary									
Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total	
2	Customer Rates	Forebay, Diversion, & Canal Improvements	100	100	100	100	100	500	
1	Customer Rates	Flume Rehabilitation		350	350			700	
3	Customer Rates	Hydro Plant Generator Rewinds	650	650	650			1,950	
1	Customer Rates	Washoe Flume Reconstruction	250	2,200	_			2,450	
3	Customer Rates	Orr Ditch Hydro Facility	50		_			50	
Subtotal Hydroelectric Improvements			1,050	3,300	1,100	100	100	5,650	

HYDROELECTRIC IMPROVEMENTS

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



Hydroelectric Improvements Forebay, Diversion, and Canal Improvements

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Customer Rates	Forebay, Diversion, & Canal Improvements	100	100	100	100	100	500

PROJECT DESCRIPTION:

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

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



Hydroelectric Improvements Flume Rehabilitation

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Customer Rates	Flume Rehabilitation		350	350			700

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

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



Hydroelectric Improvements Hydro Plant Generator Rewinds

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
3	Customer Rates	Hydro Plant Generator Rewinds	650	650	650			1,950

PROJECT DESCRIPTION:

The Fleish generator was last rewound in 1958 and is still operational. The typical in-service life of this type of generator is about 50 years. The two Washoe generators were damaged in a flood in 2006. The units were cleaned and repaired but suffered damage to the core laminations that has shortened the operating life. Work would consist of rewinding the plant generators with spending in fiscal years 2020, 2021 and 2022.

SCHEDULE: Washoe Hydro Plant generators FY 2020 and FY 2021, Fleish Hydro Plant generator FY 2022. This schedule may be adjusted depending on river flows and generator condition evaluation.



Hydroelectric Improvements Washoe Flume Reconstruction

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Customer Rates	Washoe Flume Reconstruction	250	2,200				2,450

PROJECT DESCRIPTION: TMWA's three operating hydroelectric facilities have nearly 12,150 feet of flume. The average service life for flume structures is 35 years using treated timbers, at an average replacement cost of approximately \$1,000 per lineal foot of flume. The present cost to replace a linear foot of flume depends on the location and height of the flume structure. Due to limited access of this project a larger section (84 box sections) of flume is scheduled to be replaced. This project requires us to use the flume alignment as access. We will demolish the old flume and build ourselves backwards out of the alignment. This section of flume is more than 30 years old.

SCHEDULE: This project is projected for the Fall of 2021 when river flows are dropping off for the winter months, this will minimize the loss of generation.



Hydroelectric Improvements Orr Ditch Hydro Facility

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
3	Customer Rates	Orr Ditch Hydro Facility	50		_			50

PROJECT DESCRIPTION: During periods of low demand, the Highland Canal has available capacity to bring water to the Chalk Bluff Facility. An existing pipeline brings water from the river via the Orr Ditch Pump Station up to Chalk Bluff. A feasibility and financial study will be completed to analyze the possibility of using existing infrastructure with the addition of power generation equipment to produce power for direct use at the Chalk Bluff Water Treatment Facility.

SCHEDULE: A feasibility study will be completed in FY 2020.



			v					
Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
3	Customer Rates	Meter Reading Equipment	100	_	60	_	75	235
2	Developer Fees	New Business Meters	175	100	100	100	100	575
1	Customer Rates	Mueller Pit Replacements former Washoe County	125	125	125	125	125	625
2	Customer Rates	Galvanized / Poly Service Line Replacements	250	250	250	250	250	1,250
1	Customer Rates	AMI Automated Meter Infrastructure	1,750	2,100	2,100	2,100	2,100	10,150
Subtotal Customer Service		2,400	2,575	2,635	2,575	2,650	12,835	

CUSTOMER SERVICE OUTLAYS Summary

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



Customer Service Outlays Meter Reading Equipment

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
3	Customer Rates	Meter Reading Equipment	100	_	60	_	75	235

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

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



Customer Service Outlays New Business Meters

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Developer Fees	New Business Meters	175	100	100	100	100	575

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

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



Customer Service Outlays Mueller Pit Replacements Former Washoe County

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Customer Rates	Mueller Pit Replacements former Washoe County	125	125	125	125	125	625

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

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



Customer Service Outlays Galvanized / Poly Service Line Replacements

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Customer Rates	Galvanized / Poly Service Line Replacements	250	250	250	250	250	1,250

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

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

Customer Service Outlays AMI Automated Meter Infrastructure

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Customer Rates	AMI Automated Meter Infrastructure	1,750	2,100	2,100	2,100	2,100	10,150

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

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

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Customer Rates	GIS / GPS System Mapping Equipment	60		20		20	100
2	Customer Rates	IT Server Hardware	370	180	30	45	30	655
2	Customer Rates	IT Network Security Upgrades	30	45	160	70	10	315
2	Customer Rates	IT Physical Access Security Upgrades	60	60	60	60	60	300
2	Customer Rates	Printer / Scanner Replacement	40	40	50		100	230
1	Customer Rates	TMWA Refueling Facility	500		_			500
3	Customer Rates	Crew Trucks / Vehicles	585	650	750	750	850	3,585
1	Customer Rates	Emergency Response Projects	150	150	150	150	150	750
1	Customer Rates	CIS System Replacement	1,400	600				2,000
1	Customer Rates	Emergency Operations Annex Design / Construction			250	250	1,500	2,000
2	Customer Rates	System Wide Asphalt Rehabilitation	200	200	200	200	200	1,000
1	Customer Rates	Physical Access Control System Upgrade	75	200				275
Subtotal A	Administrat	tive Outlays	3,470	2,125	1,670	1,525	2,920	11,710

ADMINISTRATIVE OUTLAYS Summary

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


Administrative Outlays GIS/GPS System Mapping Equipment

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Customer Rates	GIS / GPS System Mapping Equipment	60		20		20	100

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 purchased as needed.



Administrative Outlays IT Server Hardware

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Customer Rates	IT Server Hardware	370	180	30	45	30	655

PROJECT DESCRIPTION: TMWA currently has over 50 physical servers and 130 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 would be determined on an as needed basis.



Administrative Outlays IT Network Security Upgrades

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Customer Rates	IT Network Security Upgrades	30	45	160	70	10	315

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: Spending occurs only on an as needed basis.



Administrative Outlays IT Physical Security Upgrades

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Customer Rates	IT Physical Access Security Upgrades	60	60	60	60	60	300

PROJECT DESCRIPTION: Security measures that are designed to deny unauthorized access to facilities, equipment and resources to protect personnel from damage or harm such as theft or attacks. Physical security involves the use of multiple layers of interdependent systems which can include surveillance, security guards, protective barriers, locks and other techniques.

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



Administrative Outlays Printer / Scanner Replacement

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Customer Rates	Printer / Scanner Replacement	40	40	50		100	230

PROJECT DESCRIPTION: TMWA currently has variety of printers and scanners that support TMWA's daily business operations. All printers 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 printer/scanner performance and business needs and can option a strategy of warranty extension, if cost effective, rather than outright replacement.

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



Administrative Outlays TMWA Refueling Facility

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Customer Rates	TMWA Refueling Facility	500		_	_		500

PROJECT DESCRIPTION: Design and construct an onsite refueling facility located at Corporate TMW A. Project includes a three phased approach accomplishing feasibility study, design and construction. Facility will include an approximate 18,000 gallon tank comprised of 1 lK gallons of unleaded fuel and 7K gallons on diesel all within a skid mounted tank with 4 fill points. Area will be housed beneath a canopy with lighting and security cameras.

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



Administrative Outlays Crew Trucks/Vehicles

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
3	Customer Rates	Crew Trucks / Vehicles	585	650	750	750	850	3,585

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

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



Administrative Outlays Emergency Response Projects

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Customer Rates	Emergency Response Projects	150	150	150	150	150	750

PROJECT DESCRIPTION: Various ongoing improvements to security infrastructure are required to protect TMWA facilities. 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 completed on a review of priorities each year.

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



Administrative Outlays CIS System Replacement

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Customer Rates	CIS System Replacement	1,400	600	_		_	2,000

PROJECT DESCRIPTION: Software selection consulting and purchase of new Customer Information (billing) system, which will also include a customer portal for water usage information and bill payment.

SCHEDULE: Project implementation will begin in FY 2020.



123 Corporate Drive RENO, NV 89502

Administrative Outlays Emergency Operations Annex-Design / Construction

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Customer Rates	Emergency Operations Annex Design / Construction		_	250	250	1,500	2,000

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

SCHEDULE: DR improvements were completed in FY 2018. FY 2019 Project to include design, fabrication, installation of two construction water fill stations at Glendale and Chalk Bluff Water Treatment Plant, construction of water fill stations at four tank sites, standby power retrofits at four existing wells and ten portable water fill manifold stations. Design and permitting to be completed in FY 2022/23. EOC construction planned for FY 2024.



Administrative Outlays System Wide Asphalt Rehabilitation

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Customer Rates	System Wide Asphalt Rehabilitation	200	200	200	200	200	1,000

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

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



Administrative Outlays Physical Access Control System Upgrade

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Customer Rates	Physical Access Control System Upgrade	75	200				275

PROJECT DESCRIPTION: Replacement of legacy readers and employee cards with multifrequency readers and smart cards to address several vulnerabilities and increase the physical security of various TMW A sites.

SCHEDULE: Planning and design is scheduled for FY 2020. Construction is scheduled for FY 2021.



FORMER STMGID	SYSTEM	IMPROVEMENTS
	Summary	

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Reserve	STMGID Well Bypass & Chlorine Room Improvements Phase 2	350		_		_	350
2	Reserve	STMGID Well Fix & Finish	150	150	150	150	150	750
1	Reserve	STMGID Conjunctive Use Facilities	1,500	600				2,100
1	Reserve	STMGID Tank Recoats		220	—	300		520
1	Reserve	STMGID Mueller Pit Replacements	50	50				100
1	Reserve	STMGID NAC Deficiencies - Saddlehorn, Upper Toll, STMGID East	360	1,653	350		_	2,363
1	Reserve	STMGID NAC Deficiencies Phase 2 - Sioux Trail, Geiger Grade, Westwind Cr.	360	347	_			707
Subtotal S	STMGID S	system Improvements	2,770	3,020	500	450	150	6,890

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



Ground Water Supply Improvements Well Bypass and Chlorine Room Improvements (former STMGID wells)

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Reserve	STMGID Well Bypass & Chlorine Room Improvements Phase 2	350					350

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

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



Ground Water Supply Improvements STMGID Well Fix & Finish

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Reserve	STMGID Well Fix & Finish	150	150	150	150	150	750

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

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



Water Main-Distribution & Service Line Improvements STMGID Conjunctive Use Facilities

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Reserve	STMGID Conjunctive Use Facilities	1,500	600	_			2,100

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 14inch discharge pipe on Arrowcreek Parkway to the STMGID Tank 4/5 pressure zone. Approximately \$0.5 million of the \$3.6 million will be used for pipeline oversizing which will be allocated to new development. The facilities will provide off-peak supply which will allow TMWA to implement conjunctive use in the STMGID West system.

SCHEDULE: Construction of the pipeline was completed in FY 2019 and the booster station design/construction is scheduled to begin in FY 2020 and completed in FY 2021.



Potable Water Storage Improvements STMGID Tank Recoats

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Reserve	STMGID Tank Recoats	_	220	_	300	_	520

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

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



Customer Service Outlays STMGID Mueller Pit Replacements Former

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Reserve	STMGID Mueller Pit Replacements	50	50			_	100

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

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



Distribution System Pressure Improvements NAC Deficiencies-Saddlehorn, Upper Toll Road, STMGID East

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Reserve	STMGID NAC Deficiencies - Saddlehorn, Upper Toll, STMGID East	360	1,653	350	_	_	2,363

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 new pressure zone on upper Toll Road will be constructed in FY 2021 subject to acquisition of the tank site property which may be private or on BLM property.



Distribution System Pressure Improvements NAC Deficiencies Phase 2 - Sioux Trail, Geiger Grade, Westwind Circle

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Reserve	STMGID NAC Deficiencies Phase 2 - Sioux Trail, Geiger Grade, Westwind Cr.	360	347	_	_	_	707

PROJECT DESCRIPTION: Sioux Trail Improvements - Replace existing main with ~204-400 LF of 8" diameter and ~377-410 LF of 10" diameter Geiger Grade Hydrant Improvements - Replace existing main with ~250 LF of 10" diameter Westwind Circle Improvements - Replace existing main with ~1150 LF of 8" diameter Install 9 individual booster pumps.

SCHEDULE: The deficiencies on Sioux Trail, on Geiger Grade, on Westwind Circle and Terry Way will be addressed in FY 2019/20. The individual booster stations will start in FY 2019 and go into FY 2020 depending on customer needs and coordination.





STAFF REPORT

TO:Board of DirectorsFROM:Mark Foree, General ManagerDATE:May 14, 2019SUBJECT:General Manager's Report

Attached please find the written reports from the Management team including the Operations Report (*Attachment A*), the Water Resource and the Annexation Activity Report (*Attachment B*), and the Customer Services Report (*Attachment C*).

Also, included in your agenda packet are press clippings from April 11, 2019 through May 16, 2019.

Staff continues to work the State of Nevada on an agreement regarding the right to use 3,090 acre feet of water from Marlette Lake which includes a possible long term option to use water from the Marlette Lake water system on an ongoing basis. Staff anticipates the agreement will be finalized by the end of fiscal year 2019 and we will continue to update the Board on its progress.

Finally, TMWA had its second Smart About Water Day event on May 4th at Idlewild Park. Staff and partner agencies did a fantastic job engaging with the public, answering their questions and showcasing TMWA's water system, long range planning, conservation programs, and distribution and hydro systems and equipment. The event was very well attended and very well received. Approximately 230 people attended the event throughout the day to learn about our water supply, infrastructure projects, Water Resource Plan and Water Facility Plan, as well as future projects. Thank you to all who contributed their time and expertise as well as those who attended, which made the event a resounding success.



STAFF REPORT

TO: Board of Directors
THRU: Mark Foree, General Manager
FROM: Scott Estes, Director of Engineering
BY: Bill Hauck, Senior Hydrologist
DATE: May 14, 2019
SUBJECT: May 2019 Operations Report

Summary

- Overall, the water supply outlook for the region as of May 14th is exceptional
- The official NRCS April 01 snowpack measurements were 183% and 172% of normal, respectively in the Lake Tahoe and Truckee River basins
- Upstream reservoir storage will be at maximum capacity to start the summer months
- Significantly above average river flows are projected through the summer months
- Hydroelectric revenue for April 2019 was approximately \$210,000
- Customer demands are climbing significantly which is typical for this time of the year

(A) Water Supply

- **River Flows** Truckee River flows at the CA/NV state line are significantly above average for this time of year at 3,390 cubic feet per second (CFS). The average flow for May 14th based on 109 years of record is 1,750 CFS.
- **Reservoir Storage** Reservoir storage is in excellent shape. The elevation of Lake Tahoe is 6228.29 feet, about 8/10th of a foot from full. Overall, Truckee River reservoir system storage is in exceptionally good shape at 85% of maximum capacity. Storage values for each reservoir as of 5/14 are as follows:

	Current Storage	% of Capacity
Reservoir	(Acre-Feet)	(Percent)
Tahoe	645,000	87%
Boca	12,104	30%
Donner	5,679	60%
Independence	16,231	93%
Prosser	16,866	57%
Stampede	208,191	92%

In addition to the 21,910 acre-feet of storage in Donner and Independence reservoirs, TMWA has approximately 10,236 acre-feet of water stored between Boca and Stampede reservoirs under the terms of TROA. TMWA's total combined upstream reservoir storage is approximately 32,146 acre-feet as of this afternoon.

- **Snowpack** This ended up being one of the big ones. The official Natural Resources Conservation Service (NRCS) April 1st snowpack measurement showed the Lake Tahoe Basin at 183% of normal and the Truckee River Basin snowpack at 172% of normal. Snow water content of the snowpack is still significantly above average (in mid-May) at more than two times greater than where it normally is this time of the year.
- **Runoff and River Flows** The streamflow runoff projections are significantly above average as well. Projected runoff for both the Lake Tahoe and Truckee River basins is coming in at almost two times the normal volume typically seen between April and July. The latest forecast shows 180% of normal runoff for Lake Tahoe, and 205% of normal for the Truckee River between now and mid-summer. This equates to big flows in the mainstem of the Truckee River through the early-summer months.
- **Outlook** This water year will go in the books as one of the biggest water years on record, wiping the slate clean and erasing the subpar year we experienced in 2018. The water supply outlook for this region just couldn't be any better than it is right now. Lake Tahoe will be completely full by mid-summer, as will the other reservoirs on the Truckee River system. With reservoirs filled to capacity and significantly above-average river flows projected through the spring and early summer months, Northern Nevada couldn't be positioned any better from a water supply perspective.

(B) Water Production

• **Demand** - Customer demand is right about where it should be this time of year (@ 101% 2018 YTD). Consumption continues to increase, averaging 92 million gallons per day (MGD) for the first week of May. This was 17 % higher than the previous week, and about 4% higher than the same week last year. This is a very dynamic time of year as demands climb rapidly and additional sources of supply are brought on-line to meet that projected demand. In the span of three short weeks, average daily demand almost doubled going from about 47 MGD to over 90 MGD. Overall, surface water is providing about 86% of our supply and groundwater the other 14%.

(C) Hydro Production

Generation - Average Truckee River flow at Farad (CA/NV state line) for the month of April averaged 3,565 cubic feet per second (CFS). The Verdi and Washoe Hydroelectric power plants were on the line for the entire month. The Fleish plant remained off-line the entire month for scheduled improvements and maintenance. Monthly statistics are as follows:

Hydro Plant	Days On-Line	Generation (Megawatt hours)	Revenue (Dollars)	Revenue (Dollars/Day)
Fleish	0	0	\$ 0	\$ 0
Verdi	30	1,532	\$ 111,149	\$ 3,705
Washoe	30	1,344	\$ 98,513	\$ 3,284
Totals	60	2,876	\$ 209,662	\$ 6,989



STAFF REPORT

TO: Chairman and Board Members
THRU: Mark Foree, General Manager
FROM: John Zimmerman, Manager, Water Resources
DATE: 23 May 2019
SUBJECT: Report Water Resources and Annexation Activity

<u>RULE 7</u>

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

Beginning Balance	4,538.55 AF
Purchases of water rights	0.93 AF
Refunds	0.00 AF
Sales	– 29.00 AF
Adjustments	– 0.00 AF
Ending Balance	4,510.48 AF
Price per acre foot at report date:	\$7,600

FISH SPRINGS RANCH, LLC GROUNDWATER RESOURCES

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

Beginning Balance	7,820.94 AF
Committed water rights	00.00 AF
Ending Balance	7,820.94 AF
Price per acre foot at report date:	$$35.000^{1}$

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

WATER SERVICE AREA ANNEXATIONS

See attached maps.







STAFF REPORT

TO: Board of Directors
THRU: Mark Foree, General Manager
FROM: Marci Westlake, Manager Customer Service
DATE: May 23, 2019
SUBJECT: April Customer Service Report

The following is a summary of Customer Service activity for April 2019.

<u>Ombudsman</u>

• No calls this month.

Communications

Customer outreach in April included:

- Chuck Swegles had an Irrigation Start-up Workshop and 16 people attended.
- Chuck Swegles had a Landscape Planning and Design Workshop and 28 people attended.
- Chuck Swegles and Lauren Kunin had an Irrigation Start-up Workshop and 6 people attended.
- Kara Steeland attended UNR Women in STEM Student Job Shadowing and one person attended.
- Lauren Kunin and Katherine Perkins attended Earth Day at NVEnergy and 40 people attended.
- Lauren Kunin and Katherine Perkins attended Earth Day at Renown and 300 people attended.
- Lauren Kunin and Sonia Folsom attended Earth Day at JcPenney and 30 people attended.
- Lauren Kunin, Sonia Folsom and Dale Carlon attended Earth Day at IGT and 40 people attended.
- Laine Christman and Chuck Swegles attended KTMB River Clean-Up and 100 people attended.
- Robert Charpentier, Chuck Swegles, Lauren Kunin, Laine Christman and Dale Carlon attended Truckee Meadows Earth Day at Mayberry Park and 500 people attended.

Conservation (2019 Calendar year to date)

- 1 Water Watcher Contacts
- 379 Water Usage Reviews

Customer Calls – April

- 7,722 phone calls handled
- Average handling time 4 minutes, 6 seconds per call
- Average speed of answer 20 seconds per call

<u> Billing – April</u>

- 129,489 bills issued
- 1(0.01%) corrected bills
- 19,713 customers (15.0%) have signed up for paperless billing to date.

Service Orders - April (% is rounded)

- 7,165 service orders taken
- 3,644 (51%) move-ins / move-outs
- 493 (7%) cut-out-for-non-payment and cut-in after receiving payments, including deposits and checks for tamper
- 776 (11%) zero consumption meter checks
- 285 (4%) re-read meters
- 560 (8%) new meter sets and meter/register/ERT exchanges and equipment checks
- 304 (4%) problems / emergencies, including cut-out for customer repairs, dirty water, no water, leaks, pressure complaints, safety issues, installing water meter blankets, etc.
- 285 (4%) high-bill complaints / audit and water usage review requests
- 818 (11%) various other service orders

Remittance – April

- 32,317 mailed-in payments
- 26,939 electronic payments
- 35,301 payments via RapidPay (EFT)
- 17,916 one-time bank account payments
- 6,489 credit card payments
- 856 store payments
- 2,803 payments via drop box or at front desk

Collections – April

- 11,991 accounts received a late charge
- Mailed 6,648 10-day delinquent notices, 5.1% of accounts
- Mailed 1,339 48-hour delinquent notices, 1.0% of accounts
- 209 accounts eligible for disconnect
- 188 accounts were disconnected (including accounts that had been disconnected-for-non-payment that presented NSF checks for their reconnection)
- 0.08% write-off to revenue

Meter Statistics – Fiscal Year to Date

- 0 Meter retrofits completed
- 731 Meter exchanges completed
- 1,346 New business meter sets completed
- 126,507 Meters currently installed



TMWA Board Meeting

Thursday, May 23, 2019

Press Clippings

April 11, 2019 – May 16, 2019



TMWA Mechanic Welding a Spool for Sanitary Survey Repairs

Shutoff notices coming soon for thousands of Lancaster water customers who haven't made meter-upgrade appointments

• Mar 30, 2019





This undated handout photo shows a water meter left, and an Encoder-Receiver-Transmitter, or ERT, used for remote meter reading.

Lancaster city's water bureau needs a little more cooperation from its customers.

The bureau is shifting to a fully automated meter reading system, a project it hopes to complete by the end of the year.

It requires installation of a device known as an "ERT" — short for Encoder-Receiver-Transmitter — on individual customers' meters, which is done by appointment.

Local News

But so far, more than 3,700 customers haven't made appointments, despite receiving two letters and having hangers placed on their doors, deputy public works director Matt Metzler said.

Those customers are now getting a final round of door hangers, he and meter supervisor Mark Kelly said.

If that doesn't get a response, the city tentatively plans to send out final notices by certified mail beginning the second week of April, telling customers they have 10 days to make an appointment.

If they don't, their water will be shut off.

A utility shutoff is a serious matter: Among other things, it can be grounds for declaring a property unfit for habitation.

Lancaster water system to start installing remote meter reading technology

Metzler said he hopes the final notice is effective. He'd like to keep actual shutoffs to a minimum — no more than 1 to 2 percent of the backlog.

Mayor Danene Sorace, too, said emphatically: "We do not want to shut off water."

But the work has to be done, and the city can't just keep sending out notice after notice, she said.



The city water system serves about 140,000 people. Its roughly 47,000 accounts are split roughly 36 percent to 64 percent between the city on the one hand and Millersville and portions of eight townships on the other.

About 68 percent of the customers who haven't responded are suburban, Kelly said.

In some cases, the problem is absentee landlords. The city is doing its best to find and notify them, Sorace said.

The installation of the automated system began last summer and is being done in phases. In all, more than 44,000 ERTs will be installed. (There are several thousand customers, primarily industrial accounts, that are not affected.)

About 70 percent of the time, the city is swapping out old meters for new ones, as well. Meters 14 years and older are being replaced, Kelly said.

So far, the city has contacted a little over 60 percent of its customers — meaning more than 16,000 accounts have yet to receive the first letter.

The ERT installation is free, as is the meter upgrade, if it's performed. Customers whose water is shut off for cause, however, will be charged an \$83 reconnection fee.

Remote meter reading is expected to save at least \$130,000 to \$200,000 a year. It's expected to largely eliminate the need for estimates. It can also be used to flag spikes in water usage, allowing the bureau to spot leaks quickly.

The overhaul is budgeted at about \$10.5 million, plus another \$2 million to \$2.5 million for the replacement water meters.

Sending out certified mail costs nearly \$7 per letter, not including staff time, Metzler said.

Aurora rolls out smart water meter system

Michael Pegues, Aurora's chief information technology officer. (Steve Lord / The Beacon-News)

Steve Lord The Beacon-News

The city of Aurora has a new smart water meter system up and running.

The system, known as Advanced Metering Infrastructure, brings together the city's Information Technology Department, along with Public Works and the Finance-Water Billing departments. The new system, which has been running for about a week, was anticipated as part of the city's recently announced Technology Strategic Plan.

The city is using meters from Sensus to modernize the water meters "to an unprecedented level," according to Michael Pegues, Aurora's chief information technology officer.

"The (system) is focused on enhanced service delivery and management of the 49,000-plus water meters that comprise the city's network," Pegues said.

The project deployed new infrastructure and technology that includes installation of four Flexnet Wireless Base Stations, SmartPoint Meter computerized attachment devices and newly programmed handheld devices.

The smart meter records consumption of water in intervals of an hour or less and communicates that information at least daily back to the utility for monitoring and billing, Pegues said. The FlexNet communication network is a powerful, long-range radio system at the heart of smart meters.

Now Public Works, Water Billing and citizens can review and manage various areas of meter activity including operational issues, billing errors, equipment malfunctions, reporting, cost savings and much more, city officials said.

The new meters also produce a more streamlined, effective water consumption management process for the city and residents, Aurora officials said.

City officials said the new smart meter system will record more accurate data, make billing faster and more consistent and help the city resolve billing questions quicker.

Pegues said for residents, it will allow them to make informed choices on how much water and energy they use, and base bills on actual usage, instead of estimated. It also will allow for saving money with energy efficiency, he said.

<u>slord@tribpub.com</u>
IndyForum: Reno developer warns electeds not to let region become 'Reno, California'



By

Daniel Rothberg

May 9th, 2019 - 2:10am

The Nevada Independent Editor Jon Ralston hosts a forum on development and growth in Reno with Blockchains CEO Jeffrey Berns, Reno Land CEO Chip Bowlby and Brian Bonnenfant, project manager for the Center for Regional Studies, on Wednesday, May 8, 2019 at the Atlantis Casino Resort Spa. (David Calvert/The Nevada Independent)

IndyForum: Reno developer warns electeds not to let region become 'Reno, California'

Major Reno developer Chip Bowlby said Wednesday that the "world is our oyster right now in Reno," comparing it to Austin, Texas "back in the day." But he also warned the opportunity is "ours to lose, and it's our City Council to screw it up as well."

Bowlby's comments came during an hour-long IndyForums discussion Wednesday hosted by *The Nevada Independent* at Atlantis Casino Resort Spa in Reno and moderated by Editor Jon Ralston. The developer suggested that the municipal governments often gets in their own way when approving projects.

The panel, which focused on the challenges of regional growth, also included Blockchains CEO Jeffrey Berns and Brian Bonnenfant, project manager for UNR's Center for Regional Studies. Throughout the panel discussion, the conversation returned often to the role of government in planning the region's future.

When asked about government's responsibility, Bowlby said: "The only thing I can say about Reno City Council, Sparks or Washoe County is get out of your way. Make things happen."

Bowlby said that meant they should not become "Reno, California" to applause in the room, noting the Golden State's many regulations, such as the California Environmental Quality Act, known as CEQA.

"Be proactive in what's coming," he said. "Be a solution. Don't be a problem. And don't stop growth. And I don't mean grow quickly. I mean sustainable growth that's smart growth."

He specifically referenced litigation over Meridian 120 South, a project Bowlby's company, Reno Land Inc., is developing. Last year, the council affirmed its planning commission's technical denial of maps for 78 homes in the project after a judge's temporary restraining order.

"Why would you do that," he asked. "We need housing. We need growth. We need all this stuff."

Where Bowlby was critical of local government, Berns said he sought to create a new one. The cryptocurrency millionaire, whose Blockchains purchased about 67,000 acres at the Tahoe Reno Industrial Center in January, aims to create a desert utopia he said would usher in "the age of collaboration," decentralize powerful institutions and empower individual voices.

On a chunk of land about the size of Reno, Berns has said the company would pilot blockchain technology, which uses a decentralized public ledger as a backbone for software applications.

But Berns is interested in incorporating blockchains into the infrastructure of daily life. He told *The* <u>New York Times</u> in November that the site could become a community with houses and schools that incorporate blockchain. Although he conceded that reality would take time to build — and involved a level of risk — Nevada utility regulators have <u>approved the company</u> to serve as a telecommunications provider. It has partnered with other Nevada organizations on projects.

On Wednesday, Berns said the problem with government is that "we don't believe that we all play by the same rules." He said that there was not enough transparency in government.

"Our goal for Innovation Park and our smart city is to have a transparent government system, where everybody knows the rules," Berns said. "Everybody agrees to those rules. Everybody sees those rules being enforced, and there isn't this back-gaming of the system."

No plans have been presented an official plan to Storey County, he said. But Blockchains has a unique opportunity, he said, because it was building a smart city from the ground up rather than adding technology, such as sensors, to existing infrastructure like roads and traffic lights.

"I would estimate that we will likely break ground on our vault next year late in the year," Berns said. "We will probably break ground on the smart city somewhere closer to 2022."

For keeping data safe, <u>Berns said in November</u> that it had planned to build a nuclear-bomb resistant bunker. Berns also said it was purchasing or buying space in other facilities.

With the development of the industrial center, Bonnenfant noted that the region is no longer contained in Washoe County but includes some of Northern Nevada's surrounding areas, including towns such as Fernley. He said the obstacle now was to build out infrastructure.

"We need to invest in those communities to the East and South, so we can put housing there," Bonnenfant said. "You're talking water, sewer, police, fire, schools."

But he added that "these are good problems to have."

Income inequality and affordable housing, Bonnenfant said, remain issues for the region, as they do in many cities. He added that some governmental efforts, including housing bills sponsored by Sen. Julia Ratti and the Sage Street housing project, could address those issues.

Bonnenfant also said it was important for governments to take quality of life into consideration, emphasizing the importance of protecting open space, trails and other outdoor activities.

"You've got to keep this area with the good quality of life that we have now," he said to applause.

Bowlby said he was optimistic about the designation of Opportunity Zones in several census tracts throughout the region. Created in 2017 as part of the federal tax bill, the zones allow homebuilders and investors to get incentives for building and developing businesses in low-income or rural areas. Although the tax break was pushed through as part of the Republican tax bill, it has received bipartisan support, including from progressives such as California Gov. Gavin Newsom.

When asked about the importance of regional planning, Bowlby said: "If we do not solve the housing problem for the companies like Blockchains, the companies that are here will not continue to grow and move out. The companies that are looking here will not come in here."

"Like I said, the world is our oyster," he added. "Why would we not want to engage with City Council, regional planning, with Washoe County?... It's ours to lose. It is."

Bowlby said he was working with Berns on projects that are "going to be epic," but joked he could not disclose those projects without getting nondisclosure agreements from the audience.

"This has not started yet in Reno," he said. "It has not started."

The audio and video of the full forum will be posted online soon.

City Returns \$3.7 Million for Smart Water Meter Program

Reimbursement is part of overall settlement of Smart Water Meter Project funding, however, case is still ongoing.

By Dorian Hargrove and Consumer Bob

Published Apr 10, 2019 at 4:29 PM | Updated at 11:15 PM PDT on Apr 10, 2019

Questions Arise Over \$67M Funding for Smart Water Meters Now Playing

The City of San Diego has agreed to return more than \$3.7 million to the city's sewer fund which it took to pay for a citywide conversion to wireless water meters.

The refund was made in hopes of ending a lawsuit filed by a ratepayer who said the city was charging the 8,500 sewage customers who do not use city water in order to help pay for the \$67 million conversion to Advanced Metering Infrastructure, or AMI.

The new meters will allow ratepayers to monitor their current water usage as well as make it easier to check for leaks. At the same time, the city's water department would benefit in reducing meter reading errors and cut down on employee hours.

But the rollout has hit bumpy terrain. During a nearly two-year investigation NBC 7 Responds found that the city was made aware of a manufacturing glitch with one of the meter vendors but did not inform the public and does not know how many meters could potentially exhibit the so-called glitch. In addition, crews had been told to retrofit the old meters with the smart meter displays. Those retrofits resulted in some meter misreads, and astronomical bills for some ratepayers.

Then, in March 2018, the funding for the AMI project came under scrutiny with the lawsuit from ratepayer Miller Marks.

Attorney Paul Neuharth represents Marks. He says the city ignored recommendations from its oversight board to pay for the new wireless meters using 70 percent from water fund reserves and 30 percent from the sewer fund. Instead the city chose to divvy up the costs 50 percent by 50 percent.

"The city chose to go forward at a 50-50 allotment without having any sort of background to justify that," Neuharth told NBC 7 Responds.

In March of last year Neuharth filed a lawsuit on behalf of San Diego ratepayer Miller Marks, alleging the city was dipping into the wrong bucket of money. In December 2018 the City Council changed the split to the 70 percent/30 percent ratio for the next five years, as well as sending \$3.7 million back into the sewer reserves.

But Neuharth and his client say five years is not enough. They are pulling the proposed settlement off the table.

"No matter what, all of the ratepayers for sewer are being held responsible for half of the water utilities," added Neuharth. "That's just not right."

The City of San Diego, however, says Neuharth's decision to pull the proposed settlement agreement is a ploy to get more in attorneys' fees.

"This is incomprehensible," reads an October 18 court document filed by the City Attorney's Office. "[Marks] got the benefit of the bargain he sought and signed a written stipulation to that effect in the presence of his counsel and a retired judge of this Court...In truth, this opposition is entirely about attorneys' fees."

The AMI project is currently on hold until an city investigation is concluded.

Legislature

IndyVideo: Breaking down the Renewable Portfolio Standard

By



Joey Lovato

May 13th, 2019 - 2:05am Solar field in Nevada. Photo courtesy NV Energy. IndyVideo: Breaking down the Renewable Portfolio Standard

May 13th, 2019 - 2:05am

Last month, Gov. Steve Sisolak <u>signed a "milestone" bill into law</u> that will gradually raise the state's Renewable Portfolio Standard to 50 percent by 2030.

It was a signing rejoiced by lawmakers — who approved the bill unanimously — and environmental groups, who have long touted the policy as a way to reduce the state's reliance on carbon-heavy fossil fuels.

But lost in the conversation and publicity around the bill is a simple question — what exactly is a Renewable Portfolio Standard, and what does increasing it actually do?

Check out the video below for a rundown of how an RPS works, and how the bill signed by Sisolak will affect the state's use of renewable energy:

Link to video

Water & Land

High snowpack leaves Nevada drought free with a shortterm water supply boost, as rivers continue to face structural issues

April 14th, 2019 - 2:00am

Mt. Rose Ski Tahoe on Dec. 2, 2018. (Daniel Rothberg/The Nevada Independent) High snowpack leaves Nevada drought free with a short-term water supply boost, as rivers continue to face structural issues



Daniel Rothberg

When snowpack in the eastern Sierra runs off into the Truckee River each spring, it hits several reservoirs before winding through Reno and flowing into Pyramid Lake. During the past couple of months, so much snow fell on the Truckee Basin — about 185 percent of normal for this time of the year — that more water will enter the reservoirs than there is space to store it.

The story is similar throughout Nevada. Across the state, snowpack in all but two basins is above 150 percent of normal. According to a U.S. Drought Monitor update released on Thursday, Nevada is drought free. Only one percent of the state — in Northeastern Nevada — remains abnormally dry.

That is a significant turnaround from the start of the year, when moderate to severe drought affected more than 81 percent of the state.

"Technically, from this map, there's no drought in Nevada and California," said Dan McEvoy, a climate scientist at the Desert Research Institute.

A map of how much snow fell across the West. (Natural Resources Conservation Service)



Where snowpack-fed rivers run through Nevada, a good water year can boost short-term water supplies. Water managers might aim to store more water in reservoirs or reduce groundwater pumping in an attempt to relieve drought-stricken aquifers. It could also benefit fish, wildlife and wetlands as more water flows through rivers and into lakes.

"In a year like this all reservoirs on the Truckee River are not only going to fill but they're going to spill," said Bill Hauck, a senior hydrologist with the Truckee Meadows Water Authority.

For the Reno-Sparks are, one good water year like 2019 — or the record-breaking year in 2017 — means that the region has a certain supply for three years, even under drought conditions.

"You could say Mother Nature hit the water supply reset button," Hauck added.



As of April 11, Nevada had no areas with drought conditions. (U.S. Drought Monitor)

Still, many warn that one good water year does not erase the long-term management issues facing some rivers and aquifers in Nevada and across the West. In the Rocky Mountain basins that feed the Colorado River — the source for 90 percent of Las Vegas' water — enough snow dropped this year that an above-average supply of runoff is forecasted to enter the river system.

High snowpack has already reduced the risk that federal water managers with the Bureau of Reclamation will declare a shortage on the river next year, according to a March report.

But Kim Mitchell and John Berggren, water policy analysts at Western Resource Advocates, said that the above-average snowpack in the Rockies does not erase the problems facing the Colorado River system. The river's main reservoirs — Lake Mead and Lake Powell — remain below half full. Lake Mead is at about 42 percent and Lake Powell is at about 37 percent.

It can be a struggle to communicate that to the public.

"It's hard to get that message across and that's a constant effort for us," Mitchell said. "You are looking at two of the largest reservoirs in the country that are less than half capacity."

She also stressed that runoff is often a function of multi-year weather dynamics. For instance, dry soil conditions in Colorado, lingering from the start of the season, could lessen the amount of water that runs off into the reservoirs that line the Colorado River, according to forecasts.

In the long-term, research has shown that warming temperatures, or "hot droughts," can also affect run-off, Mitchell and Berggren said, stressing that snowpack is not the only factor for the river.

Berggren added that it's important for water users to remember that the Colorado River faces structural problems — there are simply more rights to water than there is water in most years. That's why he said Congress' approval of a Drought Contingency Plan for the Colorado River was a big deal, even though it was completed in a year when the drought mostly dissipated.

Congress approved a drought plan for the Colorado River this week.



The photo shows the river downstream of Hoover Dam. (Daniel Rothberg/The Nevada Independent)

The Colorado River is not the only body of water in Nevada that faces structural issues.

In Northern Nevada, groundwater pumping along the Humboldt River has decreased supplies, leading to conflicts with irrigators that rely on river water. In 2015, the Pershing County Water Conservation District filed a lawsuit to curtail pumping, as farmers and ranchers were affected by drought. The case is ongoing. At the same time, state regulators have been working on studying how water flows in the basin and developing regulations for managing the river.

The snowpack this year does not fix the Humboldt River's long-term issues, but it will likely help in the short-term. Bennie Hodges, who leads the Pershing County irrigation district, said that a good water year "going to be good for the stuff you don't see," such as recharging groundwater.

"We're all happy," Hodges said. "There is going to be more than enough water [this year]."

Water managers typically consider April 1 as the date when snowpack peaks.

Last year, mountain survey stations across Nevada reported below average snowpack on April 1. The turnaround this year is significant, but not as significant as it was in 2017, when record storms hit the region after a period of dry years, said Jeff Anderson, a water supply specialist who conducts Nevada's snow survey for the Natural Resources Conservation Service.

McEvoy, with the Desert Research Institute, said that it's hard to draw conclusions about how this year fits into the larger picture of long-term climate, noting that

"weather is not climate." But he also said that recent research on climate change predicts "precipitation whiplash," where conditions become more extreme, with more swings between very wet and very dry years.

"That's exactly what we saw the last three years," he said.

Lyon County industrial park to mimic Tahoe-Reno Industrial Center

Amy Alonzo, Fernley Leader-Courier

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The proposed Northern Nevada Industrial center in Lyon County is set to mimic the Tahoe-Reno Industrial Center in Storey County. (*Photo: Jason Bean/RGJ*)

The first business should be up and operating at Lyon County's own version of the Tahoe-Reno Industrial Center in less than two years, according to a representative for the project's developer.

Developer NV-Reno Industrial LLC is looking at building out 12,000 acres on a 20,000-acre parcel on the Lyon County/Storey County border, about 3.6 miles from the intersection of USA Parkway and Highway 50. Plans for the Northern Nevada Industrial Center include two Tesla-sized developments with access strictly from USA Parkway.

Dave Brown, President of Land Development Associates in Las Vegas, worked with Reno Engineering on the Tahoe-Reno Industrial Center before working on the Apex Industrial Park in Las Vegas.

"We've taken everything good we've seen work at the industrial centers over the past 20 years and make industrial park 2.0," he said. "It will look a lot like the Tahoe-Reno Industrial Center with large industrial users and small commercial support users."

Brown said the first user is currently in a negotiating contract for a site on the Lyon Couty property, and he estimates the business will be up and running within 18 months.

Substantial development on the site will take five to 25 years, Lyon County Planning Director Rob Pyzel said. The pace of development depends on several factors, Pyzel said, mainly access to water. There are a few small wells on the site, as well as some water rights, but "they have to acquire additional water rights before there is substantial development. They're trying to attract similar uses such as you're seeing at TRIC, like Switch, and they do need water."

High speed internet already runs along the parkway, as well as storm drain infrastructure.

The idea of an industrial park was brought to Lyon County in late 2016/early 2017, Pyzel said.

"The property switched hands, and the new property owner (Wes Adams) didn't want to do residential development," he said. "Before the recession they were proposing to put housing up there with some commercial uses, and then all hell broke loose. Then they started to see the success they were having at TRIC."

Brown said the proximity to utilities and distance from water made industrial development, rather than residential, the more logical choice for the property. He said several well-known companies have expressed interest in the site.

"There is definitely interest," Pyzel said. "Some of the businesses you see at TRIC are now coming in on the Lyon County side. With these types of companies there is a lot of money. It's amazing what happens when money gets involved with development. Things can happen very quickly if there is sufficient interest by the correct parties."

Amy Alonzo covers Mason Valley and rural Nevada. <u>See her work right here</u>. <u>Here's how you can</u> <u>support local journalism</u>.

Arsenic in Some Bottled Water Brands at Unsafe Levels, Consumer Reports Says

Keurig Dr Pepper suspends production of its Peñafiel brand, as CR urges a full recall and tougher federal standards. What you need to know.

By Ryan Felton Last updated: April 18, 2019



PHOTO: NIGEL COX

Natural foods grocery chain Whole Foods introduced its new brand of bottled water at a 2015 investor event, where company executives heralded the product's purity and healthfulness.

"It naturally flows out of the ground," chief operating officer A.C. Gallo said about the company's spring in Council, Idaho, according to a published transcript on its website. "We built, actually, a spring house over it so we can let the water go down to the bottling plant. It's amazingly pristine water."

Yet from late 2016 to early 2017, Starkey Water—the name of Whole Foods' brand—recalled more than 2,000 cases of water after tests by regulators showed an impermissible level of arsenic beyond the federally mandated threshold of 10 parts per billion. A year later, Whole Foods' internal testing showed results that were just under the federal limit but still at levels that pose risks if regularly consumed, according to growing research and independent experts, including Consumer Reports' scientists.

Over the past few years, as consumers have worried more about the quality of municipal tap water, bottled water has surged in popularity. It's now the nation's best-selling bottled beverage, according to the International Bottled Water Association. But a CR investigation has found that in some cases bottled water on store shelves contains more potentially harmful arsenic than tap water flowing into some homes.

"It makes no sense that consumers can purchase bottled water that is less safe than tap water," says James Dickerson, Ph.D., chief scientific officer at Consumer Reports. "If anything, bottled water—a product for which people pay a premium, often because they assume it's safer—should be regulated at least as strictly as tap water."

For this report, CR tracked down and reviewed hundreds of public records and test reports from bottled water brands, and from various federal and state regulators. We found that several popular brands sell bottled water with arsenic levels at or above 3 ppb; current research suggests that

amounts above that level are potentially dangerous to drink over extended periods of time. CR believes the federal limit for bottled water should be revised to 3 ppb from the current federal standard of 10 ppb.

In total, CR identified 11 brands out of more than 130 that either self-reported or, based on tests we commissioned, had detectable amounts of arsenic. Of those, six had levels of 3 ppb or higher. These brands are Starkey (owned by Whole Foods), Peñafiel (owned by Keurig Dr Pepper), Crystal Geyser Alpine Spring Water, Volvic (owned by Danone), and two regional brands, Crystal Creamery and EartH₂O.

As part of our investigation, CR also was able to purchase two brands of imported water—Jermuk from Armenia and Peñafiel from Mexico—that are on an import alert issued by the federal government for previously having arsenic levels above the federal limit of 10 ppb. Such an alert is meant to "prevent potentially violative products from being distributed in the United States," according to the Food and Drug Administration. Even so, CR easily purchased the two brands in retail stores in two states and on Amazon.

A spokesperson for the FDA, which regulates bottled water, wouldn't comment directly on the availability of the products but said that the agency takes the issue of heavy metals "seriously" and that if a product on the market is deemed "adulterated," the agency will take "appropriate action."

Beverage giant Keurig Dr Pepper provided CR in March with Peñafiel's bottled water quality report for 2018, which stated that the water had nondetectable amounts of arsenic. But the company said this week that it had conducted new testing, because of CR's questions, and confirmed levels above the federal limit, at an average of 17 ppb.

MORE ON ARSENIC

<u>Arsenic and Lead Are in Your Fruit Juice: What You Need to Know</u> <u>Arsenic in Your Food</u> <u>Heavy Metals in Baby Food: What You Need to Know</u>

Keurig Dr Pepper said Monday that it had suspended bottled water production for two weeks at its Mexico facility that makes Peñafiel for export to the U.S. It plans to improve filtration at the plant to lower arsenic levels, the company told CR. For its latest internal testing, the company said it used a different protocol and consulted the FDA. A recall isn't planned, Peñafiel said, but CR believes one should be issued.

"An arsenic level of 17 ppb is a clear violation of the federal bottled water standard of 10 ppb," says Jean Halloran, director of food policy initiatives at CR. "Keurig Dr Pepper should recall all Peñafiel water currently on the market that may contain these violative levels. If they do not act, the FDA should mandate a recall."

Companies Can Remove Arsenic

Arsenic is a naturally occurring heavy metal that can cause disease and also affect child development. It can be found in natural water supplies, depending on the geology of the area. There are also water sources that don't contain the heavy metal. Companies can test for it and also use certain treatment processes to remove it from water.

"With bottled water, why should you have arsenic in the water?" says Ana Navas-Acien, M.D., Ph.D., professor of environmental health sciences at the Mailman School of Public Health at Columbia University in New York City. "There should be plenty of opportunities for treatment and remediation."

Bottled water manufacturers promote their product as a pure, healthy alternative to sugar-loaded sodas, and the industry's sales have been on a continuous climb for years, thanks in part to skittish consumers uneasy about the quality of water from their taps after a highly publicized water quality scandal in Flint, Mich., in 2015.

To be sure, CR also found dozens of bottled water brands that reported nondetectable levels of arsenic. And drinking a single glass of water with 3 ppb of arsenic probably will not harm you, says Dickerson at CR. But regular consumption over extended periods increases the risk of cardiovascular disease, can lower IQ scores in children, and can cause certain cancers and other health problems, he says.

CR's investigation—which focused only on arsenic levels—shows that, unlike tap water, bottled water is regulated in a hodgepodge fashion. Moreover, some states have inconsistent arsenic guidelines in place for tap and bottled water, with stricter thresholds in place for tap than for bottled water. And public records on bottled water quality are also difficult to access, CR found, with some states destroying company testing reports after a year and other states not collecting them at all.

The FDA set the federal threshold for arsenic in drinking water at 10 ppb in 2006, in line with the standard for drinking water set by the Environmental Protection Agency, which regulates tap water. But New Jersey says the level for tap water should be half that. New Jersey's Department of Environmental Protection says that water with arsenic above 5 ppb shouldn't be used for "drinking, cooking, mixing baby formula, or in other consumptive ways." However, the state's bottled water arsenic limit is still 10 ppb, in keeping with the federal standard. New Hampshire is considering a similar standard, but also for tap water only.

CR says the limit for arsenic in bottled water should be revised from 10 ppb to 3 ppb, <u>the same</u> <u>threshold CR recently proposed</u> for apple, grape, and other juices. Recent CR testing detected the heavy metal in some juices at levels posing potential health risks.

Spot Testing 3 Brands

For this report, CR decided to commission its own independent spot tests for three brands that the FDA had previously flagged for elevated arsenic levels—the Starkey Whole Foods brand, and also Peñafiel (owned by Keurig Dr Pepper) and Jermuk.

The test results show that Whole Foods' bottled water still has levels of arsenic that approach or exceed the legal federal limit: Three samples tested this month ranged from 9.48 to 9.86 ppb of arsenic; a fourth registered 10.1 ppb, just above the federal limit of 10 ppb. The tested bottles of water were purchased in March at retail locations.

In a statement Tuesday, Whole Foods said it had recently conducted an analysis on Starkey samples from the same lot used in the tests that CR commissioned. The company said the tests "show these products are fully compliant with FDA standards for heavy metals." The company also said it tests "every production run of water before it is sold."

"We would never sell products that do not meet FDA requirements," the company's statement said.

At the same time, the Jermuk samples we tested revealed dramatically lower arsenic levels than a government test result indicated in 2009. The result of that earlier test prompted the import alert that remains in effect. CR's recent test of Jermuk water shows three tested samples averaging about 1.31 ppb, well below the federal threshold and down from the more than 450 ppb the government found in 2009. (The company bottles water at a single plant in Armenia, according to its website. Jermuk didn't respond to requests for comment.)

All three Peñafiel samples CR tested, however, found arsenic levels well above the 10 ppb limit, registering an average of 18.1 ppb.

Katie Gilroy, spokesperson for Keurig Dr Pepper, says the new internal tests of Peñafiel were conducted after CR's inquiries, revealing "somewhat elevated levels" consistent with our testing results at about 17 ppb.

"Because the health and safety of our consumers is our top priority, as soon as we received the test results, we took immediate action by stopping production at the Mexico facility in question, working with outside experts, and consulting with the FDA, which is supportive of our action plan," Gilroy says. (An FDA spokesperson didn't respond to a request for comment on this subject in time for publication.)

"The independent experts with whom we are working have indicated that there is no health or safety risk to consumers at the current levels, and we have begun remedying the situation by enhancing the filtration system in the plant, which we expect to take two weeks," Gilroy said. "At that point, we will resume production."

Gilroy says tests were conducted on products for sale in the U.S. market, "which come from one production location in Mexico."

The International Bottled Water Association says that any product that doesn't meet the FDA's 10 ppb standard for arsenic "should not be allowed to be sold."

"As with other food products, bottled water that does not meet all applicable laws and regulations is subject to FDA enforcement actions, including recalls, warning letters, and product seizures," the IBWA says. "This helps ensure that adulterated or mislabeled products do not reach consumers."

The popularity of bottled water can't be overstated: Consumers nowadays have hundreds of brands to choose from—some carrying celebrity endorsements; others touting big, sometimes vague, health claims. But even as water has become the nation's most popular bottled beverage, CR's investigation also found that the regulatory regime meant to protect consumers is inadequate.



PHOTO: FDA

Peñafiel bottled water seized in December 2014 by the Food and Drug Administration. The agency found that the water had excessive arsenic levels.

America's Favorite Bottled Drink

The federal government's safety inspections of water bottling facilities hit a 15-year low in 2017, according to documents CR obtained through a public records request. In 2010, the FDA conducted 371 inspections; by 2017, that number fell to 209. These inspections include verifying that companies have test results on file for their products.

But records show that some companies have been issued violations by the FDA and state agencies for lacking legally required test data. The companies were required to correct the violations by a later date, records show. The FDA doesn't conduct tests on individualized finished bottled water during these inspections, a spokesperson said, and relies on companies to produce their own results.

(Imported water could be tested during routine border testing at ports of entry, however, the spokesperson said.)

That could be an unsettling reality for some consumers, especially those in cities that have turned to bottled water because of unsafe tap water, such as Flint, Mich., which continues to deal with the effects of a lead-in-water scandal that began in 2015.

"This is a huge, multibillion-dollar industry selling a product that is viewed by many consumers as safer than tap water," says Erik Olson, senior director of health and food at the Natural Resources Defense Council (NRDC), which published a four-year bottled water study in 1999. He says that "meaningful oversight of this extremely profitable business" is needed and that consumers should be able to easily get test results online.

Years after Flint's lead contamination first became known, donations of bottled water continue to flow into the city. At the same time, perhaps in response to quality concerns that Flint's crisis sparked elsewhere, sales of bottled water nationally have risen 19 percent, to \$18.5 billion in 2018, according to the IBWA.

"These companies make a mint on basically something that's a free resource," says David Carpenter, Ph.D., director of the Institute for Health and the Environment at the State University of New York at Albany. "So there's no reason that they can't find a water source that is either very, very low in arsenic, or do the treatment themselves."

Looking for Arsenic Answers

A key problem, CR found, is that the industry and the government haven't made it easy for the public to obtain information on bottled water quality.

For one thing, a public repository of bottled water quality information currently doesn't exist.

Few states regularly conduct independent tests on bottled water for contaminants, as municipalities must for tap water. Many states, however, require bottled water companies to submit the results of their own testing to sell products. But CR found that information can be hard to come by.

In California, for example, CR filed a public records request for all test reports submitted to the state by bottled water manufacturers, as required under a 2009 state law. Because the state discards these records once a company is deemed in compliance, the best it could do was to provide CR with a list of companies licensed to bottle water. The state recommended that we contact the companies for their reports.

So we did. Ultimately, using the California list and other sources, we obtained reports representing more than 130 bottled water brands across the country, either through company websites or in response to queries sent to them. We also reviewed public records and independent studies that have analyzed bottled water.

Overall, beyond our tests that revealed Peñafiel, owned by Keurig Dr Pepper, had levels of arsenic in excess of the federal standard, five companies self-reported levels at or above CR's recommended cutoff of 3 ppb. In addition to Starkey (8 ppb), that included two other national brands—Crystal Geyser (3.8 ppb for water bottled at its facility in Olancha, Calif.) and Volvic (4 ppb). EartH₂O (3 ppb), a firm based in Oregon, reported 3 ppb.

Crystal Creamery, based in California, reported in 2017 that its water contained 5 ppb of arsenic. The California Department of Health says the company's license to sell bottled water expired in June 2018. Some consumers, however, may still have the product on their shelves. Two more brands, Aguavida, a regional brand in California, and Badoit, a mineral water owned by Danone, fell shy of CR's cutoff, reporting 2 ppb, a level researchers say is associated with health issues such as high blood pressure and circulatory problems.

Two leading national brands—Fiji and Niagara Bottling (for its spring water)—reported 1 ppb of arsenic on average in their most recently available reports. Another, Poland Spring, reported nondetectable levels below 2 ppb.

CR contacted the companies that reported detectable amounts, and of those that responded, most said that they adhered to government standards and that arsenic can be naturally occuring. Crystal Creamery and Crystal Geyser did not respond to a CR request for comment.

"Volvic Natural Spring Water is naturally filtered as it slowly trickles down through hundreds of layers or porous puzzolana sand, basalt, and lava stone," said Alessandra Simkin, senior manager of external communications at Danone, which owns Volvic, in a statement. "As the water filters through these different volcanic layers, it absorbs natural minerals, where arsenic naturally occurs. The level in Volvic is 4 ppb, well below the FDA arsenic maximum level. Volvic is safe and in full compliance with all applicable federal, state, and industry bottled water standards."

Austin Bouck, plant manager at EartH₂O, said in an email, "As a responsible producer of bottled water, we continue to listen to the public health experts at the FDA and EPA to help us ensure we produce a safe, wholesome product, just as we did in 2000 when the arsenic limits were last evaluated."

"We always encourage those agencies to make decisions that are in the best interest of public health and consumer choice, and will continue to re-evaluate our water source as new benchmarks and standards are established," Bouck said.

Separately, independent studies have tested other brands and found arsenic: A 2011 study conducted by the Los Angeles County Agricultural Commissioner/Weights & Measures found that grocery chain Trader Joe's bottled water had 3.48 ppb of arsenic. Trader Joe's didn't respond to repeated requests for comment on the study's findings.

How Much Arsenic Is Too Much?

Arsenic—found naturally in soil, minerals, air, and plants—enters water by way of eroding rocks and minerals, urban runoff, pesticides, and municipal waste disposal. Because it's ubiquitous, it can also get into the foods and drinks we consume. In fact, CR has recently found worrisome levels of arsenic in juices and baby foods.

For many years, the upper limit for arsenic in drinking water was set at 50 ppb. But in 2001, the EPA responded to rising concerns about the heavy metal's health risks by lowering that level, initially suggesting 3 ppb as a "feasible" cutoff. The agency eventually settled on 10 ppb because it "maximizes health risk reduction benefits at a cost that is justified by the benefits."

Growing research, however, suggests that the health risks of arsenic exposure emerge at levels below 10 ppb, especially in children, says Joseph Graziano, Ph.D., a professor of environmental health sciences at Columbia University's Mailman School of Public Health and professor of pharmacology at Columbia's medical school. For example, a 2014 study he co-authored found that an arsenic level of 5 ppb or greater in a child's household water supply was associated with a 5- to 6-point reduction in IQ compared with those whose exposure to arsenic levels was below 5 ppb.

Regular exposure to small amounts of arsenic can also harm adults. A 2017 study published in the journal Environmental Research found a relationship between exposure to arsenic levels starting around 2 ppb and prostate cancer among men in Iowa, prompting the authors to suggest that the 10 ppb arsenic limit may "not be protective for human health."

And public health officials in New Hampshire, in explaining their pending proposal to lower the state's cutoff for arsenic in tap water, cited research that potentially identified health problems that appear at levels below 10 ppb, including "lung, bladder and skin cancer; cardiovascular disease; adverse birth outcomes; illnesses in infants; and reduced IQ."

In fact, the EPA itself sets its "maximum contaminant level goal" for arsenic in water—the level below which there is no known or expected risk to health—at zero.

Experts acknowledge that reaching that goal may not be practical, especially for municipal water supplies, because the cost of purification could be prohibitive.

But Navas-Acien at Columbia says that consumers often purchase bottled water because they believe it's a safe product.

"The standard [for arsenic] needs to be stronger for bottled water, as compared to just regular old tap water," she says.

And the FDA does have a history of enforcing stricter standards: The agency requires bottled water companies to keep lead levels below 5 ppb, but the EPA allows tap water to contain up to 15 ppb of that heavy metal.

Arsenic in Bottled Water

The bottled water brands in the chart below have arsenic levels at or above 3 parts per billion, the maximum amount Consumer Reports recommends for bottled water. That is below the Food and Drug Administration's 10 ppb limit.

The results are the most recent available from the companies themselves, or in the case of Starkey Water (owned by Whole Foods) and Peñafiel (owned by Keurig Dr Pepper), from CR's own tests. *Keurig Dr Pepper told CR on April 15 that it had temporarily stopped production at its Mexico facility to address the problem.

Leading Bottled Waters With Lower Arsenic Levels

The bottled water brands listed below have self-reported levels of arsenic that are nondetectable or below 3 parts per billion—the maximum amount recommended by Consumer Reports—based on the most recent data available from the companies themselves (listed in alphabetical order).

Aquafina Arrowhead Dasani Deer Park Essentia Evian Fiji Glaceau Smart Water Ice Mountain Kirkland (Costco) Life WTR Market Pantry (Target) Nestlé Pure Life Niagara Poland Spring Propel

Varying Results

The publicly available reports might not give a complete picture of the quality of a company's bottled water.

For one thing, water test results can vary not only from brand to brand but also from bottle to bottle, says the NRDC's Olson. "Many bottlers have multiple bottling plants," he says. "So you can have one plant that has bad source water, or you can have a plant that has a problem with its treatment or with how it's bottling the water."

Whole Foods' Starkey brand illustrates the variation that can arise. The company's 2016 water quality report listed its average arsenic level at 9 ppb, but records show that on Dec. 15 of that year, Starkey issued a recall after 11.7 ppb of arsenic was detected in a water sample by regulators in Florida. Three weeks later, a second recall was issued after 12 ppb of arsenic was detected in another sample. The Starkey brand is produced at the company's plant in Idaho.

Ronald Owens, spokesperson for the California Department of Health, says that companies with a single plant can provide the results from just one test on their bottled water report, while companies with more than one plant, like Niagara Bottling, may report a range reflecting the results from multiple locations, as long as no violations have occurred. "Average values can only be reported when all of the individual values are below a required standard." he says.

The FDA reports on the overall safety of the nation's bottled water supply in its annual Total Diet Study, but its test results may offer an incomplete picture.

The most recent results from that analysis, from 2016, show that the average amount is well below the federal 10 ppb standard, at less than 1 ppb of arsenic. But the FDA blends samples of bottled water brands together, then tests the composite sample, making it impossible to know the levels in any specific brand from that analysis.

A FDA spokesperson says the Total Diet Study is a monitoring program and "not intended to be an enforcement program."

"Bottled water is one of over 260 foods tested in the program," the spokesperson says. "The sample collections are intended to be representative of the diet. Therefore, it is appropriate to purchase foods at regions across the U.S. and to test composites rather than individual brands."

Inconsistent Oversight

The IBWA, the industry's main group, said in its statement that bottled water is "comprehensively regulated as a packaged food product by the FDA. It is required to meet the FDA's standards of identity, standards of quality, good manufacturing practices, and labeling requirements specifically for bottled water."

"As with other food products, bottled water that does not meet all applicable laws and regulations is subject to FDA enforcement actions, including recalls, warning letters, and product seizures," the IBWA said. "This helps ensure that adulterated or mislabeled products do not reach consumers." Indeed, over the past five years, at least 22 recalls have been initiated by bottled water firms, according to FDA records obtained through a Freedom of Information Act request, including for mold, pieces of plastic ending up in the finished product, and excessive arsenic. (The agency has never mandated a bottled water recall, records show, but it didn't have mandatory recall authority until a new federal law was passed in 2011.)

Additionally, during the same period, the agency has issued at least three warning letters to bottled water firms for misbranded source water labels, E. coli contamination, and failure to conduct followup testing for E. coli contamination when coliforms are detected. And that follows the FDA's ongoing import alert—which began in 2009—for bottled water with high amounts of arsenic.

But CR's reporting raises additional questions about the government's oversight of bottled water products known to contain arsenic, and the industry at large.

Consider Keurig Dr Pepper's Peñafiel, which ended up on the FDA's import alert list in 2015, when a spot check by the agency found that it had arsenic levels above 10 ppb. Public records show that the water has been on the radar of New Jersey regulators going back to 2009. Since then, tests conducted by the state's health department have found Peñafiel water with arsenic levels reaching as high as 22 ppb, prompting one scientist to write in an email that the water was "well above" the state's limit for arsenic.

While the state has periodically cracked down on the company—once prompting an importer to voluntarily destroy 83 cases of Peñafiel—the results don't appear to have registered on the FDA's

radar until federal inspectors independently conducted tests of its own, which also revealed excessive arsenic.

Officials for both agencies couldn't explain the seven-year gap between when New Jersey first raised a red flag and the federal government took action.

A spokesperson for the New Jersey Department of Health says the FDA was notified of its findings of excessive arsenic in Peñafiel in 2008, 2009, 2013, and 2014, adding: "I suggest you reach out to the FDA for any additional information." Asked by CR whether it was aware of the findings, an FDA spokesperson said CR would need to file a Freedom of Information Act request to get an answer.

One possible explanation for that lack of action and communication: insufficient staffing. A New Jersey Department of Health spokesperson tells CR there's only one full-time employee overseeing the state's bottled water program. (Owens, the California Department of Health spokesperson, also says there's only one full-time-equivalent employee handling that state's bottled water program.)

How to Protect Yourself

For now, it's mostly up to consumers to educate themselves, and the options for that are limited. The chart above can help identify some brands of bottled water with arsenic levels that were undetectable or below CR's recommended cutoff of 3 ppb, based on the company's test reports. "But remember, those results are self-reported, so we cannot be certain that water actually has the amount of arsenic that is claimed," says CR's Dickerson.

If you purchase water bottled by company that isn't on the chart, you can also go to the company's website to see whether it publishes test results. Some companies include a number or email address

on the label for consumer questions. Look for reports that show nondetectable levels of arsenic. But also make a point to review the entire report for other listed contaminants.

You can also limit exposure to arsenic in drinking water—tap or bottled—by running it through a reverse osmosis filter, CR previously reported, but that can be pricey. We reviewed such filters in 2017 and recommended three brands, including the Culligan Aqua Cleer and Kinetico K5 Drinking Water Station. (Arsenic in tap water is a problem in certain areas of the country, such as in parts of the Southwest.)

If you'd like to get your tap water tested, you can search on the EPA's website for a <u>certified lab near</u> <u>you</u> (choose your state from the drop-down menu). Additionally, you can review the <u>consumer</u> <u>confidence report</u> for your drinking water or request a copy of it from your municipality's system.

It's also important, especially for children, to limit exposure to arsenic from other sources, including <u>rice</u>, <u>fruit juices</u>, and <u>baby foods</u>. "Arsenic's health concerns are due to cumulative exposure—the more you consume, from all sources, the greater the risk," Dickerson says. "So you want to limit your exposure overall, and water is a good place to start."

Editors note: This story was updated to include an additional statement from Whole Foods saying that it tests every run of its Starkey brand bottled water.

Truckee River: Fast, high, cold and dangerous

LIKELY TO REMAIN ON GUARD FOR SOME TIME TO COME.

By Ed Pearce

Posted: Fri 7:16 PM, Apr 19, 2019 | Updated: Sat 6:03 AM, Apr 20, 2019

RENO, NV (KOLO) We expect two things along the Truckee River every spring. First, an increased runoff from the snow pack melt. And with the arrival of warm weather more people will be drawn to the river.



That leads to a third thing we can usually expect, and that's people getting into the river and getting into trouble.

Potentially all those factors come together this weekend, so the river rescue teams from the Reno and Sparks fire departments are ready for a busy time ahead.

"All of the runoff forecasts are predicting a very similar river flow season as 2011 and 2017, which were very high call volumes for us," says Kevin Joell, the Reno Fire Department's Water Entry Team Director.

The flow you are seeing now in the Truckee is about four times higher than the average spring runoff. And he says it's not just the volume and velocity; the water is very cold and the high level hides all sorts of hazards, rocks, brush and other debris.

"So the likelihood of getting caught in what we refer to as a strainer, like a tree downed in the river or a rock sieve where the water is flowing through but a body could be trapped, increases greatly with these flows."

Because there's so much snow above this year and the melt is starting late, these conditions are going to last for a time. Joell says the flows may be dangerous clear into mid-summer.

For those who are prepared, this high flow can be good news, but those who just think this looks like great fun, and buy an inner tube or cheap inflatable and jump in, are putting themselves at risk.

"They're going to find themselves in a situation they've never encountered before and they could find themselves in a life-threatening predicament.

Kayakers and other whitewater enthusiasts are usually well-prepared and trained in self rescue techniques. If you don't have that equipment or those skills, you shouldn't be in the water.

Future of Reno floodplain development focus of new BANN website

Special to the NNBV April 18, 2019

Special to the NNBV

Courtesy BANN

April 18, 2019



This map shows where floodplains exist across Reno, in addition to several key landmarks built on them — farthest north is Reno City Hall; south of that, middle, is Reno-Tahoe International Airport; southeast of the airport is The South East Connector; southwest of the airport is the Reno-Sparks Convention Center; and farthest south is South Reno neighborhoods, including Damonte Ranch.

RENO, Nev. — The Builders Association of Northern Nevada recently launched a website designed to help Reno residents and developers understand how innovative engineering techniques allow safe and environmentally sustainable new neighborhoods in floodplains.

The site, FloodPlainFacts.com, isn't focused on any single housing project, said Don Tatro, chief executive officer of BANN.

Instead, the industry group wants to improve public understanding of Reno's long history of development in floodplains, as well as the engineering and planning requirements that dramatically improve flood protection in new projects.

Reno grew up in floodplains, Tatro notes. Considering City Hall, Reno Sparks Visitors and Convention Authority and many neighborhoods in south Reno sit on the floodplain, the city has established clear guidelines to protect development in those areas.

But the question of development along the edges of floodplains has become even more critical, Tatro says, as Reno struggles to provide housing for middle-class families.

It's all the more difficult for homebuilders to meet the needs of middle-income families because limited supplies of developable land remain within the city, said the top executive of the builders group.

As the organization's educational website notes, the combination of regional flood-control measures, new development techniques and improved flood mitigation combine to create opportunities to build new homes.

In fact, Tatro says, innovative, environmentally sustainable engineering design often preserves floodplains, enhances natural stream channels and wetlands and creates neighborhoods focused on the natural world.

The alternative — development on the hillsides above floodplains — is more expensive because it requires substantially higher costs to prepare sites for construction, professional members of The Builders have explained. Those higher costs, in turn, push the price of new hillside homes above the prices that most working families can afford.

"Housing is our community's critical issue. How we respond to our community's call to house our middle class, our seniors, our entrepreneurs, and our college graduates will shape Reno for years and generations to come," says Tatro.

He said FloodPlainFacts.com provides information that allows the public and community leaders to carefully balance state-of-the-art flood protection and responsible development. Page 26 of 83

'Extremely experienced' kayaker who died in Truckee River this weekend identified

Sam Gross, Reno Gazette Journal Published 12:08 p.m. PT April 22, 2019 | Updated 2:03 p.m. PT April 22, 2019

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Truckee River at Farad, Calif. (Photo: Benjamin Spillman/RGJ)

A kayaker who died in the Truckee River this weekend has been identified by the Washoe County Regional Medical Examiner's Office.

Stephen Bauwens, 49, of Washoe Valley was pronounced dead at the scene after his boat rolled and got stuck in rapids near the California/Nevada state line on Saturday, April 20.

Bauwens and the partner he was paddling with were both "extremely experienced" kayakers, according to Brook Howard, manager of community engagement for the Washoe County Sheriff's Office.

Bauwens' partner was able to pull him to safety after he rolled, Howard said, and began administering CPR on the shore.

"He kept going and going and going for about an hour," Howard said.

After that hour, he ran to nearby Interstate 80 and flagged down a motorist, who called 911.

The exact cause and manner of Bauwens' death is still under investigation by the medical examiner's office.

The Truckee river is currently running very high and cold, Howard said, and she cautioned river-goers to exercise extreme caution before entering the water.

Sam Gross is a breaking news reporter for the Reno Gazette Journal who covers wildfires, emergencies and more. <u>Support his work by subscribing to RGJ.com right here.</u>

River safety: How Sierra storms kick start Truckee River 'drowning machine'.

Residents test water in Swan Lake



By <u>Terri Russell</u> | Posted: Wed 3:36 PM, Apr 24, 2019 | Updated: Wed 3:46 PM, Apr 24, 2019

LEMMON VALLEY, NV (KOLO) Looking down on the water treatment plant in Lemmon Valley, you can understand why residents in the area are worried about the water in <u>Swan Lake</u>. Comparing pictures from 2011 and now, the facility is a shadow of its former self.

The plant is not far from the elementary school in Lemmon Valley. That's why a couple weeks ago, Denise Ross and an environmental engineer experienced in water collection took samples of the water. They started right next to Lemmon Valley Elementary School.

"There being two sewer treatment plants dumping effluent into the lake, we weren't comfortable with the results we were being told," say Denise Ross, a Lemmon Valley resident.

They then moved to Pompe Way, where homeowners have been forced from their property because of flood waters. They then went to the other side of the elementary school.

The samples were taken to a certified lab in Nevada. The results would come back several weeks later. All the tests were paid for by Ross.

"Two by the school came back with no coliform or e-coli bacteria," says Ross. "And then the one near Pompe did show some levels, higher levels. But that could also be explained by leaking septic systems, and bird droppings," she says.

Ross says they did not test for metals. That may come later. But she says because of the clay bottom of the lake, and the higher alkali PH, levels were higher than normal in one of the samples.

She says these results are at least within safe ranges where residents don't have to worry about coliform, nitrates, PH levels, and solids, especially considering no one would even want to swim, much less drink this water.

Still, residents are encouraged to wash their hands with soap and water if they come in contact with the lake.

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AN FRANCISCO WEATHER // WEATHER

How an 'unripe snowpack' will impact Lake Tahoe this summer



Amy Graff, SFGATE April 24, 2019

Comments



10f21Aerial view of Lake Tahoe on a sunny winter day in California. Sierra mountains covered in snow are visible in the background.Photo: Andrei Stanescu /Â iStock / Getty Images Plus / Getty Images/iStockphoto



2of21HIDDEN LAKE TAHOE: FAVORITE SECRET SPOTS

Secret Cove Beach, eastern shore Lake Tahoe is notorious for traffic jams, packed beaches and restaurant lines. Savvy travelers know where to escape the crowds, take in the region's beauty and find peace and relaxation. One of those quiet spots is Secret Cove Beach on the lake's eastern shore. Don't be Photo: stevedunleavy.com/Getty Images



3of21**Chambers Landing Pier Bar, West Shore** This wooden shack at the end of a pier is a favorite locals spot for drinks. It's tucked away in a residential area on the west shore. 6300 W Lake Blvd, HomewoodPhoto: Adriana A. / Yelp

For the third year in a row, Lake Tahoe is expected to fill.

This is noteworthy for the sixth-largest lake in the United States that flirted with record-low levels amid a five-year drought that ended in 2017.

Even more good news for the West's water supply: Tahoe's water level is likely to reach its peak late in the season as a robust snow pack slowly melts through summer, feeding the reservoir and the Truckee River continuously for months to come.

"There won't be a lot of time between when it fills and when it starts snowing again," explains Chad Blanchard, the U.S. District Court water master who tracks water between Lake Tahoe and the lower Truckee River. "That means we have more water to carry over and if we do go back into a dry cycle, it'll prepare us better."

ALSO: Rock star's extravagant Lake Tahoe home hits the market for \$9.85 million

Straddling the California-Nevada border, Tahoe is a renowned outdoor playground enjoyed by people from around the world. It's also the main water source for the Reno-Sparks, Nev., area. The lake is fed by 63 tributaries that drain 505 square miles known as the Lake Tahoe Watershed. With a vast surface area of 191 square miles, Tahoe requires an immense amount of water to fill, especially because roughly 100 billion gallons of water evaporates annually.

Blanchard explains the lake reaches its peak when the amount of water flowing into the lake matches the amount lost due to evaporation.

"As temperatures warm, evaporation is starting to climb, but inflow is also climbing rapidly with the melting snowpack," he says. "The lake will rise as long as the inflow is greater than evaporation."

Depending on the amount of rain and snow that fell in winter, evaporation typically equals inflow any time between April and August. At this point, the flood gates on the Lake Tahoe Dam are closed and water is no longer released into the Truckee River. The lake is "topped off," so to say.

Blanchard can't say exactly when the lake will peak but he suspects it will happen later in the season, maybe late July or early August. That's because the watershed is currently under a near-record snowpack after a winter of severe weather.

He describes the current state of the snowpack as "unripe," as it's massive and cold. While snow has melted at lower-elevations below the lake, the higher level snow above 6,200 feet is still well-established.

"Things are starting to pick up, and the lake is starting to see more inflows from snowmelt, but it has been limited considering how late we are," says Blanchard. "We're just starting to see some of the higher stuff melt. We'll see what happens after about a week worth of warm weather."

MORE: 20 super-secret spots around Tahoe: Where to escape the crowds

When the lake hits its peak, it will likely be at full capacity, give or take a couple inches. The lake's natural rim is at 6,223 feet above sea level. The lake can store an additional 6.1 feet in its reservoir, which would push it to 6,229 feet, its legal maximum limit.



AMY GRAFF

Big waves on Lake Tahoe: Surfer caught riding waves at Kings...

The dam at Tahoe City, the lake's only outlet, regulates the upper 6.1 feet above the low water mark. This winter, small amounts of water have been released into the Truckee River since February.

As of Tuesday, the lake level was at 6,227.94 feet with only about a foot of rise needed to hit full capacity. In coming weeks, Blanchard will be watching the weather and the snowpack closely to determine how much water to release and prevent flooding on the Truckee River. It's a tricky dance to ensure as much water as possible is stored.

RELATED: <u>Readers' photos show off Lake Tahoe, brimming with water and beautiful</u>

With two of the three past winters seeing record-breaking snowfall, Lake Tahoe reached full capacity in 2017 and 2018.

After an extended period of drought, the lake saw a significant rise in 2017. That year, the water level shot up 6.5 feet. The equivalent of three feet was also released through the dam. In 2017, the lake peaked in early July. There was less snow the following year, but the lake still filled with significant carryover from the year before. In 2018, the peak was in May.

"A lot of things are driving the lake's level," says Blanchard, but long story short, it comes down to how much water is coming in and how much is coming out.



<u>Amy Graff</u>

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Amy Graff is a news producer for SFGATE, focusing on Bay Area news, real estate and science and environment stories. As a mother raising three children in San Francisco, she also covers parenting topics and writes the site's Mommy Files blog.

Amy can empathize with any parent navigating SFUSD's lottery system as in 2007 she launched a blog called the SF K Files chronicling her experience of finding a kindergarten for her daughter. The blog still exists and is a popular resource for San Francisco parents.

Amy got her start in journalism writing features for the Daily Californian, the student newspaper at UC Berkeley. She went on to become a senior editor covering travel at VIA, the magazine for the American Automobile Association, and was a content manager helping oversee a team of over 30 bloggers at BabyCenter.

Amy has been a guest on dozens of radio and TV shows nationwide from Forum (NPR) to Good Morning America (ABC) to the BBC. Her writing has also appeared in the Huffington Post, Sunset and San Francisco magazine.



NEWS

Man Transported to Hospital After Falling in Truckee River

A man is in the hospital with hypothermia after falling into the Truckee River, early Thursday morning.

Thursday, April 25th 2019, 6:27 AM PDT Updated: Thursday, April 25th 2019, 7:46 AM PDT

Play Video

A man is in the hospital with hypothermia after falling into the Truckee River, early Thursday morning.

The Reno Police Department, Reno Fire Department, and REMSA responded to Fisherman's Park near

Kietzke Lane and Galletti Way just before 5 a.m.

Reno Fire says the person was walking along the Truckee River, when he fell and yelled for help.

Officials say a group of homeless people in the area helped pull him out of the river.

TMWA Admits Lemmon Valley Flooding Affecting Water Supply Wells (Opinion)

April 25, 2019 ThisIsReno

Submitted by Kris Hemlein

Open Letter to Mr. John Enloe, Director, Natural Resources, Truckee Meadows Water Authority

Dear Mr. Enloe:

I understand that you want to correct the claim that the Vidler Pipeline contributes to the flooding in Swan Lake. You asserted that TMWA is operating the Vidler pipeline to meet drinking water demands in Stead and Lemmon Valley, since several of TMWA's wells around Swan Lake are shut down due to the flooding.

I am alarmed that this could indicate that the wells were shut down due to contamination of the aquifer. Contamination of an aquifer could be due to the leakage of the contaminated surface water through the clay layer or due to leakage around the wellpipe itself. Please explain why these wells were shut down.

Area residents and county residents need to understand the well issue in detail so as to have confidence that the wells and drinking water are compromised due to flooding and, should the wells need to be replaced, what costs will be incurred. Please provide the following documents.

1) A map of TMWA well locations for both production and monitoring wells.

- Identify the wells that have been shut down.
- Identify which wellheads are submerged.
- Describe the construction, depth, and extraction rates for each well.
- •

2) Recent water quality test reports.

3) A description of how the water from the production wells is treated. Do these wells extract water below the "50 feet of impermeable clay" (per Dwayne Smith)?

4) For technical completeness, please include the depths to screened intervals, construction records, and piezometric surface mapping data.

It is imperative that the NDEP remain involved in the ongoing Lemmon Valley/Swan Lake flooding monitoring and remedial efforts. The Bureau of Water Pollution Control must ensure

compliance with water pollution control laws. The Bureau of Corrective Actions must oversee the remedial efforts to be determined by Washoe County/City of Reno.

The Bureau of Safe Drinking Water must ensure compliance with state and federal drinking water standards of all water sources in Lemmon Valley. If it is determined that Swan Lake is indeed contaminated by untreated effluent then the Bureau of Waste Management must participate in regulating remedial efforts as untreated effluent is considered a hazardous waste.

If it is determined that these wells have been compromised, then costs associated with new well construction must be made public. This cost will be absorbed by Washoe residents, therefore must be made public knowledge as part of the Lemmon Valley flooding remediation and mitigation planning process.

As a community-owned utility, TMWA must provide a complete and comprehensive response to these questions. In a good faith effort to ensure complete transparency TMWA must supply abstraction, domestic and monitoring well construction and analytical data, to be utilized as an integral part of the Lemmon Valley water balance scheme, and as necessary to ensure complete remediation and best practice for ongoing stormwater, sewage, and domestic water supply management.

Respectfully,

Kris Hemlein

Kris Hemlein is an environmental engineer in the mining industry

Submitted opinions do not represent the views of ThisisReno. Have something to say? <u>Submit an opinion article here</u>.

• 105

Lemmon Valley residents speak out about flooding

By Terri Russell



RENO, NV (KOLO) "All of us out in the valley, all we talk about is corruption," said Leona Galau to the joint meeting of the Reno City Council and Washoe County commissioners. "Because that is what we feel. We feel that there is so much corruption in this board that we are never going to get listened to," she said.



Those comments came after a four-hour meeting between Lemmon Valley residents, county commissioners, Reno City Council members, and staff from each municipality.

Residents were allowed to talk about their personal experience in Lemmon Valley, where flood waters have ravaged their homes and property since 2017.

"We can't start over. If we were 35 or 45 years old, we could," said Sherlyn Barney, another Lemmon Valley resident. "But I am going to be 70 this year; my husband is going to be 80. We can't move to a new place," she told the meeting.

"I will never be able to go home again. Mortgage-free home. Never going to be able to live there," said Lemmon Valley resident Tracy Hall.

While county commissioners and City Council members heard the personal toll Swan Lake is taking on the residents' homes and streets, they also heard from county and city staff on the current status of the lake itself.

Staff acknowledges the Hesco Barriers are holding up. But water levels from what they call storm events can, at times, make it to the roadway.

There was concern about Lemmon Valley Elementary School near the water treatment plant. The flood waters are making their way to the playground.

"We did put a fence around where the water intruded on the property," said Pete Etchart with the school district.

At the commission's last meeting, county staff said if nothing was done to get rid of the water, it would take seven years for Swan Lake to disappear. But that would require predicting years' worth of weather--virtually impossible.

In a report, Washoe County's assistant county manager said the county wants to widen and raise Lemmon Drive.

Residents said the county should focus instead on the effluent dumping into the lake coming from two water treatment facilities in the area, as well as what they call unbridled development, which adds runoff to the lake. That had City Council member Jenny Brekhus calling for a moratorium.

"It will shift the focus from development-driven process," said Brekhus. "Of this development project to that development project, what they are going to do over here To a community based approach to understand what the build out land use is going to be in this area," Brekhus said during the meeting.

With plenty of direction coming from the elected officials, staff has plenty to look into and will report back to county commissioners and City Council members.

Earlier in the meeting Reno Mayor Hillary Schieve said she wanted another joint meeting just like the one April 29. But Schieve says she wants it in the early evening so they can hear from even more Lemmon Valley residents.

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Washoe County Commissioners, Reno City Council Meet to Discuss Lemmon Valley Flooding

The Washoe County Board of Commissioners and Reno City Council

held a joint meeting to learn more about the issues at Swan Lake.

Monday, April 29th 2019, 6:18 PM PDT by Paul Nelson Updated: Monday, April 29th 2019, 8:27 PM PDT

Play Video

The Washoe County Board of Commissioners and Reno City Council held a joint meeting to learn more

about the issues at Swan Lake. Now they are looking at ways to use the information. Swan Lake started

flooding areas of Lemmon Valley in 2017 and it has caused problems ever since. This year's wet winter

has also contributed to the problem.

"The residents are frustrated and we fully understand that but the roads are safe to travel on and their houses are dry," Dave Solaro, Assistant (Washoe) County Manager said.

Solaro says the next step is to find solutions to the problems. Residents say the biggest problem is development and effluent water.

"Development causes storm water runoff," Tammy Holt-Still, Lemmon Valley resident said. "Development

causes effluent. You bring water in but you have no place for it to go, you've got a problem."

Officials say about 16 percent of the lake is treated waste water, or about a foot of current lake levels.

That is why they are focusing most of their attention on storm water.

"We're trying to get some action around there, trying to get to the point where we can start taking down

those HESCO barriers but still provide the same amount of protections that we have today," Solaro said.

Councilwoman Jenny Brekhus wants a moratorium on future development until they can study the

impacts it will have on the Swan Lake.

"It's very complicated but the development, any water hookups, anymore sewer generation is an add to the problem," Brekhus said.

Brekhus says she thought the discussions were important but now it is time to take action. However, she says they have to be careful with their future decisions because it could impact the entire region.

"I see big price tags that are going to be born regionally whether they're from road construction budget that's required, whether it's TMWA that's regional, or a big sewer investment," Brekhus said.

Holt-Still says along with effluent water, sewage treatment plants should also improve water quality so they do not have to release it into Swan Lake.

"Once they have the water to A-plus, then they can figure out it can go anywhere," Holt-Still said. "The tribals want it. It could go down the Truckee River."

Some leaders are asking for barriers around Lemmon Valley Elementary School, where water is already up to its playground.

Solaro says finding the right solutions are difficult because they don't have a budget for it and some options could be expensive. One idea is to use nearby land for farming crops that require a lot of water, using Lake Swan as an irrigation source.

"We're checking this with the experts to go create some large water pivots and grow alfalfa," Solaro said. Some mentioned a partnership with the BLM, allowing them to use the alfalfa as feed at its wild horse facility.

Other ideas include raising Lemmon Drive to create a levy or pumping water into a reservoir. Solaro says pumping the water out, altogether, is difficult because of water laws, lack of places to move it, and possible ownership of the water. Another idea is to allow construction companies to fill their water trucks with water from Swan Lake, which they can use for dust control.

"It sounds really good to go get these things but I think there are other consequences associated with that as well, increased traffic, increased fuel usage for a very small benefit," Solaro said.

Solaro says about 2.5 feet of water evaporate each year. If they don't do anything, it would take about five years for the lake to dry up. These options could help speed up the process.

Brekhus is hoping for an interlocal agreement between Washoe County and the City of Reno to help make the best decisions. They are also hoping for more FEMA funding, which would reimburse about 75 percent of local expenditures.
Fixing Swan Lake 'nightmare' flooding in north Reno won't be cheap or easy

Benjamin Spillman, Reno Gazette Journal Published 4:50 p.m. PT April 29, 2019 | Updated 10:25 p.m. PT April 29, 2019

The waters in Swan Lake started rising two years ago. Residents there are still worried. Sam Gross and Benjamin Spillman and Anjeanette Damon, Reno Gazette Journal

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The floodwaters of Swan Lake have long since chased Tracy Hall from her North Valleys home.

Hall says she's lucky to have friendly neighbors who allow her to live in an RV on their property while water laps at a temporary barrier on the edge of her property.

But Hall and others are tired of the disruption to their lives that started more than two years ago when the formerly dry lake in Lemmon Valley filled with stormwater runoff and urban effluent.

"We are living this nightmare, we want it to end," said Hall, who on Monday told members of the Reno City Council and Washoe County Commission she recently rescued a puppy that got past a barrier and was in danger of drowning. "Please, come together and give us some kind of fix."

Hall and more than a dozen other residents pleaded with the city and county elected officials to ramp up efforts to drain the area quickly and make sure the floods don't return.

"We can't do anything about it," resident Ann Marie Nevarez said during a rare joint meeting of the city and county governing boards. "All these people are here asking for help because we can't do it."

Floodwaters have plagued Lemmon Valley since January 2017, when heavy precipitation filled Swan Lake beyond normal levels, pushing it into roads and homes.

Officials installed temporary pumps and barriers to stop the immediate problem. But heavy rains and snow in subsequent years sent more water into the lake than the amount that evaporates.

The lake is in a closed basin with no natural path for the water to leave, besides evaporation. That's left residents to cope with the problems associated with rising and falling water and officials to struggle for answers.

The joint meeting was a chance for residents to speak out to officials elected to represent the flooded areas.

"This is a community problem not a Washoe County problem, not a city of Reno problem," resident Lori Beach said.

The meeting, which ran longer than four hours, highlighted potential solutions. But it also showed the huge scope of the problem and foreshadowed that some of the solutions might be controversial.

"I think we have a regional problem, it is going to require regional investment," Reno City Council member Jenny Brekhus said.

Brekhus pitched a one-year moratorium on development in the basin in order to study the source of the problem and identify long-term solutions.

It's an idea that's popular with residents, who place much of the blame for the flooding on the influx of new development.

Development increases impervious surfaces, thus increasing runoff, and also the amount of wastewater going to treatment plants that are overflowing into the basin.

"Every water hookup, every sewer hookup is exacerbating the problem right now, which is at an emergency level," Brekhus said.



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Washoe County installs temporary inflatable barriers, called Tiger Dams, in front of homes bordering Swan Lake along Shane Way in Lemmon Valley on April 3, 2019. (*Photo: Jason Bean/RGJ*)



Floodwaters encroach on a home near Swan Lake, an ephemeral lake north of Reno. Residents are worried snowmelt will push the water beyond the ability of barriers to contain it. March 13, 2019. (Photo: Benjamin Spillman and Sam Gross)

But other elected officials and even some staff members questioned the necessity.

"We feel we can at least move forward with appropriate development," said Assistant County Manager Dave Solaro.

The development moratorium wasn't the only big idea on the table.

Several officials asked city and county staff members about widening and raising Lemmon Drive. They hope raising the road will make the busy arterial serve as a levee.

Washoe County Commission Chairman Vaughn Hartung asked Solaro whether the federal government would pay all or some of the cost to raise the road.

Raising the road was already included on a list of items already in planning, but others questioned the need.

Brekhus asked whether expanding the road would contribute to problems by inducing further development or diverting money from other road projects.

Others said raising the road simply isn't necessary.

Lemmon Valley Update - Short Term Steps by Benjamin Spillman on Scribd

"The neighborhoods do not want Lemmon Valley Drive raised," resident Tim Fadda said. "We don't need it."

While development and infrastructure were among the headier issues officials and residents discussed at the meeting, they also covered other ideas that could alleviate the immediate problems.

Among those were proposals to speed up the rate of evaporation by digging infiltration ponds, spraying water into the air and growing water-intensive crops such as alfalfa in low-lying areas.

Dwayne Smith, Washoe County's director of engineering and capital projects, said the natural evaporation rate reduces the lake level by about 2.5 feet annually.

New water flowing in, whether it's natural storm and snowmelt inflow or treated effluent or runoff from hard surfaces in developments, offsets evaporation.

And in recent years evaporation hasn't kept pace with inflows.

Without any assistance, it would likely take five years or longer for the basin to empty through evaporation, Smith said.

He said efforts to speed up the process, whether by spraying water in the air, filtering it into the ground or putting it on crops, could lower the lake by an additional one to two feet annually in addition to the natural evaporation.

"These are things we believe can be implemented pretty quickly," Smith said.

But those efforts would cost money.

Smith's estimates to decrease the lake level by an additional foot annually ranged from \$2 million to \$3.5 million. Using short-term methods to lower the lake an additional two feet annually could cost from \$3.6 million to \$7.3 million.

Officials also proposed additional ideas. Washoe County Commissioner Kitty Jung urged staff members to encourage companies that use water to control dust on construction sites to take it from the lake.

Lemmon Valley Flooding by Benjamin Spillman on Scribd

Jung and others also said once the lake level is stabilized the city and county should consider ways to manage it as an asset to the community.

"This should be a regional amenity, a lake that can be used by everybody in Washoe County," Jung said.

Washoe County Commissioner Jeanne Herman raised the possibility of elevating structures.

"It is less costly than buying out people who don't want to move," Herman said "If I lived there I wouldn't want to move."

While the meeting on Monday was a chance for people to air grievances and ideas in an open forum, it didn't include many direct actions.

The county and city elected officials voted to launch a website to post progress reports and answers to frequently asked questions.

And Brekhus promised to pitch her proposal for a development moratorium and calls for agreements between the two governments to take meaningful steps toward solving the problem to the Reno City Council.

Residents reacted with a mix of skepticism that officials were listening to their concerns and hope that they will take swift action.

"Nobody seems to understand what we are dealing with," resident Pat Flynn said. "I really hope ... this is a real thing and not just a big show."

Benjamin Spillman covers the outdoors and environment in Northern Nevada, from backcountry skiing in the Sierra to the latest from Lake Tahoe's ecosystem. <u>Support his work by subscribing to</u> <u>RGJ.com right here</u>.

Washoe County, Reno Discuss Options to Address Lemmon Valley Flooding

April 30, 2019 Carla O'Day

HESCO barriers, meant to be temporary, have served as levees against flooded Swan Lake for more than two years. Image: Bob Conrad.

By Carla O'Day and Bob Conrad

Closed basin protection measures for the North Valleys were considered Monday with some local politicians calling for a moratorium on development in the flood-prone area of Lemmon Valley during a joint meeting between the Washoe County Commission and Reno City Council.

Lemmon Valley residents packed the county commission chambers, many who said they were hoping their voices would be heard.

Norma Brownell, who's lived in the Lemmon Valley area for 35 years, said flooding will negatively affect the sale of properties.

County Commissioner Vaughn Hartung and Reno Mayor Hillary Schieve listen to frustrated Lemmon Valley residents at a meeting to discuss the seemingly never-ending flood concerns in Lemmon Valley. Image: Bob Conrad.

"Who would like to buy a house out in Lemmon Valley with all this going on?" Brownell asked. "Everybody just throws up their hands and says, 'I don't think so.'"

Tim Jeter, a 20-year Lemmon Valley resident, said it seems local authorities are buffering up the HESCO barriers and hoping nothing happens.

"That's not good enough," Jeter said. "We want fixes. We're tired of driving down a road that partially works and is partially opened."

TMWA: Two Sources of Water Serving Residents

The Truckee Meadows Water Authority addressed during the meeting concerns raised in a submitted letter to ThisisReno published Friday.

Andy Gebhardt, TMWA's director of operations and water quality, said that wells in Swan Lake, now underwater because of the flooding, are not being used because getting to the wells is difficult.

"We have the wells out there, and the water quality we have tested an abundant amount of times — more than a hundred samples," he said.

One well was sealed, but four other wells could be used to provide drinking water.

"They're not contaminated, the wells themselves were not compromised, it's just that the access to them is iffy in the middle of the lake," he added. "Since we have a secondary source of supply, it didn't seem like a good use of money to keep building roads in the middle of the lake."

Gebhardt said that residents are getting clean water through TMWA's Chalk Bluff water treatment plant and the Vidler water project at Fish Springs Ranch.

Unprecedented Water Levels

Water levels at Swan Lake have risen in recent years due to above-average precipitation, causing flooding and property damage. The area averages 7.48 inches of precipitation annually but got almost 17 inches between Oct. 1, 2016 to Sept. 30, 2017, according to a meeting presentation. The following year (Oct. 1, 2017 to Sept. 30, 2018) was less, but still above average. Since Oct. 1, 2018, precipitation is ahead of the prior year.

"Most smart developers are passing on this area. They know there's a problem."

Council member Jenny Brekhus.

Council member Jenny Brekhus said there's been too much lip service and not enough movement. She requested the city approve a 1-year moratorium on development in the Lemmon Valley area at that it be put on the next council meeting's agenda.

"Some people might say that's anti-development but I disagree," Breckhus said. "I think there would be some short-term hurt and maybe 100 or 200 residential units might not be able to come in on a 1-year time frame, but in the Reno Master Plan, we have other areas that can pull

up the slack and there are a fair amount of projects about to come on anyway. Also, most smart developers are passing on this area. They know there's a problem."

Washoe County Commissioner Jeanne Herman.

Commissioner Jeanne Herman said elevating homes in the area would be less costly than buying out people who don't want to move. She also suggested the county consider a moratorium.

Topics brought up by other commissioners and council members included whether emergency federal funds could be obtained, if the Swan Lake area could be made into a park similar to Sparks Marina, better protection for Lemmon Valley Elementary School, an insurance policy for people affected by flooding, and using the area for farming.

Assistant County Manager Dave Solaro said the issue hasn't been discussed as a local emergency in federal terms, although the county plans to apply for pre-disaster mitigation grants through the Federal Emergency Management Agency.

Also, Solaro said it's not known if turning Swan Lake into a recreation area or making it into a park with walking paths is feasible because there are questions about whether it has a long-lasting water source. Agriculture was also discussed as a potential solution.

"We are working with the National Resource Conservation Service to discuss the right type of crop for the soil, what that looks like, the end result of utilizing the highest usage of water crop that we can," Solaro said. "Certainly as we get down that road, we can narrow down what that crop might be. We will start discussions with the BLM to see if that is useful to them.

"Again, there are costs associated with harvesting a crop, so we want to make sure we're mindful of all costs associated with growing, but also the harvest."

Pete Etchart, Washoe County School District chief operations officer, told the commission and council that he's been in contact with the Lemmon Valley Elementary School principal and has been assured the campus is in good shape.

Next Steps

No official action was taken at the meeting, but both boards supported the creation of a web site regarding planned Lemmon Valley improvements that would provide information and allow visitors to submit questions that would be answered by city or county staff.

Another future meeting between Reno and Washoe County will also be scheduled, this one in the evening, which will allow people who work days to attend.

Save The Date: TMWA's Smart About Water Day is May 4

April 26, 2019 ThisIsReno

SPONSORED POST

Image: TMWA

Truckee Meadows Water Authority (TWMA) invites the public to its Smart About Water Day, a free event on Saturday, May 4, at the California Building in Idlewild Park. From 10 a.m. -2 p.m., regional water experts will offer information on projects, plans and actions that contribute to the overall state of our water in the Truckee Meadows.

TMWA's highly skilled staff of operators, scientists and engineers will be there with information and interactive displays for the community to explore. For those wanting to know more about the state of our water, short talks on topics regarding snowpack, long-term water resource planning and future infrastructure projects are scheduled. Landscape and irrigation workshops and tree tours will be featured as well.

To provide a complete picture of water in the Truckee Meadows, many other agencies will be represented, including Truckee Meadows Regional Planning, Truckee Meadows Water Reclamation Facility, Truckee River Flood Management Authority and the Western Regional Water Commission. In addition, other nonprofit partners will be on site, such as OneTruckeeRiver and The Nature Conservancy.

With all this water expertise under one roof, it will be a great learning opportunity for the whole family. Sierra Nevada Journeys will present watershed awareness activities in which kids can become scientists at an interactive, water-quality testing exhibit. TMWA's big rigs will also be on display, and TMWA operators will show kids and adults how the equipment works. Kids will be given a passport to acquire stamps at each education booth. If completed, the kids will win TMWA prizes!

For those who would like to see everything the event has to offer and make lunch plans, several local food trucks will be on site selling some of our community's best mobile-food offerings (vegan and gluten-free options included). For a list of food trucks, scheduled water talks and more updates as the event gets closer, visit <u>www.tmwa.com/2019</u> for the latest information.

The Town That Extended 'Smart Growth' to Its Water

1. JASON PLAUTZ

APR 30, 2019

As Western states grapple with drought, Westminster, Colorado, has become a model for its integration of water data into the planning process.

The turning point in that history was the hot, dry summer of 1962. Westminster was already embroiled in a debate over where to source its water when a drought choked the small city, forcing officials to impose a sprinkler ban. Soon enough, residents noticed that the water trickling from their taps was slightly discolored and didn't smell right. The desperate city had started drawing water from the Kershaw Ditch, a pool it had recently abandoned over treatment issues.

Although the city said the water was "safe, but stinky," fed-up local mothers were convinced it would make their children sick and raised hell. In what became known as the "Mothers' March," more than 100 women gathered at city hall to protest the city's water management. City-council meetings were disrupted by protesters who would shout questions through open windows, and the mothers flogged petitions on street corners. They attracted enough attention that Dan Rather did a segment on the protests for CBS News.

Four women collect signatures for a referendum that would have required Westminster to purchase water from Denver during the town's 1960s water fight. One woman holds a sign telling city planners: "You goofed the water." (Courtesy of the Westminster Historical Society)

The events of that summer ensured that water would become Westminster's defining issue for years to come, until the city struck a deal with local farmers to share water from the artificial Standley Lake. But even with its supply settled, Westminster continued to focus on taming demand, most recently with a conservation and planning approach that's become a regional model for managing growth without straining resources.

"Starting from such an uncomfortable place, we've kept our eyes on the prize," said Stu Feinglas, who retired last year as Westminster's senior water-resources analyst. "Sustainable development and sustainable water."

Feinglas, who started with the city in 2001 (as another drought gripped northeast Colorado), approached the problem holistically, with a data-driven approach that has become influential for other cities in the West. By merging the city's land-use plans with water data, Feinglas and colleagues ensured that Westminster wouldn't run dry, even as its population boomed from less than 10,000 at the time of the water protests to 113,000 today. The surrounding county was even water-healthy enough to support Colorado's first two water slides as part of the <u>Water</u> <u>World theme park.</u>

The state's population is expected to keep growing—as much as 70 percent by 2040. At the same time, climate change is fueling persistent droughts. In 2018, parts of nine Western states, including Colorado, were in severe or extreme drought, according to the <u>National Oceanic and Atmospheric Administration</u>.

Conservation measures have helped many Western cities decouple population growth from water use, but that approach often puts the burden on businesses and residents to be more efficient. Taking a demand-focused approach to water from the earliest stages of planning is still rare, said Erin Rugland, a junior fellow at the Babbitt Center for Land and Water Policy in Phoenix.

"There's always been a way to engineer around it," Rugland said. "It's been feasible to find a new supply. But I think we're starting to reach a turning point."

The recent sustained drought—which has left the critical storage facilities Lake Powell and Lake Mead at their lowest levels since they were being filled—has cemented the idea that Western states are going to have to try to do more with less water. On April 8, Congress approved a seven-state <u>Drought</u> Contingency Plan, which lays out shared cuts if supplies continue to stay

The plan builds on 2007 guidelines that helped manage the early years of the drought; now states, tribes, agriculture groups, and cities are negotiating a new set of guidelines set to take effect in 2026. Previous agreements have hit agriculture hard, since the industry is by far the biggest water user in the West, but most everyone agrees that the 2026 guidelines will require some sacrifices from cities, even as they grow as economic engines.

That's where Feinglas thinks his approach—which current Westminster officials <u>are sticking</u> with needs to become the norm.

Using Westminster's comprehensive plan, which zones parcels for general use like multifamily housing or retail, Feinglas made a rough estimate of how much water each type of building would use. Then the city built GIS software that overlays water resources and infrastructure over the comprehensive plan—making it easy to see, for example, how much water a proposed strip mall might use.

Westminster planners can coordinate advanced water-use projections with land use. Here, a geographic area is shown (green is new development, blue is redevelopment, yellow is existing), with height reflecting the projected water use. (Courtesy of Stu Feinglas)

It's a step up from the typical water-per-capita measure that most cities rely on, which doesn't reflect the fact that denser developments are typically more water-efficient than a single-family house with a green lawn. It also, Feinglas said, helps planners guide developers to smarter construction, even previewing what their water rates and tap fees might be.

"We didn't want public works to determine how the city developed. We wouldn't be the ones to say no," Feinglas said. "What we could do is show how much water we have and ask them to be creative and make their development work with that."

Software overlays water resources and infrastructure over the comprehensive plan—making it easy to see, for example, how much water a proposed strip mall might use.

That meant city planners could identify where it might make more sense to zone for multifamily housing, or see where new pipes might be necessary. Developers could amend their permits to include more low-flow toilets or water recycling. On rare occasions, proposals have been scrapped because they'd need more water than the city could supply. Essentially, Westminster is planning for the worst, making sure that another drought won't force anyone to turn off the taps.

It seems straightforward, and more or less mirrors what cities have been doing for years to align transportation and transit demand with new construction. But only a handful of other cities—notably Flagstaff, Arizona—have made it work.

"It requires operating between the silos of water management and planning, two disciplines that don't have a lot of common language," Rugland said. "Efforts for collaboration would have to be on top of day-to-day duties."

Also, water data <u>isn't always easy</u> to come by, especially on a lot-by-lot basis that breaks it down by business type. It's even tougher for cities that draw their water from multiple sources, who may keep data in different forms (California, for instance, had to <u>pass a law</u> in 2016 requiring

that the various state and local agencies be able to share their water data).

What If People Were Paid to Use Less Water?

1. ZACHARY BURT

MAY 10, 2018

America's Fastest-Growing Urban Area Has a Water Problem

1. JAKE BULLINGER

MAY 18, 2018

More states and cities are trying to make the water-land link. <u>Colorado's Water Plan</u> calls for 75 percent of citizens to live in communities that have integrated water conservation into land use by 2025, and the state's water conservation board has guidance to help local governments (the Keystone Policy Center has also held <u>a dialogue</u> with state and local partners). Arizona has a law that requires local jurisdictions to include available water supply and demand as part of a comprehensive plan, but not necessarily to make the link to planning (government cuts reduced state oversight for those comprehensive plans, as well). New software tools, like <u>Razix</u> <u>Solutions</u>, offer off-the-shelf guidance for local officials.

Ultimately, Feinglas said, the model requires city departments to talk to each other and plan for the worst, even if it means some short-term pain. "We know water is valuable, especially now," Feinglas said. "The last thing you want is to lose your economy because you can't supply your citizens."

About the Author **Jason Plautz**

Spring Freeze Could Damage Your Plants And Pipes

All it takes is one freeze to ruin someone's garden, and a spring freeze is coming on the night of April 30th.

Tuesday, April 30th 2019, 6:30 PM PDT by Ryan Canaday

Here's a shorter story filed w/ Laine's interview

All it takes is one freeze to ruin someone's garden, and a spring freeze is coming on the night of April 30th.

Thankfully, there are plenty of options available to keep your flowers and veggies safe.

At Moana Nursery, there are products called fleece jackets and frost covers that can go over your plants to keep them warm.

In fact, you can even use a bed sheet if you don't want to spend any money.

Whichever option you choose, you'll need to act quickly, because the last thing you want to do is wake up to a dead garden.

"If you can bring your pots into your garage or in your house for a couple of days till this passes that would be a good idea," says Rick Clark with Omega Landscape Solutions

If you can't bring them inside, or don't use one of the defensive products, you might have to kiss your tomatoes goodbye during Tuesday night's hard frost.

"The tomato plant may die and it will recover, but it takes a month, month and a half to recover from that kind of injury," says Jon Bruyn, plant doctor with Moana Nursery.

Here in Northern Nevada, we don't have that much time. We're known to have a short 90 to 100 day growing season in this climate.

In fact, this short time window, and April's deceivingly warm weather is likely why people are already gardening.

"It's tough to avoid a temptation getting those warm temperatures and the nurseries are full of flowers,"

says Clark. "Almost without failure, we have a late frost and people are going oh my god what do I do now."

Of course, as the old adage goes around these parts, when in doubt, "Don't plant tomatoes until the snow is off of Peavine," says Clark. It's important to note that it's not just plants, but your hoses and pipes are also at risk during a hard freeze.

"We want to recommend people disconnect any hoses that they have outside, as well as cover any back flows or exposed part of their irrigation with an installation cover," says Laine Christman, a conservation supervisor with the Truckee Meadows Water Authority.

If you don't pull the hose off during a freeze, you could break the outside spigot or damage the hose itself, and the same goes for other exposed pipes.

Beyond that, you should be in the clear during a one night freeze in spring.

In fact, TMWA is not recommending that people winterize their sprinkler systems on the 30th, saying most of the irrigation runs two feet beneath your lawn which puts it under the frost line.

This means, that the current temperatures of the ground should be warm enough to keep the pipes intact.

Despite that being the case, it's still a good idea to give the system a test run after the storm passes.

"After the freeze is done, run your sprinklers and check for any leaks or breaks that may have occurred during the freeze," says Christman

You are here: Home / Features / Cover Story / Amping Up

Amping Up Nevada's Utilities Expand to Meet Demand

May 1, 2019 By Doresa Banning Comments



Nevada's population is projected to increase 5.6 percent through 2022, according to the state demographer. That expansion and the continuing robust economy translate into greatly increased, cumulative power and water needs by new businesses and residences. Accommodating the current and forecasted growth is a huge focus of the Silver State entities providing these utilities. Here's a look at the energy and water industries.

Energy

Nevada's energy industry is "thriving," described John Hester, CEO, Southwest Gas Corp., the state's largest provider of natural gas (700,000 customers). In the north, the utility serves Carson City, Elko, Winnemucca, Fallon, Gardnerville, Incline Village and other areas around Lake Tahoe. In the south, it covers the Las Vegas Valley, Henderson and North Las Vegas. It operates in California and Arizona, too.

To meet demand, Hester expects his corporation to grow over the next few years at 1.6 percent on an annualized basis, or add about 35,000 customers per month. Further, plans call for Southwest Gas to spend more than \$2 billion over the next three years in its tristate service territory to feed growth and ensure its gas delivery systems are as new and as safe as possible.

Energy in Nevada continues to evolve, with the demand for more renewable energy rising, particularly as the related technologies and the adoption of them improves. One example of the evolution is large-scale batteries for storage and electric vehicles, said Doug Cannon, CEO, NV Energy. The utility provides electricity to more than 1.2 million customers in the state. It also delivers natural gas to more than 165,000 people in the Reno-Sparks area.

Regarding electric vehicles, last year Nevadans adopted them 40 percent more than in 2017, according to the Nevada Governor's Office of Energy's (GOE) "2018 Status of Energy Report." Additionally, the GOE and various partners are working to develop the Nevada Electric Highway, a system with the infrastructure needed for electric vehicles to travel long distances. As for Phase 1, along US 95, Beatty, Fallon and Hawthorne now have charging stations; the final two, in Tonopah and Indian Springs, should be added this year.

Renewable sources accounted for 18.1 percent of the state's power generation as of August 2018. That category encompasses biomass/biogas/landfill, geothermal, waste heat, hydroelectric, solar, net metering (energy sold back to the grid) and wind.

Natural gas, which is low carbon emitting, was the largest energy source in Nevada at 69.5 percent. Coal followed renewables at 9 percent. Next were hydroelectric at 3.3 percent and petroleum at less than 0.01 percent. Currently, before the Nevada legislature is a bill to double the state's renewable portfolio standard to 50 percent by 2030 from the current 25 percent by 2025. This standard is the amount of electricity sold by a power utility to retail customers that must come from renewable sources, 6 percent of which must be solar generated. Senate Bill 350 also would require wholly carbon-free emissions by 2050.

Cannon said NV Energy supports the bill and is committed to adding more renewable energy resources to its system. With its integrated resource plan, approved by the Public Utilities Commission of Nevada (PUCN) in December 2018, NV Energy will bring 1,001 megawatts of new renewable energy to the state, including 100 megawatts of battery storage capacity. The PUCN regulates the 400 investor-owned utilities in the Silver State.

Representing a \$2.2 billion investment, six photovoltaic solar projects (three in the north, three in the south) are being built by different developers, will boost the utility's renewable energy portfolio to about 3,000 megawatts. These projects are scheduled to be completed by the end of 2021. From most to least power generation, they are:

Eagle Shadow Mountain Solar Farm: 300 MW, north of Las Vegas on land owned by the Moapa Band of Paiutes, developer 8minutenergy Renewables

Copper Mountain Solar 5: 250 MW, Eldorado Valley, south of Boulder City, CED Southwest Holdings, Inc.

Dodge Flat Solar Energy Center: 200 MW with 50 MW of battery energy storage, east of Reno, NextEra Energy Resources LLC

Battle Mountain Solar Project: 101 MW, including 25 MW of battery energy storage, near Battle Mountain, Cypress Creek Renewables

Fish Springs Ranch Solar Energy Center: 100 MW with 25 MW of battery energy storage, north of Reno, NextEra Energy Resources LLC

Techren Solar V: 50 MW, adjacent to Techren Solar I, II, III and IV in Eldorado Valley, Techren Solar LLC

"For the first time we'll be adding large-scale battery storage onto those projects," Cannon said. "We're excited to get experience with these batteries to provide more benefits to the grid."

Southwest Gas has been pursuing, with various potential partners, the addition of renewable natural gas to its assets and expects that will come to fruition next year. The utility would collaborate with entities that generate methane gas as an operational byproduct, for example sewage treatment plants and dairy farms. The methane would be captured, cleaned and added to Southwest's distribution system.

"It creates a carbon neutral or carbon positive source of fuel," Hester said. "It's a nice opportunity to make natural gas even greener than it already is."

Nevada also is increasingly moving away from carbon-intense energies like coal and diesel to renewables and natural gas, Hester said. For instance, NV Energy will no longer own any coal generation plants in Southern Nevada by year-end and is scheduled to retire its Valmy plant in Northern Nevada in 2021, Cannon said.

Additionally, Southwest Gas is expanding its Nevada service territory, particularly in the rural areas. It most recently added Mesquite in February.

Another energy provider, to Nevada's rural areas, Pahrump-based Valley Electric Association Inc. (VEA), has been plagued with scandal recently. Mismanagement and an unexpected March rate hike by the cooperative have many of its 7,500 members outraged and wanting the entire board ousted. VEA provides electricity to more than 45,000 Nevadans within a 6,800-square-mile area between Fish Lake Valley and Sandy Valley.

Most recently, when this issue went to press, the VEA had a meeting scheduled for April 27 for its members to "address concerns regarding fiduciary responsibilities and the process for recalling VEA board members," according to a news release.

VEA Members for Change, the entity that represents the disgruntled VEA members, announced via Facebook on March 16 it had collected enough petition signatures to "hold a special meeting on April 20 for the purpose of presenting charges against the board members for their removal" and had notified the governing body of such.

In early March, the VEA board appointed an interim CEO, Richard Peck, who will serve until further notice.

All of these moves resulted from a string of events unfolding after VEA's former CEO, Tom Husted, resigned hastily in late spring 2018 after ten-plus years in the position. The board, in October 2018, appointed then chief operating officer Angela Evans as the new CEO.

In early February, the VEA announced a rate increase to \$0.12 per kWh from \$0.11 to go into effect March 1, despite members previously having been assured rates would remain stable through 2024. Subsequently, in late February, Evans was arrested on charges of embezzlement stemming from about \$75,000 worth of work done involving power lines at her home, which was charged to the VEA. Thereafter, the VEA board placed her on administrative leave.

Claims have been made that Husted allegedly sexually harassed a former employee and then paid more than \$1 million of VEA funds as hush money to certain employees who knew about it, including Evans. Further, it's been charged the company raised member rates to recoup those coverup funds.

Days before her arrest, Evans stated all of the allegations of criminal activity by then VEA employees were false and the rate increase was necessary primarily because VEA's costs to provide service had been rising steadily over the decade. Further, she noted that an audit of VEA's finances by an outside firm for the period between Jan. 1, 2016 and July 31, 2018 was clean, showing no evidence of wrongdoing or funds mismanagement.

Last month, Peck stated in a TV news interview that other than the recent rate hike, VEA plans no other significant changes in the near term.

Looking forward, Nevada can expect its energy industry in the near future to change even more, encompass more electrification and continue investing in infrastructure to meet increasing demands.

"The conversation will continue to be very focused on how we reduce carbon in the environment, what's the role of the electric industry in reducing that carbon and where do we want to take our energy in the future," Cannon said.

Water

In Southern Nevada, the water supply is "strong and resilient," said John Entsminger, thanks to conservation, infrastructure investments and resource planning.

"From a resource and facilities perspective, we have the situation well in hand," he said.

Entsminger is the general manager of the Las Vegas Valley Water District (LVVWD) and the Southern Nevada Water Authority (SNWA). The LVVWD is the largest of seven member agencies comprising SNWA, from whom it receives water wholesale. The LVVWD then sells it retail to its customers in the city of Las Vegas and unincorporated Clark County.

"We don't show a scenario in our resource plan where we need to be bringing in new supplies in the next 30 years, even under the worst hydrologic scenario on the Colorado River," Entsminger said.

However, he emphasized, having enough water for the region depends on the entire community maintaining and improving its conservation efforts. The utility's primary initiatives in this regard are getting customers to follow the existing rules and removing the nearly 5,000 acres of non-functional, unused turf commonly located in medians, traffic circles, pocket parks and the like. Success with the former alone would result in a savings of tens of thousands of acre-feet of water (one acre-foot of water is enough for two to three single-family homes for a year).

Also important in protecting Nevada's water resource, Entsminger said, is the federal Colorado River Drought Contingency Plan Authorization Act, introduced on April 2 by two U.S. senators from New Mexico. The law would implement the water conservation measures agreed upon by the seven Colorado River Basin states (Nevada is one) and Native American tribes to ensure the river's sustainability and to protect Lake Mead and Lake Powell's reservoir levels.

Regarding facilities, SNWA will have \$1.5 billion worth of new facilities at Lake Mead finished by April 2020, which guarantee it can extract water out of the lake continually.

To meet economic and population growth in the southwest, west and northwest parts of the Vegas Valley, the LVVWD is in the midst of a "robust" system expansion, the first since the Great Recession. Construction of a number of new pump stations and reservoirs, now in the design phase, is part of the 10-year \$616 million capital improvement plan the LVVWD board approved in 2017.

The utility's priorities in the ensuing years are making additional gains in conservation, having the necessary facilities in place and, through demand management and partnering with neighbors, ensuring water is available.

"You're going to see stability because we're planners. Our job is to look out multiple decades and make sure nothing's going to sneak up on us," Entsminger said.

In Northern Nevada, a wet winter brought nearly double the average snowpack, which means "all of our reservoirs will fill and spill, and because of that, the water supply situation really could not get any better than this," said Mark Foree, general manager, Truckee Meadows Water Authority (TMWA), the water utility for the Greater Reno-Sparks area and parts of Washoe County.

"We do have ample water resources to provide for expected growth over the next 20 years and beyond," he added.

TMWA is experiencing growth throughout its system, which requires planning, design, new facilities construction, operation, maintenance and rehabilitation, Foree said. The utility currently is updating its 20-year water resource plan, an every five year event, this round of which should be finished in about a year. Part of that planning is for capital improvements to existing infrastructure.

Another part is planning for drought periods. Today, TMWA stores water during the winters in upstream reservoirs on the Truckee River that are federally owned and operated. This is the result of the Truckee River Operating Agreement completed in 2015 after 27 years of negotiation.

"That's been a big change," Foree said. "It really sets us up for several decades of expected growth."

Where possible, TMWA is maximizing the use of Truckee River surface water by moving it into the groundwater-dependent systems in its portfolio and minimizing the use of pumped groundwater by temporarily taking the necessary wells offline. The utility plans to do just that with its new asset, acquired in March, the West Reno Water System near Boomtown in Verdi, after connecting it to the main system.

"We have seen groundwater levels recover and rise because of that," Foree said.

Also, the utility is building a water treatment plant off of Mt. Rose Highway in the Galena area. Water from Whites Creek will be treated at the new facility and used, again to replace some of the pumped groundwater in the area. The plant is slated to be up and running in about a year.

As for renewable energy efforts, TMWA generates hydroelectric power from its three run-of-theriver plants then sells to NV Energy what its water system doesn't use. Last year, the sellback yielded \$3.76 million for TMWA.

"That's saying quite a bit if you have renewable energy-generating facilities that can produce nearly all of what you use in terms of power," Foree said. "We really look at it as a cost benefit to our customers."

For the next few years, TMWA will remain focused on managing and keeping pace with all of the growth, said Foree

Energy | Legislature

Including hydropower in RPS will give NV Energy, others leg up in meeting higher renewable standard

By



Riley Snyder

May 2nd, 2019 - 2:15am

The base of Hoover Dam on Feb. 18, 2018. (Daniel Rothberg/The Nevada Independent)

In Nevada, there are few words more synonymous with the term renewable energy than "solar," a given in a state called the "Saudi Arabia of solar."

That connection and subsequent imagery of massive solar fields blanketing the Nevada desert dominated messaging around a 2018 ballot question and a bill approved by the 2019 Legislature raising the state's Renewable Portfolio Standard to 50 percent by 2030.

Gov. Steve Sisolak — who during the 2018 campaign cut an ad in which he <u>appeared in the midst of a</u> <u>solar field</u> touting his support for raising the RPS — signed the bill, <u>SB358</u>, on Earth Day <u>surrounded</u> <u>by appreciative lawmakers from both parties</u>, who applauded the Democratic governor's pronouncement of the bill as a "major milestone" in driving renewable energy growth in the state.

In fact, the bill will increase compliance with the state's Renewable Portfolio Standard overnight — but in a much less-publicized way.

A seemingly minor change in the legal definition of hydropower could have potentially significant implications by allowing entities, including NV Energy, to leverage existing large hydropower facilities toward meeting the RPS, thereby giving them a leg up toward meeting an increased standard without requiring any new spending to expand renewable energy.

Had the bill been in effect last year, NV Energy would have been able to meet around 12 percent of its mandated RPS goal just with electricity generated by the Hoover Dam.

The 2019 bill's sponsor, Democratic Sen. Chris Brooks, said in an interview that the change was in part meant to give more leeway to entities now required to meet the standard, as well as to rural electric cooperatives locked into long-term hydropower contracts. He said past concerns that favoring hydropower would push other renewable energy sources to the wayside were outdated, and that the bill was an attempt to have the RPS accurately reflect the actual renewable generation in the state.

"The thinking has evolved," he said. "The market is moving on new and emerging renewables, and we're looking at this from not just a bill to create opportunities for new and emerging industries, we're looking at it as an overall, more holistic view of how we get to a zero-carbon electricity sector."

RPS and hydropower

That change marks the end of a longstanding state policy of not including hydropower in the RPS formula — a deliberate omission intended to spur development in nascent renewable sources such as solar, wind and geothermal energy.

Rose McKinney James, a lobbyist and energy consultant credited with helping the state pass its first RPS in 1997, said the initial portfolio standard was set up to focus on "traditional" renewable energy sources and that including hydropower would have made it "very challenging to get any momentum from solar."

"Hydro is obviously an important part of the overall mix, but it doesn't get to the essence, to the heart of what we're trying to do in this state, which is to drive development using our indigenous resources," she said in an interview.

Electricity produced by waterpower was added to the state's definition of "<u>renewable energy</u>" in <u>2003</u>, where lawmakers added a limited exemption for hydropower projects used exclusively for agriculture or projects with less than 30 megawatts of generating capacity.

But concern was still evident even in 2003; former Assemblywoman Barbara Buckley raised concerns during a hearing that the bill would "gut everything we are trying to do" in developing new electric resources.

But the bill approved unanimously by lawmakers and signed into law by Sisolak last month removes many of those exemptions, meaning renewable energy created by large hydropower producers — namely the Hoover Dam — can now be credited toward meeting the state's Renewable Portfolio Standard.

How it affects NV Energy

The measure could have a sizable impact for NV Energy, which receives a large percentage of the <u>state's share of electricity</u> annually produced by the dam — providing enough power to serve 1.3 million people in the Southwest.

According to 2017 data from the Colorado River Commission, NV Energy receives more than 497,700 megawatt hours of electric generation from the Hoover Dam. Under the state's RPS system, that production means it will generate the same number of "Portfolio Energy Credits," which are required for yearly compliance with the standard.

A Renewable Portfolio Standard works by setting up an artificial marketplace where renewable power plants gain "PECs" (Portfolio Energy Credits) for producing renewable energy. The state runs a marketplace where PECs can be bought and sold, and requires NV Energy and other applicable entities to meet a certain percentage standard by turning in enough credits as compared to their total electricity generation.

In NV Energy's 2018 RPS compliance report, the utility reported nearly 20.5 million megawatt hours of electric sales over the year, with a 20 percent RPS requirement of around 4.1 million PECs. If the hydropower credited to the utility was applied to the RPS in 2018, it would make up about 12 percent of the credits needed to meet the 20 percent RPS target — boosting the utility's reported renewable production numbers by about a tenth without having to spend a penny more on renewable energy programs.

Although the addition of hydropower will help the utility meet required renewable standards, the company has already taken steps to meet a higher RPS. NV Energy has held steadfast since announcing in 2018 the company's support of raising the standard to 50 percent by 2030, and won approval last year from state energy regulators to construct six new large-scale photovoltaic solar power plants, more than doubling renewable energy production in the state by 2023.

It exceeded its RPS compliance target in 2018, the ninth straight year of doing so, and a utility spokeswoman said in an email that the company will comply with the new RPS "as it aligns with our long-term goal of 100 percent renewable energy at low costs for customers."

Other impacts

But NV Energy isn't the only entity receiving power from the dam — several rural cooperatives and power districts, including Boulder City, Valley Electric Association, Overton Power District and Lincoln County Power District all draw significant amounts of electric power from the dam.

Andy Maggi, the head of the Nevada Conservation League, said that although his organization typically opposes new hydropower development given negative effects to the environment through disruption of stream flow and local ecosystems, his organization was fine with including more hydropower into the RPS formula given that rural cooperatives and power districts had signed multi-decade hydropower contracts and would be relying on that power source for years to come.

"We understand that for a lot of municipal utilities and co-ops, their system was baked decades ago when the rural electrification programs were going on and the BLM reclamation projects," he said. "And so a lot of that energy has been in existence, and they haven't gone beyond that that need and demand too much."

Maggi said that building "a big dam just doesn't make sense anymore," and supported the provision in the bill exempting any new hydropower facilities from being included in the definition of "renewable energy." He said the inclusion of hydropower only makes up a small percentage of future RPS compliance and wouldn't preclude NV Energy and other entities from having to meet the higher renewable standards.

"It's not peanuts; it's not a de minimis amount that we can just sort of ignore," Maggi said. "But I think it's not enough to where the utility is not going to have to go out and build new, clean energy resources."

The addition of hydropower will also likely be a boon to state agencies — such as the Colorado River Commission, which manages the state's allocation of Colorado River water and hydropower created by the Hoover Dam. Eric Witkoski, the commission's executive director, said the inclusion of hydropower would likely help the commission meet its newly required RPS target, but said he was still reviewing how the agency would be affected by having to meet the new renewable targets.

"We haven't really thought through how all of this is going to work, and it's not something we've had to deal with in the past, so it's still something we're reviewing," he said.

Southern Nevada Water Authority spokesman Bronson Mack said the public agency — also now required to meet the RPS bill — was supportive of the higher RPS and that it had already been working prior to bill passage to voluntarily comply with the renewable standard.

"It's a little early to determine how exactly how we're going to be able to comply with the 50 percent by 2030, but we are evaluating the strategies to do that," he said. "Certainly the inclusion of hydro does provide a little more ability for us to be able to comply with that standard."

Brooks, the bill sponsor, said the inclusion of public agencies and hydropower was meant to give them the opportunity to sell or trade excess PECs to other energy users out of compliance with the RPS.

"This just kind of broadens that market that's available," he said.

Other states

Only about 3.3 percent of Nevada's electric generation comes from hydropower, but existing limitations on what kinds of hydro generation counts towards the RPS means just under 1 percent of renewable generation comes from "small" hydro production, according to the <u>Governor's Office</u> of Energy's 2018 annual report.

Other states have varied in the amount of hydropower they allow as part of their RPS; according to a <u>2014 analysis by the Hydropower Reform Coalition</u>, 37 states allow hydropower to count towards the RPS with various restrictions depending on size, technology, or if the hydropower facilities consider environmental impacts such as stream flow, fish passage or water quality.

Kelly Catlett, a director at the <u>Hydropower Reform Coalition</u>, said California opted to severely limit hydropower when it first adopted renewable standards, excluding any project with more than 30 megawatts of capacity and requiring any smaller-scale projects demonstrate that they don't adversely affect river flow. She said the limitations also came from a desire to spur development of other renewable energy production.

"Simply grandfathering in existing large hydropower does nothing to incentivize the creation of new renewable energy sources," she said.

Although the coalition's website recommends against including hydropower towards an RPS except in limited cases, Catlett said the language was slightly outdated and that electricity produced by waterpower — which is typically more reliable and not as intermittent as solar or wind energy — was an important component as states move to reduce their use of fossil fuels. She pointed toward the state's recently passed legislation requiring 100 percent of fuel used in the state to come from "carbon-free" energy sources — something currently undefined but likely to include large-scale hydropower projects.

"I think there is a realization now that if the goal is to reduce emissions and spur new development of renewables, while we can define renewables (to exclude hydropower), maybe after a certain point it doesn't really matter what exactly the technology is," she said. "If it can cause reduced emissions, then that's good."

That sense of having the state's RPS reflect actual renewable energy production is something that doesn't currently happen in Nevada, where the actual fuel mix in the state typically runs behind the RPS goal. It's why Brooks, the sponsor of the 2019 bill, said he wanted to remove "multiplier" and energy efficiency credits from the RPS to make sure that it was a more accurate reflection of renewable production.

"By the time we get to 50 by (2030), it will be 50 percent of the energy in the state coming from renewables," he said.

Gavin Newsom officially kills twin Delta tunnels, eyes downsized CA water project

By Dale Kasler and Ryan Sabalow

May 02, 2019 11:51 AM, Updated May 02, 2019 02:44 PM

Gov. Gavin Newsom lays out views on California's water issues in State of the State speech

California Gov. Gavin Newsom says he wants to downsize the Delta water project and build one tunnel instead of two. By <u>David Caraccio</u>

California Gov. Gavin Newsom says he wants to downsize the Delta water project and build one tunnel instead of two. By <u>David Caraccio</u>

Gov. Gavin Newsom's administration officially pulled the plug Thursday on the twin Delta tunnels, <u>fullfilling Newsom's pledge</u> to downsize the project to a single pipe as he attempts to chart a new course for California's troubled water-delivery system.

The Department of Water Resources halted the planning on the twin tunnels by withdrawing its application to a sister agency, the State Water Resources Control Board, for permission to build the massive project from a starting point on the Sacramento River near Courtland. The state also scrapped documents declaring that the twin tunnels plan — designed to smooth water deliveries to the southern half of the state — complied with California's environmental laws.

In the short run, the decision means more delays for a project that's been on the drawing board for more than a decade. Karla Nemeth, director of the Department of Water Resources, said it could take up to three years to rework the environmental documents and other permits needed to build a single tunnel beneath the Delta. But by downsizing and simplifying the project, she said the state hopes it can speed up the "overall delivery schedule" for the project.

Nemeth said the federal Bureau of Reclamation, the state's partner in the Delta project, is also withdrawing its applications and environmental permits.

Officials said they will soon file a new application, as well as new environmental reviews, to support their plan for a single tunnel.

Downsizing the project is in line with Newsom's effort to push a more centrist approach on water issues than his predecessor, Jerry Brown, who once <u>told tunnels opponents to "shut up."</u> Earlier this week Newsom signed <u>an executive order</u> directing Natural Resources and other agencies to develop a comprehensive "water resilience portfolio" in an effort to unite warring factions like environmentalists and farmers.

Besides costing billions of dollars less than the original, Nemeth said a downsized project could be "more responsive to the naysayers" who believe WaterFix, as it's officially known, will harm the Delta instead of helping it. A single tunnel will bring fewer environmental impacts to the Delta, and "that's a good place to be," she said.

Shortly after the announcement, the Natural Resources Defense Council, one of the environmental groups suing to block the project, said a single tunnel "that takes less water from the Delta" is worth considering.

But Nemeth acknowledged, "I don't expect that all parties will be supportive," and some critics remain skeptical of the smaller proposal.

Dante Nomellini, a Stockton attorney who represents the Central Delta Water Agency, said farmers and others he represents still oppose a single tunnel. Even a downsized project could be used to send copious amounts of Northern California water to powerful south state interests, bringing more harm to the estuary, he said.

"And the disruption to our area for 10 or 15 years with tunnel construction going right through the middle of important habitat in the Delta, it's just terrible for us," Nomellini said.

Downsizing would save about \$5 billion, bringing project costs down to around \$11 billion. South state water agencies that rely on shipments from the Delta will foot the bill.

Jeff Kightlinger of the Metropolitan Water District of Southern California — which was one of the key backers for the original twin tunnels proposal and has pledged to contribute billions to the project — endorsed Newsom's decision.

"We will work with the administration to expeditiously advance a project that is long overdue to both meet the water reliability needs of the state and minimize impacts to the communities and ecology of the Delta," he said in a prepared statement.

The Sacramento-San Joaquin Delta is the hub of the state's water network. Giant pumps at the south end of the estuary, near Tracy, deliver supplies from Northern California to irrigation districts and municipalities that belong to the State Water Project and the federal Central Valley Project. Around 25 million Southern Californians and Bay Area residents receive imported water from the Delta. The pumps supply water to 3 million acres of farmland.

Scientists say decades of pumping is a key reason for the decline in the Delta's ecosystem and its imperiled fish species, including the critically endangered Delta smelt and winter-run Chinook salmon.

The pumps are so strong that they sometimes reverse river flows within the Delta and push migrating fish toward predators or the pumps themselves. As a result, often the pumps have to be throttled back, allowing the river water to follow its natural course to the ocean — to the frustration of the south state water agencies counting on the deliveries.

The Delta project — one tunnel or two — has been touted as a way of correcting the problem. By routing a portion of the Sacramento River's flow underground and delivering it directly to the pumps, the state's engineers say the "reverse flow" issue would be eased, enabling the pumps to operate more reliably while doing less harm to the fish.

The original twin tunnels proposal has been enormously controversial, though.

Environmentalists, salmon fishing groups and Delta farmers said the project, by diverting a portion of the Sacramento River, would harm native fish and leave the estuary too salty for agriculture; they also branded it a south-state "water grab."

TMWA teaches locals about water conservation during Smart About Water Day

by Shah Ahmad Saturday, May 4th 2019



TMWA teaches locals about water conservation during Smart About Water Day

RENO, Nev. (News 4 & Fox 11) — The Truckee Meadows Water Authority ensured that locals had an opportunity to learn about water conservation today by hosting their "Smart About Water Day" at Idlewild Park.

Experts from the Truckee Meadows Water Authority offered updates on current and future water initiatives as well as the best tips to conserve water.

Visitors could also learn about melting snow packs, water resource planning, and even take part in irrigation workshops.

Kids were welcome as well, and got a chance to interact with the water quality testing exhibit and operate some of the big rigs.

According to Truckee Meadows Water Authority and the EPA, these are the best tips to keep your water consumption low:

- Only run dishwashers and washing machines when they are completely full.
- Use Energy Star or EPA approved appliances. High-efficiency appliances can reduce your water and energy use by as much as 50 percent.
- Limit the length of showers to 5 minutes or less. A family of four taking daily 5-minute showers with a high-efficiency shower head can save more than 20,000 gallons of water each year.
- Toilets consume about 24 percent of water used in the home. Installing an earlyclosure flapper on the toilet can save as much as 1.5 gallons per flush. Investing in a high-efficiency toilet can save more than 4,000 gallons of water per person each year

TMWA to host Smart About Water Day event this weekend

by News 4 & Fox 11 Digital Team Friday, May 3rd 2019



Sprinkler (MGN Online)

RENO, Nev. (News 4 & Fox 11) — TMWA is hosting Smart About Water Day Saturday where the public can talk with regional water experts about water conservation.

The event will be held at the California Building at Idlewild Park, where people will find topic tables, mini-presentations, and answers to any questions they have about water in our area.

The event is free for everyone and the first 200 people who take a tree tour will receive a free tree book and regional-landscaping guide.

There will also be fun activities that kids can enjoy and food trucks throughout the event. Below is the full schedule:

- 10:30 a.m. Presentation: Putting the Winter Snowpack in Perspective
- 11:00 a.m. Conservation Q&A: Sprinklers and Irrigation Start-up
- 11:00 a.m. Idlewild Tree Tour
- 11:30 a.m. Presentation: Updating the Long-Range Water Resource Plan
- 12:00 p.m. Conservation Q&A: Sprinklers and Irrigation Start-up
- 12:00 p.m. Idlewild Tree Tour
- 12:30 p.m. Presentation: Infrastructure Expansion and Growth
- 1:00 p.m. Conservation Q&A: Sprinklers and Irrigation Start-up
- 1:00 p.m. Idlewild Tree Tour
- 1:30 p.m. Presentation: Surface to Ground: Approaches in Water Resource Management

Being Smart About Water

Your kids could learn to be smart about water! If you're looking for a fun day at the park head over to Idlewild where the Truckee Meadows Water Association will be to teach kids, and adults, about the conservation of water in the Truckee Meadows.

Saturday, May 4th 2019, 11:18 AM PDT by Cynthia Sandoval Updated: Saturday, May 4th 2019, 11:20 AM PDT



MGN Online

Water makes up over half of our body and it covers more than 70% of the world's surface so it's important

to be smart about it!

If you're looking to not only learn how to conserve water but also for a fun day at the park head over to Idlewild! The Truckee Meadows Water Association will be there to teach kids, and adults, about the conservation

of water in the Truckee Meadows. This is happening Saturday, May 4th.

There will be topic tables, mini-presentations and answers to any questions you have about water inside

the California Building.

Plus there will food trucks!

The trucks scheduled to attend are:

- Nom Eats Vegan Food Truck
- Still Rollin Food Truck
- Espinoza's Food Truck
- Bite Me Truck
- Bibo Freddo Gelato

The event goes on until 2:00 p.m.

Tesla Announces Funding for KTMB Youth Education Program

Keep Truckee Meadows Beautiful says it has received a \$95,000 grant to expand sustainability education across northern Nevada.

Tuesday, May 7th 2019, 10:08 AM PDT



Keep Truckee Meadows Beautiful says it has received a \$95,000 grant to expand sustainability education across northern Nevada.

The grant is part of Tesla's \$37.5 million investment into Nevada's K-12 STEM/STEAM and sustainability education.

With the grant, Keep Truckee Meadows Beautiful plans to expand their Warriors Youth Education Program, which educates students with STEM-based curriculum in the classroom.

KTMB says the money will also support the integration of "fine art" into the curriculum.

Truckee Meadows Water Authority hosts free workshops and tours

by Jordan Hicks and Karsen Buschjost Wednesday, May 8th 2019



Truckee Meadows Water Authority hosts free workshops and tours

RENO, Nev. (News 4 & Fox 11) — Be smart about your water! The <u>Truckee</u> <u>Meadows Water</u> <u>Authority (TMWA)</u> is hosting free "smart water use" tours and workshops throughout May and June.

The sessions focus on smart water usage in our region, and include topics such as water quality, biodiverse gardens, how to care for your trees, and sprinkler/drip system maintenance.

The first workshop and tour begins today, May 8, with a tour of the Glendale Water Treatment Plant and a discussion on "Understanding Your Drinking Water" from 5:30 p.m. until 7:30 p.m.

During the session, TMWA's water quality staff will discuss methods on getting high-quality drinking water to home taps.

With a full Truckee River thanks to a wet winter, TMWA is fully prepared to supply water to residents for the summer.

"In the middle of summer time, our peak day is going to be about 140 million gallons of water supplied," says Will Raymond with Truckee Meadows Water Authority.

In addition to drinking water focused opportunities, TMWA is offering landscape workshops and tours as well. These additional offerings include:

- Tree Care: Wednesday, May 15 at 5:30 p.m.
- Biodiverse Gardens Walking Tour (at Valley Wood Park):Saturday, May 25 from 10:00 a.m. to 11:30 a.m.
- Drip System Maintenance Made Easy: Thursday, May 30 at 5:30 p.m.
- Sprinkler Maintenance Made Easy: Wednesday, June 5 at 5:30 p.m.
- Watershed Warrior: Thursday, June 13 at 5:30 p.m.

Following these sessions, participants will have better knowledge on how to utilize every type of yard for landscaping, while staying water efficient throughout the process.

Unless otherwise stated, the sessions are one hour and will be at TMWA's office located at 1355 Capital Blvd. in Reno.

Space is limited, and RSVPs are required for all events via email rsvp@tmwa.com or by calling 775-834-8290.

Tech company: Blockchain primed for major growth in Nevada

News | May 5, 2019

Anne Knowles Nevada Appeal



A look inside Blockchains LLC's compound at the Tahoe-Reno Industrial Center in Storey County. Kaleb M. Roedel / NNBV

CARSON CITY, Nev. — Blockchain technology, officially recognized in Nevada since a law passed in 2017, has attracted about \$300 million in investments statewide, according to Blockchains LLC.

Four more bills, all sponsored this legislative session by Sen. Ben Kieckhefer, R-Reno, who sponsored the earlier legislation, will further lay the groundwork for the technology, said Matthew Digesti, vice president, Government Affairs and Strategic Initiatives, at the Storey County-based startup.

The four bills — Senate Bills 161 through 164 — would, among other things, define a virtual currency and allow businesses to maintain certain records via blockchain technology.

Digesti and Stephanie Sciarani, vice president of operations for <u>Blockchains LLC</u>, provided a primer on the technology and where it's headed at the Northern Nevada Development Authority breakfast held April 24 at the Casino Fandango convention center.

"We'll attempt to demystify blockchain technology for you," said Digesti.

Digesti said the technology essentially eliminates the middleman in many everyday transactions and saves time and money.

"Blockchain is a ledger in its purest form," said Digesti.

It's distributed across a network of peers. A transaction generates a hash, which if approved by all peers on the network, turns into a block, and multiple blocks in the transaction form a chain. Cryptography protects the data.

Sciarani gave examples of applications, including smart contracts which can be created, executed and disputed outside the already overburdened court system.

"So Matt agrees to buy my car on May 1. On May 1, the money is automatically deducted from his account, the title is automatically changed. It builds in a dispute resolution mechanism," said Sciarani. "We can keep those breach of contract cases out of court."

She talked about medication tracing from a company called FarmaTrust; medical record tracking and access from MedRec; and Titan Seal, which uses blockchain technology for government records in Washoe County.

Even voting can be done using blockchain technology. Sciarani said West Virginia successfully tested a system from Voatz with 144 voters in the military who were stationed outside the country.

Blockchains LLC has several revenue streams, Digesti said in response to a question from the audience. Among other endeavors, the company plans to build bunkers in which people can store their personal data, to incubate other startups, and to build a smart city in Painted Rock east of Sparks.

Digesti said the company is now working with Storey County on the master plan and hopes to break ground on the campus in the first half of 2020.

BUSINESS

NASA, Nevada institute to test drones in downtown Reno

THE ASSOCIATED PRESS

May 08, 2019 12:05 AM, Updated May 08, 2019 12:06 AM *RENO, NEV.*

Drones will be buzzing around parts of downtown Reno the next two weeks for urban testing by NASA and the Nevada Institute for Autonomous Systems.

Reno officials announced Tuesday that the city is helping to facilitate the testing, which will be conducted in the downtown area May 11-24 and result in some road closures and pedestrian restrictions.

According to the city's announcement, NASA earlier this year selected the Las Vegasbased institute to participate in drone operations that will test flying in higher-density urban areas.

Specific areas for testing and related restrictions include Idlewild Park, City Plaza and portions of Virginia Street and Keystone Avenue.

Officials said public viewing areas are limited. Suggested viewing locations are in Idlewild Park from Cowan Drive or the Snowflake Pavilion.

Read more here: https://www.islandpacket.com/news/business/article230153349.html#storylink=cpy

Theft suspect pulled unconscious from Truckee River

By Steve Timko | Posted: Sun 3:17 PM, May 12, 2019 | Updated: Mon 8:56 AM, May 13, 2019



RENO, NV (KOLO)-- A man running from authorities tried to escape Sunday by jumping into the Truckee River, but after 20 minutes he appeared to go unconscious and was pulled underneath the water, Reno Fire Department Battalion Chief Mike Pilcher said.

Firefighters found the man eight minutes later but he was not breathing and had no pulse, Pilcher said. Firefighters attempted to revive the man as he was taken to the hospital. Pilcher didn't know his condition.

"The river flows are up because of the spring runoff of the snow melt," Pilcher said. "It is extremely cold. High flows with extreme cold are a lethal combination."

The incident began around 11:30 a.m. May 12, 2019 as the man, a larceny suspect from the Three Nations Walmart on East Second Street, fled store police and Reno-Sparks Indian Colony Police Department officers followed him to the river near Glendale Avenue.

The Reno Fire Department sent its water rescue team plus several fire engines and a ladder truck plus two water rescue team members working at the Reno River Festival, Pilcher said.

The man continued to evade authorities, getting out at one point and then getting back into the river as officers approached, Pilcher said. The battalion chief credited tribal police with doing a good job of keeping an eye on the man.

Firefighters moved down the river in an effort to rescue him, Pilcher said. When he passed underneath the Greg Street bridge, about 20 minutes after getting into the water, he was submerged. It appears hypothermia set in, Pilcher said.

Sparks Fire Department rescue team members joinied RFD water rescue members to pull the man out at Rock Park about eight minutes later.

"When we pulled him out, he was unconscious, he was pulseless and he was not breathing," Pilcher said. "This guy didn't want to be rescued. That was an enormous challenge to us."

Pilcher noted the efforts expert kayakers at the Reno River Festival took to protect themselves from the cold Truckee River water. Someone in street clothes can expect about 10 minutes before hypothermia kicks in, Pilcher said.

He suggested people wait until July before floating down the river.

"Now is not the time to go cruising the river on a float inner tube," Pilcher said. "If you do, you're taking your life in your hands."

Even in July, use a life jacket and an approved watercraft and tell someone where you plan to go into the water and leave the water, he said.

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Elm seeds everywhere: Yes, more this year.

By <u>Ed Pearce</u> | Posted: Mon 6:52 PM, May 13, 2019 |



RENO, NV (KOLO) Those little round seed pods, blowing everywhere in the slightest breeze. They're not an uncommon sight every spring, but this spring there's an uncommon number of them.



They're elm seeds. And you can blame our wet winter.

It seems when there's a lot of moisture, it's a signal for the trees to try to make a lot more little trees. If you're saying right now 'Wait a minute, I remember seeing a lot of them in a dry year too.' you're absolutely right.

"When they're stressed out they send out seeds, as well, to procreate more," says Dale Carlon, a consulting arborist for the Truckee Meadows Water Authority.."Either way. They're opportunistic. This is an indicator of an environmental influence on the trees whether it be good or bad."

It may seem like a minor nuisance, littering the ground, clogging the gutters. The real impact comes later.

"They're perfectly suited to digging into little nooks and crannies," says Carlon. "They get a little moisture and off they go."

And in a matter of a few years you end up with a healthy tree growing where it shouldn't.

"It's going to jack up the sidewalk. It's going to wreck the fences. And when the go to paint, it's going to be pretty hard to paint, plus the damage to the siding."

At this point you might be asking if they're so much trouble why do we even have them? Carlon says here's some history to the answer.

"Back in the day there was a very limited palette of deciduous trees and evergreen trees that we could landscape with and elms just happened to be a real hardy version of a tree that got real big and provided a lot of shade. So that's why it was utilized."

And the elms readily available at that time were primarily Siberian elms. American elms, which you will see at St. Mary's or on the University campus are less mess, less trouble. No one's planting much of either one these days. Elms are forbidden on municipal property.

"But as far as an urban forester in either Reno or Sparks going into your yard and telling you you can't plant something, that's not the case. We would discourage you from it of course, but we're not going to bother you about it."

Carlon's quick to add there are problems associated with a lot of different species. And the elm does have a lot to recommend it. Without their shade Reno would be an uncomfortable place in the heat of summer.

But if you don't want them showing up in your flower bed or growing up through the crack in your sidewalk, you have a chore ahead of you.

It's best, Carlon says to bag them up like you would any yard waste and dispose of them. Blowing them into the street just sends the problem elsewhere.

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Science

New dam proposal in Sierra Nevada stirs debate over California energy policy



Kurtis Alexander May 13, 2019 Updated: May 13, 2019 4 a.m. Comments



A southern California company has submitted an application to build a hydroelectric complex in the Owens Valley to help the state meet its clean power goals. But the massive project threatens to disrupt a treasured mountain wilderness. This is a view looking south towards Round Valley. Photo: Sierra Club

Up a remote canyon in the towering eastern Sierra, a Southern California company has an ambitious plan to dam the area's cold, rushing waters and build one of the state's first big hydroelectric facilities in decades.

The project, southeast of Yosemite near the town of Bishop (Inyo County), faces long regulatory odds as well as daunting costs. But residents of the Owens Valley downstream and state environmentalists are not taking it lightly.

The complex, as proposed in an application to the Federal Energy Regulatory Commission last month, is scheduled for mostly federal land at the edge of the Inyo National Forest, partly in the popular John Muir Wilderness. It threatens to disrupt a landscape known for its brown trout and bighorn sheep, unparalleled alpine vistas, and pristine rivers and lakes.

Yet, the plan comes at a time when California is eager for clean, climate friendly energy, and renewed interest is emerging in hydroelectric plants. Such facilities are not always considered green; however, they offer a unique way of storing wind and solar power, which are cleaner but provide only sporadic contributions to the electrical grid.

The proposed "pumped-storage" project would essentially bank solar and wind energy by pumping creek water uphill when the power sources are plentiful, say during sunny or windy

times, and conversely, send the water back down through power-producing turbines when the energy is needed.

"It's a great way to manage the intermittency of renewable energy," said Frank Wolak, an economics professor at Stanford University and director of the school's Program on Energy and Sustainable Development, who called pumped storage "ideal" for helping the state scale up its clean power. "But the problem in California is siting the projects."



A proposed hydroelectric complex in the Owens Valley to help the state meet its clean power goals would dam the waters of Lower Rock Creek. Photo: Sierra Club

Several federal and state agencies will have a say in whether a new, large hydroelectric undertaking is appropriate for California. Most regulators have only begun reviewing the proposal, though officials at the Inyo National Forest recently expressed concerns about disturbances to mountains, rivers and wildlife in a letter to the applicant.

The application for the facility was filed by Premium Energy Holdings LLC of Walnut (Los Angeles County). The company, which appears to be a consultant in the power sector, did not return multiple calls from The Chronicle.

FERC officials confirmed they're considering the company's request for a preliminary permit, which would simply grant Premium Energy an exclusive right to study the project. Before any construction could begin, the company would have to take the additional step of getting a license from FERC, a process that involves more review and more input.

California regulators have been wary of new hydroelectric facilities because of their sprawling environmental footprint, even when they can assist in meeting renewable energy goals. But some fear that the Trump administration could try to limit the state's voice on the matter as part of a continuing effort to make public lands more accessible to industry.

"We are entering perilous times," said Ron Stork, senior policy advocate for the environmental group Friends of the River and a longtime dam expert. "California has been shut out of any meaningful participation in FERC licensing. We are potentially entering an era where there's no one but FERC or the licensee making the decisions."
The proposed Owens Valley Pumped Storage Project, according to the FERC filing, would bring an elaborate series of dams, pumps and pipes to Lower Rock Creek Gorge, a rugged canyon of sagebrush and pine that's commonly used by hikers and mountain bikers.

Pumped-storage hydropower

A new pumped-storage hydroelectric facility is proposed for the eastern Sierra. Pumped-storage projects store and generate energy by moving water between reservoirs at different elevations.



The process of storing and generating power would begin with three concrete dams, some more than 300 feet tall, that would capture water from Lower Rock Creek. The water in these reservoirs would then be pumped through pipelines thousands of feet uphill to three other reservoirs, built along 11,000-foot Wheeler Ridge in the John Muir Wilderness.

There, water would be held until electricity is needed, at which time the water would be released back downhill to three power-generating stations near the dams. The water could be recycled through the system as warranted, in what Premium Energy describes as a "closed-loop" hydroelectric operation.

As an alternative, the company proposes damming nearby Owens Valley River Gorge and similarly pumping water to reservoirs on Wheeler Ridge.

Either configuration would have an energy capacity of 5,200 megawatts, according to the FERC filing, a staggering amount of power that could meet the needs of a couple of million homes. The project would be California's largest such operation.

Eight pumped storage sites currently operate in California, with a total capacity of 4,500 megawatts, according to the California Energy Commission. Wolak, at Stanford, said there's a demand for plenty more facilities, given both the existing storage needs of wind and solar power and the future needs of the growing renewable sector.

California last year set an aggressive goal of getting 100 percent of its power from zero-emissions sources by 2045. While state law limits how much hydropower counts as clean energy, the storage potential of the plants alone is driving their resurgence.

"People see the need for what they provide, and developers are trying to get their licenses and work the deals," said Jeff Leahey, head of governmental affairs for the National Hydropower Association. "In the past five to seven years, we really started to notice the increase in project proposals, particularly in the West."

Preliminary permits for about a half dozen pumped-storage projects in California are being sought or were recently granted, FERC records show.

What makes the Owens Valley project different from several of the others — and more controversial — is that it proposes construction of new infrastructure instead of using existing hardware. Many pumped-storage operations piggyback on drinking-water reservoirs, like Lake Oroville, where water released from the reservoir is sometimes pumped back into the reservoir for power generation.

A proposal near Joshua Tree National Park would use old mining pits to hold water for generating electricity. Two other proposals, one at the San Vicente Dam near San Diego and one at Lake Elsinore in Riverside County, would add a single reservoir near an existing one to move water in between to produce power.

The Owens Valley project would build a total of six new reservoirs, a major ask that faces significant federal, state and local constraints. For starters, most development is banned in federally designated wilderness. Plus, residents and environmental groups are already raising concerns about a hydroelectric project chasing off threatened bighorn sheep and migrating deer, degrading water quality in the area's many streams and simply shattering the natural beauty.

"I don't know anybody who doesn't support clean energy," said Mono County resident Evan Russell, who has hiked the area along Lower Rock Creek hundreds of times. But "this would absolutely destroy the canyon."

Most in the region remain flabbergasted about how something so big could be proposed for the sparsely developed eastern Sierra.

"Of course it was a surprise to people," said Fran Hunt, a local organizer for the Sierra Club. "It's really lit up the phone lines and people's emails."

Energy experts, who note that such an endeavor would likely cost billions of dollars, say the applicant may be pitching the project now as a longshot bet that it will become viable in the future. Others suggest that the applicant could be working with a larger company or utility that has the means and interest in moving a project forward quickly.

The Los Angeles Department of Water and Power, which has infrastructure in the area, is listed on the application as a possible recipient of the new energy. The utility has had a long and strained relationship with the residents of the Owens Valley over efforts to cull water and power from the region, dramatized in the 1974 movie "Chinatown."

The utility did not return multiple calls from The Chronicle for comment.

Steve Evans, who tracks hydroelectric projects as program director of the California Wilderness Coalition, said he normally would dismiss the Owens Valley proposal as completely unrealistic. But with the Trump administration working to upend many of the nation's environmental protocols, on top of state pressure to ramp up clean power, Evans said now anything seems possible.

"I'm sure Trump would love to stick it to California's renewable energy program by approving a reservoir in a wilderness area," he said. "All this is just really troubling."

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LETTERS TO THE EDITOR

Only way for water to leave the basin

Re: "Fixing Swan Lake 'nightmare' flooding won't be cheap or easy," May 5: There's only one solution at this point. It's too late to stop the growth. And, this is the source of the issue. Runoff is a background issue. The real source is added water importation and resulting treated effluent being put into the lake. More growth, more effluent. Since it's a basin, evaporation is no longer able to keep up with this.

The solution is simple. Like the water imported, the effluent needs to be exported. Continued growth is only exacerbating this issue.

It's not going to go away. It's only going to get worse.

This is a City of Reno and Washoe County issue since these entities approved this. It's time to stop deflecting the blame and create a solution. It really is that simple. *Tim King, Reno*

Reno River Festival needs better plan for trash, recycling

The Reno River Festival is a truly spectacular event, attracting visitors and locals and enhancing the local economy. But the overflowing garbage containers, the total lack of recycling programs and the message that it conveys are simply disgusting.

This happens year upon year, and it seems no one cares — not the city, the various downtown associations, etc. It is not a funding issue, it is an attention issue. Please, Reno, do better ... much better.

David MacDonald, Reno

Water & Land

<u>As legislators weigh changes to water law, litigation and the pipeline loom</u>

By



Daniel Rothberg

May 16th, 2019 - 2:15am

All of the water lawyers showed up this week.

Some of the developments this week in the ongoing debate over Nevada's water law were to be expected. Others came as a surprise. Everyone from Southern Nevada Water Authority to environmental groups were caught off guard on Tuesday when Sen. Melanie Scheible, who chairs the Senate Natural Resource Committee, called a surprise work session on <u>Assembly Bill 30</u>, a contentious water bill aimed at resolving conflicts between water users and often viewed as a proxy battle over the water authority's proposed pipeline.

Scheible wrote in an email that she wanted "to discuss the committee's collective understanding of AB 30 and receive input from committee members on the direction any amendments should go." That discussion happened, until a recess was called and the meeting was adjourned.

But in the backdrop of that surprise move was an equally dramatic hearing last Thursday.

In the ceaseless conflict over how to use the state's available water — and maybe then some — a varied group of water users and lawmakers sang a refrain older than Nevada: "Everyone is going to court in the end." That specific variation of the common theme came from Eureka Sen. Pete Goicoechea, whose district spans six counties and covers most of rural Eastern Nevada.

The ghosts of litigation — past, present and future — loomed over the Thursday Senate Natural Resources Committee hearing that stretched until 8 p.m. and offered insight into why it's so difficult to update Nevada water law. Not only did the hearing Thursday illuminate the challenges of coming to a consensus on water issues, it displayed the ability of the water buffalo, known to be quiet and intelligent, to enter into unexpected alliances and inch away from perceived ones.

The overarching reason for the hearing was the same as it was in 2017: State regulators want more clarity on Nevada's often vague water law, as do many water users. Nevada's top water regulator, the state engineer, has been sued 115 times over the past five years and his office is dealing with 53 open cases. In different contexts, the proposed tweaks can be seen as attempts to answer questions left open by the Supreme Court or set the guardrails for future litigation.

If the Legislature does not act, "all of these problems get worse," Brad Crowell, who leads the Department of Conservation and Natural Resources, said during an interview on Friday. Yet the Legislature, on these proposed bills and on many other water issues, has not acted in the past.

Enter the stampede

On Thursday night, no water lobbyists testified in support of <u>Assembly Bill 30</u> and <u>Assembly Bill 62</u>, the two bills that were proposed by Acting State Engineer Tim Wilson. Instead they testified in opposition or in neutrality, with more than a few suggestions. AB 30 addresses new water users while AB 62 addresses existing water users. In addition to the specter of litigation, the Southern Nevada Water Authority's proposed pipeline project loomed over both.

Nowhere was this more apparent than in debate over Assembly Bill 30, which addresses the nondescriptly named "Monitoring, Management and Mitigation (3M) Plan." These mitigation plans are used to settle conflicts between water users concerned about protecting their rights.

Central to Western water law is the concept that users who claimed water first have a priority to use water before those who claimed water later. If a water user comes along years later with a "junior right," the diversion of water must not conflict with a water user who has a "senior right." Current law directs the state engineer to deny new water rights if there is a conflict. At the same time, the law also makes a reference to using mitigation aimed at resolving a conflict. With AB 30, the state wants the Legislature to resolve the seemingly contradictory clauses in statute.

In past actions, regulators have interpreted the statute as allowing them to approve new water rights with mitigation, including a 3M Plan. The most notable example is in the water authority's long-standing proposal to pump and pipe groundwater from rural Eastern Nevada to Las Vegas if the Colorado River drought persists and growth continues. It's why environmentalists opposed the original version of AB 30, which said 3M Plans could be used to "eliminate" a conflict.

That word has now been replaced with "avoid" a conflict, which environmental groups say no longer enables the pipeline. Groups that were once opposed to the state's bill, such as the Nevada Conservation League and Great Basin Water Network, testified on Thursday as neutral. On this, those environmental groups have formed a delicate alliance with rural interests.

In doing so, <u>the motley coalition</u> traded places with the water authority. Andy Belanger, the water authority's lobbyist, moved in the other direction, switching from a neutral to opposed position.

A stampede being what it is, there was ample confusion.

Confusion on all sides

There is confusion about the word-swap. Many water lawyers and environmental groups agree the word "avoid" has a different meaning from "eliminate," even if few people can explain what it is in layman's terms. Though they agree on that, they disagree as to whether a 3M Plan can still be used. It left the water authority concerned that a disadvantageous interpretation could affect the pipeline. So it proposed its own vague and short amendment: to recognize that the state can use mitigation (the question has not been fully vetted by the Supreme Court) "to resolve issues."

Crowell, in an interview, said the amendment was designed to kill the bill, a statement that has surprised environmentalists, who have often accused the state of favoring the water authority. In the interview, Crowell added that the hearing should dispel any myths of that perception.

Yet lawyers on all sides of the issue will readily admit that the pipeline's very presence is overpowering and that the 3M Plan concept is about much more. It could be used to resolve a number of potential conflicts. In fact, much of the litigation around the issue has come out of a case not involving the water authority, but one involving a proposed mine in Eureka's Kobeh Valley. Lobbyists across the water user spectrum support the idea of mitigation plans in certain cases. Key phrase: in certain cases. The questions revolve around what those cases should be. Should mitigation be used to address known and deliberate conflicts? An example would be a water user pumping groundwater with the knowledge that it would deplete a spring. Or should a 3M Plan be used to address issues that might arise in the future? An example would be a water user pumping groundwater and unknowingly depleting an interconnected spring decades later.

In Tuesday's impromptu work session, which ended in a recess, Goicoechea and Sen. Dallas Harris — one of the most vocal senators during the hearings — went back-and-forth on the process for determining a conflict. Harris said it was important to be clear about that in statute.

"The clearer that directive is from us the less likely mitigation is to be messy and for unintended consequences to occur," Harris, whose district is in Clark County, said on Tuesday.

When does an applicant show they have avoided a conflict by conserving or adjusting their proposed project? Whose responsibility is it to identify a conflict? And whose hydrology should the state trust? Hydrologists often present differing data and groundwater model on projects.

"You can put 10 hydrologists in a room, you might get 10 different answers," Wilson said at Thursday's hearing. "It is not necessarily black-and-white. There are a lot of unknowns."

Everyone wanted to weigh in on AB 30 because everyone had something different at stake. That comes back to the litigation. Many water users on Thursday were posturing in pending legal cases or cases they foresee in the future since "everyone is going to court at the end."

"Use it or lose it"

The quip about ending up in court turned out to be timely. Several issues addressed in Wilson's second bill, AB 62, had been taken up the week before in a decision by the Supreme Court.

AB 62 looks to close a loophole that could allow water speculators to hold onto water rights indefinitely. Under Western water law, irrigators and municipalities must put their water to "beneficial use" for activities like farming and drinking water, or risk losing their full allocation.

In reality, water users can avoid what is known as the "use it, or lose it" doctrine by indefinitely applying for extensions in constructing projects, such as a well or a diversion, to use their water. At the same time, their water right, even if it is not put to use, is effectively accounted for as though it is. That prevents other users, who might have projects ready, from using the water.

"If you're not willing to show that you have a legitimate reason to hold onto that water, and preferably through a public hearing, it's hard to argue why you need it," Crowell said. "We're not trying to take anyone's water rights away. But we're also not trying to penalize other users who have applied for water... and are ready to [develop] it in a much sooner time."

With AB 62, the state engineer could cap extensions to 15 years for municipal providers, unless there are circumstances beyond one's control, like an issue with permitting or a court action.

At Thursday's hearing, water utilities rural and urban offered a Nevada reply: "Don't Fence Me In." Lobbyist after lobbyist agreed there was a problem, but they said the bill was not the right path to fix it, the 15-year cap was arbitrary and that municipal utilities had a statutory duty to plan decades out into the future, a contradiction that was echoed by Sen. Ira Hansen.

"We tell the water purveyors to plan for the future, including the acquisition of water for the growth in Clark County, for example," Hansen said. "You guys do it. Now we're going to come back and say, 'uh-oh you have to use beneficially that water within a 15-year window or we're going to come back and punish you for planning the 40-year window we ordered you to do.""

The most heated exchange came between the state and the water authority.

Nevada's largest water purveyor, the Southern Nevada Water Authority, came out against the bill, arguing it could affect its water resource plan, perversely moving up the date for its pipeline. If there is a 15-year timeline, Belanger argued it could force the water authority to reconsider its water resource portfolio, which currently puts off the pipeline project until at least 2040.

"Our concern is it forces the hand on the priority and ordering of projects," Belanger said.

On May 2, the Nevada Supreme Court weighed in on the issue as part of a case about sending

water to Lemmon Valley, remanding to the state engineer a decision over granting an extension. That suggested to some that the courts were already applying anti-speculation law to the issue.

But at the hearing, Crowell said the courts were part of the reason why the state was pushing AB 62. When the state engineer denies an extension, its decision is often challenged in court.

What happens next?

Today the bills are likely to be taken up again, and the water buffalos will be back.

In an interview Friday, Goicoechea said AB 62 was a "non-starter."

At the hearing, tensions between the state and the water authority were on full display. The state argued that the water authority had been negotiating in bad faith, appearing to have come to an agreement on an amendment passed by the Assembly and then walking back its support. In his testimony, Belanger said he understood there were "some hard feelings," suggesting that there was a miscommunication and noting he did not have institutional support for the amendment.

"That's making these conversations more challenging," Crowell said at the end of the hearing. "And I don't want to have conversations and constructive dialogue unless they are in good faith. And we can't get to a solution without the largest water provider in the state."

The water authority, in an emailed statement Tuesday, said that "water legislation is complex and requires thoughtful consideration to prevent unintended consequences. We continue to support the state engineer's efforts to address those complicated issues. We are engaged in conversations with the respective parties, remaining hopeful of reaching a balanced outcome."

As for AB 30, various water interests met throughout the week to discuss how to move forward.

Crowell said on Friday that some of the issues raised by the legislators and water users were workable. But it remains unclear whether a mitigation bill can pass without the water authority's support. The Las Vegas Chamber of Commerce and the Operating Engineers Local 12 also came out against it.

To Goicoechea, the debate over the mitigation bill reflects a changing Legislature. Although it is weighted to Clark County, he said the body has younger and more liberal representatives who want to ensure there are safeguards to mitigate environmental impacts when water is used.

"I think SNWA is going to have to recognize that this Legislature has changed and they are going to have to give," he said. "The environmental groups have really taken charge."