



TRUCKEE MEADOWS WATER AUTHORITY
Board of Directors

AGENDA

Wednesday, March 20, 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. Approval of the agenda (**For Possible Action**)

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

5. Approval of the minutes of the February 20, 2019 meeting of the TMWA Board of Directors **(For Possible Action)**
6. 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)**
7. Water Supply Update — Bill Hauck*
8. Discussion and action on nomination and appointments of Trustee(s) to the Western Regional Water Commission (WRWC) from the TMWA Board of Directors for the following positions:
 - A) Pursuant to Sec.25(3)(a) of the WRWC Act from the following list of qualified persons: Jenny Brekhus and Neoma Jardon to fill the vacancy of David Bobzien.— Mark Foree **(For Possible Action)**
9. Report on status of West Reno Water System acquisition and related improvements and possible direction to staff on system acquisition — John Zimmerman and John Enloe **(For Possible Action)**
10. Discussion and possible action and direction to staff regarding the implementation of a Portland Loo public restroom at Brodhead Memorial Park to be funded for no more than \$150,000 — John Enloe **(For Possible Action)**
11. Discussion and possible action on Resolution No. 274: A Resolution to approve funding for the projects recommended by the Truckee River Fund Advisory Committee and an authorization for the Community Foundation to fund such projects from Fund proceeds — John Enloe **(For Possible Action)**
12. Discussion and action on the TMWA Tentative Budget for the Fiscal Year ending June 30, 2020 and Draft Capital Improvement Plan for Fiscal Years 2020 through 2024 — Matt Bowman and Joe Petrelli **(For Possible Action)**
13. 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 April 1, 2019 to December 31, 2021 from the following pool of candidates listed in alphabetical order: Susan Hoog and Kar Katt — Sonia Folsom **(For Possible Action)**
14. General Manager's Report*
15. Public comment — limited to no more than three minutes per speaker*
16. Board comments and requests for future agenda items*
17. Adjournment **(For Possible Action)**

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

TRUCKEE MEADOWS WATER AUTHORITY
MINUTES OF THE FEBRUARY 20, 2019
DRAFT MEETING OF THE BOARD OF DIRECTORS

The Board of Directors met on Wednesday, February 20, 2019, at Sparks Council Chambers., 745 4th Street, Sparks, Nevada. Chair Hartung called the meeting to order at 10:01 a.m.

1. ROLL CALL

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

A quorum was present.

Alternate Jardon departed at 11:37 a.m.

2. PLEDGE OF ALLEGIANCE

The Pledge of Allegiance was led by Mr. Chip Bowlby.

3. PUBLIC COMMENT

There was no public comment.

4. APPROVAL OF THE AGENDA

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

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

Upon motion by Member Jardon, second by Member Herman, which motion duly carried by unanimous consent of the members present, the Board approved the January 16, 2019 minutes.

6. DISCUSSION AND ACTION ON NOMINATION AND ELECTION OF VICE CHAIRMAN OF TMWA BOARD OF DIRECTORS AND REQUEST FOR BOARD ADOPTION OF RESOLUTION NO. 273 APPOINTING A VICE CHAIR FOR THE

REMAINDER OF FISCAL YEAR 2019 TO FILL POSITION VACATED BY VICE CHAIR RON SMITH

Mark Foree, TMWA General Manager, presented this agenda item.

Member Dahir said it was an honor to be appointed to fulfill the remaining term of the previous Vice Chair Ron Smith.

Upon motion by Member Herman, second by Member Anderson, which motion duly carried by unanimous consent of the members present, the Board adopted Resolution No. 273 appointing Kristopher Dahir as Vice Chair for the remainder of Fiscal Year 2019 to fill position vacated by Vice Chair Ron Smith.

7. WATER SUPPLY UPDATE

Bill Hauck, TMWA Senior Hydrologist, updated the Board on the status of the TMWA's water supply. Mr. Hauck stated the snow water equivalents in the Truckee River and Tahoe Basins are at 169% and 174% of average, respectively; All reservoirs on the system will fill and spill except Boca Reservoir, which will only half fill due to the seismic retrofit construction on the dam; expect extremely high river flows through the summer, tapering off in August; Independence Lake is approximately 86% full; TMWA currently has approximately 32,000 acre feet of reservoir storage; and Lake Tahoe is approximately one foot below the natural rim, which is at elevation 6229.1.

8. (CONTINUED FROM JANUARY MEETING) DISCUSSION AND ACTION ON NOMINATION AND APPOINTMENTS OF TRUSTEE(S) TO THE WESTERN REGIONAL WATER COMMISSION (WRWC) FROM THE TMWA BOARD OF DIRECTORS FOR THE FOLLOWING POSITIONS TO FILL VACANCIES ENDING MARCH 31, 2019 AND FOR A NEW TWO YEAR TERM APRIL 1, 2019 TO MARCH 31, 2021:

A) PURSUANT TO SEC.25(3)(B) OF THE WRWC ACT FROM THE FOLLOWING LIST OF QUALIFIED PERSONS: PAUL ANDERSON.

B) PURSUANT TO SEC.25(3)(C) OF THE WRWC ACT FROM THE FOLLOWING LIST OF QUALIFIED PERSONS: JEANNE HERMAN.

C) PURSUANT TO SEC. 25(4) OF THE WRWC ACT REPRESENTING TMWA AS SUCCESSOR TO SOUTH TRUCKEE MEADOWS GENERAL IMPROVEMENT DISTRICT FROM THE FOLLOWING LIST OF QUALIFIED PERSONS: JENNY BREKHUS, OSCAR DELGADO, BONNIE WEBBER, NEOMA JARDON, HILLARY SCHIEVE, MARSHA BERKBIGLER, BOB LUCEY, KITTY JUNG, CHARLENE BYBEE, AND ED LAWSON.

Mr. Foree presented this agenda item for consideration.

Discussion followed regarding the appointment as TMWA's successor to South Truckee Meadows General Improvement District with Member Brekhus stating it would be logical to appoint someone who already sits on the TMWA Board as the WRWC's meeting precedes it. Chair Hartung recommended to appoint Commissioner Bob Lucey as he resides in the area.

Member Brekhus requested to be updated on attendance the following year.

Upon motion by Member Duerr, second by Member Dahir, which motion duly carried by unanimous consent of the members present, the Board approved Paul Anderson to the WRWC, pursuant to Sec.25(3)(b) of the WRWC Act, to fill the vacancy ending March 31, 2019 and for a new two year term April 1, 2019 to March 31, 2021.

Upon motion by Member Duerr, second by Member Dahir, which motion duly carried by unanimous consent of the members present, the Board approved Jeanne Herman, pursuant to Sec.25(3)(c) of the WRWC Act, to fill the vacancy ending March 31, 2019 and for a new two year term April 1, 2019 to March 31, 2021.

Upon motion by Member Hartung, second by Member Dahir, which motion duly carried by unanimous consent of the members present, the Board approved Bob Lucey, pursuant to Sec. 25(4) of the WRWC Act, to fill the vacancy ending March 31, 2019 and for a new two year term April 1, 2019 to March 31, 2021.

9. (CONTINUED FROM JANUARY MEETING) DISCUSSION AND ACTION ON APPOINTMENT OF TWO TMWA BOARD MEMBERS TO THE LEGISLATIVE SUBCOMMITTEE FOR PARTICIPATION IN THE 2019 LEGISLATIVE SESSION

John Zimmerman stated the Legislative Subcommittee needs two more board members to convene.

Upon motion by Member Hartung, second by Member Duerr, which motion duly carried by unanimous consent of the members present, the Board approved the appointment of Kristopher Dahir and Jenny Brekhus to the TMWA Legislative Subcommittee for participation in the 2019 Legislative Session.

10. PRESENTATION ON PROPOSED BILLS FOR THE 2019 LEGISLATIVE SESSION AND DISCUSSION AND POSSIBLE ACTION ON TMWA LEGISLATIVE POSITION RECOMMENDATIONS

Mr. Zimmerman and Steve Walker, TMWA's Legislative Lobbyist, presented the staff report of proposed bills with staff recommendations for Board approval.

After discussion regarding the proposed bills, Board Members agreed with staff's recommendations, but directed staff to research further on AB127, AB136, and AB138 and potentially change position to Oppose, Watch and Oppose, respectively, and report back to the subcommittee at its next meeting for further consideration.

No action taken.

Chair Hartung moved up agenda item 14 due to Alternate Jardon needing to leave.

14. DISCUSSION AND ACTION, AND POSSIBLE DIRECTION TO STAFF REGARDING THE STATUS OF ACQUISITION OF THE WEST RENO WATER SYSTEM AND FINAL CLOSING DOCUMENTS, THE POSSIBLE APPROVAL OR MODIFICATION OF THE FOURTH AMENDMENT TO ACQUISITION AGREEMENT, AND THE AUTHORIZATION TO THE GENERAL MANAGER TO EXECUTE THE FOURTH AMENDMENT AND FINAL CLOSING DOCUMENTS AND PROCEED WITH CLOSING

Mr. Zimmerman presented the staff report for the Board to approve the Fourth Amendment to Acquisition Agreement and closing documents, authorize the General Manager to execute the Fourth Amendment and proceed with closing. Mr. Zimmerman stated the closing was targeted to occur on or before March 22 and the Fourth Amendment would extend closing to that date.

Discussion followed regarding the upcoming connection to the Riverbelle Mobile Home Park (TMWA assisted with temporary water service a few years ago) and the River Oak Homeowners Association (TMWA has secured easements through River Oak and Riverbelle that will allow for future connection to West Reno water system); and TMWA applied for a State Revolving Fund Loan Forgiveness to offset some of the costs for the main extension.

Upon motion by Member Duerr, second by Member Jardon, which motion duly carried by unanimous consent of the members present, the Board approved the Fourth Amendment to Acquisition Agreement and Closing Documents and authorized the General Manager to execute the Fourth Amendment and proceed with closing.

11. DISCUSSION AND POSSIBLE ACTION, AND DIRECTION TO STAFF REGARDING SELECTION OF EIDE BAILLY AS TMWA'S EXTERNAL AUDITOR FOR FISCAL YEARS 2019, 2020, AND 2021

Matt Bowman, TMWA Financial Controller, presented on this agenda item.

Upon motion by Member Dahir, second by Member Herman, which motion duly carried by unanimous consent of the members present, the

Board approved the selection of Eide Bailly as TMWA's external auditor for fiscal years 2019, 2020, and 2021.

12. PRESENTATION OF FINANCIAL PERFORMANCE FOR THE FISCAL YEAR FIRST HALF ENDED DECEMBER 31, 2018

Mr. Bowman informed the Board the change in net position was \$9.0m more than budget and due to capital contributions; cash position was \$207.7m or \$14.3m higher than at the beginning of the fiscal year; operating revenue was \$1.6m higher than budget, and water sales was 8% higher over the prior year (3% due to rate increase and 5% due to services added and increased water use); total operating expenses are \$2.1m under budget, but \$3.8m more than prior year due to increases in salaries and wages and as well as increasing employee headcount by approximately 10%; non-operating expense are \$1.1m lower than budget in the current fiscal year, and lower than prior year by \$0.9m; capital contributions were \$4.2m more than budget and \$3.2m more than first half FY19, which are growth related; and total capital spend is estimated to be between \$35m and \$40m for the full fiscal year.

Discussion followed regarding hydro sales being down due to rehabilitation (two sections of the Fleish flume were 10 years past when a rehabilitation would normally be performed); the best time to rehabilitate flumes is during a drought; and staff is waiting for the annual PERS adjustment report at the end of the fiscal year.

Chair Hartung recommended a tour of the hydro facilities be scheduled for new, and current, members.

13. DISCUSSION AND ACTION, AND POSSIBLE DIRECTION TO STAFF REGARDING APPROVAL OF FUNDING TMWA'S SHARE OF THE REGIONAL CATEGORY A+ RECLAIMED WATER FEASIBILITY STUDY PROGRAM COORDINATION EFFORTS WITH NEVADA WATER INNOVATION INSTITUTE (NWII) TO OBTAIN PROFESSIONAL SERVICES FROM A QUALIFIED CONSULTANT, INCLUDING PROJECT MANAGEMENT, IN AN AMOUNT NOT TO EXCEED \$120,000 OVER FOUR FISCAL YEARS, FY 2019 THROUGH FY 2022

John Enloe, TMWA Director of Natural Resources & Planning, presented this agenda item.

Upon motion by Member Duerr, second by Member Dahir, which motion duly carried by unanimous consent of the members present, the Board approved funding TMWA's share of the Regional Category A+ Reclaimed Water Feasibility Study Program Coordination efforts with Nevada Water Innovation Institute (NWII) to obtain professional services from a qualified consultant, including project management, in an amount not to exceed \$120,000 over four fiscal years, FY 2019 through FY 2022.

15. GENERAL MANAGER'S REPORT

Mr. Foree restated that the snowpack is exceptional which is great news for our water supply.

16. PUBLIC COMMENT

There was no public comment.

17. BOARD COMMENTS AND REQUESTS FOR FUTURE AGENDA ITEMS

Member Duerr noted that Earth Day was cancelled, and the City of Reno has now taken charge to work with local non-profits to continue with it.

Vice Chair Dahir welcomed TMWA's new Board Members, Members Anderson and Herman.

18. ADJOURNMENT

With no further discussion, Chair Hartung adjourned the meeting at 12:11 p.m.

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

Sonia Folsom, Recording Secretary

Alternate Jardon left at 11:37 a.m. and was present for agenda items 1 thru 10 and 14 only.



STAFF REPORT

TO: Chairman and Board Members
THRU: Mark Foree, General Manager
FROM: John Zimmerman, Manager of Water Resources
DATE: March 14, 2019
SUBJECT: **Discussion and possible action and direction to staff regarding 2019 legislative activities, current bills, and TMWA recommended positions on legislative proposals**

The TMWA legislative subcommittee will meet on Monday March 18th to review all new bills staff has recommended TMWA watch or take a position on. Staff will provide a list of those bills to the Board after receiving the subcommittee's direction so that the Board has the most-recent information. Staff, TMWA lobbyist Steve Walker, and General Counsel Michael Pagni will update the Board regarding the new legislation and the subcommittee's recommendations. Additionally, we will update the Board on any relevant new information regarding the session and existing bills the Board has already directed TMWA to support or oppose.

Staff requests the Board provide direction regarding TMWA's position on, and possible action regarding, the new and existing legislation.

2019 Legislative Deadlines:

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

Bill	Sponsor	Description	Last Meeting / Action	Next Meeting	Staff Recommended Position
AB136		Makes various changes relating 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, Sprinkle, Swank, Thompson, Torres, Watts and Yeager		Assembly Committee on Government Affairs 3/11/2019 9:00 AM		OPPOSE
			Do pass		
AB138		Revises provisions governing 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				OPPOSE
SB231		Revises provisions relating to certain construction. (BDR 28-910)			
	Brooks, Cannizzaro, Parks, Atkinson, Cancela, Denis, Harris, Ohrenschall, Ratti, Scheible and Woodhouse				OPPOSE
SB245		Revises provisions relating to civil actions. (BDR 3-965)			
			Senate Committee on Judiciary 3/11/2019 8:00 AM		OPPOSE
			Heard, No Action		

Bill	Sponsor	Description	Last Meeting / Action	Next Meeting	Leg. Subcommittee Recommended Position
AB265	Assemblymen Peters, Swank, Watts, Senators Brooks, Goicoechea, Scheible	Requires the Desert Research Institute to conduct a study concerning water treatment and recycling. (BDR S-901)			SUPPORT w/ amendment
SB250	Settelmeyer, Goicoechea, Hardy, Hansen and Seevers Gansert	Revises provisions relating to the dedication of water rights. (BDR 48-664)			OPPOSE



Northern Nevada Water Supply Outlook

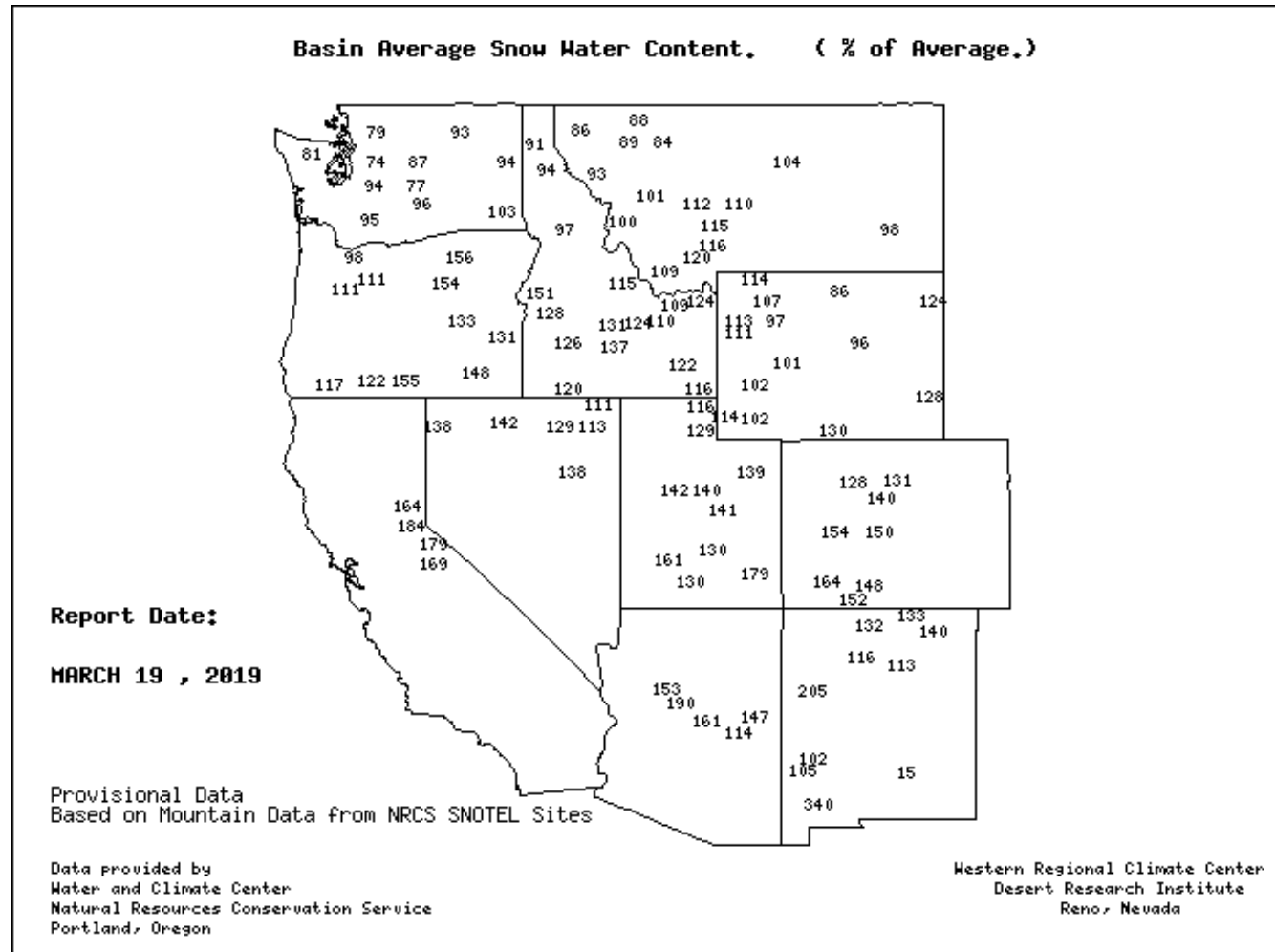
TMWA Board of Directors Meeting

Bill Hauck, Senior Hydrologist

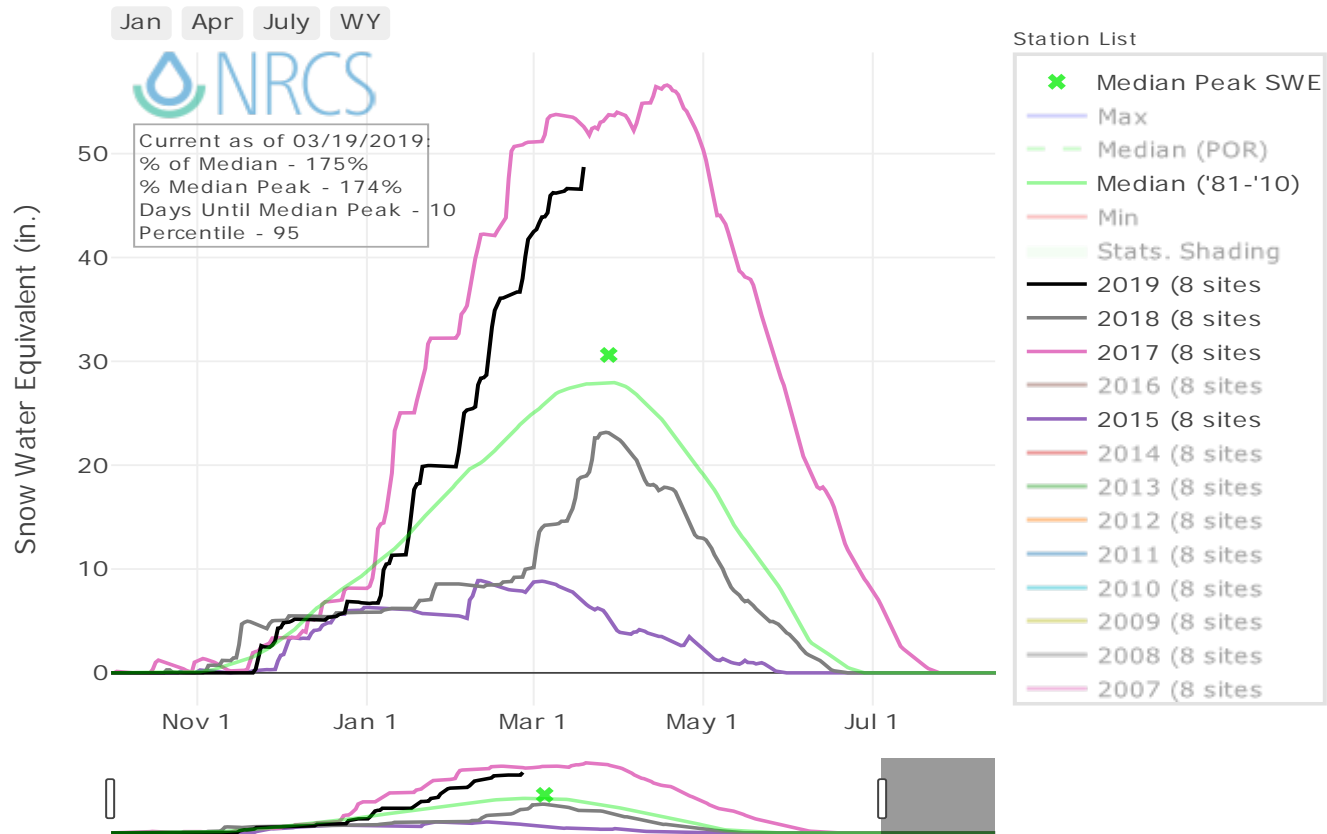
March 20, 2019



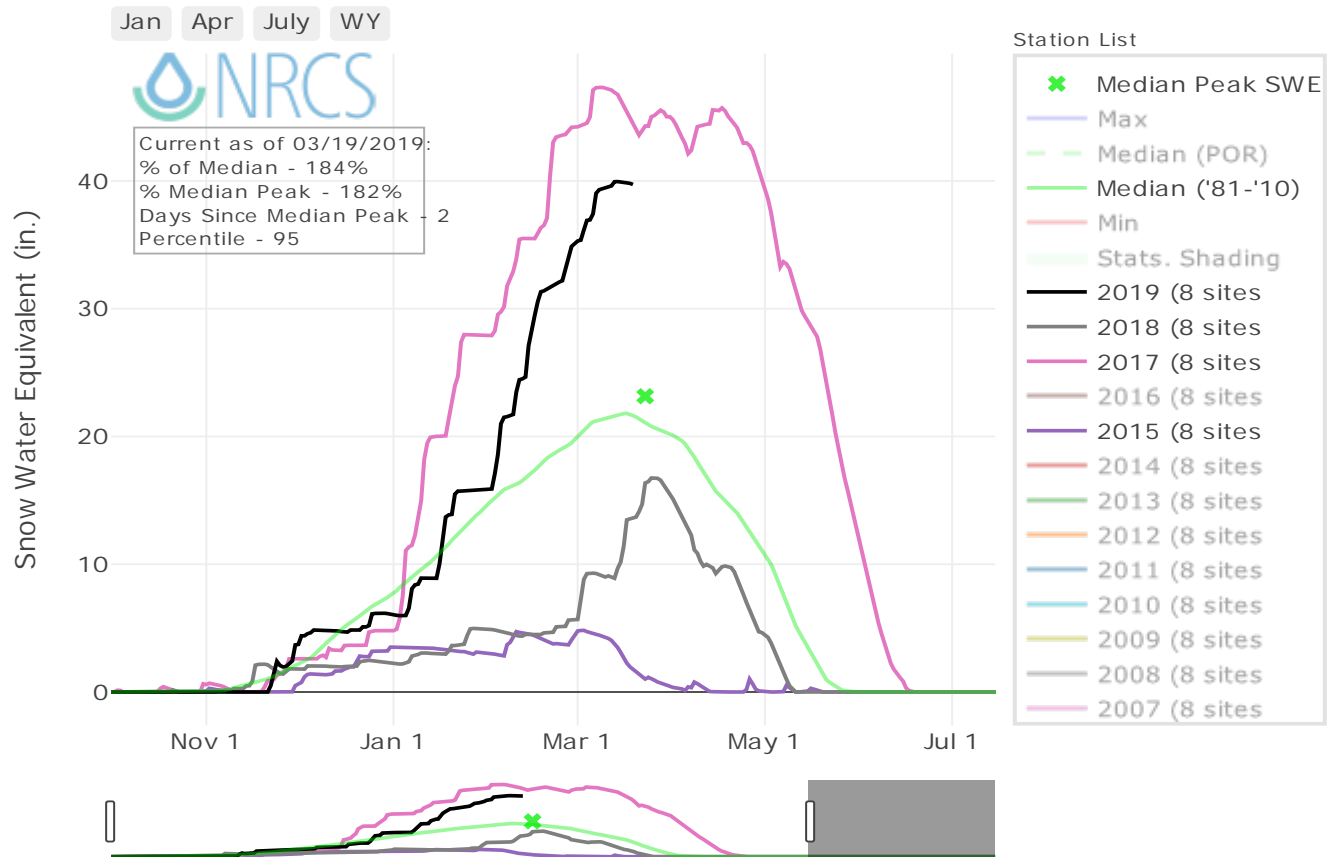
NRCS River Basin Snow Water Content



Truckee River Basin Snow Water Equivalent

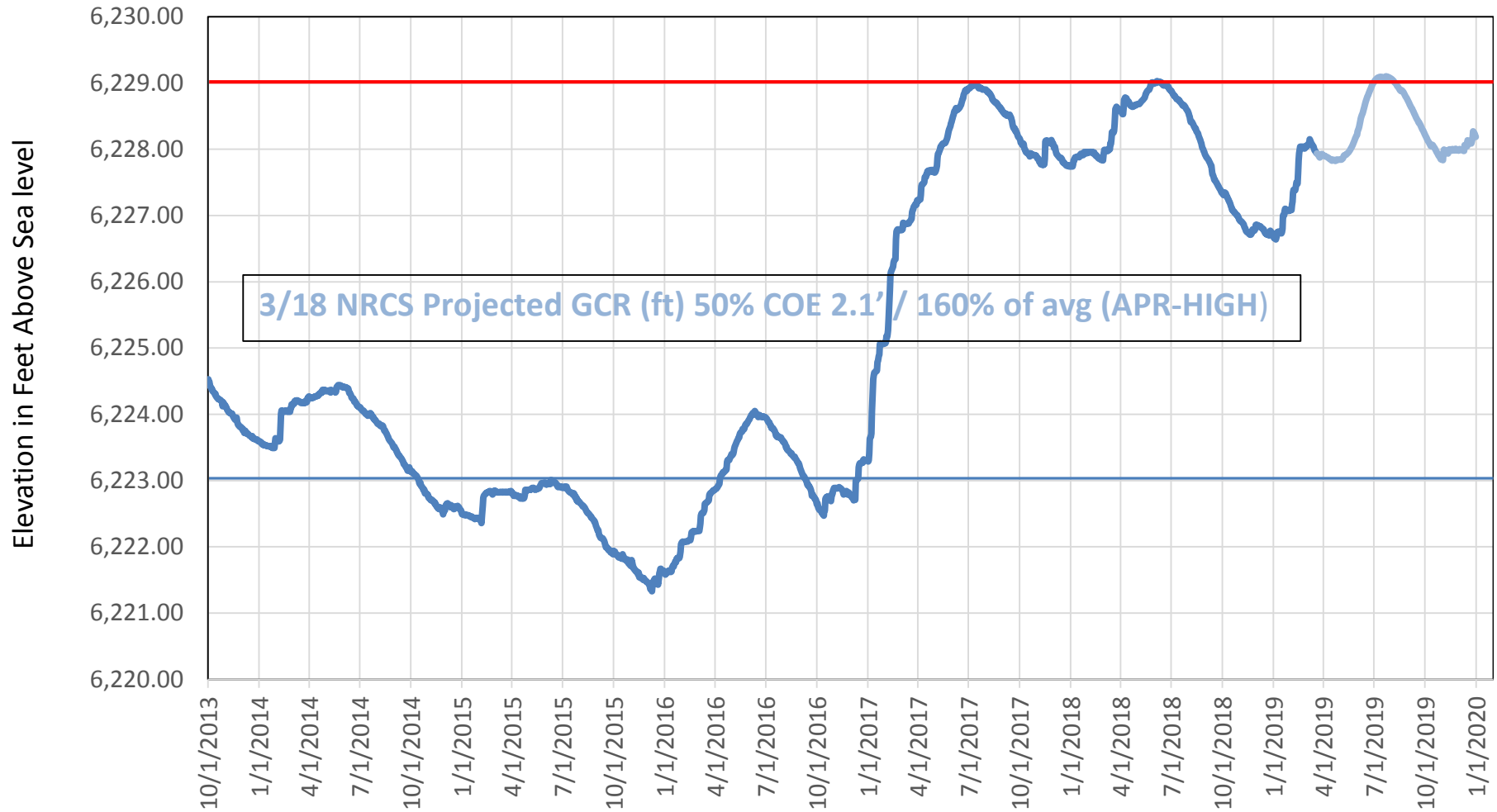


Lake Tahoe Basin Snow Water Equivalent

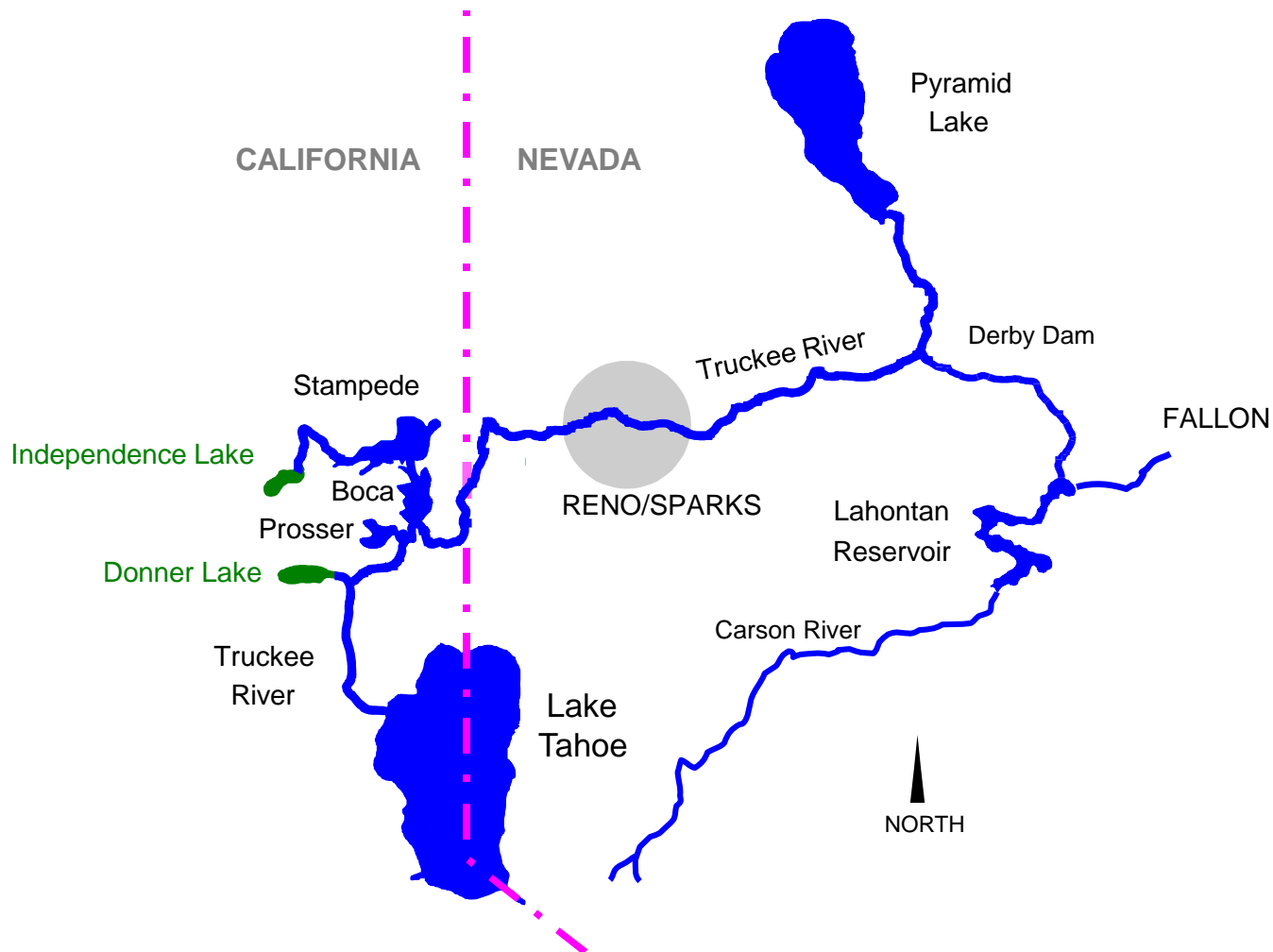




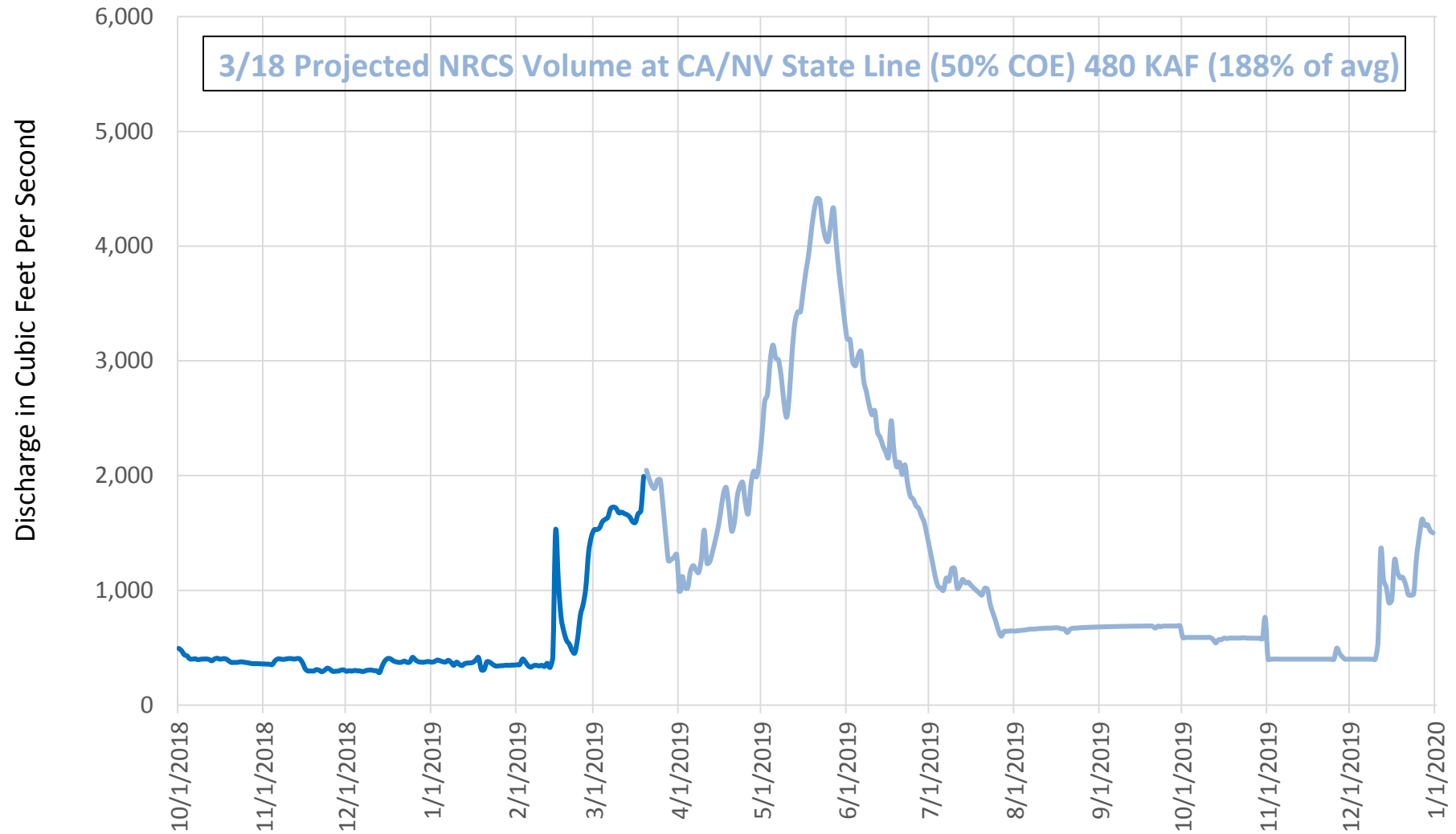
Lake Tahoe Elevation (actual and projected through 2019)



The Truckee River System



Truckee River at Farad (actual and projected through 2019)









Thank you!
Questions?

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



STAFF REPORT

TO: Board of Directors
FROM: Mark Foree, General Manager
DATE: March 11, 2019
SUBJECT: **Discussion and action on nomination and appointments of Trustee(s) to the Western Regional Water Commission (WRWC) from the TMWA Board of Directors for the following positions to fill vacancies for a new two year term April 1, 2019 to March 31, 2021:**
A) Pursuant to Sec.25(3)(a) of the WRWC Act from the following list of qualified persons: Jenny Brekhus and Neoma Jardon.

RECOMMENDATION

It is recommended that the TMWA Board appoint one member to the Western Regional Water Commission to serve a two-year term commencing April 1, 2019 to include:

1. One TMWA Board member who is a member of the Reno City Council

DISCUSSION

During the 2007 legislative session, SB487 was enacted to create the Western Regional Water Commission (effective date April 1, 2008), a governing board to oversee water resources planning and management in Washoe County. The Western Regional Water Commission Act, Chapter 531, Statutes of Nevada, Section 25, provides for appointments to the Board of Trustees as follows:

Sec. 25. 1. The Regional Water Commission must be directed and governed by a Board of Trustees composed of the following nine members appointed pursuant to this section:

- (a) Two members of the City Council of the City of Reno;
- (b) Two members of the City Council of the City of Sparks;
- (c) Two members of the Board of County Commissioners of Washoe County;
- (d) One member representing the Truckee Meadows Water Reclamation Facility or its successor;
- (e) One member designated by the Board of Trustees of the South Truckee Meadows General Improvement District or its successor; and
- (f) One member of the Board of Trustees of the Sun Valley General Improvement District or its successor.

2. The City Council of the City of Reno, the City Council of the City of Sparks and the Board of County Commissioners of Washoe County shall each appoint one trustee from their membership for an initial term of 2 years.

3. The Board of Directors of the Truckee Meadows Water Authority or its successor shall appoint from its membership, for initial terms of 3 years:

- (a) One trustee who is a member of the City Council of the City of Reno;
- (b) One trustee who is a member of the City Council of the City of Sparks; and
- (c) One trustee who is a member of the Board of County Commissioners of Washoe County.

➡ The trustees appointed pursuant to this subsection must be different persons than those appointed pursuant to subsection 2.

4. The Board of Trustees of the Sun Valley General Improvement District or its successor and the Board of Trustees of the South Truckee Meadows General Improvement District or its successor shall each appoint one trustee from its membership for an initial term of 3 years.

5. The owners of the Truckee Meadows Water Reclamation Facility or its successor shall jointly appoint one trustee for an initial term of 2 years.

6. After the initial terms, each trustee who is appointed to the Board serves for a term of 2 years. A trustee may be reappointed.

7. All trustees must be elected officials. No trustee may serve beyond his term of office.

8. The position of a trustee must be considered vacated upon his loss of any of the qualifications required for his appointment, and in such event, the appointing authority shall appoint a successor to fill the remainder of the unexpired term.

The current appointees to the Western Regional Water Commission Board are as follows:

Appointing Body	Trustee
City of Reno	Councilmember Naomi Duerr
City of Sparks	Councilmember Kristopher Dahir
Washoe County	Commissioner Vaughn Hartung
TMWA (Section 3 - from TMWA Board):	Sparks Council Member – Paul Anderson
	Reno Council Member – <i>Vacant</i>
	Washoe County Commissioner – Jeanne Herman
Truckee Meadows Water Reclamation Facility	Councilmember Donald Abbott
Sun Valley General Improvement District	SVGID Trustee Sandra Ainsworth
TMWA (Section 4 – as successor to STMGID)	Commissioner Bob Lucey



STAFF REPORT

TO: Chairman and Board Members
THRU: Mark Foree, General Manager
FROM: John Enloe, Natural Resources Director,
John Zimmerman, Water Resources Manager
DATE: March 15, 2019
SUBJECT: **Report on status of West Reno Water System acquisition and related improvements and possible direction to staff on system acquisition.**

SUMMARY

This transaction is scheduled to close by the date of the TMWA Board meeting and staff does not anticipate any obstacles that would prevent the closing from occurring by then. Under the amended purchase agreement, the other parties must complete the required work to the Boomtown Hotel/Casino private water facilities and detention basin by May 14, 2019 or pay TMWA the amounts remaining in escrow for that work as liquidated damages.

At closing, TMWA will get three main commercial customers (Boomtown properties, Dermody warehouses, and Cabela's) and 8 single-family residential customers (Meridian 120 North Village 1). TMWA will also annex into its service area the Meridian 120 North subdivisions, five vacant SJP Reno Property, LLC parcels, and six BT South, LLC parcels south of I-80.

Staff thanks all the TMWA employees involved in this acquisition for the hard work and expertise they contributed to the project as well as the Board for its perseverance throughout this somewhat lengthy and arduous process.



STAFF REPORT

TO: Board of Directors
THRU: Mark Foree, General Manager
FROM: John Enloe, Director, Natural Resources
DATE: March 20, 2019
SUBJECT: **Discussion and possible action and direction to staff regarding the implementation of a Portland Loo public restroom at Brodhead Memorial Park to be funded for no more than \$150,000**

Recommendation

Staff proposes that the Board approve funding for a Portland Loo public restroom at Brodhead Memorial Park in an amount not to exceed \$150,000, contingent upon One Truckee River securing an additional funding partner for the first two years of O&M and outreach. TMWA's annual contribution to the Truckee River Fund for FY 20 will be reduced by \$150,000 to \$700,000.

Background

Presently, the public finds shelter in riparian vegetation to relieve themselves in both wilderness and rural Truckee River stretches where there are no restroom facilities. The lack of public restrooms has created a human waste issue that impacts the water quality of the Truckee River. The desire for additional public restrooms started as a priority for TMWA, which solicited a targeted RFP in 2015 through the Truckee River Fund (TRF) to try to help address the issue. Keep Truckee Meadows Beautiful (KTMB) and the Nevada Land Trust collaborated on a project to address the public restroom and numerous other issues along the river, which ultimately grew into the One Truckee River (OTR) Management Plan.

In 2018, following an unsuccessful attempt to maintain a portable restroom near Galletti Way and Fisherman's Park, OTR, TMWA and KTMB worked together to advance the public restroom project (Project) with the City of Reno and the City of Sparks. The Project evolved from an OTR Housing and Sanitation Working Group focused on the issue, including local government staff. The Working Group researched restroom options, explored the Portland Loo in detail, and conducted multiple interviews with local cities' staff and elected officials.

The Project's long-term goal is to increase the number of public restrooms from 9 to 19 along the Truckee River's 114-mile stretch to improve the region's water quality and well-being. With the installation of this first Portland Loo public restroom, the objective is to develop a successful model that meets public restroom needs in the River's greenspace areas, including long-term secured funding. This model will leverage the installation of a new restroom and complementary outreach and community engagement to ensure Project success.

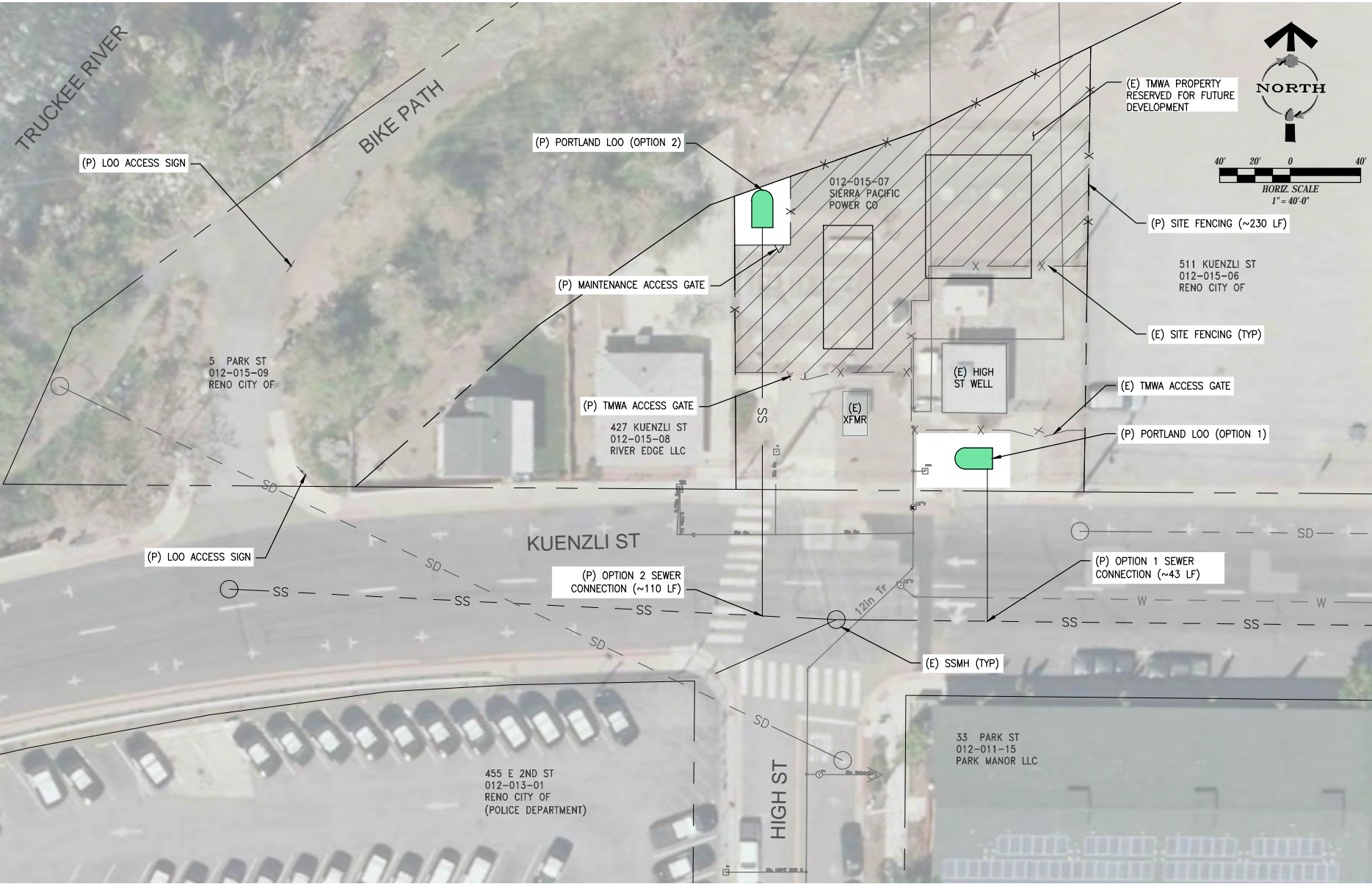
Discussion

The Project's first initiative is to establish a new public restroom on a TMWA-owned property near Brodhead Park (a strategic high-use urban park, see attached location map and figures), hire a River Coordinator to engage and build networks with currently homeless river users, and collaborate with KTMB, Truckee Meadows Tomorrow and the larger OTR partnership to conduct river-related outreach activities (including mailers, surveys, educational walks, river clean-ups, and public events) to increase the understanding of and engagement in the Truckee River and the Project. The Project's first phase will engage residents and homeless river users, develop lessons learned and build OTR's capacity for future Project success. It will also leverage the OTR Management Plan, the Tahoe-Pyramid Trail, and the new Ambassadors Program developed by the Downtown Reno Partnership. Project success will lead to improved water quality and an increased quality of life for Truckee Meadow residents with a Truckee River path that is unsoiled and accessible to the general public.

It is proposed that TMWA fund the purchase and installation of the Portland Loo restroom, estimated at \$150,000. A part-time River Coordinator who will engage and build networks with currently homeless river users, various river-related outreach activities and the first two years of restroom O&M are proposed to be funded by a combination of a grant from the TRF (See Agenda Item #11) and financial contributions from a funding partner. A funding partner's \$25,000 sponsorship would support the River Coordinator position and restroom maintenance for the first two years. It should be noted that TMWA's funding, and that of the TRF, is contingent upon One Truckee River securing an additional funding partner that pays for the first two years of O&M and outreach.

Fiscal Impact: TMWA's funding for a Portland Loo public restroom at Brodhead Memorial Park will not to exceed \$150,000 and is contingent upon One Truckee River securing an additional funding partner for the first two years of O&M and outreach. Annual funding to the Truckee River Fund for FY 20 will be reduced by \$150,000 to \$700,000, resulting in no net impact to TMWA's proposed FY 20 Operating Budget.

Proposed Motion: I recommend the Board approve funding for a Portland Loo public restroom at Brodhead Memorial Park in an amount not to exceed \$150,000, contingent upon One Truckee River securing an additional funding partner for the first two years of O&M and outreach. Annual funding to the Truckee River Fund for FY 20 will be reduced by \$150,000 to \$700,000.



1355 CAPITAL BLVD. PO BOX 30013 RENO, NEVADA 89520-3013 PHONE: 775-834-8080

PORTLAND LOO INSTALLATION
HIGH ST WELL ON KUENZLI ST
LOCATION OPTIONS

DATE:	3.14.2019
DRAWN BY:	JPB
WORK ORDER #:	
SCALE:	AS SHOWN

FIGURE
1



1355 CAPITAL BLVD. PO BOX 30013 RENO, NEVADA 89520-3013 PHONE: 775-834-8080

PORTLAND LOO INSTALLATION
HIGH ST WELL ON KUENZLI ST
PHOTO RENDERING

DATE:	3.14.2019
DRAWN BY:	JRH
WORK ORDER #:	
SCALE:	AS SHOWN

FIGURE
2





STAFF REPORT

TO: Board of Directors
THRU: Mark Foree, General Manager
FROM: John Enloe, Director of Natural Resources
Janet Phillips, Chairman, Truckee River Fund Advisory Committee
DATE: March 11, 2019
SUBJECT: Discussion and possible action on adoption of Resolution No. 274: A resolution to approve funding for the projects recommended by the Truckee River Fund Advisory Committee and an authorization for the Community Foundation to fund such projects from Fund proceeds

Recommendation

The Truckee River Fund (TRF) Advisors recommend that the TMWA Board authorize by resolution the funding of the following projects from the TRF. This recommendation stems from a Fund advisors' meeting held on February 28, 2019 where multiple grant proposals from the spring request for proposal (RFP) process were reviewed and discussed. Corresponding to the TRF Grant Priorities (see attachment), nine projects are recommended for funding totaling \$642,923 out of nine project funding requests for \$541,731. Each of the project details are summarized below and all RFPs are also attached.

PROJECTS RECOMMENDED FOR FUNDING

Project #214: Watershed Education Initiative (WEI)

Organization: Sierra Nevada Journeys (SNJ)

Amount Requested: \$36,207

Amount Recommended: \$36,207

Organizational Match: \$2,917 (Cash) \$12,238 (In-Kind)

Project Description:

The WEI delivers high-quality, experiential watershed education programs based on local issues associated with the Truckee River, such as water quality and invasive species while empowering youth to protect and enhance the quality of the Truckee River. Through this funding, SNJ will serve 875 students in 32 classrooms throughout northern Nevada. Conducted over a four-week period, WEI includes three in-class lessons, one field-study experience, pre- and post-assessments, classroom

extension lessons for teachers, and family and community engagement. Curriculum developed and delivered by SNJ's team of credentialed teachers aligns to state and national standards and the North American Association for Environmental Education's Guidelines for Excellence.

TMWA Benefit:

WEI is an education program that addresses water, water quality and watershed protection for K-8th grade students, directly aligning with grant priority VI: *Stewardship and Environmental Awareness*. Students gain first-hand experience with the Truckee River, explore human impacts on their water source, and obtain skills and knowledge to help protect the watershed. The overall long-term program impacts include:

- Students understand important science concepts related to the Truckee River watershed and can articulate how their actions affect the Truckee River watershed and local ecosystems.
- Students understand important science concepts related to the Truckee River watershed and can articulate how their actions affect the Truckee River watershed and local ecosystems.
- Teachers use extension lessons and implement more hands-on exploration of the watershed. Parents and community members engage in watershed education directly through WEI volunteer
- The health of the Truckee River watershed and local ecosystems improves as students and their families adopt environmental stewardship practices that help reduce water pollution and human impacts.

Project #215: Truckee Meadows Nature Study Area: First Year Operational Phase

Organization: Truckee Meadows Parks Foundation

Amount Requested: \$120,000

Amount Recommended: \$61,400

Organizational Match: \$60,000 (Cash)

Project Description:

Execute a community supported master plan to repurpose the former Rosewood Lakes Golf Course into the Truckee Meadows Nature Study Area. The nature study area will serve as an outdoor learning laboratory and community green space.

The property formerly known as the Rosewood Lakes Golf Course is one of the last vestiges of wetland habitat in the Truckee Meadows. The proposed Truckee Meadows Nature Study Area (TMNSA) has been overtaken by multiple non-native plant species listed on the Nevada Noxious Weed List and the (WSCWMA) high-priority list. Noxious weeds presently include, but are not limited to, tall whitetop (*Lepidium latifolium*), poison hemlock (*Conium maculatum*), and puncture vine (*Tribulus terrestris*).

Over the course of this operational year, environmental data will be collected, analyzed and used to evaluate effectiveness of the different restoration practices. Techniques can then be adjusted to ensure best practices are being utilized for weed removal. In the summer of 2020, TMNSA is scheduled to open

to the public and host educational programs and stewardship events to engage and educate the community regarding invasive plants and the watersheds they affect. A restored wetland will allow these programs to better show the community what effect noxious weed removal can have on an environment.

TMWA Benefit:

The Truckee Meadows Nature Study Area (TMNSA) project advances priorities VI (Stewardship and Environmental Awareness) and VIII (Leverage Stakeholder Assets and Participation). The TMNSA project advances priority VI in that the Parks Foundation will use TMNSA as an outdoor classroom where community members can participate in volunteer and restoration events and educational programs related to weed awareness, water, water quality, and watershed protection. The TMNSA project will involve multiple stakeholders, including the City of Reno, Nevada Department of Wildlife, Nevada Land Trust (One Truckee River), University of Nevada Reno, The Nature Conservancy, Truckee River Flood Management Authority, Walker Basin Conservancy, and Lahontan Audubon Society to encourage collaborative efforts in all aspects of river water quality, watershed protection, source water protections, species enhancement, and to promote the missions of all involved agencies. The Parks Foundation has leveraged community members from a breadth of disciplines willing to contribute time and expertise for the TMNSA advisory board, therefore advancing priority VIII.

Project #216: McIver Dairy Meadow Restoration Project

Organization: Truckee River Watershed Council

Amount Requested: \$200,000

Amount Recommended: \$161,000

Organizational Match: \$119,300 (Cash)

Project Description:

The funding request is to Complete construction of the McIver Dairy Meadow Restoration Project to reduce excess sediment discharge to the main stem of the Truckee River.

The project is a wetland and stream restoration project that seeks to reduce excess sedimentation of the Truckee River by addressing degradation caused by modern and historic land uses. Funding is requested to help complete the implementation of the project.

TMWA Benefit:

- **Watershed Improvements.** The project will decrease excess sedimentation to the Truckee River and support attainment of the 303 (d) listed TMDL pollutant by restoring the hydrologic function of the McIver Dairy Meadow. The restored floodplain and wetlands will attenuate high flows and filter runoff before it drains to the Truckee River.

- **Local Stormwater Improvements.** The project site receives stormwater inputs from adjacent roads and commercial development. The project will provide natural treatments for those inputs before reaching the main stem of the Truckee River. Note: The Town of Truckee and Caltrans are project partners and are addressing required stormwater management regulations.
- **Meet Multiple Objectives.** The project meets the watershed and water quality objectives listed above. It also benefits wetlands and instream habitats, native fish and wildlife species, flood attenuation, and carbon sequestration.
- **Leverage Stakeholder Assets and Participation.** The project has leveraged partner participation and assets from the outset. The Town of Truckee was instrumental in early funding for the project and has been critical in completing the design and environmental compliance for the project.

Project #217: 2019 Fall Truckee River Cleanup, Adopt-A-River & Adult Outreach Education

Organization: Keep Truckee Meadows Beautiful (KTMB)

Amount Requested: \$54,500

Amount Recommended: \$53,000

Organizational Match: \$103,900 (Cash) \$57,407 (In-Kind)

Project Description:

The Truckee River Cleanup is designed to address both the direct and immediate presence of weeds, litter and non point pollution runoff, and the underlying causes of these challenges by educating and engaging the community. KTMB uses proven approaches to "Cleanups" that have been shown to save tax payers money. According to Keep America Beautiful "about 85 percent of littering is the result of people's attitudes Changing individual behaviors is the key to preventing litter -and environmental cues can make a difference." By engaging volunteers and community partners in this effort, as well as having consistent outreach and messaging to support behavior change, KTMB is helping to better protect the water resources of the Truckee River.

- Remove invasive weeds and trash from along the Truckee River corridor and its tributaries during KTMB's Truckee River Cleanup Day
- Monitor the impact of current cleanup efforts
- Engage more year-round cleanup support through KTMB's Adopt-A-River program
- Provide community education and outreach to decrease environmental threats to the river

TMWA Benefit:

This project supports the TRF Grant Priorities V, VI, VII, and VIII - *Support to Rehabilitation of Local Tributary Creeks and Drainage Courses, Stewardship and Environmental Awareness, Meet Multiple Objectives, and Leverage Stakeholder Assets and Participation.* KTMB educates and informs residents and visitors about the importance of maintaining a healthy river; how noxious weeds negatively affect native plant communities, habitats, and watershed; how litter and pollution are harmful to human health,

wildlife, the local environment and economy; and collaborates to create a cleaner community while saving taxpayer dollars.

Project #218: Dividing the Waters Conference “Sustainable Water Rights Management in Times of Shortage” at Stanford Law School

Organization: The National Judicial College

Amount Requested: \$3,092

Amount Recommended: \$1,000

Organizational Match: \$1,030 (Cash)

Project Description:

The goal of convening the Dividing the Waters Conference on "Sustainable Water Rights Management in Times of Shortage" is to provide judges who hear water law cases with the information and insights they need to make informed and thoughtful decisions about the allocation of this country's precious water resources during a major drought. The course will improve judges' abilities to resolve water conflicts in ways that are faithful to the law, science and practicalities of water rights management. Specific learning objectives will be prepared for each segment of the program, and faculty will be held accountable for reaching these objectives.

The measurable outcomes resulting from judges completing the conference will include the following:

- a. Understand how the law grapples with problems of water scarcity
- b. Be able to evaluate and weigh scientific evidence relevant to resolving water disputes
- c. Be better prepared to make principled decisions about the use of water during scarcity

TMWA Benefit:

The project advances three of TRF's grant priorities: (a) Priority II Watershed Improvements: (b) Priority VI Stewardship and Environmental Awareness, and (c) Priority VIII, Leverage Stakeholder Assets and Participation and Priority.

Project #219: Mount Rose Noxious Weed Monitoring and Treatment #7

Organization: Friends of Nevada Wilderness

Amount Requested: \$24,094

Amount Recommended: \$24,094

Organizational Match: \$2,446 (Cash) \$10,080 (In-Kind)

Project Description:

Friends of Nevada Wilderness seeks to treat approximately 75 acres of noxious weeds on Humboldt-Toiyabe National Forest lands within the Truckee River Watershed. The overall goal of the Mount Rose Wilderness Noxious Weed Monitoring and Treatment Project is to protect the water quality of the Truckee River and its watershed. Specifically, our goal is to treat noxious weeds at their source to mitigate their spread, monitor known weeds sites for changes and growth, and identify any new weed activity or infestations. Noxious weeds threaten the biodiversity, wildlife habitat, soil productivity, water quality, and recreational resources of the Mt. Rose Wilderness. By removing them we will help retain and improve watershed health. Staff will lead volunteers to known locales of noxious weeds, removing them with shovels and clippers as necessary. Staff and volunteers will also monitor previously identified and/or treated sites and scout the 2017 Hunter creek Fire perimeter and helicopter loading points.

TMWA Benefit:

The grant proposal is in line with many of the grant priorities outlined by the TRF, specifically priority #1 (Aquatic Invasive Species); priority #2 (Watershed Improvements); and priority #6 (Stewardship and Environmental Awareness). Noxious weeds, specifically musk thistle, poses a significant threat to the Truckee River Watershed. Through volunteer-powered stewardship projects, we seek to improve the Truckee River Watershed by removing these noxious weeds. Reducing the number of weeds in the Hunter Creek area (a main tributary to the Truckee River) will improve the water quality, reduce soil erosion, and slow the spread further downstream, as well as enhance the recreation qualities of the beloved Hunter Creek Trail. Our long-standing Wilderness Weed Warriors program seeks to both engage and educate the public on the Importance of noxious weed management and it is our hope that after one project with us, volunteers have a basic understanding of the effect of noxious weeds on plant diversity, wildlife habitat, and water and soil quality. By educating the public on these issues, we can inspire more stewardship and environmental awareness of the Truckee Meadows.

Project #220: Washoe County Parks and Open Space Weed Treatment and Revegetation Project along the Truckee River

Organization: Washoe County Parks and Open Space

Amount Requested: \$45,000

Amount Recommended: \$45,000

Organizational Match: \$16,200 (Cash) \$1,600 (In-Kind)

Project Description:

This project would remove noxious and invasive weeds and re-establish native vegetation in Washoe County Parks and Open Space areas along the Truckee River corridor. Project implementation would include weed inventory, GIS mapping and reporting, chemical and mechanical treatments, re-vegetation, and monitoring. A combination of Washoe County staff time, contracts, and volunteer efforts would be used to implement the project. In previous years, a majority of the weed inventory and treatment in Washoe County Parks and Open Spaces along the Truckee River was conducted by the Nevada Land Trust using Truckee River Funds and in partnership with the Nevada Division of Forestry (NDF) using

Medusahead Grant funds. Since the Nevada Land Trust weed program has ended, Washoe County Parks would like to continue with noxious weed monitoring and treatments to improve fish and wildlife habitat, enhance recreational opportunities, improve water quality through soil stabilization, reduce fire hazard, and increase the visual quality of parks.

TMWA Benefit:

The proposed project advances Truckee River Fund grant priorities II, IV, VII, and VIII. Managing noxious weeds and re-establishing native vegetation along the Truckee River corridor helps to improve water quality by stabilizing soils and reducing erosion potential and sedimentation as identified in Priority II. The proposed project advances Priority IV through re-vegetation of upland areas which will help to improve watershed resiliency and targeted efforts in Bartley Ranch Regional Park which will focus on restoring native upland vegetation in a previously burned area. Priority VIII is advanced through Washoe County's partnership with multiple stakeholders including the Nevada Land Trust (One Truckee River Initiative), Keep Truckee Meadows Beautiful, Nevada Department of Wildlife, Nevada Department of Agriculture, and Nevada Division of Forestry to identify restoration needs and leverage funding sources for projects in the Truckee River Corridor.

Project #221: River Restroom Project lead by One Truckee River (OTR)

Organization: One Truckee River (Nevada Land Trust as fiscal agent)

Amount Requested: \$124,976

Amount Recommended: \$124,976

Organizational Match: \$31,244 (Cash)

***Note:** Funding is subject to OTR securing a funding partner to fund O&M and Outreach costs.

Project Description:

The River Restroom Project's (the Project) goal is to improve the Truckee River and Pyramid Lake's water quality by the establishment and support of 19 public restrooms along the Tahoe- Pyramid Trail, which follows the Truckee River for 114 miles from Lake Tahoe to Pyramid Lake. Since 2018, OTR's core staff has focused on supporting collaborations with local government entities and nonprofits to increase public restrooms along the Truckee River. From that work these short-term goals emerged to support the Project: 1) Expand the Project concept to garner more support, 2) Provide outreach and connection with currently homeless river users, and 3) Grow One Truckee River to build capacity and engage with residents along the river.

The measurable Project outcomes are to:

- A. Finalize the River Restroom Project Plan with key stakeholders by:
 - a. Securing at least two more key partners who will financially support the Project
 - b. Developing and implementing a strategic communication plan

- c. Conducting a series of OTR partner retreats and meetings to build capacity and develop metrics to track OTR's phase one management plan's level of success
- B. Increase the understanding and respect for the Truckee River from Brodhead to John Champion parks by engaging with currently homeless river users and local residents within a one-mile radius of Brodhead Park. This work will aim to:
 - a. Decrease the trash within that area
 - b. Understand the perspectives of currently homeless river users and local residents surrounding river related issues and share this information with the OTR partnership
 - c. Increase participation in OTR Month, river walks, and Keep Truckee Meadows Beautiful (KTMB) river cleanups
- C. Increase OTR followers (newsletter subscribers, Facebook, Twitter, and Instagram) by 200% by:
 - a. Directing OTR AmeriCorps to be present at river-related events to encourage residents to follow OTR in real-time with incentive
 - b. Collaborate with other entities to lead public river-related events
 - c. Deepen relationships with key partners to utilize their audiences to promote OTR efforts

TMWA Benefit:

VI. *Stewardship and Environmental Awareness:* The Project is developing connections in the region to increase the understanding and engagement of the Truckee River ecosystem and related issues. Engagement will focus on nurturing a respect for the river. It will utilize KTMB's Watershed Warriors and (to be developed) river education focused on supporting the Project. The goal is to increase awareness of river-related issues and increase OTR followers. Connections will develop or increase within these populations;

- The currently homeless river users from Brodhead to John Champion parks
- Local residents within a mile radius of Brodhead Park
- Downtown residents from Mayberry to Rock parks
- Followers of key OTR partners
- Participants who attend river events

The Project will also support KTMB's River Clean-Up to cover Brodhead to John Champion parks, OTR Month, neighborhood river walks, hosting a collaborative event with Truckee Meadows Tomorrow, work with Change Point to enhance needle return, work with Turning Point to build OTR capacity and develop trackable metrics for OTR success.

- VII. *Meet Multiple Objectives:* The Project's short-term goals will...
 - Support the establishment of a new restroom along the Truckee River, which will support the long-term goal to meet the total restroom needs from Tahoe to Pyramid. • Create opportunities to connect with residents by utilizing KTMB's Watershed Warriors education and supporting this education to incorporate Project goals
 - Develop a connection with the currently homeless river users to foster an increased respect for the river and build a stronger network from this subculture to the OTR partnership
- VIII. *Leverage Stakeholder Assets and Participation:* One Truckee River will ...
 - Align the Project's goals with these key Project partners: TMWA, NLT, and KTMB

- Recognize, honor, and work to leverage past TRF support of OTR and KTMB
- Work to engage additional partners to align with the Project: Tahoe-Pyramid Trail, Downtown Reno Partnership
- Engage with other nonprofits to explore collaboration and possible partnership: Change Point, Community Health Alliance, Truckee Meadows Tomorrow, and Crossroads

Project #222: Galena Creek Ecological Restoration & Demonstration Project

Organization: Great Basin Institute (GBI)

Amount Requested: \$35,054

Amount Recommended: \$35,054

Organizational Match: \$141,196.94 (Cash) \$10,000 (In-Kind)

Project Description:

GBI seeks to expand learning opportunities, specifically for Title I students, in service-based outdoor education through collaboration with teachers, educational institutions, land management agencies, and local foundations. The Institute delivers educational programs while serving as lead organization at the Galena Creek Visitor Center, a partnership with Washoe County and the US Forest Service now entering its eleventh year. This collaboration aims to ensure students and teachers have access to integrated educational activities at outdoor sites of learning, regardless of financial limitations. Utilizing the infrastructure at the Regional Park, including the interpretative center, residential facility and historic fish hatchery, the Institute provides field study programs for schools and the general public.

For this project, the Institute will establish restoration sites along Galena Creek, an at-risk tributary of the Truckee River. Project staff will engage teachers and students in STEM-based learning relevant to curricula used in Washoe County schools and will introduce teachers and students to theories and concepts of applied restoration ecology and watershed stewardship. Students will be challenged with inquiry-based field studies at Galena where students actively develop site plans, then participate in hands-on restoration and monitoring activities. A post-trip classroom visit will capture learning outcomes through testing. This project addresses the need for civic local engagement in active restoration activities, providing integrated learning opportunities and ongoing stewardship of our local watershed.

TMWA Benefit:

This project supports multiple Truckee River Fund priorities that seek watershed improvements by reducing sediment, suspended solids, or TDS discharges to the Truckee River. The project also supports the development and implementation of educational programs relative to water, water quality and watershed protection.

Grant Priorities

Based upon the aforementioned discussion, TMWA recommends that the Advisors give preference to well-prepared and thought out grant requests for projects and programs that mitigate substantial threats to water quality and the watershed, particularly those threats upstream or nearby treatment and hydroelectric plant intakes:

- I. **Aquatic Invasive Species (AIS):** Projects/Programs that support the prevention or control of aquatic invasive species in the main stream Truckee River, Lake Tahoe, other tributaries and water bodies in the Truckee River system.
- II. **Watershed Improvements:** Projects that reduce erosion or sediment, suspended solids, or TDS discharges to the River. Projects or programs that are located within 303d (impaired waters) sections of the River should be considered, both in California and Nevada. Innovative techniques should be encouraged.
- III. **Local Stormwater Improvements:** Projects that are well designed which mitigate storm water run-off due to urbanization of the local watershed. Priority should be given to those improvement projects in close proximity to TMWA's water supply intakes and canals and which will improve the reliability and protect the quality of the community's municipal water supply.
- IV. **Re-Forestation and Re-Vegetation Projects:** Projects to restore forest and upland areas damaged by fire and historical logging operations, and to improve resiliency in drought situations. Projects/programs in this category should be given a high priority due to urbanization of the watershed and increased susceptibility of the urban and suburban watershed to wildfire.
- V. **Support to Rehabilitation of Local Tributary Creeks and Drainage Courses:** Practical projects to support water quality improvement in Gray Creek, Bronco Creek, Mogul Creek, Chalk Creek, Steamboat Creek and the North Truckee Drain.
- VI. **Stewardship and Environmental Awareness:** Support to Clean-Up programs and the development and implementation of educational programs relative to water, water quality and watershed protection.
- VII. **Meet Multiple Objectives:** Projects/Programs should identify opportunities to meet multiple water quality and watershed objectives as outlined above with preference given to those achieving multiple benefits.
- VIII. **Leverage Stakeholder Assets and Participation:** Projects/Program selection should include an assessment of various stakeholder interests in all aspects of river water quality, watershed protection, source water protection and species enhancement thereby leveraging available funds and other assets.

TRUCKEE MEADOWS WATER AUTHORITY
(TMWA)

RESOLUTION NO. 274

**A RESOLUTION APPROVING PROJECTS
FOR FUNDING UNDER THE TRUCKEE RIVER FUND**

WHEREAS, the Truckee Meadows Water Authority and the Community Foundation of Western Nevada (the "Community Foundation"), a Nevada non-profit corporation, have entered into an agreement creating The Truckee River Fund (the "Fund") to foster projects that protect and enhance water quality or water resources of the Truckee River, or its watershed;

WHEREAS, pursuant to the Fund Agreement, an Advisory Committee has solicited proposals from prospective beneficiaries of the Fund;

WHEREAS, the Advisory Committee has recommended projects for funding, as listed on Exhibit A, attached hereto;

WHEREAS, the Advisory Committee has the responsibility of securing preliminary approval for projects from the TMWA Board, which may disapprove projects for any reason, or may approve projects by resolution, subject to Community Foundation Board approval;

WHEREAS, the Community Foundation has advised the Advisory Committee that the projects' applicants are eligible beneficiaries of the Fund;

WHEREAS, the Board is only willing to fund Project #221, River Restroom Project lead by One Truckee River, in the amount recommended in Exhibit "A" if an additional funding partner is secured for operation and maintenance and outreach;

WHEREAS, the Board has reviewed the recommendation of the Advisory Committee and has found that the projects as listed on Exhibit A are consistent with the purposes of the Fund and merit funding; and

NOW THEREFORE, BE IT RESOLVED by the Board of Directors of the Truckee Meadows Water Authority:

The projects set forth on **Exhibit A** are approved for funding under the Truckee River Fund in the amount set forth in such Exhibit, subject to final authorization by the Community Foundation Board, and subject to the provisions of the Fund Agreement, including without limitation the requirements set forth in Article VC, and with respect to Project #221, subject further to securing an additional funding partner as set forth above.

NOW, THEREFORE, BE IT RESOLVED by the Board of Directors of the Truckee Meadows Water Authority,

Upon motion of _____, seconded by _____, the foregoing Resolution was passed and adopted on March 20, 2019 by the following vote of the Board:

Ayes: _____

Nays: _____

Abstain: _____ Absent: _____

Approved March 20, 2019

Vaughn Hartung, Chairman

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

On this 20th of March, 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

EXHIBIT A**Project #214: Watershed Education Initiative (WEI)****Organization:** Sierra Nevada Journeys (SNJ)**Amount Requested:** \$36,207**Amount Recommended:** \$36,207**Organizational Match:** \$2,917 (Cash) \$12,238 (In-Kind)**Project Description:**

The WEI delivers high-quality, experiential watershed education programs based on local issues associated with the Truckee River, such as water quality and invasive species while empowering youth to protect and enhance the quality of the Truckee River. Significantly increase parent engagement, citizen science, and volunteer components to increase the long-term sustainability of our Watershed Education Initiative, thereby fostering protection of the primary water source for our community.

Through this funding, SNJ will serve 875 students in 32 classrooms throughout northern Nevada. Conducted over a four-week period, WEI includes three in-class lessons, one field-study experience, pre- and post-assessments, classroom extension lessons for teachers, and family and community engagement. Curriculum developed and delivered by SNJ's team of credentialed teachers aligns to state and national standards and the North American Association for Environmental Education's Guidelines for Excellence.

TMWA Benefit:

WEI is an education program that addresses water, water quality and watershed protection for K-8th grade students, directly aligning with grant priority VI: *Stewardship and Environmental Awareness*. Students gain first-hand experience with the Truckee River, explore human impacts on their water source, and obtain skills and knowledge to help protect the watershed. The overall long-term program impacts include:

- Students understand important science concepts related to the Truckee River watershed and can articulate how their actions affect the Truckee River watershed and local ecosystems.
- Students understand important science concepts related to the Truckee River watershed and can articulate how their actions affect the Truckee River watershed and local ecosystems.
- Teachers use extension lessons and implement more hands-on exploration of the watershed. Parents and community members engage in watershed education directly through WEI volunteer
- The health of the Truckee River watershed and local ecosystems improves as students and their families adopt environmental stewardship practices that help reduce water pollution and human impacts.

Project #215: Truckee Meadows Nature Study Area: First Year Operational Phase

Organization: Truckee Meadows Parks Foundation

Amount Requested: \$120,000

Amount Recommended: \$64,757

Organizational Match: \$60,000 (Cash)

Project Description:

Execute a community supported master plan to repurpose the former Rosewood Lakes Golf Course into the Truckee Meadows Nature Study Area. The nature study area will serve as an outdoor learning laboratory and community green space.

The property formerly known as the Rosewood Lakes Golf Course is one of the last vestiges of wetland habitat in the Truckee Meadows. The proposed Truckee Meadows Nature Study Area (TMNSA) has been overtaken by multiple non-native plant species listed on the Nevada Noxious Weed List and the (WSCWMA) high-priority list. Noxious weeds present include, but are not limited to, tall whitetop (*Lepidium latifolium*), poison hemlock (*Conium maculatum*), and puncture vine (*Tribulus terrestris*).

Over the course of this operational year, environmental data will be collected, analyzed and used to evaluate effectiveness of the different restoration practices. Techniques can then be adjusted to ensure best practices are being utilized for weed removal. In the summer of 2020, TMNSA is scheduled to open to the public and host educational programs and stewardship events to engage and educate the community regarding invasive plants and the watersheds they affect. A restored wetland will allow these programs to better show the community what effect noxious weed removal can have on an environment.

TMWA Benefit:

The Truckee Meadows Nature Study Area (TMNSA) project advances priorities VI (Stewardship and Environmental Awareness) and VIII (Leverage Stakeholder Assets and Participation). The TMNSA project advances priority VI in that the Parks Foundation will use TMNSA as an outdoor classroom where community members can participate in volunteer and restoration events and educational programs related to weed awareness, water, water quality, and watershed protection. The TMNSA project will involve multiple stakeholders, including the City of Reno, Nevada Department of Wildlife, Nevada Land Trust (One Truckee River), University of Nevada Reno, The Nature Conservancy, Truckee River Flood Management Authority, Walker Basin Conservancy, and Lahontan Audubon Society to encourage collaborative efforts in all aspects of river water quality, watershed protection, source water protections, species enhancement, and to promote the missions of all involved agencies. The Parks Foundation has leveraged community members from a breadth of disciplines willing to contribute time and expertise for the TMNSA advisory board, therefore advancing priority VIII.

Project #216: McIver Dairy Meadow Restoration Project

Organization: Truckee River Watershed Council

Amount Requested: \$200,000

Amount Recommended: \$161,000

Organizational Match: \$119,300 (Cash)

Project Description:

The funding request is to Complete construction of the McIver Dairy Meadow Restoration Project to reduce excess sediment discharge to the main stem of the Truckee River.

The project is a wetland and stream restoration project that seeks to reduce excess sedimentation of the Truckee River by addressing degradation caused by modern and historic land uses. We are requesting funding to help complete the implementation of the project.

TMWA Benefit:

Watershed Improvements. The project will decrease excess sedimentation to the Truckee River and support attainment of the 303 (d) listed TMDL pollutant by restoring the hydrologic function of the McIver Dairy Meadow. The restored floodplain and wetlands will attenuate high flows and filter runoff before it drains to the Truckee River.

Local Stormwater Improvements. The project site receives stormwater inputs from adjacent roads and commercial development. The project will provide natural treatments for those inputs before reaching the main stem of the Truckee River. Note: the Town of Truckee and Caltrans are project partners and are addressing required stormwater management regulations.

Meet Multiple Objectives. The projects meet the watershed and water quality objectives listed above. It also benefits wetlands and instream habitats, native fish and wildlife species, flood attenuation, and carbon sequestration.

Leverage Stakeholder Assets and Participation. The project has leveraged partner participation and assets from the outset. The Town of Truckee was instrumental in early funding for the project and has been critical in completing the design and environmental compliance for the project.

Project #217: 2019 Fall Truckee River Cleanup, Adopt-A-River & Adult Outreach Education

Organization: Keep Truckee Meadows Beautiful (KTMB)

Amount Requested: \$54,500

Amount Recommended: \$53,000

Organizational Match: \$103,900 (Cash) \$57,407 (In-Kind)

Project Description:

The Truckee River Cleanup is designed to address both the direct and immediate presence of weeds, litter and non point pollution runoff, and the underlying causes of these challenges by educating and engaging the community. KTMB uses proven approaches to "Cleanups" that have been shown to save tax payers money. According to Keep America Beautiful "About 85 percent

of littering is the result of people's attitudes Changing individual behaviors is the key to preventing litter -and environmental cues can make a difference." By engaging volunteers and community partners in this effort, as well as having consistent outreach and messaging to support behavior change, KTMB is helping to better protect the water resources of the Truckee River.

- Remove invasive weeds and trash from along the Truckee River corridor and its tributaries during KTMB's Truckee River Cleanup Day
- Monitor the impact of current cleanup efforts
- Engage more year-round cleanup support through KTMB's Adopt-A-River program
- Provide community education and outreach to decrease environmental threats to the river

TMWA Benefit:

This project supports the TRF Grant Priorities V, VI, VII, and VIII - *Support to Rehabilitation of Local*

Tributary Creeks and Drainage Courses, Stewardship and Environmental Awareness, Meet Multiple

Objectives, and Leverage Stakeholder Assets and Participation. KTMB educates and informs residents and visitors about the importance of maintaining a healthy river; how noxious weeds negatively affect native plant communities, habitats, and watershed; how litter and pollution are harmful to human health, wildlife, the local environment and economy; and collaborates to create a cleaner community while saving taxpayer dollars.

Project #218: Dividing the Waters Conference "Sustainable Water Rights Management in Times of Shortage" at Stanford Law School

Organization: The National Judicial College

Amount Requested: \$3,092

Amount Recommended: \$1,000

Organizational Match: \$1,030 (Cash)

Project Description:

The goal of convening the Dividing the Waters Conference on "Sustainable Water Rights Management in Times of Shortage" is to provide judges who hear water law cases with the information and insights they need to make informed and thoughtful decisions about the allocation of this country's precious water resources during a major drought. The course will improve judges' abilities to resolve water conflicts in ways that are faithful to the law, science and practicalities of water rights management. Specific learning objectives will be prepared for each segment of the program, and faculty will be held accountable for reaching these objectives.

The measurable outcomes resulting from judges completing the conference will include the following:

- a. Understand how the law grapples with problems of water scarcity
- b. Be able to evaluate and weigh scientific evidence relevant to resolving water disputes

- c. Be better prepared to make principled decisions about the use of water during scarcity

TMWA Benefit:

The project advances three of TRF's grant priorities: (a) Priority II Watershed Improvements: (b) Priority VI Stewardship and Environmental Awareness, and (c) Priority VIII, Leverage Stakeholder Assets and Participation and Priority.

Project #219: Mount Rose Noxious Weed Monitoring and Treatment #7

Organization: Friends of Nevada Wilderness

Amount Requested: \$24,094

Amount Recommended: \$24,094

Organizational Match: \$2,446 (Cash) \$10,080 (In-Kind)

Project Description:

Friends of Nevada Wilderness seeks to treat approximately 75 acres of noxious weeds on Humboldt-Toiyabe National Forest lands within the Truckee River Watershed. The overall goal of the Mount Rose Wilderness Noxious Weed Monitoring and Treatment Project is to protect the water quality of the Truckee River and its watershed. Specifically, our goal is to treat noxious weeds at their source to mitigate their spread, monitor known weeds sites for changes and growth, and identify any new weed activity or infestations. Noxious weeds threaten the biodiversity, wildlife habitat, soil productivity, water quality, and recreational resources of the Mt. Rose Wilderness. By removing them we will help retain and improve watershed health. Staff will lead volunteers to known locales of noxious weeds, removing them with shovels and clippers as necessary. Staff and volunteers will also monitor previously identified and/or treated sites and scout the 2017 Hunter creek Fire perimeter and helicopter loading points.

TMWA Benefit:

Our grant proposal is in line with many of the grant priorities outlined by the TRF, specifically priority #1 (Aquatic Invasive Species); priority #2 (Watershed Improvements); and priority #6 (Stewardship and Environmental Awareness). Noxious weeds, specifically musk thistle, poses a significant threat to the Truckee River Watershed. Through volunteer-powered stewardship projects, we seek to improve the Truckee River Watershed by removing these noxious weeds. Reducing the number of weeds in the Hunter Creek area (a main tributary to the Truckee River) will improve the water quality, reduce soil erosion, and slow the spread further downstream, as well as enhance the recreation qualities of the beloved Hunter Creek Trail. Our long-standing Wilderness Weed Warriors program seeks to both engage and educate the public on the importance of noxious weed management and it is our hope that after one project with us, volunteers have a basic understanding of the effect of noxious weeds on plant diversity, wildlife habitat, and water and soil quality. By educating the public on these issues, we can inspire more stewardship and environmental awareness of the Truckee Meadows.

Project #220: Washoe County Parks and Open Space Weed Treatment and Revegetation Project along the Truckee River

Organization: Washoe County Parks and Open Space

Amount Requested: \$45,000

Amount Recommended: \$45,000

Organizational Match: \$16,200 (Cash) \$1,600 (In-Kind)

Project Description:

This project would remove noxious and invasive weeds and re-establish native vegetation in Washoe County Parks and Open Space areas along the Truckee River corridor. Project implementation would include weed inventory, GIS mapping and reporting, chemical and mechanical treatments, re-vegetation, and monitoring. A combination of Washoe County staff time, contracts, and volunteer efforts would be used to implement the project. In previous years, a majority of the weed inventory and treatment in Washoe County Parks and Open Spaces along the Truckee River was conducted by the Nevada Land Trust using Truckee River Funds and in partnership with the Nevada Division of Forestry (NDF) using Medusahead Grant funds. Since the Nevada Land Trust weed program has ended, Washoe County Parks would like to continue with noxious weed monitoring and treatments to improve fish and wildlife habitat, enhance recreational opportunities, improve water quality through soil stabilization, reduce fire hazard, and increase the visual quality of parks.

TMWA Benefit:

The proposed project advances Truckee River Fund grant priorities II, IV, VII, and VIII. Managing noxious weeds and re-establishing native vegetation along the Truckee River corridor helps to improve water quality by stabilizing soils and reducing erosion potential and sedimentation as identified in Priority II. The proposed project advances Priority IV through re-vegetation of upland areas which will help to improve watershed resiliency and targeted efforts in Bartley Ranch Regional Park which will focus on restoring native upland vegetation in a previously burned area. Priority VIII is advanced through Washoe County's partnership with multiple stakeholders including the Nevada Land Trust (One Truckee River Initiative), Keep Truckee Meadows Beautiful, Nevada Department of Wildlife, Nevada Department of Agriculture, and Nevada Division of Forestry to identify restoration needs and leverage funding sources for projects in the Truckee River Corridor.

Project #221: River Restroom Project lead by One Truckee River (OTR)

Organization: One Truckee River (Nevada Land Trust as fiscal agent)

Amount Requested: \$124,976

Amount Recommended: \$124,976

Organizational Match: \$31,244 (Cash)

***Note:** Funding is subject to OTR securing a funding partner to fund O&M and Outreach costs.

Project Description:

The River Restroom Project's (the Project) goal is to improve the Truckee River and Pyramid Lake's water quality by the establishment and support of 19 public restrooms along the Tahoe-Pyramid Trail, which follows the Truckee River for 114 miles from Lake Tahoe to Pyramid Lake. Since 2018, OTR's core staff has focused on supporting collaborations with local government entities and nonprofits to increase public restrooms along the Truckee River. From that work these short-term goals emerged to support the Project: 1) Expand the Project concept to garner more support, 2) Provide outreach and connection with currently homeless river users, and 3) Grow One Truckee River to build capacity and engage with residents along the river.

The measurable Project outcomes are to:

- A. Finalize the River Restroom Project Plan with key stakeholders by:
 - a. Securing at least two more key partners who will financially support the Project
 - b. Developing and implementing a strategic communication plan
 - c. Conducting a series of OTR partner retreats and meetings to build capacity and develop metrics to track OTR's phase one management plan's level of success
- B. Increase the understanding and respect for the Truckee River from Brodhead to John Champion parks by engaging with currently homeless river users and local residents within a one-mile radius of Brodhead Park. This work will aim to:
 - a. Decrease the trash within that area
 - b. Understand the perspectives of currently homeless river users and local residents surrounding river related issues and share this information with the OTR partnership
 - c. Increase participation in OTR Month, river walks, and Keep Truckee Meadows Beautiful (KTMB) river cleanups
- C. Increase OTR followers (newsletter subscribers, Facebook, Twitter, and Instagram) by 200% by:
 - a. Directing OTR AmeriCorps to be present at river-related events to encourage residents to follow OTR in real-time with incentive
 - b. Collaborate with other entities to lead public river-related events
 - c. Deepen relationships with key partners to utilize their audiences to promote OTR efforts

TMWA Benefit:

VI. *Stewardship and Environmental Awareness:* The Project is developing connections in the region to increase the understanding and engagement of the Truckee River ecosystem and related issues. Engagement will focus on nurturing a respect for the river. It will utilize KTMB's Watershed Warriors and (to be developed) river education focused on supporting the Project. The goal is to increase awareness of river-related issues and increase OTR followers.

Connections will develop or increase within these populations;

- The currently homeless river users from Brodhead to John Champion parks
- Local residents within a mile radius of Brodhead Park
- Downtown residents from Mayberry to Rock parks

- Followers of key OTR partners
- Participants who attend river events

The Project will also support KTMB's River Clean-Up to cover Brodhead to John Champion parks, OTR Month, neighborhood river walks, hosting a collaborative event with Truckee Meadows Tomorrow, work with Change Point to enhance needle return, work with Turning Point to build OTR capacity and develop trackable metrics for OTR success.

VII. *Meet Multiple Objectives:* The Project's short-term goals will...

- Support the establishment of a new restroom along the Truckee River, which will support the long-term goal to meet the total restroom need from Tahoe to Pyramid. With the restroom need met, all river users will be able to urinate and defecate in the proper facilities instead of along the river banks entering the region's drinking water source
- Create opportunities to connect with residents by utilizing KTMB's Watershed Warriors education and supporting this education to incorporate Project goals
- Develop a connection with the currently homeless river users to foster an increased respect for the river and build a stronger network from this subculture to the OTR partnership

VIII. *Leverage Stakeholder Assets and Participation:* One Truckee River will ...

- Align the Project's goals with these key Project partners: TMW A, NL T, and KTMB
- Recognize, honor, and work to leverage past TRF support of OTR and KTMB
- Work to engage additional partners to align with the Project: Tahoe-Pyramid Trail, Downtown Reno Partnership, and Renown Health
- Engage with other nonprofits to explore collaboration and possible partnership: Change Point, Community Health Alliance, Truckee Meadows Tomorrow, and Crossroads

Project #222: Galena Creek Ecological Restoration & Demonstration Project

Organization: Great Basin Institute

Amount Requested: \$35,054

Amount Recommended: \$35,054

Organizational Match: \$141,196.94 (Cash) \$10,000 (In-Kind)

Project Description:

OBI seeks to expand learning opportunities, specifically for Title I students, in service-based outdoor education through collaboration with teachers, educational institutions, land management agencies, and local foundations. The Institute delivers educational programs while serving as lead organization at the Galena Creek Visitor Center, a partnership with Washoe County and the US Forest Service now entering its eleventh year. This collaboration aims to ensure students and teachers have access to integrated educational activities at outdoor sites of learning, regardless of financial limitations. Utilizing the infrastructure at the Regional Park,

including the interpretative center, residential facility and historic fish hatchery, the Institute provides field study programs for schools and the general public.

For this project, the Institute will establish restoration sites along Galena Creek, an at-risk tributary of the Truckee River. Project staff will engage teachers and students in STEM-based learning relevant to curricula used in Washoe County schools and will introduce teachers and students to theories and concepts of applied restoration ecology and watershed stewardship. Students will be challenged with inquiry-based field studies at Galena where students actively develop site plans, then participate in hands-on restoration and monitoring activities. A post-trip classroom visit will capture learning outcomes through testing. This project addresses the need for civic local engagement in active restoration activities, providing integrated learning opportunities and ongoing stewardship of our local watershed.

TMWA Benefit:

This project supports multiple Truckee River Fund priorities that seek watershed improvements by reducing sediment, suspended solids, or TDS discharges to the Truckee River. The project also supports the development and implementation of educational programs relative to water, water quality and watershed protection.



Cover Sheet

Date: January 28, 2019

Organization Name:	Sierra Nevada Journeys																				
Type:	501(c)(3) EIN#01-0881587	Governmental entity? No																			
Address:	190 E. Liberty Street																				
Project Name:	Watershed Education Initiative																				
Amount requested: \$36,207	Website: www.sierranevadajourneys.org																				
This funding will be used to (complete this sentence with a max of 2 sentences):	Deliver high-quality, experiential watershed education programs based on local issues associated with the Truckee River, such as water quality and invasive species while empowering youth to protect and enhance the quality of the Truckee River. Significantly increase parent engagement, citizen science, and volunteer components to increase the long-term sustainability of our Watershed Education Initiative, thereby fostering protection of the primary water source for our community.																				
Key People:	Director:	Eaton Dunkelberger, CEO																			
	Board Chair:	Shane Tucker																			
	Project Contact:	Name:	Sean Hill																		
		Position:	Education Director																		
		Phone:	775-355-1688																		
		Fax:	775-329-1689																		
		Email:	sean@sierranevadajourneys.org																		
Organization Mission:																					
Has your organization received other grants from the Truckee River Fund? Yes X No (use additional page if necessary)	If yes, <table border="1"> <tr> <td>Date awarded:</td> <td>October 2018</td> </tr> <tr> <td>Project title:</td> <td>Watershed Education Initiative</td> </tr> <tr> <td>Amount of Award:</td> <td>\$36,207</td> </tr> <tr> <td>Date awarded:</td> <td>March 2018</td> </tr> <tr> <td>Project title:</td> <td>Watershed Education Initiative</td> </tr> <tr> <td>Amount of Award:</td> <td>\$46,376</td> </tr> <tr> <td>Date awarded:</td> <td>October 2017</td> </tr> <tr> <td>Project title:</td> <td>Watershed Education Initiative</td> </tr> <tr> <td>Amount of Award:</td> <td>\$35,065</td> </tr> </table>			Date awarded:	October 2018	Project title:	Watershed Education Initiative	Amount of Award:	\$36,207	Date awarded:	March 2018	Project title:	Watershed Education Initiative	Amount of Award:	\$46,376	Date awarded:	October 2017	Project title:	Watershed Education Initiative	Amount of Award:	\$35,065
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DESCRIPTION OF PROJECT UNDER CONSIDERATION

Indicate the description that best fits the project you are proposing. Mark no more than three categories:

- ☐ A. Projects that improve bank or channel stabilization and decrease erosion.
- ☐ B. Structural controls or Low Impact Development (LID) projects on tributaries and drainages to the Truckee River where data supports evidence of pollution and/or sediments entering the Truckee River.
- ☐ C. Projects that remove pollution from the Truckee River.
- ☐ D. Projects that remove or control invasive aquatic species or terrestrial invasive plant species that are adverse to water supply.¹
- ☒ E. Other projects that meet the evaluation criteria.

¹ For proposals related to weed control/eradication, contact Lauren Renda at the Community Foundation of Western Nevada for additional criteria. lrenda@nevadafund.org; 775-333-5499.



1. Specific project goals and measurable outcomes and how you will measure and report them.

During the past eight years, Sierra Nevada Journeys' (SNJ) Watershed Education Initiative (WEI) has impacted nearly 8,000 students and over 475 educators. This has been made possible in no small part thanks to the generous support of the Truckee River Fund. WEI educates students about the local watershed including human impacts on the watershed, water quality, and watershed protection. While in-class and field-based lessons reach students and educators, WEI's additional outreach components serve to engage families and community volunteers. Through WEI, we will successfully meet the following objectives:

Outputs	Outcomes
Deliver WEI to 875 K-8th grade students from throughout northern Nevada.	80% of students can correctly identify, label, and diagram the Truckee River Watershed. 70% of students will use knowledge of storm drains to describe how individuals and communities can protect watersheds.
All students receive first-hand experience with the local watershed through a field-study on the Truckee River or one of its tributaries.	70% of students will define what happens to rainwater and associated non-point source pollutants after they enter a storm drain. 95% of students participating in "Hands in the River" curriculum complete a Truckee River issue case study on water quality in the watershed.
97 parents and community members volunteer for the program and serve 583 educational service hours.	95% of teachers will report that the program is helping to build critical thinking skills among their students.
Provide 32 teachers with WEI extension lessons.	

Methods to measure outcomes: Pre- and post-assessments are completed by each participating student. Each teacher completes a survey. Both are scored and compiled by SNJ staff. A third-party consultant from the NV Department of Education's assessment office designed the assessment tool.

Methods to measure outputs: SNJ's Education Department manages an internal database that tracks details on participating students, schools, parents and volunteers.

- 2. Project location** The three main field sites for this program will be the Truckee River at the McCarran Ranch Preserve, (managed by The Nature Conservancy in Nevada) Galena Creek Regional Park (managed by Washoe County Regional Parks and Open Space), and the Oxbow Nature Study Area (managed by the Nevada Department of Wildlife). These locations are convenient and close to home for local students, increasing their sense of ownership, awareness and comfort with accessible nature areas.

3. Project description.

Why WEI? A recent study from The Nature Conservancy reveals that students who have had a personal experience in nature are:



- Significantly more likely to express concern about water pollution, air pollution, global warming, and the condition of the environment;
- More than twice as likely to “strongly agree” that protecting the environment is “cool”;
- More than twice as likely to consider themselves a “strong environmentalist,”; and
- Substantially more likely to express interest in studying the environment in college, working in a job related to nature, or joining an environmental club at their school. ²

Unfortunately, the study also notes that these personal experiences are increasingly uncommon reporting that, “The vast majority of today’s children use a computer, watch TV, or play video games on a daily basis, but only about 10 percent say they are spending time outdoors every day.” Through WEI, SNJ strives to provide local youth with opportunities to have a meaningful experience outdoors, thereby increasing their likelihood to value nature, engage with it, and feel empowered to care for it.

Through this funding, SNJ will serve 875 students in 32 classrooms throughout northern Nevada. Conducted over a four-week period, WEI includes three in-class lessons, one field-study experience, pre- and post-assessments, classroom extension lessons for teachers, and family and community engagement. Curriculum developed and delivered by SNJ’s team of credentialed teachers aligns to state and national standards and the North American Association for Environmental Education’s Guidelines for Excellence.

SNJ’s Watershed Education Initiative Overview

The **school-based** component includes three in-class lessons (4.5) hours of engaging instruction. Students participate in hands-on lessons that incorporate the Truckee River watershed, the water cycle, point and non-point source pollution, invasive species, sources and impacts of erosion, water conservation and stewardship.

The **field-based** component includes approximately one day of outdoor science education as students hike around the Truckee or one of its tributaries. Students seek clues related to the health of the watershed and determine water quality by collecting and identifying macro-invertebrates or conducting chemical tests such as pH, dissolved oxygen, or turbidity. Students use evidence to make a conclusion about the health of the Truckee River Watershed.

SNJ provides five ready-to-use classroom **extension lessons for teachers** that help students prepare for and review learning objectives as well as extend and reinforce each SNJ-directed lesson. By explicitly modeling teaching methods and reinforcing with SNJ’s classroom lessons we strive to support educators and multiply the effects of our student programming.

To encourage **family engagement**, SNJ provides teachers with a template to email parents with a summary and pictures of their child’s experience after each unit along with information for family-based discussion of the curriculum. This increases parent involvement, which allows individuals within families to reinforce the attitudes, motivations, skills, and behaviors learned and to foster parent–student communication about watershed-related topics.

The **volunteer component** of the program builds our capacity to involve the local community and broadens accessibility to our programming for low-income schools by helping to keep costs low. Volunteers, who are primarily comprised of retired educators, naturalists, and parent chaperones, also consistently report learning tremendously in their participation with WEI.

4. Grant priorities.

WEI is an education program that addresses water, water quality and watershed protection for K-8th grade students, directly aligning with grant priority VI: *Stewardship and Environmental Awareness*. Students gain first-hand experience with the Truckee River, explore human impacts on their water source,

² The Nature Conservancy, Connecting America’s Youth to Nature, 2012 Retrieved from: <http://www.nature.org/newsfeatures/kids-in-nature/youth-and-nature-poll-results.pdf>



and obtain skills and knowledge to help protect the watershed. The overall long-term program impacts include:

- Students understand important science concepts related to the Truckee River watershed and can articulate how their actions affect the Truckee River watershed and local ecosystems.
- Students understand important science concepts related to the Truckee River watershed and can articulate how their actions affect the Truckee River watershed and local ecosystems.
- Teachers use extension lessons and implement more hands-on exploration of the watershed. Parents and community members engage in watershed education directly through WEI volunteer
- Health of the Truckee River watershed and local ecosystems improves as students and their families adopt environmental stewardship practices that help reduce water pollution and human impacts.

5. **Permitting.** - N/A

6. **Future land use.** – N/A

7. **If future phases of the project will be needed, identify anticipated sources of funding.** - N/A





8. **Principals involved:**

Credentialed science educators on the SNJ staff will be directly responsible for coordination and delivery of watershed education programs. Sean Hill, SNJ's Education Director, will oversee the implementation of WEI. Sean is a former science teacher and holds a Bachelor of Science degree from Montana State University and a Master of Science degree in Human Dimensions of Natural Resources from Colorado State University. His passion for outdoor science education was inspired by his service as a Graduate Fellow for the Walking Mountains Science School in Avon, Colorado, and from his time spent as a science teacher in the inner-city during his service with Teach For America.

9. Number of **staff positions involved** in project: Fulltime **3** Part-time **6**

10. Number of **volunteers involved:** **97** volunteers (including field educators and parent volunteers) will donate **583** volunteer hours during WEI's field-study portion of the program, increasing parents and community member access to watershed education.

11. **Time Line of Project.**

Deliverables	2019					
	July	Aug	Sep	Oct	Nov	Dec
Recruitment/Scheduling: SNJ outreach efforts are continuous. Outreach is now underway for the spring semester. SNJ targets schools that participated in watershed programming in the past and new schools that have not received WEI.						
Program Delivery: SNJ instructors will deliver engaging watershed education lessons to 875 students through school-based and field-based programs.						
Evaluation: SNJ staff will compile student assessment data throughout the grant period. These results will inform any changes to the curriculum to ensure effective programming in the future.						
Final Report: Submit the final report to the Community Foundation of Western Nevada. This report will include a summary of the work completed, student assessment data, and a budget update.						



12. Success.

Outputs	Tracking
<p>Deliver watershed education to 875 K-8th grade students from throughout northern Nevada.</p> <p>All students receive first-hand experience with the local watershed through a field-study on the Truckee River or one of its tributaries.</p> <p>97 parents and community members volunteer for the program and serve 583 service hours.</p> <p>Provide 32 teachers with WEI extension lessons.</p>	<p>Internal SNJ database – Updated regularly throughout the year</p>
Outcomes	Tracking
<p>80% of students can correctly identify, label, and diagram the Truckee River Watershed.</p> <p>70% of students will use knowledge of storm drains to describe how individuals and communities can protect watersheds.</p> <p>80% of students will define what happens to rainwater and associated non-point source pollutants after they enter a storm drain.</p> <p>95% of students participating in “Hands in the River” curriculum complete a Truckee River issue case study on water quality in the watershed.</p> <p>90% of teachers will report that the program is helping to build critical thinking skills among their students.</p>	<p>Pre- and post-assessments - reviewed after the end of each program and presented in report at end of grant period</p> <p>Teacher surveys</p>

13. Grant Match

Match amount to be provided:		\$15,155 (30% of requested funds)
Match details:	Match is:	
	Cash	\$ 2,917
		\$12,238
	In-kind	Note: Volunteer and in-kind hours may be calculated at a maximum rate of \$20/hour per individual. Indirect cost may not be counted as match.
For the cash portion of your match, is the funding already being held by the applicant for this project? Yes ___ No <u>X</u>		
Description of matching funds/in-kind donations:	In-kind match provided by field educator volunteers and parent volunteer hours.	



14. Project Budget
Watershed Education Initiative (WEI) Budget

Item	Description	Total	SNJ Match	Request
Program Coordinator/ Instructor	Program Instructor - In-class instruction (5 hours/class), field study (5 hours/class), Program prep and wrap up (10 hours/class), travel time (5 hours/class) = 25 hours per class / 27 kids per class	\$14,705	\$0	\$14,705
Education Director	Education Director -. Coordination (2 hours/class), Parent volunteer/chaperon communication and scheduling (1 hour/class), Field-study instruction (4.5 hours/class), Extension lessons (1 hour/class), Observations and management (3 hours/class) = 11.5 hours per class / 27 kids per class	\$13,044	\$0	\$13,044
Director of Communications	Director of Communications - Recruitment and extension lesson delivery = 2 hours per plan / 27 kids per class	\$1,815	\$0	\$1,815
Volunteers	An average of 3 volunteers per field-study dedicate 6 hours to helping guide and facilitate the program = 18 hours per class / 27 kids per class. Independent Sector Value of Volunteer time in Nevada = \$20.98/hour	\$12,238	\$12,238	\$0
Printing Costs	\$1 per student. Field-science journals are used by students and are an integral component to the education program. SNJ prints teacher packets with detailed information about delivery and implementation of the program, as well as student assessments for before and after each unit.	\$875	\$0	\$875
Program Supplies	\$1 per student. Funds supplies (pencils, glue sticks, popsicle sticks, etc.) used during hands-on student activities.	\$875	\$0	\$875
Travel	Avg. 15 miles roundtrip * 4 (3 class, 1 field) = 60 miles * .54 per mile (federal rate of reimbursement) per class / 27 kids per class	\$1,050	\$0	\$1,050
Student Transportation (School Bus)	Average \$90/trip per class / 27 kids per class	\$2,917	\$2,917	\$0
Overhead Costs	13% indirect/overhead rate (rent, utilities, phone, etc.) on personnel only.	\$3,843	\$0	\$3,843
		\$51,362	\$15,155	\$36,207



Cover Sheet

Date: February 4th, 2019

Organization Name:	Truckee Meadows Parks Foundation																				
Type:	501(c)(3) EIN# 45-4837735	Governmental entity? Y/ N																			
Address:	50 Cowan Drive, Reno, NV 89509																				
Project Name:	Truckee Meadows Nature Study Area: First Year Operational Phase																				
Amount requested: \$120,000	Website: tmparksfoundation.org																				
This funding will be used to (complete this sentence with a max of 2 sentences):	Execute a community supported master plan to repurpose the former Rosewood Lakes Golf Course into the Truckee Meadows Nature Study Area. The nature study area will serve as an outdoor learning laboratory and community green space.																				
Key People:	Director:	Heidi Anderson																			
	Board Chair:	Elisa Davis																			
	Project Contact:	Name:	Elena Larsen																		
		Position:	Wetland Restoration Program Director																		
		Phone:	(775) 360-6068																		
		Fax:	N/A																		
		Email:	elena@tmparksfoundation.org																		
Organization Mission:	Truckee Meadow Parks Foundation strives to enhance the quality of life for all citizens of the greater Reno-Sparks metropolitan area by ensuring the long-term sustainability and improvement of our parks. We accomplish this by offering park-based educational and recreational programs designed to increase community-wide awareness, appreciation, and stewardship of our parks.																				
Has your organization received other grants from the Truckee River Fund? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (use additional page if necessary)	If yes, <table border="1"> <tr> <td>Date awarded:</td> <td>October 4th, 2018</td> </tr> <tr> <td>Project title:</td> <td>Truckee Meadows Nature Study Area Project: Planning Phase</td> </tr> <tr> <td>Amount of Award:</td> <td>\$38,400</td> </tr> <tr> <td>Date awarded:</td> <td></td> </tr> <tr> <td>Project title:</td> <td></td> </tr> <tr> <td>Amount of Award:</td> <td></td> </tr> <tr> <td>Date awarded:</td> <td></td> </tr> <tr> <td>Project title:</td> <td></td> </tr> <tr> <td>Amount of Award:</td> <td></td> </tr> </table>			Date awarded:	October 4 th , 2018	Project title:	Truckee Meadows Nature Study Area Project: Planning Phase	Amount of Award:	\$38,400	Date awarded:		Project title:		Amount of Award:		Date awarded:		Project title:		Amount of Award:	
Date awarded:	October 4 th , 2018																				
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DESCRIPTION OF PROJECT UNDER CONSIDERATION

Indicate the description that best fits the project you are proposing. Mark no more than three categories:

- ☐ A. Projects that improve bank or channel stabilization and decrease erosion.
- ☐ B. Structural controls or Low Impact Development (LID) projects on tributaries and drainages to the Truckee River where data supports evidence of pollution and/or sediments entering the Truckee River.
- ☐ C. Projects that remove pollution from the Truckee River.
- ☒ D. Projects that remove or control invasive aquatic species or terrestrial invasive plant species that are adverse to water supply.³
- ☒ E. Other projects that meet the evaluation criteria.

NARRATIVE REQUIREMENTS

³ For proposals related to weed control/eradication, contact Lauren Renda at the Community Foundation of Western Nevada for additional criteria. lrenda@nevadafund.org; 775-333-5499.



Truckee Meadows Nature Study Area Project: First Year Operational Phase

1. Specific project goals and measurable outcomes and how you will measure and report them.

The overarching goal of the Truckee Meadows Nature Study Area (TMNSA) project is to repurpose the former Rosewood Lakes Golf Course into a high-quality wetland habitat and nature study area. TMNSA will serve as an outdoor learning laboratory where community members, families, and visitors come to understand the value of wetlands and the Truckee River watershed. The high level of accessibility makes this location an ideal spot for water and watershed education. The Parks Foundation has submitted an AmeriCorps operational grant with anticipated funding of \$151,909 for this purpose. During the first year of the operational phase, the wetland restoration program director will lead a team of 14 AmeriCorps wetland restoration technicians whose primary service responsibilities will be to remove undesirable invasive species while concurrently revegetating with competitive, native plant species. To establish this area as an educational and recreational site, AmeriCorps members will also build and maintain bridges and trails, construct bird blinds for wildlife viewing, develop and place interpretive signage, and lead community members in educational volunteer and restoration events. A restored wetland system will offer much more engaging educational programs to the community.

Restoration outcomes will be measured through a combination of qualitative and quantitative analyses including photo point sites and drone imagery, as well as transects plotted using GIS software. These evaluation techniques will allow Truckee Meadows Parks Foundation (TMPF) staff and AmeriCorps members to accurately assess restoration efforts. Assessments will include percent cover of invasive species removed and amount (number of individuals or pounds of seed) of native plants established. Outcomes will also include reaching 500 community members through educational programs and events. For each grant year, TMPF will seek match funding from multiple sources to continue long-term restoration. TMPF will submit a final report and self-evaluation to the Truckee River Fund and the Washoe Storey Cooperative Weed Management Area members (WSCWMA) in September 2020.

2. Project location.

The former Rosewood Lakes Golf Course is a 219-acre property owned by the City of Reno. It is located on the east side of Reno between the Reno-Tahoe International Airport and the Virginia Range. The parcel contains approximately 60 acres of wetland and is contiguous with Steamboat Creek, the most important tributary to the Truckee River (Horton 1997). The location is unique in that it borders both Reno and Sparks, making it highly accessible. Approximately 145 acres of the property are infested with target noxious weeds. See page eight for the proposed Truckee Meadows Nature Study Area site map.

3. Project description.

The property formerly known as the Rosewood Lakes Golf Course is one of the last vestiges of wetland habitat in the Truckee Meadows. The proposed TMNSA has been overtaken by multiple non-native plant species listed on the Nevada Noxious Weed List and the (WSCWMA) high-priority list. Noxious weeds present include, but are not limited to, tall whitetop (*Lepidium latifolium*), poison hemlock (*Conium maculatum*), and puncture vine (*Tribulus terrestris*). These invasive plant species are known to



TRUCKEE MEADOWS PARKS FOUNDATION

AWARENESS • APPRECIATION • STEWARDSHIP

03-20-19 BOARD Agenda Item 11
Attachment 3

outcompete and exclude most native plants. Invasives have been identified by Sherman Swanson, Rangeland and Riparian Specialist at the University of Nevada, Reno and an expert in plant identification. Elena Larsen, the Wetland Restoration Program Director, is an active member of the WSCWMA and has experience in plant identification. She will continue her formal weed identification and management training in 2019. Haley McGuire, Truckee Meadows Parks Foundation Special Program Manager, has an extensive background in plant identification and has attended both the Riparian Plant Identification training by Jerry Tiehm and the Proper Functioning Condition Assessment for Integrated Riparian Management classes in 2018.

With \$151,909 in anticipated funding from the AmeriCorps operational grant and the requested \$120,000 grant from the Truckee River Fund, TMPF will recruit 14 AmeriCorps Wetland Restoration Technicians to begin on the ground restoration efforts at TMNSA. Members' main focus during this first year operational year will be to restore the wetland area by removing invasive species while concurrently planting and caring for desirable, competitive species — a proven methodology for native species recovery (Flory and Clay 2009). AmeriCorps members will receive education and training regarding weed prevention best management practices. Additionally, these members will lead volunteer and restoration events to engage and educate the community about noxious weeds and their effect on watersheds.

Over the course of this operational year, environmental data will be collected, analyzed and used to evaluate effectiveness of the different restoration practices. Techniques can then be adjusted to ensure best practices are being utilized for weed removal. These analyses will consist of a multi-year monitoring plan to assess the success of control efforts, as AmeriCorps grants typically run on three-year cycles. Data will also be captured in GIS and provided to the Nevada state weed mapper throughout the project. Furthermore, Steamboat Creek runs contiguous with this parcel, and therefore, restoration of this land reduces the potential for weed spread to the Truckee River and adjacent properties.

In the summer of 2020, TMNSA is scheduled to open to the public and host educational programs and stewardship events to engage and educate the community regarding invasive plants and the watersheds they affect. A restored wetland will allow these programs to better show the community what effect noxious weed removal can have on an environment. Prior weed management events on the property have shown community interest in noxious weeds, how to identify them, and ways to remove them. Local agencies and organizations will be able to access the site for their educational programs as well. The restoration of this invaluable habitat will provide immense ecological benefits to the wetland and its surrounding waters and preserve a rare ecosystem that once spanned the majority of the Truckee Meadows. Furthermore, TMNSA will provide opportunities for recreation, public education, improved health and wellness, and foster a deeper appreciation for the intrinsic value of natural spaces.

4. Grant priorities.

The Truckee Meadows Nature Study Area (TMNSA) project advances priorities VI (Stewardship and Environmental Awareness) and VIII (Leverage Stakeholder Assets and Participation). The TMNSA project advances priority VI in that the Parks Foundation will use TMNSA as an outdoor classroom where community members can participate in volunteer and restoration events and educational programs related



TRUCKEE MEADOWS PARKS FOUNDATION

AWARENESS • APPRECIATION • STEWARDSHIP

03-20-19 BOARD Agenda Item 11
Attachment 3

to weed awareness, water, water quality, and watershed protection. The TMNSA project will involve multiple stakeholders, including the City of Reno, Nevada Department of Wildlife, Nevada Land Trust (One Truckee River), University of Nevada Reno, The Nature Conservancy, Truckee River Flood Management Authority, Walker Basin Conservancy, and Lahontan Audubon Society to encourage collaborative efforts in all aspects of river water quality, watershed protection, source water protections, species enhancement, and to promote the missions of all involved agencies. The Parks Foundation has leveraged community members from a breadth of disciplines willing to contribute time and expertise for the TMNSA advisory board, therefore advancing priority VIII.

5. Permitting.

The Parks Foundation is currently using the former Rosewood Lakes Clubhouse as office space on a one-year operational permit and is in the process of negotiating terms for a long-term lease. At this time, there are no other required permits. Further permitting requirements will be assessed in the future.

6. Future land use.

There are currently no foreseeable zoning, land use, or development plans that may affect the TMNSA project in this first year of the operations.

7. Future phases.

Following the initial operational phase, the Parks Foundation will reapply for AmeriCorps funding to begin in September 2020. The Parks Foundation will apply to various regional grantors and partners to support later stages of the TMNSA project. The generous support of the Truckee River Fund will allow TMPF to gather precise data from the restoration project, greatly increasing our competitiveness when applying for larger scale federal grants that will fund TMNSA into the future.

8. Principals involved.

Truckee Meadows Parks Foundation Executive Director, Heidi Anderson, and Wetland Restoration Program Director, Elena Larsen, M.S., will be the principals involved in the coordination of the project.

9. Staff positions involved.

Full time (1): Wetland restoration program director (100%)

Part-time (3): Special Programs Manager (50%), Development Officer (25%), Executive Director (25%)

10. Volunteers involved.

In order to gauge interest in the repurposing of the former Rosewood Lakes Golf Course, the project has involved community members' input during public presentations. During the operational phase of this project, the 14 AmeriCorps wetland restoration technician will serve alongside community volunteers who will be recruited and managed by the Parks Foundation's Wetland Restoration Program Director and Community Engagement Coordinator AmeriCorps VISTA. Volunteers will participate in multiple community restoration events.



TRUCKEE MEADOWS PARKS FOUNDATION

AWARENESS • APPRECIATION • STEWARDSHIP

11. Timeline.

August 2019: The initial planning phase will close and the Parks Foundation will deliver the City of Reno approved TMNSA plan, final report, and self-evaluation to the Truckee River Fund and the Washoe Storey Cooperative Weed Management Area members.

September 2019: The anticipated AmeriCorps operation grant will commence and six AmeriCorps wetland restoration technicians will begin service at TMPF.

October 2019: AmeriCorps technicians will establish test plots on the wetland under the supervision of the Wetland Restoration Program Director.

November 2019: AmeriCorps technicians will begin removing invasive species using either manual or mechanical removal techniques.

December 2019: The Wetland Restoration Program Director and AmeriCorps members will conduct the first analysis of plot data. These analyses will be performed quarterly.

January 2020: The Parks Foundation development team will submit an application for the AmeriCorps State and National Competitive Operational Grant for the 2020-2021 year to support the TMNSA project.

March 2020: AmeriCorps members begin planting competitive, native species on the wetland property.

April 2020: Eight additional AmeriCorps Wetland Restoration Technicians will begin service at TMPF.

July 2020: TMNSA will open to the public and begin offering educational programs and events.

August 2020: AmeriCorps operational grant and Truckee River Fund grants close and the Parks Foundation will submit a final report and self-evaluation to the Truckee River Fund and the Washoe Storey Cooperative Weed Management Area members (WSCWMA) in September 2020.

12. Success.

Success will be measured by the amount of undesirable, noxious weeds removed and the establishment of competitive, native plant communities. We will also measure success by tracking the number of citizens engaged in volunteer restoration events and other public education programs offered on-site. The Parks Foundation will track these data and submit them in the Truckee River Fund final report in August 2020.

13. Grant match.

Truckee Meadows Parks Foundation has submitted an AmeriCorps operational grant that will award \$151,922 in anticipated funding from the Corporation for National and Community Service to begin the project. The project total is \$278,502 with \$120,000 being the requested amount from the Truckee River Fund. TMPF intends to use \$60,000 of the anticipated AmeriCorps operational funding as match for the requested Truckee River Fund grant. If TMPF does not receive the AmeriCorps operational grant, the Parks Foundation is prepared to use general funds for the 50% match. More than 50% of on-the-ground control costs for both the planning and operational phases will be contributed by project cooperators.

14. Project Budget.

Please see page 6.



TRUCKEE MEADOWS NATURE STUDY AREA PROJECT BUDGET

Budget Item Description	TRF \$	*AmeriCorps Operational Grant	Match \$	Total
Wetland Restoration Program Director	\$20,456	\$21,503	\$10,228	\$52,187
Wetland Restoration Technicians	\$69,933	\$73,546	\$34,966	\$178,445
Member Supplies (Field tools, GPS units, GIS software, etc)	\$22,451	\$1,895	\$11,226	\$35,572
Staff Travel and AmeriCorps Annual Conference	\$0	\$1,558	\$0	\$1,558
Administrative Overhead (Utilities, Insurance, Repairs, Telephone, Internet, etc.)	\$7,160	\$0	\$3,580	\$10,740
TOTAL	\$120,000	\$98,502	\$60,000	\$278,502

*The AmeriCorps Operational Grant has been submitted and is pending review. Truckee Meadows Parks Foundation will be notified in spring 2019 if the project has been funded.



Grant Match

Match amount to be provided:	\$60,000					
Match details:	<p>Please provide the form of your matching funds. If match is made up of both cash and in-kind, fill in both sections.</p> <p>Match is:</p> <table border="1"> <tr> <td>Cash</td> <td>\$60,000</td> </tr> <tr> <td>In-kind</td> <td>\$</td> </tr> </table> <p>Note: Volunteer and in-kind hours may be calculated at a maximum rate of \$20/hour per individual. Indirect cost may not be counted as match.</p> <p>For the cash portion of your match, is the funding already being held by the applicant for this project? Yes ___ No <u>X</u></p>		Cash	\$60,000	In-kind	\$
Cash	\$60,000					
In-kind	\$					
Description of matching funds/in-kind donations:	<p>Truckee Meadows Parks Foundation has submitted a \$151,909 operation grant to the Corporation for National and Community Service to allow 14 AmeriCorps members to begin on the ground restoration efforts at the future, public Truckee Meadows Nature Study Area. This project will match the requested \$120,000 from Truckee River Fund with \$60,000 from the anticipated operational grant; a 50% match.</p>					

ATTACHMENTS

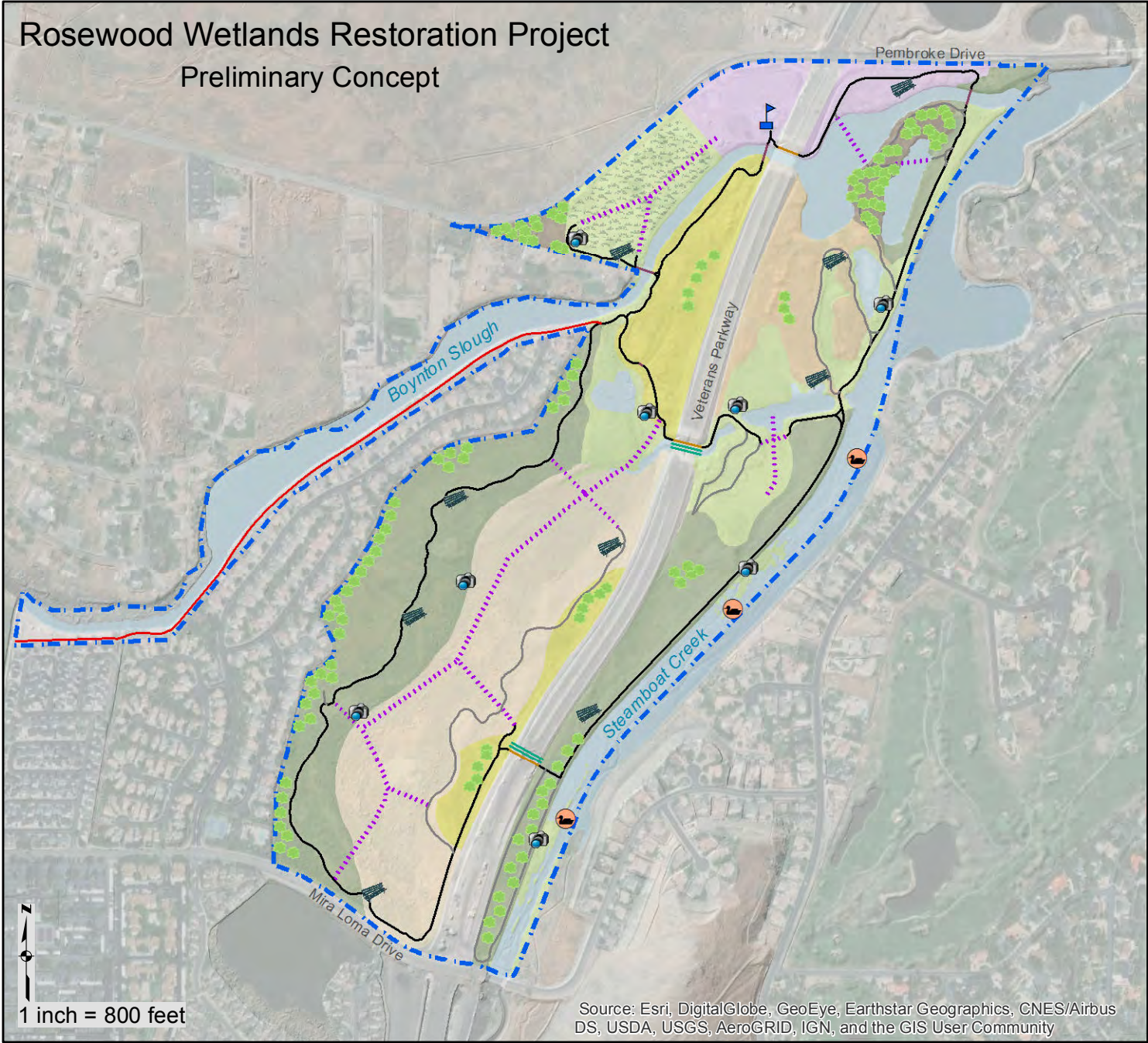
You may be asked to submit the following attachments via email. If you are asked to submit the attachments, clearly label each file with your organization's name. If you do not have the ability to email them, place each of the items listed below on a separate page and submit just one copy.

Nonprofits submit:

- ☐ Last audited financial statements if your organization has been audited
- ☒ List of Board of Directors
- ☒ Copy of agency's IRS 501(c)(3) Tax Determination Letter
- ☒ Copy of the agency's most recent IRS Form 990

Governmental entities submit:

- ☐ Departmental budget in lieu of audited financial statements



- Restoration Area
- Community Center
- Black Willow-Cottonwood
- Waterfowl Nesting Cylinders
- Information Kiosk-Rest Area
- Photography-Observation
- Crumb Rubber/Asphalt Path
- DG Path
- Boardwalk
- Tunnel
- Wildlife Transit Tunnel
- Foot Bridge
- Controlled Access
- Floodplain - Wet Meadow
- Wet Meadow
- Native Upland
- Emergent
- Tree Stand
- Grass - Shrub
- Ponding
- Grass Reseeding Project
- Special Event Area



This map is for illustrative purposes only. It does not represent a survey. No liability is assumed as to the sufficiency or accuracy of the data delineated hereon.



TRUCKEE MEADOWS PARKS FOUNDATION

AWARENESS • APPRECIATION • STEWARDSHIP

03-20-19 BOARD Agenda Item 11
Attachment 3

Truckee Meadows Nature Study Area Project Works Cited

- Birch, G.F., Matthai, C., Fazeli, M.S. et al. 2004. Efficiency of a Constructed Wetland in Removing Contaminants from Stormwater. *Wetlands* 24: 459.
- Flory, S.L. and Clay, K. 2009. Invasive Plant Removal Method Determines Native Plant Community Responses. *Journal of Applied Ecology* 46: 434-442.
- Horton, G. 1997. Truckee River Chronology: A Chronological History of Lake Tahoe and the Truckee River and Related Water Issues. Nevada Division of Environmental Protection: I-10.

Truckee River Watershed Council
McIver Dairy Meadow Restoration Project Implementation

Organization Name:	Truckee River Watershed Council																				
Type: Non-Profit	501(c)(3) EIN# 91-1818748	Governmental entity? No																			
Address:	P.O. Box 8568, Truckee, CA 96162																				
Project Name:	McIver Dairy Meadow Restoration Project																				
Amount requested: \$200,000	Website: www.truckeeriverwc.org																				
This funding will be used to (complete this sentence with a max of 2 sentences):	Complete construction of the McIver Dairy Meadow Restoration Project to reduce excess sediment discharge to the main stem of the Truckee River.																				
Key People:	<table border="1"> <tr> <td>Director:</td> <td colspan="2">Lisa Wallace</td> </tr> <tr> <td>Board Chair:</td> <td colspan="2">Michael Park</td> </tr> <tr> <td rowspan="5">Project Contact:</td> <td>Name:</td> <td>Matt Freitas</td> </tr> <tr> <td>Position:</td> <td>Program Manager</td> </tr> <tr> <td>Phone:</td> <td>(530) 550-8760 x 6#</td> </tr> <tr> <td>Fax:</td> <td>N/A</td> </tr> <tr> <td>Email:</td> <td>mfreitas@truckeeriverwc.org</td> </tr> </table>			Director:	Lisa Wallace		Board Chair:	Michael Park		Project Contact:	Name:	Matt Freitas	Position:	Program Manager	Phone:	(530) 550-8760 x 6#	Fax:	N/A	Email:	mfreitas@truckeeriverwc.org	
Director:	Lisa Wallace																				
Board Chair:	Michael Park																				
Project Contact:	Name:	Matt Freitas																			
	Position:	Program Manager																			
	Phone:	(530) 550-8760 x 6#																			
	Fax:	N/A																			
	Email:	mfreitas@truckeeriverwc.org																			
Organization Mission:	We bring the community together for the Truckee to restore, protect, and enhance the Truckee River watershed.																				
Has your organization received other grants from the Truckee River Fund? Yes X No (use additional page if necessary)	<p>If yes,</p> <table border="1"> <tr> <td>Date awarded:</td> <td>October 2018</td> </tr> <tr> <td>Project title:</td> <td>Restoration Projects: Donner Creek and Dry Creek Meadow</td> </tr> <tr> <td>Amount</td> <td>\$92,000</td> </tr> <tr> <td>Date awarded:</td> <td>March 2018</td> </tr> <tr> <td>Project title:</td> <td>Truckee Meadows Restoration Project- Phase 2</td> </tr> <tr> <td>Amount:</td> <td>\$30,000</td> </tr> <tr> <td>Date awarded:</td> <td>October 2017</td> </tr> <tr> <td>Project title:</td> <td>Truckee River Tributaries Sediment Reduction Project</td> </tr> <tr> <td>Amount:</td> <td>\$165,00</td> </tr> </table> <p>Please see Attachment A for a full list of awarded grants</p>			Date awarded:	October 2018	Project title:	Restoration Projects: Donner Creek and Dry Creek Meadow	Amount	\$92,000	Date awarded:	March 2018	Project title:	Truckee Meadows Restoration Project- Phase 2	Amount:	\$30,000	Date awarded:	October 2017	Project title:	Truckee River Tributaries Sediment Reduction Project	Amount:	\$165,00
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Project title:	Truckee River Tributaries Sediment Reduction Project																				
Amount:	\$165,00																				

DESCRIPTION OF PROJECT UNDER CONSIDERATION

Indicate the description that best fits the project you are proposing. Mark no more than three categories:

- ☒ A. Projects that improve bank or channel stabilization and decrease erosion.
- ☒ B. Structural controls or Low Impact Development (LID) projects on tributaries and drainages to the Truckee River where data supports evidence of pollution and/or sediments entering the Truckee River.
- ☒ C. Projects that remove pollution from the Truckee River.
- ☐ D. Projects that remove or control invasive aquatic species or terrestrial invasive plant species that are adverse to water supply.¹
- ☐ E. Other projects that meet the evaluation criteria.

1. Specific project goals and measurable outcomes and how you will measure and report them.

The goals of the McIver Dairy Meadow Restoration Project are to restore and enhance the hydrologic function of an impaired wetland complex, restore historic wetland and floodplain, and reduce excess sediment discharge to the main stem of the Truckee River.

The McIver Dairy Meadow is a known source of sediment pollution that drains directly to the Truckee River (River Revitalization Assessment 2018). We have identified several sources of impairment and degradation within the meadow. Some date back to the early 1900s when the site was used as a dairy farm. Others are more recent, associated with modern land uses and development. Their cumulative effect is the loss of natural hydrologic function within the meadow, which is exacerbated by the stormwater runoff discharged into the site. Due to the lack of functional floodplains and stream channels, the meadow is continually degraded and does not provide the “filtration” services of a healthy and functional wetland.

TRWC has worked closely with our project partner, the Town of Truckee, to develop a restoration project to address the degradation. We have completed 100% designs, environmental compliance and permitting, and pre-project monitoring data for the project. The Town is a strong supporter of the project and has provided funding and in-kind services to aid its development. We are now working to advance the project to implementation in 2019.

The measurable outcomes for the project are:

- Enhancement of hydrologic function for 4 acre meadow complex
- Restoration 1.25 acres of wetland habitats
- Increased shallow groundwater levels and infiltration
- Increased cover of “wetland” plant communities
- Attenuation of peak flows during storm events and reduced runoff rates
- Reduction in sediment discharge to the Truckee River of approximately 2 tons/year

We will monitor progress toward these outcomes via the project’s pre/post-monitoring program that includes groundwater levels, surface water flows, turbidity, vegetation communities, benthic macroinvertebrate communities, and rapid assessments. Most of these data are collected on a continual basis both pre and post project to allow for high-resolution analysis of project effectiveness.

This request is to fill a gap in construction funding.

2. Project location.

The McIver Dairy Meadow is located on Donner Pass Road in Truckee, CA, just northwest of downtown Truckee. It is a wetland complex, bounded by development including a hospital, commercial offices, and local and interstate roadways.

The site is a mosaic of seasonal marsh, wet meadow, riparian, seasonal wetland, and upland habitats following the course of a swale (very much like a small stream) that drains through the 4-acre site. (Attachment B). This swale terminates into a culvert that drains to the Truckee River. The site is approximately 300 meters upstream of the Truckee River and drains directly to the river.

3. Project description.

The project is a wetland and stream restoration project that seeks to reduce excess sedimentation of the Truckee River by addressing degradation caused by modern and historic land uses. We are requesting funding to help complete the implementation of the project.

Truckee River Watershed Council
McIver Dairy Meadow Restoration Project Implementation

The Problem: The McIver Dairy Meadow was historically used as a dairy farm. This historic use and more modern land uses have contributed to the degradation of the site and the function of its wetland resources. Without properly functioning wetlands and floodplains to slow, infiltrate, and filter runoff, it is flowing untreated directly to the Truckee River. Water quality monitoring at the site has indicated that the site contributes approximately 2 tons of sediment annually (TRWC 2018).

The Solution: The project has been a long-term priority for the Town of Truckee (landowner) and TRWC. In 2017, TRWC and the Town partnered on an assessment that identified sources of sediment pollution to the Truckee River from within the Town corridor and better characterized the issues and opportunities at the McIver site. TRWC used that information to develop 100% restoration designs and completed environmental compliance and pre-project monitoring at the site.

The overall restoration approach focuses on restoring hydrologic function to the wetland complex. This will improve habitat quality in this important urban refuge and will also promote improved water quality and reduced sediment discharge. At the upstream (western) end of the site, the design includes modifications to an existing pond to create a wetland bench and create a secondary outflow—rewatering dry portions of meadow. Continuing downstream, we will install “sod blocks” in the wetland swale to promote overbank flows into the surrounding meadow and floodplain.

In the central and downstream portions of the meadow, the design includes the removal of artificial fill adjacent the swale. This will create an inset floodplain with imported rootwads and woody material to disperse flows and provide habitat features. We will replace a failed culvert and protect the foundation of a historic dairy barn. Lastly, we will stabilize the outfall from a stormwater basin into the swale preventing continued erosion.

Gap in Construction Funding. TRWC successfully raised \$300,000 to fund the design, monitoring, environmental compliance, construction, and maintenance of this project from project partners and the State Water Resources Control Board. However, we have gap in construction funding that we seek to fill.

4. Grant priorities. The project addresses the following Truckee River Fund priorities

- **Watershed Improvements.** The project will decrease excess sedimentation to the Truckee River and support attainment of the 303 (d) listed TMDL pollutant by restoring the hydrologic function of the McIver Dairy Meadow. The restored floodplain and wetlands will attenuate high flows and filter runoff before it drains to the Truckee River.
- **Local Stormwater Improvements.** The project site receives stormwater inputs from adjacent roads and commercial development. The project will provide natural treatments for those inputs before reaching the main stem of the Truckee River. Note: the Town of Truckee and Caltrans are project partners and are addressing required stormwater management regulations.
- **Meet Multiple Objectives.** The projects meet the watershed and water quality objectives listed above. It also benefits wetlands and instream habitats, native fish and wildlife species, flood attenuation, and carbon sequestration.
- **Leverage Stakeholder Assets and Participation.** The project has leveraged partner participation and assets from the outset. The Town of Truckee was instrumental in early funding for the project and has been critical in completing the design and environmental compliance for the project.

5. Permitting.

TRWC and the Town of Truckee (CEQA lead) completed CEQA compliance in November 2018. Required permits include California Department of Fish and Wildlife 1600 agreement, Section 401 Water

Truckee River Watershed Council
McIver Dairy Meadow Restoration Project Implementation

Quality Certification, Section 404 Nationwide 27 and 43 permit, Town of Truckee Grading Permit, Construction General Permit, and Caltrans Encroachment Permit.

6. Future Land Use.

There are no foreseeable zoning, land use, or development plans that will affect the project or project site. The Town of Truckee owns and manages the site as open space and has recently completed a land-use plan to ensure the long-term sustainability of that public use. TRWC and the Town coordinated the restoration design and land-use plan to ensure compatibility. The land-use plan will greatly improve the sustainability of public use at the site.

7. Future Phases.

The future phases of the project include monitoring and maintenance. These will be funded by secured funding from the State Water Resources Control Board (see match description).

8. Principals involved.

Matt Freitas, Program Manager with TRWC, will oversee the implementation of the project.

9. Number of staff positions involved in project.

Matt Freitas and Lisa Wallace will work part-time on this project.

10. Number of volunteers.

Volunteers will assist with native plant revegetation as part of Truckee River Day 2019. Approximately 20 volunteers (80 person hours) will participate.

11. Timeline.

Task	Completion Date
Pre-project monitoring (vegetation, water quality, hydrology)	Ongoing until construction
Hire construction oversight consultants (engineering, biology, archaeology)	March 2019
Hire construction contractor	April 2019
Construction	October 2019
Post-project monitoring	October 2021

12. Success.

Post-project monitoring will confirm the habitat enhancement, restoration of natural hydrology, and reductions in sediment discharge. This monitoring program is already funded by our grant with the State Water Resources Control Board.

13. Grant match.

Match amount to be provided:	\$119,300.00
Match details:	Match is:
	Cash
	In-kind
	For the cash portion of your match, is the funding already being held by the applicant for this project? Yes
Description of matching funds/in-kind donations:	\$132,435 from California State Water Resources Control Board 319h Grant Program funding. Funding is allocated to construction costs.

Attachments

- A. Extended list of past TRWC projects funded by the Truckee River Fund.
- B. McIver Dairy Meadow Restoration Project Location and Site Map

Documents noted below are available and can be submitted upon request.

- Last audited financial statements if your organization has been audited
- List of Board of Directors
- Copy of agency's IRS 501(c)(3) Tax Determination Letter
- Copy of the agency's most recent IRS Form 990

Grant application to the *Truckee River Fund*
from the
Truckee River Watershed Council
McIver Dairy Meadow Restoration Project Implementation

03-20-19 BOARD Agenda Item 11
Attachment 3

BUDGET

Item	TRF Request	Other Funding Name	Match	Total
Project management	\$18,000.00		\$0	\$18,000.00
Construction Oversight: Engineering	\$13,000.00		\$0	\$13,000.00
Construction Oversight: Archaeology, Biology	\$8,000.00		\$0	\$8,000.00
Construction	\$161,000.00	SWRCB 319h Grant Program	\$119,300.00	\$280,300.00
TOTAL	\$200,000.00		\$119,300.00	\$319,300.00

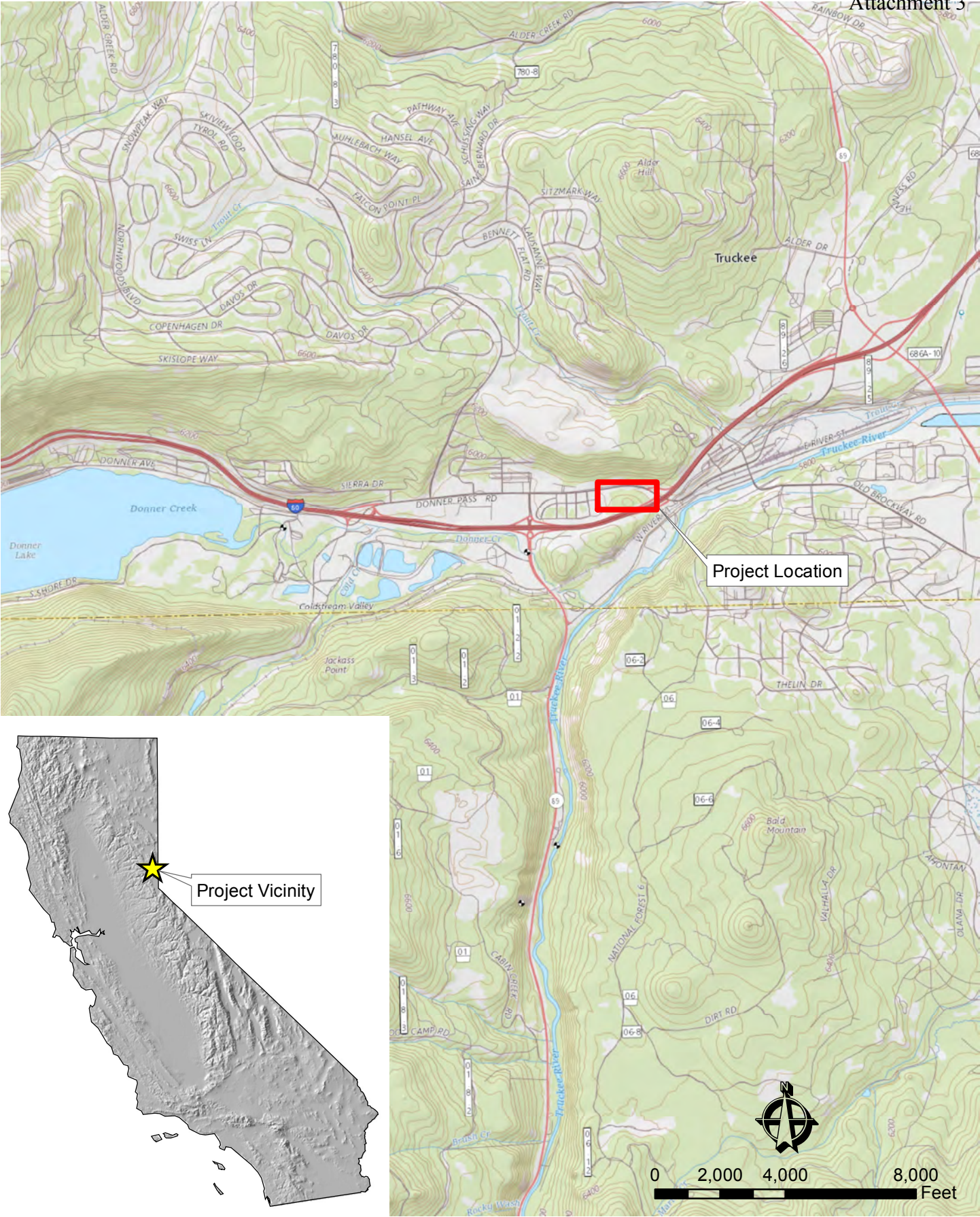
Grant application to the *Truckee River Fund*
from the Truckee River Watershed Council

Attachment A
Continued list of grants to TRWC from the Truckee River Fund

Date awarded:	March 2017
Project title:	Big Chief, F4M Restoration Culvert Outflows
Amount of Award	\$50,000
Date awarded:	September 2016
Project title:	Donner Creek Bank Stabilization Downstream of Railroad Culvert Final Design
Amount of Award	\$90,000
Date awarded:	March 2017
Project title:	F4M Restoration Culvert Outflow
Amount of Award	\$50,000
Date awarded:	September 2016
Project title:	Donner Creek Concept Designs
Amount of Award	\$40,000
Date awarded:	September 2016
Project title:	Donner Creek Bank Stabilization
Amount of Award	\$92,000
Date awarded:	April 2016
Project title:	Johnson Canyon West #2
Amount of Award	\$67,000
Date awarded:	October 2015
Project title:	Johnson Canyon West #1
Amount of Award	\$25,000
Date awarded:	September 2014
Project title:	Donner Lake Watershed Assessment
Amount of Award	\$70,000
Date awarded:	March 2014
Project title:	Truckee Wetlands Restoration – Phase 3,4, & 5 – Design
Amount of Award	\$50,000
Date awarded:	October 2013
Project title:	Truckee River Big Chief Corridor –Restoration
Amount of Award:	\$150,000
Date awarded:	March 2013
Project title:	Truckee River Big Chief Corridor – Implementation
Amount of Award	\$11,000
Date awarded:	March 2013
Project title:	Middle Martis Wetland Restoration – planning and design
Amount of Award:	\$120,000
Date awarded:	August 2012
Project title:	Phase 2 Coldstream Canyon Floodplain Restoration
Amount of Award:	\$196,000
Date awarded:	March 2012
Project title:	Lacey Creek and Meadow Assessment
Amount of Award	\$50,000

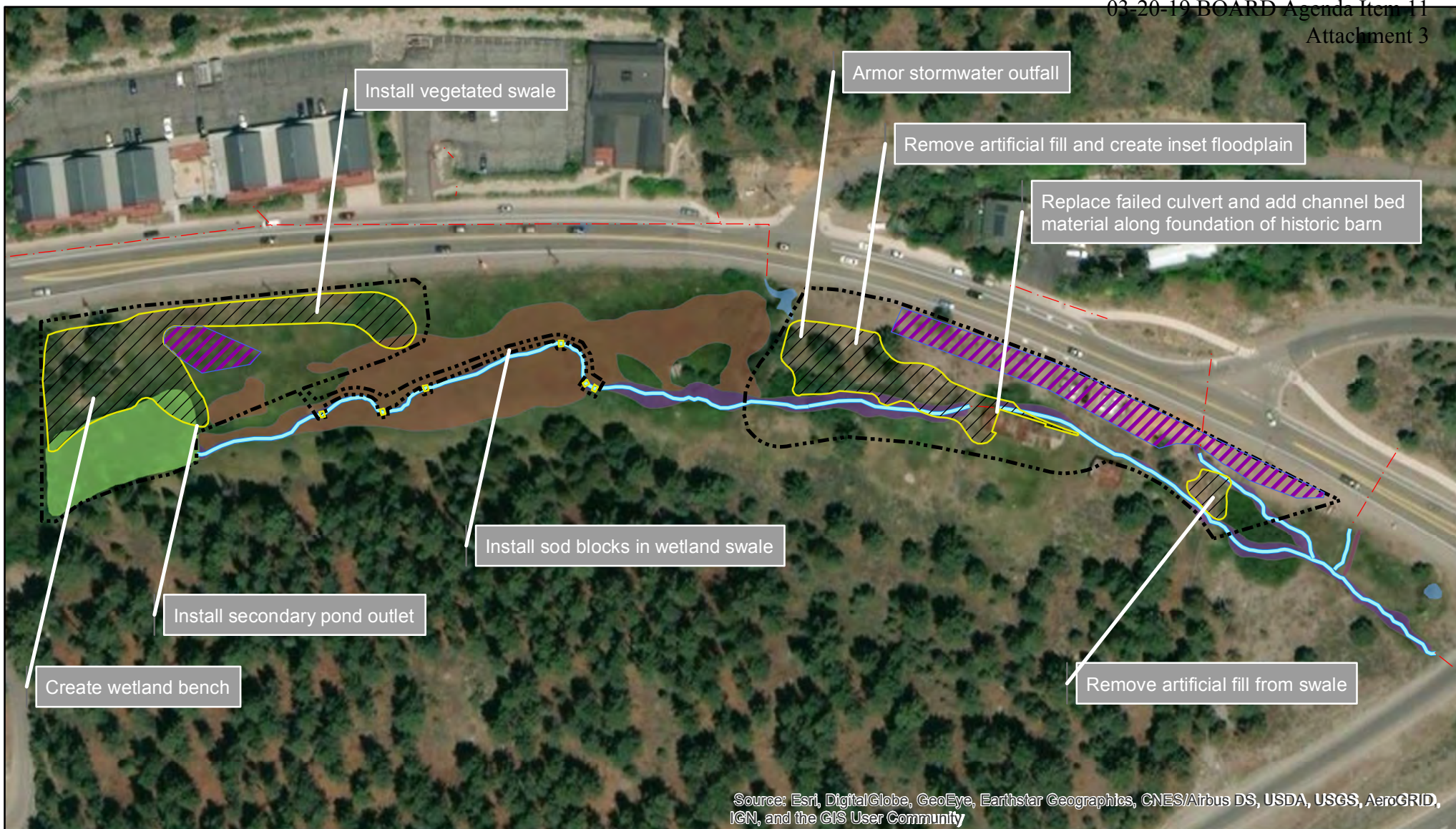
Grant application to the *Truckee River Fund*
from the Truckee River Watershed Council

Date awarded:	March 2012
Project title:	Negro Canyon Restoration – pre-project monitoring
Amount of Award:	\$25,000
Date awarded:	October 2010
Project title:	Coldstream Canyon Floodplain Restoration Project
Amount of Award:	\$135,000
Date awarded:	August 2010
Project title:	Truckee Wetlands Restoration Project – Phase 2
Amount of Award:	\$40,000
Date awarded:	July 2006
Project title:	“This Drains to the Truckee River” Storm Drain Stenciling Pilot Project
Amount of Award:	\$9,300



**Attachment B. Location Map,
McIver Dairy Meadow Restoration Project,
Nevada County, California**

Basemap source: USGS, 2013



Legend

	Work limits		Ephemeral Stream
	Staging and stockpile		Seasonal Marsh
	Project boundary		Seasonal Wetland
	Existing Stormdrain Pipe		Wet Meadow
	Existing Channel		Wetland Swale

Attachment B. McIver Dairy Meadow Restoration Site Map & Design Summary

0 50 100 200 300 Feet



foriver
TRUCKEE RIVER WATERSHED COUNCIL



KEEP TRUCKEE MEADOWS
B E A U T I F U L

PROPOSAL TO THE TRUCKEE RIVER FUND

Organization Name:	Keep Truckee Meadows Beautiful																										
Type:	501(c)(3) EIN# 88-0254957	Governmental entity? No																									
Address:	P.O Box 7412 Reno, NV 89510																										
Project Name:	2019 Fall Truckee River Cleanup, Adopt-A-River & Adult Outreach and Education																										
Amount requested: \$54,500	Website: www.ktmb.org																										
This funding will be used to	Remove invasive weeds and trash from along the Truckee River corridor and its tributaries during KTMB's Truckee River Cleanup Day, monitor the impact of current cleanup efforts. Engage more year-round cleanup support through KTMB's Adopt-A-River program. Provide community education and outreach to decrease environmental threats to the river.																										
Key People:	<table border="1"> <tr> <td>Director:</td> <td colspan="3">Christi Cakiroglu</td> </tr> <tr> <td>Board Chair:</td> <td colspan="3">Kate Thomas</td> </tr> <tr> <td rowspan="5">Project Contact:</td> <td>Name:</td> <td colspan="2">Lindsey Panton</td> </tr> <tr> <td>Position:</td> <td colspan="2">Program Director</td> </tr> <tr> <td>Phone:</td> <td colspan="2">775-851-5185</td> </tr> <tr> <td>Fax:</td> <td colspan="2">N/A</td> </tr> <tr> <td>Email:</td> <td colspan="2">christi@ktmb.org/lindsey@ktmb.org</td> </tr> </table>			Director:	Christi Cakiroglu			Board Chair:	Kate Thomas			Project Contact:	Name:	Lindsey Panton		Position:	Program Director		Phone:	775-851-5185		Fax:	N/A		Email:	christi@ktmb.org/lindsey@ktmb.org	
Director:	Christi Cakiroglu																										
Board Chair:	Kate Thomas																										
Project Contact:	Name:	Lindsey Panton																									
	Position:	Program Director																									
	Phone:	775-851-5185																									
	Fax:	N/A																									
	Email:	christi@ktmb.org/lindsey@ktmb.org																									
Organization Mission:	KTMB is dedicated to creating a cleaner, more beautiful region through education and active community involvement.																										
Has your organization received other grants from the Truckee River Fund?																											
Yes <input checked="" type="checkbox"/> See attached page																											

DESCRIPTION OF PROJECT UNDER CONSIDERATION

Indicate the description that best fits the project you are proposing. Mark no more than three categories:

- ☒ C. Projects that remove pollution from the Truckee River.
- ☒ D. Projects that remove or control invasive aquatic species or terrestrial invasive plant species that are adverse to water supply.



NARRATIVE

1. **Specific project goals and measurable outcomes and how you will measure and report them:** Keep Truckee Meadows Beautiful (KTMB) is a 501(c)3 nonprofit dedicated to beautification, advocating for a clean community and education in the Truckee Meadows for 30 years. KTMB creates a cleaner, more beautiful area to increase the quality of life for all who live in and visit the Truckee Meadows. In 2019, KTMB will continue to build strategic partnerships to protect and conserve the Truckee River, while expanding thriving litter and invasive weed removal projects along the Truckee River and throughout the watershed, as well as education of residents on the steps they can take to prevent threats to the river and watershed.

Truckee River Cleanup – Fall 2019

- Engage minimum of 600 volunteers in river cleanup, storm drain stenciling and weed removal;
- Remove 15-25 tons of trash and weeds from the river corridor at cleanup locations from Verdi to Lockwood;
- Involve a minimum of 100 youth through partnerships with youth programs;
- Work with area park staff to identify and wrap trees as needed along the river corridor;
- Host cleanup event, and provide invasive weed, recycling and litter-reduction education to volunteers at cleanup sites, and during volunteer post-cleanup lunch with goal being to educate volunteers on "Zero Waste" and keep the event as close to "Zero Waste" as possible;
- Maximize resources and community awareness efforts by stenciling a minimum of 100 storm drains in conjunction with the City of Reno (as all drains flow to the river!);
- Survey participants and compile analyzed results to determine the success and impact of the event;
- Host a minimum of 20 "on the river" volunteers including kayakers and fly-fishers and WET team Emergency Response personnel as needed to remove debris from within the river;
- Spread Christmas tree mulch for soil erosion projects, and remove graffiti as needed.

Adopt-A-River

- In response to the changing conditions of the Truckee River, KTMB works with municipal partners to update KTMB's annual Litter Index Survey to reflect our growing community. In the update, there will be a section completely dedicated to the Truckee River corridor.
- Adopt-A-River program will be supported by the annual Litter Index Survey to assess areas that need adoption.
- Adopt-A-River program will also include a Litter Survey before each cleanup. Areas are rated based on a scale of 1-4: 1, meaning "virtually no litter"; and 4, indicating "major illegal dump site". These surveys will show the impact of the Adopt-A-River program.
- Recruit and retain adopters and volunteers to be stewards of river corridor and watershed areas.

Adult Education and Community Outreach

- Communicate the negative impacts non-point source pollutants have on our local watershed so that we may contribute to enhancing our water quality and conserving our water resources.
 - KTMB will convey the importance of preserving our natural ecosystem and native plant species and keeping invasive and noxious weeds from spreading as they can contribute to intense fires in the summer and are a health risk to humans and our wildlife.
 - KTMB AmeriCorps will coordinate quarterly "River Walks" as an educational and outreach effort along the river corridor in conjunction with the One Truckee River (OTR) River Restroom Project.
 - KTMB will pilot a new outreach program to target more parents and families with educational efforts by collaborating with Sierra Nevada Journey's (SNJ) Family Science Nights.
2. **Project location:** The Truckee River Cleanup (TRC), and Adopt-A-River cleanups follow the original Champions of the Truckee River "Streamkeepers Map," stretching from the Verdi Dam to Lockwood, including sites such as Brodhead Park, John Champion Park, Mayberry Park, Crystal Peak Park, Cottonwood Park, Oxbow Park, Dorostkar Park, Rock



Park, Barbara Bennett Park, and other sections of the river. Local municipalities and watershed experts will determine storm drain stenciling needs for the 2019 TRC.

3. **Project description:** KTMB supports a clean and invasive weed-free community by educating and informing residents and visitors about the importance of maintaining a healthy river and watershed by removing litter and invasive weeds. Local park staff report that weed removal is often the most challenging aspect of their job.

The Truckee River Cleanup is designed to address both the direct and immediate presence of weeds, litter and nonpoint pollution runoff, and the underlying causes of these challenges by educating and engaging the community. KTMB uses proven approaches to “Cleanups” that have been shown to save tax payers money. According to Keep America Beautiful “About 85 percent of littering is the result of people’s attitudes.... Changing individual behaviors is the key to preventing litter — and environmental cues can make a difference.” By engaging volunteers and community partners in this effort, as well as having consistent outreach and messaging to support behavior change, KTMB is helping to better protect the water resources of the Truckee River.

Truckee River Cleanup activities will include:

- In cooperation with the OTR River Restroom Project, KTMB will work in collaboration with OTR to include Brodhead Park as a cleanup site during the 2019 TRC. OTR will help to lead cleanup efforts and coordinate key stakeholders for this site leading up to the event.
- Volunteers removing invasive weeds at several hot spots along the Truckee River and its tributaries, as identified by weed experts at local municipalities of the WSCWMA.
- Producing key messaging about responsible river recreation and keeping the river clean.

Adult and Community Education efforts will include:

- Presenting to City and County NABS/CABS, churches, recreation/outdoor groups, city council and county commission meetings, service organizations, area businesses, and on-site educational opportunities along the river and in Idlewild Park’s Sensory Garden.
- Quarterly “River Walks” coordinated by KTMB’s AmeriCorps to bring people to the river corridor for an educational opportunity. This activity is in cooperation with the OTR River Restroom Project.
- Pilot collaboration with SNJ on Family Science Nights outreach.
- Continued outreach to the community through social and traditional multi-media outlets with messaging related to the environmental health of the river.

Adopt-A-River activities will include:

- Recruiting new volunteers and managing existing volunteers to conduct cleanups along the Truckee River. This activity is in cooperation with the OTR River Restroom Project.
- Working with WSCWMA and local municipalities to monitor river invasive weed and litter hotspots.
- Continue to conduct annual Litter Index Survey to evaluate current river corridor cleanliness.

4. **Grant priorities:** This project supports the TRF Grant Priorities V, VI, VII, and VIII – *Support to Rehabilitation of Local Tributary Creeks and Drainage Courses, Stewardship and Environmental Awareness, Meet Multiple Objectives, and Leverage Stakeholder Assets and Participation*. KTMB educates and informs residents and visitors about the importance of maintaining a healthy river; how noxious weeds negatively affect native plant communities, habitats, and watershed; how litter and pollution are harmful to human health, wildlife, the local environment and economy; and collaborates to create a cleaner community while saving taxpayer dollars.

KTMB’s 2019 Truckee River Cleanup and Adopt-A-River program will support following objectives of the One Truckee River Management Plan: 2.1.b; 2.3.j; 2.5.b; 3.3.h; 3.4.b; 3.4.c; 3.4.e; 3.4.f.



KTMB's Adult and Community Education efforts will support the following objectives of the One Truckee River Management Plan: 1.3.b; 2.1.j; 3.2.d; 3.2.f; 3.3.b; 3.3.e; 3.3.h.

5. **Permitting:** Few permits are needed and for the most part cooperation has already been secured. Since 2005, the only required permits for KTMB's Truckee River Cleanup include health department permits for the post-event volunteer barbecues.
6. **Future land use. List any known or foreseeable zoning, land use, or development plans that may affect your proposed project:** There are no known or foreseeable zoning, land use or development plans that may affect this project.
7. **If future phases of the project will be needed, identify anticipated sources of funding:** The Truckee River Fund's annual support of KTMB's Truckee River Cleanup assists in maintaining the health of the Truckee River and its greater watershed. It provides opportunities for KTMB to engage partner agencies, municipalities, groups, foundations and local residents, and to leverage in-kind support and funding from other sources. In addition, KTMB works closely with Nevada Land Trust to provide the leadership necessary to complete Phase I of the One Truckee River to build the partnerships, fundraising mechanisms, fundable projects and capacity to address not only the symptoms of Truckee River health (weeds, litter and nonpoint pollution runoff) but also the underlying problems (education, environmental awareness, and civic participation and stewardship) community-wide. The TRF funding will enhance our ability to build these capacities. KTMB's development team is dedicated to pursuing new and diverse sources of income to continue to support these programs well into the future.
8. **Principals involved in leading or coordinating the project or activity:** KTMB is the principal coordinating agency for project implementation, management, volunteer recruitment and coordination. KTMB relies on the time and expertise of partners that include the Washoe County Health District, Washoe County Parks, City of Reno Parks, City of Sparks Parks and Recreation, The Nature Conservancy, Nevada Department of Agriculture, Nevada Department of Wildlife, Nevada Land Trust, Sierra Nevada Journeys, Reno-Sparks Indian Colony, Washoe Storey Cooperative Weed Management Authority, Truckee River Fly Fishers, Sagebrush Chapter of Trout Unlimited, and Washoe County Sheriff's Office. Former members of the Truckee River Yacht Club and Champions of the Truckee River continue to provide logistical and promotional support as needed.
9. **Number of staff positions involved in project:** Five Part-Time Staff
10. **Number of volunteers involved in project and an estimated number of volunteer hours.**

Truckee River Cleanup: <u>600-700 volunteers</u>	Estimated hours: <u>2,100-2,450 hours</u>
Adopt-A-River: <u>150-250 volunteers</u>	Estimated hours: <u>375-625 hours</u>
11. **Time Line**

TRC 2019 Timeline:
Spring/Summer 2019: Compile survey data from the spring Great Community Cleanup weed pull and re-survey sites for cleanliness. Begin planning for fall Truckee River Cleanup.
Fall/Winter: Hold Fall Truckee River Cleanup and re-survey length of river for cleanliness.

Adopt-A-River Timeline:
Winter 2019: Compile and review information on existing sites and existing volunteer groups.
Spring/Summer 2019: Outreach and volunteer recruitment and management to conduct cleanups along the river corridor.



Community Outreach Timeline:

Spring/Summer 2019: Create an outreach plan to engage more residents on river-related topics through presentations, river tours, and media outreach. Schedule and conduct Presentations.

Fall/Winter 2019: Schedule and conduct presentations and river tours. Continue outreach.

12. Success

The success of TRC will be measured in the following ways:

- Minimum of 600 community volunteers engaged in trash and invasive weeds removal along the Truckee River and its tributaries during KTMB's Truckee River Cleanup in 2019;
- Minimum of 100 youth volunteers engaged in watershed stewardship through Truckee River volunteer projects;
- A minimum of 15 tons of invasive weeds and trash will be removed from Truckee River and its watershed in the 2019 TRC;
- 100 storm drains will be stenciled;
- Improve Adopt-A-River participation in Truckee River Cleanup event.

The success of Adopt-A-River will be measured by:

- Evidence Based Litter Survey conducted along length of the river corridor to evaluate cleanup efforts;
- Perform 15 cleanups along the Truckee River corridor throughout the year;
- Minimum of 150 community volunteers engaged in trash and invasive weeds removal along the Truckee River corridor throughout the year;
- A minimum of 5 tons of invasive weeds and trash will be removed from the Truckee River corridor.

The success of Adult Education and Community Outreach efforts will be measured by:

- Minimum of 25 Community and Adult education presentations on watershed and invasive weed topics;
- Reach 1,000 community members through our adult Watershed and Invasive/Noxious Weeds informative talks to businesses, organizations, community groups, etc.

13. Grant match

Match amount to be provided:		\$161,307
Match details:	Please provide the form of your matching funds. If match is made up of both cash and in-kind, fill in both sections. Match is:	
	Cash:	\$103,900 (Combination of secured funds and pending requests)
	In-kind:	\$57,407
	For the cash portion of your match, is the funding already being held by the applicant for this project? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	
Description of matching funds/in-kind donations:	<ul style="list-style-type: none"> • Project Partners will provide a minimum of \$18,100 in staff time • KTMB is projecting \$36,000 in volunteer time at a rate of \$20/hour per individual and a minimum of 600 volunteers that will be used as a match. • Approximately \$3,307 in matching costs for equipment, services and supplies from various partners. 	

Truckee River Fund Project Budget

2019 Fall Truckee River Cleanup, Adopt-A-River Cleanup & Adult and Community Outreach and Education

Category	Justification	TRF Request	Cash & Inkind Match	Total Cost
Truckee River Cleanup 2019				
COORDINATION & IMPLEMENTATION				
Keep Truckee Meadows Beautiful	Project, Partner, and Volunteer Management	\$16,000.00	\$8,000.00	\$24,000.00
Keep Truckee Meadows Beautiful	Mileage	\$250.00	\$0.00	\$250.00
Washoe County Parks	Staff Time, Materials & Equipment	\$0.00	\$2,500.00	\$2,500.00
City of Reno Parks	Staff Time & Equipment	\$0.00	\$4,500.00	\$4,500.00
Reno Fire Dept Water Entry Team	Swiftwater rescue technicians and equipment	\$0.00	\$1,200.00	\$1,200.00
Truckee Meadows Watershed Committee	Storm drain stenciling supplies, staff time, education and give-aways	\$0.00	\$4,000.00	\$4,000.00
City of Sparks Parks	Staff Time, Materials & Equipment	\$0.00	\$2,000.00	\$2,000.00
Nevada Department of Wildlife	Staff Time, Materials & Equipment	\$0.00	\$1,000.00	\$1,000.00
Reno Sparks Indian Colony	Staff Time, Materials & Equipment	\$0.00	\$1,000.00	\$1,000.00
The Nature Conservancy	Staff Time	\$0.00	\$500.00	\$500.00
Otis Bay	Staff Time, Materials & Equipment	\$0.00	\$1,400.00	\$1,400.00
Volunteer Hours	600 volunteers x 3 hours x \$20/hour	\$0.00	\$36,000.00	\$36,000.00
Sub-Total		\$16,250.00	\$62,100.00	\$78,350.00
EQUIPMENT & SUPPLIES				
Sani-Huts	United Site Services (\$55/unit, 2 sinks, \$75/unit, damage waivers and delivery fees \$300)	\$600.00	\$300.00	\$900.00
Dumpsters	Dumpsters vary each cleanup, along with discounts. Project the need for 15 dumpsters priced at \$500.	\$4,000.00	\$2,000.00	\$6,000.00
Garbage Bags	large bags	\$300.00	\$200.00	\$500.00
KTMB Truck for Site Surveying/Event Implementation	Fuel & Maintenance/Mileage	\$200.00	\$200.00	\$400.00
Trash Pickers	various styles	\$300.00	\$200.00	\$500.00
Project Supplies	Tools, tree wrap, paint, masks, gloves, etc.	\$800.00	\$2,200.00	\$3,000.00
Project Posters	NV Energy donation 100 posters	\$0.00	\$227.00	\$227.00
Green Waste Composting	\$6/year - donated by RT Donovan	\$0.00	\$1,080.00	\$1,080.00
Sub-Total		\$6,200.00	\$6,407.00	\$12,607.00
VOLUNTEER COORDINATION				
Volunteer Appreciation BBQ, Snacks, Coffe	Catered by project partners, lunch, snacks, coffee, etc.	\$500.00	\$2,000.00	\$2,500.00
Event Signage	Signs and banners	\$500.00	\$200.00	\$700.00
Volunteer Appreciation Item	Appx. 800 items	\$4,000.00	\$4,000.00	\$8,000.00
Health Permit for Picnic	Washoe County Health District	\$200.00	\$0.00	\$200.00
Volunteer Project Leader Thank you		\$1,000.00	\$1,000.00	\$2,000.00
Volunteer wristbands	Debossed (1/2" - Youth, Green)	\$100.00	\$0.00	\$100.00
Stickers and/or clings	printing and ordering	\$1,000.00	\$500.00	\$1,500.00
Public Education	multimedia	\$4,000.00	\$1,000.00	\$5,000.00
Zero Waste Supplies	Serving ware, utensils, signage	\$400.00	\$0.00	\$400.00
Volunteer Snacks	bars, snacks, soda	\$250.00	\$2,000.00	\$2,250.00
Sub-Total		\$11,950.00	\$10,700.00	\$22,650.00
Total TRC Request		\$34,400.00	\$79,207.00	\$113,607.00
Adult Education and Community Outreach				
COORDINATION & IMPLEMENTATION				
Keep Truckee Meadows Beautiful	Project, Partner, and Volunteer Management	\$4,000.00	\$48,000.00	\$52,000.00
AmeriCorps - Adult Outreach Educator	State and National	\$4,750.00	\$4,750.00	\$9,500.00
Sub-Total		\$8,750.00	\$52,750.00	\$61,500.00
SNJ Collaboration Pilot - Family Science Nights				
Payment to SNJ	Cover costs of hosting the educational night	\$500.00	\$0.00	\$500.00
KTMB staff coordination and implementation	5 nights @ 8 hours of staff time each	\$1,000.00	\$0.00	\$1,000.00
Mileage	to and from events	\$0.00	\$100.00	\$100.00
Sub-Total		\$1,500.00	\$100.00	\$1,600.00
Total Adult Ed and Outreach Request		\$10,250.00	\$52,850.00	\$63,100.00
Adopt-A-River				
COORDINATION & IMPLEMENTATION				
Keep Truckee Meadows Beautiful	Project, Partner, and Volunteer Management	\$9,750.00	\$29,250.00	\$39,000.00
Mileage	to and from events	\$100.00	\$0.00	\$100.00
Total Adopt-A-River Request		\$9,850.00	\$29,250.00	\$39,100.00
TOTAL REQUEST		\$54,500.00	\$161,307.00	\$215,807.00

**Keep Truckee Meadows Beautiful: 2019 contributions to the
One Truckee River Management Plan**

KTMB's 2019 Truckee River Cleanup and Adopt-A-River program will support following objectives of the One Truckee River Management Plan:

- 2.1.b: Educate and coordinate with special events personnel to increase special events along less used sections of the river.
- 2.3.j: Work with local Community Wellness providers to implement a "Healthy River, Healthy People" campaign that will encourage the wellbeing of the Truckee River as well as the residents that live, work and play along it.
- 2.5.b: Create public/ private partnerships to promote Truckee River beautification.
- 3.3.h: Continue to engage community Decision makers and partners about issues related to the river.
- 3.4.b: Educate the community on Leave No Trace principles while in and along the river corridor.
- 3.4.c: Increase official presence along the river for stewardship and education of the community.
- 3.4.e: Coordinate and promote stewardship activities for groups such as high-school environmental clubs or community service organizations.
- 3.4.f: Coordinate stewardship activities throughout the river corridor to maximize impact.

KTMB's Adult and Community Education efforts will support the following objectives of the One Truckee River Management Plan:

- 1.3.b: Educate users of the Truckee River on issues impacting water quality.
- 2.1.j: Enhance prevention education and enforcement of anti-littering laws.
- 3.2.d: Create one-page handouts for adults and age-based handouts for children discussing core learning outcomes.
- 3.2.f: Identify and provide access opportunities to "outdoor classrooms" where students can learn along the river.
- 3.3.b: Coordinate a speakers bureau to hold educational river-based events.
- 3.3.e: Continue to engage the community through interactive social media.
- 3.3.h: Continue to engage community decision makers and partners about issues related to the river.

KTMB Funding received from the Truckee River Fund

Date Awarded	August 2018
Project title:	TRF #204 Great Cleanup
Amount of Award:	\$31,640
Date Awarded	August 2017
Project title:	TRF #193 Great Cleanup/River Cleanup
Amount of Award:	\$69,760
Date Awarded	August, 2016
Project title:	TRF #176 Great Cleanup/River Cleanup
Amount of Award:	\$60,625
Date awarded:	October 22, 2016
Project title:	TRF #165 Truckee River Cleanup/Invasive Weed Pull
Amount of Award:	\$48,325
Date awarded:	February, 2015
Project title:	TRF #156 Phase I Truckee River Corridor Management Plan
Amount of Award:	\$90,000
Date awarded:	September, 2014
Project Title:	TRF #154 Invasive Weed Pull & River Cleanup
Amount of Award:	\$46,000
Date awarded:	October 2013
Project Title:	TRF 126: Truckee River Youth Education/Invasive Weed Pull/Cleanup 2014
Amount of Award	\$57,050
Date awarded:	September 2012
Project title:	Truckee River Cleanup 2013
Amount of Award:	\$46,450
Date awarded:	October 2011
Project title:	TRF #89 Truckee River Cleanup 2012
Amount of Award:	\$44,950
Date awarded:	November 2010
Project title:	#82 Truckee River Cleanup May 2011 Invasive Weed Pull and September 2011 Truckee River Cleanup Day
Amount of Award:	\$42,900
Date awarded:	December 2009
Project title:	Invasive Weed Pull May 2010, River Cleanup Sep 2010
Amount of Award:	\$42,050
Date awarded:	February 2009
Project title:	Truckee River Cleanup Day, September 2009
Amount of Award:	\$26,975
Date awarded:	January 2008
Project title:	Truckee River Cleanup Day, September 2008
Amount of Award:	\$25,604.85
Date awarded:	November 2006
Project title:	Truckee River Cleanup Day, September 2007
Amount of Award:	\$24,730
Date awarded:	July 2006
Project title:	Truckee River Cleanup Day, September 2006
Amount of Award:	\$13,175
Date awarded:	December 2005
Project title:	Truckee River Cleanup Day, September 2006
Amount of Award:	\$9,402.50

Cover Sheet

Date: February 7, 2019

Organization Name:		The National Judicial College							
Type:		501(c)(3) EIN# 94-2427596	Governmental entity? No						
Address:		Judicial College Building/MS 358, Reno, NV 89557							
Project Name:		Dividing the Waters Conference "Sustainable Water Rights Management in Times of Shortage" at Stanford Law School							
Amount requested: \$3,092		Website: www.judges.org/dtw/							
This funding will be used to (complete this sentence with a max of 2 sentences):		The funding will provide three judicial professionals who adjudicate water law cases on the Truckee River to attend the Dividing the Waters Conference at Stanford Law School. The conference topic is "Sustainable Water Rights Management in Times of Shortage" on April 10-13, 2019.							
Key People:	Director:	President Benes Aldana (Ret.)							
	Board Chair:	Sandra Yamate, Esq.							
	Project Contact:	Name:	Steve Snyder						
		Position:	Executive Director of Dividing the Waters						
		Phone:	(505) 250-7700						
		Fax:							
Email:		Sesnyder@q.com							
Organization Mission:		The National Judicial College's mission is "making the world a more just place by educating and inspiring its judiciary."							
Has your organization received other grants from the Truckee River Fund? Yes No X (use additional page if necessary)		If yes, <table border="1"> <tr> <td>Date awarded:</td> <td></td> </tr> <tr> <td>Project title:</td> <td></td> </tr> <tr> <td>Amount of Award:</td> <td></td> </tr> </table>		Date awarded:		Project title:		Amount of Award:	
Date awarded:									
Project title:									
Amount of Award:									

DESCRIPTION OF PROJECT UNDER CONSIDERATION

Indicate the description that best fits the project you are proposing. Mark no more than three categories:

- ☐ A. Projects that improve bank or channel stabilization and decrease erosion.
- ☐ B. Structural controls or Low Impact Development (LID) projects on tributaries and drainages to the Truckee River where data supports evidence of pollution and/or sediments entering the Truckee River.
- ☐ C. Projects that remove pollution from the Truckee River.
- ☐ D. Projects that remove or control invasive aquatic species or terrestrial invasive plant species that are adverse to water supply.³
- ☒ E. Other projects that meet the evaluation criteria.

1. Specific project goals and measurable outcomes and how you will measure and report them.

The goal of convening the Dividing the Waters Conference on “Sustainable Water Rights Management in Times of Shortage” is to provide judges who hear water law cases with the information and insights they need to make informed and thoughtful decisions about the allocation of this country’s precious water resources during a major drought. The course will improve judges’ abilities to resolve water conflicts in ways that are faithful to the law, science and practicalities of water rights management. Specific learning objectives will be prepared for each segment of the program, and faculty will be held accountable for reaching these objectives.

The measurable outcomes resulting from judges completing the conference will include the following:

- a. Understand how the law grapples with problems of water scarcity
- b. Be able to evaluate and weigh scientific evidence relevant to resolving water disputes
- c. Be better prepared to make principled decisions about the use of water during scarcity

These outcomes will be measured by a post-course evaluation provided to all course participants. The NJC, drawing on its multiple years of experience in designing post-training questionnaires, will develop a questionnaire for the Stanford Conference that not only asks whether the conference was relevant and practical but attempts to determine whether the participants acquired a more nuanced understanding of water conflicts as a consequence of attending the conference. DTW’s executive director will conduct post-conference interviews of the Nevada judges to assess whether the conference had a positive impact on judicial performance. The knowledge and insights that the Nevada judges will obtain will be critical when they decide water cases that affect the Truckee River or its watershed.

2. Project location.

The Dividing the Waters conference will be at the Stanford Law School, Palo Alto, California.

3. Project description.

The National Judicial College (NJC), founded in 1963, is the nation’s leading provider of judicial education for state court, administrative law, and tribal judges. Dividing the Waters (DTW), founded in 1993, is a self-governing program of the NJC that provides training, informational resources and collaborative learning opportunities for judges, special masters, and administrative hearing officers who preside over water resource litigation throughout the United States—particularly in the West. With few exceptions, judges who decide conflicts over the use of water have no specialized education or experience that would enable them to understand the nuances of water management during times of shortage. Their knowledge of the science and art of water resource management will be what they learn from the evidence presented at trial. As a result, the risk exists that they will develop a distorted view of the complexities associated with water management in a drought.

DTW is holding its next conference at Stanford Law School at the invitation of the school and Stanford Law Professor Barton (Buzz) Thompson, who presided over the recently concluded

interstate water litigation between Wyoming and Montana as the United States Supreme Court appointed special master. Stanford and DTW have mutually agreed that the conference should focus on the water resource conflicts that arise in a drought and do so by examining California's efforts to manage water during its recent drought and compare those efforts to those of other States when confronting their own droughts.

The program, respectfully requests \$3,092 to provide tuition and partial travel scholarships to three judicial professionals from Northern Nevada who adjudicate water law cases that affect the Truckee River and its watershed to attend the DTW Conference "Sustainable Water Rights Management in Times of Shortage" from April 10-13, 2019, at Stanford Law School in Palo Alto, California.

Judges, special masters and administrative hearing officers from across the United States will gather at Stanford Law School to learn from one another, and from a distinguished faculty, about water litigation during drought. Judges will learn how to evaluate the scientific, technical, and legal issues that arise in litigation over the use of water during a drought. Issues to be addressed at the Conference include priority of enforcement of water rights, modeling of surface water and groundwater flows, managing the relationship between surface water and groundwater, and litigation over the protection of environmental flows. The Conference includes a field trip to the Monterey Peninsula, where judges will tour a desalination plant, a ground water injection site, and observe how the removal of a dam affected the Carmel River watershed.

The distinguished faculty will consist of judges, water lawyers, scientists and water administrators with wide-ranging experience in water litigation and management in the western United States. The conference's classroom activities will include an evaluation of California, Idaho, and Colorado's regulatory response to drought, an analysis of California's recently enacted Groundwater Sustainability Management Act, and an examination of legal efforts to protect watershed health by maintaining a minimum stream flow. Finally, judges and conference faculty will discuss the importance of obtaining real-time information about the availability and uses of surface and groundwater flows, emerging technologies for measuring those flows and how to evaluate and weigh scientific evidence based on those techniques. The conference will expand and deepen the perspective of judges who attend the conference-judges whose decisions will impact how society manages its water in the future.

4. **Grant priorities.**

The project advances three of TRF's grant priorities: (a) Priority II Watershed Improvements: (b) Priority VI Stewardship and Environmental Awareness, and (c) Priority VIII, Leverage Stakeholder Assets and Participation and Priority. The conference agenda items that address each of these priorities are listed below:

Pre-Conference Webinar:	The Surface Water-Groundwater Connection: Law vs. Science?
Presented by:	Michelle Bryan, Professor of Natural Resource Law, University of Montana
Date:	Friday, April 5, 2019 at 10:00 a.m., PST

Wednesday, April 10:	Opening Welcome Events
5:00 pm	Opening Reception
6:30 pm	Keynote Lecture: <i>Emerging Water Management Issues in the United States</i>

Presented by: Barton (Buzz) Thompson, Jr., Professor of Law, Stanford Law School; Supreme Court Special Master, *Montana vs. Wyoming*

Thursday, April 11:

Visit may include:

Monterey Peninsula Field Trip

Sand City Desalination Facility, San Clemente Dam

Removal Site, Groundwater Storage Injection Site

Friday, April 12:

Classroom Work

8:00 am

Welcome and Introductions

8:15 am

California's Regulatory and Legislative Response to the 2011-2015 Drought

Panelists:

- Felicia Marcus, Chair of the California Water Resources Control Board
- Brian Gray, Senior Fellow, Public Policy Institute of California and Professor Emeritus, University of California, Hastings College of Law
- Justice Gordon Burns, California Court of Appeal and former Undersecretary of the California Environmental Protection Agency

10:30 am

Measurement, Monitoring and Forecasting: Three Conditions Precedent to Sustainable Water Management. Panelists:

- Joya Banerjee, Esq., Senior Program Officer, S. D. Bechtel, Jr. Foundation
- Other panelists to be announced

1:30 pm

Conjunctive Management Part I: Lessons Learned from Conjunctive Management in Idaho, New Mexico and Colorado Panelists:

- Gary Spackman, Director of Idaho Department of Water Resources
- Judge Eric Wildman, Idaho District Court
- Judge Matthew G. Reynolds, New Mexico District Court
- Judge James F. Hartmann, Colorado District Court

3:30 pm

Conjunctive Management Part II: Implementing Conjunctive Management Under California's Sustainable Groundwater Management Act Panelists:

- Judge Peter Kirwan, California Superior Court
- Thomas Harter, Professor of Water Resource Management, University of California at Davis
- Alletha (Letty) Belin, Esq., Natural Resource and Water Consultant, former Visiting Scholar at Stanford Water in the West, former Counselor to the Deputy Secretary of the Interior

Friday Evening, April 12:

Conference Dinner

6:30 pm

Speaker: (To be announced)

Saturday, April 13:

Classroom Work

8:00 am

Protecting Environmental Flows Panelists:

- Leon Szeptycki, Executive Director, Stanford Water in the West
- Robin Craig, Professor of Law, University of Utah

10:30

Dialogue Among Judges: Judicial Decision Making in an Era of Sustainable Water Rights Management

5. **Permitting.** Not applicable.
6. **Future land use.** Not applicable.
7. If **future phases** of the project will be needed. Not applicable

8. **Principals involved** in leading or coordinating the project or activity.

DTW Executive Director Steve Snyder is a former special master for the Pecos, Lower Rio Grande, San Juan and Animas general stream adjudications in New Mexico. During the fourteen years he served as a special master, he heard a variety of disputes over conflicting claims to the use of water in New Mexico's principal river basins. Prior to becoming a special master, Steve was a commercial litigator and partner of a major law firm in Denver. He earned his undergraduate degree and an M.B.A. from the University of New Mexico and his J.D. from the University of Texas.

The NJC Provost Joy D. Lyngar has been a judicial educator for twenty years. She was named provost of the NJC in 2018 after serving 10 years as the chief academic officer. She has led her department to record achievement; NJC now educates more than 10,400 judicial professionals each year through in-person and on-line courses. Ms. Lyngar practiced law in Canada working in a general practice firm that handled criminal defense, civil litigation, and family law. She received a Bachelor's degree and Juris Doctor from the University of Saskatchewan. She serves on the board of the National Association of State Judicial Educators.

9. Number of **staff positions involved** in project: There are no fulltime positions. The DTW Executive Director Steve Snyder and NJC Provost Joy Lyngar provide part-time support to his project.

10. Number of **volunteers involved** in project. No volunteers are involved.

11. **Time Line** of Project.

The conference venue and speakers have been confirmed except for the Friday evening conference dinner speaker which will be confirmed by mid-February. To date, 15 judges have enrolled in the course and six are pending their scholarship confirmation enrollment. The maximum attendance is 50 judges. The materials are being developed by the speakers and are due to be finished by March 31, 2019.

12. **Success.**

Success will be attained when the three Nevada judicial professionals who attend the conference obtain additional knowledge and insights about how to adjudicate water law cases that protect and enhance water quality or water resources of the Truckee River or its watershed. They will also be successful in developing relationships with preeminent water resource experts in the West from whom they can obtain information in the future.

13. **Grant match.**

The cash match of \$1,030 will be provided by the Bechtel Foundation funds which have already been received at the NJC.

DTW Stanford Conference Budget

					REIMBURSEMENT	
Budget Item		Other			Expenditures to	Expenditures to
Description	TRF	Funding	Match \$	Total	to date TRF	date (other sources)
	\$	Name				
Labor-paid	\$0	DTW/NJC	\$0	\$36,000	\$0	\$0
Travel & Lodging for Staff and Faculty	\$0	Bechtel Foundation	\$0	\$22,950	\$0	
Conference Materials	\$0	DTW/NJC	\$0	\$1,750	\$0	
Travel and Tuition Scholarships for Two Nevada Judges (\$699 Tuition x 3 attendees and \$675 partial travel x 3 attendees)	\$3,092	Bechtel Foundation	\$1,030	\$4,122		
Travel and Lodging Scholarships for California Attendees		California Dept. of Water Resources	\$0	\$16,875		
TOTAL	\$3,092		\$1,030	\$81,697		



FRIENDS of NEVADA WILDERNESS

Cover Sheet

Date: 02/08/2019

Organization Name:		Friends of Nevada Wilderness																																					
Type:		501(c)(3) EIN# 88-0211763	Governmental entity? Y/N																																				
Address:		1360 Greg St. #111 Sparks Nevada 89431																																					
Project Name:		Mount Rose Noxious Weed Monitoring and Treatment #7																																					
Amount requested: \$24,094		Website: www.nevadawilderness.org																																					
This funding will be used to (complete this sentence with a max of 2 sentences):		Friends of Nevada Wilderness seeks to treat approximately 75 acres of noxious weeds on Humboldt-Toiyabe National Forest lands within the Truckee River Watershed.																																					
Key People: Nora Kaufmann	Director:	Shaaron Netherton																																					
	Board Chair:	Roger Scholl																																					
	Project Contact:	Name:	Nora Kaufmann																																				
		Position:	Northern Nevada Stewardship Manager																																				
		Phone:	775-324-7667																																				
		Fax:	775-324-2677																																				
		Email:	nora@nevadawilderness.org																																				
Organization Mission:			Friends of Nevada Wilderness is dedicated to preserving all qualified Nevada public lands as Wilderness, protecting all present and potential Wilderness from ongoing threats, educating the public about the values of and need for wilderness, and improving the management and restoration of wild lands.																																				
Has your organization received other grants from the Truckee River Fund? Yes X No _ (use additional page if necessary)			If yes, <table border="1"> <tr> <td>Date awarded:</td> <td>March 2018</td> </tr> <tr> <td>Project title:</td> <td>TRF #196- Mt Rose Noxious Weed Monitoring and Treatment #6</td> </tr> <tr> <td>Amount of Award:</td> <td>\$23,500</td> </tr> <tr> <td>Date awarded:</td> <td>March 2017</td> </tr> <tr> <td>Project title:</td> <td>TRF #185- Mount Rose Noxious Weed Monitoring and Treatment #5</td> </tr> <tr> <td>Amount of Award:</td> <td>\$22,405</td> </tr> <tr> <td>Date awarded:</td> <td>April 2016</td> </tr> <tr> <td>Project title:</td> <td>TRF #168- Mount Rose Noxious Weed Monitoring and Treatment #4</td> </tr> <tr> <td>Amount of Award:</td> <td>\$21,002</td> </tr> <tr> <td>Date awarded:</td> <td>September 2014</td> </tr> <tr> <td>Project title:</td> <td>TRF #153- Mount Rose Noxious Weed Monitoring and Treatment #3</td> </tr> <tr> <td>Amount of Award:</td> <td>\$15,807</td> </tr> <tr> <td>Date awarded:</td> <td>August 2013</td> </tr> <tr> <td>Project title:</td> <td>TRF #130 Mount Rose Noxious Weed Monitoring and Treatment #2</td> </tr> <tr> <td>Amount of Award:</td> <td>\$10,896</td> </tr> <tr> <td>Date awarded:</td> <td>March 2012</td> </tr> <tr> <td>Project title:</td> <td>TRF # 111 Mount Rose Noxious Weed Monitoring and Treatment</td> </tr> <tr> <td>Amount of Award:</td> <td>\$13,225</td> </tr> </table>	Date awarded:	March 2018	Project title:	TRF #196- Mt Rose Noxious Weed Monitoring and Treatment #6	Amount of Award:	\$23,500	Date awarded:	March 2017	Project title:	TRF #185- Mount Rose Noxious Weed Monitoring and Treatment #5	Amount of Award:	\$22,405	Date awarded:	April 2016	Project title:	TRF #168- Mount Rose Noxious Weed Monitoring and Treatment #4	Amount of Award:	\$21,002	Date awarded:	September 2014	Project title:	TRF #153- Mount Rose Noxious Weed Monitoring and Treatment #3	Amount of Award:	\$15,807	Date awarded:	August 2013	Project title:	TRF #130 Mount Rose Noxious Weed Monitoring and Treatment #2	Amount of Award:	\$10,896	Date awarded:	March 2012	Project title:	TRF # 111 Mount Rose Noxious Weed Monitoring and Treatment	Amount of Award:	\$13,225
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FRIENDS of NEVADA WILDERNESS

DESCRIPTION OF PROJECT UNDER CONSIDERATION

Indicate the description that best fits the project you are proposing. Mark no more than three categories:

- ☐ A. Projects that improve bank or channel stabilization and decrease erosion.
- ☐ B. Structural controls or Low Impact Development (LID) projects on tributaries and drainages to the Truckee River where data supports evidence of pollution and/or sediments entering the Truckee River.
- ☐ C. Projects that remove pollution from the Truckee River.
- ☒ D. Projects that remove or control invasive aquatic species or terrestrial invasive plant species that are adverse to water supply.¹
- ☐ E. Other projects that meet the evaluation criteria.

NARRATIVE REQUIREMENTS

Provide answers for all 11 sections below; use the numbers and topics (in **bold**) to label each section in your response. Your application is limited to 5 narrative pages, including the cover sheet. Your budget is page 6. **All projects are required to have measurable outcomes:**

1. Project goals, Measurable Outcomes, and how you will measure and report them:

Goals: The overall goal of the Mount Rose Wilderness Noxious Weed Monitoring and Treatment Project is to protect the water quality of the Truckee River and its watershed. Specifically, our goal is to treat noxious weeds at their source to mitigate their spread, monitor known weeds sites for changes and growth, and identify any new weed activity or infestations. Noxious weeds threaten the biodiversity, wildlife habitat, soil productivity, water quality, and recreational resources of the Mt. Rose Wilderness. By removing them we will help retain and improve watershed health.

Methods: Our methods to control weeds in the Wilderness will consist of monitoring/scouting and direct treatment. During the treatment phase, Friends of Nevada Wilderness staff will host volunteer weed pulling events in which we will use shovels and clippers to pull musk thistle (*Carduus nutans*) and perennial pepperweed (*Lepidium latifolium*); both are listed on the state noxious weed list and the Truckee Meadow's Dirty Dozen Noxious Weed list. To minimize impacts to desirable land, mechanical treatments are the most appropriate way to treat these weeds in Wilderness. During the monitoring/scouting phase, FNW staff, AmeriCorps members, and volunteers will monitor known weed sites to assess outcomes and continue to document change in known populations. In 2018, we mapped the 2017 Hunter Creek Fire perimeter to assess the post-fire spread of noxious weeds. We identified three new Musk Thistle sites and one new Medusa Head site. In 2019, we will return to these sites to treat and monitor the area for any new invasive weed populations.

Measurable Outcomes: Friends of Nevada Wilderness staff and volunteers will monitor and treat approximately 75 acres of noxious weeds, while also scouting the Mt. Rose Wilderness for new infestations. We will host eight volunteer weed-pulling events and six volunteer weed monitoring projects. We have identified our focus areas from years of monitoring and direction from the Carson Ranger District. Through the completion of these projects, we anticipate removing 15,000-20,000 invasive weeds that each have the potential to germinate and create thousands more plants. On each of these projects, we hope to average 6-8 volunteers for about 6 hours of on-the-ground work. These projects will not only engage and educate volunteers in the treatment of noxious weeds, but will give citizens a chance to take part in the stewardship of their public lands. To date we have removed nearly 175,000 weeds in the Mount Rose Wilderness, resulting in a decrease in density of noxious weeds, and we want to continue the hard work necessary to reduce noxious weed populations overall. Last year, we far outperformed our goals by removing over 25,000 invasive Musk Thistle and we hope to build on this momentum. We have hosted over 70 projects in the past ten years with the USFS Carson Ranger District.



Friends of Nevada Wilderness

2. **Project location.** The project is focused in the northern section of the Mount Rose Wilderness, an area 5,000 acres in size. The majority of the noxious weeds are located within Hunter Creek and Belli Front areas of the Wilderness. All of the identified noxious weed locales are within the Truckee River Watershed and are 2-4 miles from the Truckee River. Areas of concern are the helicopter loading points used by the Carson City RD to fight the Hunter Falls Fire of 2014 and the Hunter Creek Fire of 2017, which we plan to monitor closely for any further invasive weed developments.
3. **Project description.** Staff will lead volunteers to known locales of noxious weeds, removing them with shovels and clippers as necessary. Staff and volunteers will also monitor previously identified and/or treated sites and scout the 2017 Hunter Creek Fire perimeter and helicopter loading points. Please see map, included on page 7.
4. **Grant priorities.** Our grant proposal is in line with many of the grant priorities outlined by the TRF, specifically priority #1 (Aquatic Invasive Species); priority #2 (Watershed Improvements); and priority #6 (Stewardship and Environmental Awareness). Noxious weeds, specifically musk thistle, poses a significant threat to the Truckee River Watershed. Through volunteer-powered stewardship projects, we seek to improve the Truckee River Watershed by removing these noxious weeds. Reducing the number of weeds in the Hunter Creek area (a main tributary to the Truckee River) will improve the water quality, reduce soil erosion, and slow the spread further downstream, as well as enhance the recreation qualities of the beloved Hunter Creek Trail. Our long-standing Wilderness Weed Warriors program seeks to both engage and educate the public on the importance of noxious weed management and it is our hope that after one project with us, volunteers have a basic understanding of the effect of noxious weeds on plant diversity, wildlife habitat, and water and soil quality. By educating the public on these issues, we can inspire more stewardship and environmental awareness of the Truckee Meadows.
5. **Permitting.** As of now this project does not require any special permits, we will be taking direction from our Carson Ranger District contacts.
6. **Future land use.** Our program sites are all within public land managed by the US Forest Service and the majority of the sites are within the Mt Rose Wilderness. There are no foreseeable zoning, land use, or development plans that will affect this project.
7. **Future Phases:** Unfortunately, there may always be weeds to pull. Our hope is to work ourselves out of a job in that sense; however, our continuing goal is to keep existing weed sites from spreading or traveling. The danger of Musk Thistle is that these plants create dense monocultures, drive out native plants and animals, disrupt the local ecology, degrade the soil, and enhance erosion. Their seeds can stay dormant in the soil for up to 15 years, resulting in an immediate need for management continued well into the future. While ultimately getting rid of these plants altogether is ideal, we will continue pulling as many thistles as we can, year after year, in an attempt to reduce the seed bank. At sites we have treated for multiple years, we have seen a reduction in the annual number of plants. We hope to build on this success and continue to reduce the seed bank.

We will continue working with the USFS Carson Ranger District to build upon our previous management plan and treat any new weed locations. We have a GIS specialist on staff who will work with us to provide accurate and up-to-date maps, and help identify weed locations and priorities for the future. The Truckee River Fund has generously supported these efforts in past years and we hope you will continue to find it important for years to come.

8. **Principals Involved:** Five staff members from Friends of Nevada Wilderness, including two Northern Nevada Stewardship Manager and Stewardship Coordinator, Administrative Coordinator, GIS Mapping Technician, and



FRIENDS of NEVADA WILDERNESS

one seasonal AmeriCorps Service Member will be involved. We will be taking direction from the USFS Carson District Botanist, Fire Management Officer, and Recreation Staff.

9. **Staff Positions Involved:** Fulltime 0 Part-time 5
10. **Volunteers Involved:** We plan to have at least 80 volunteers involved, donating 500 or more volunteer hours. We will host 8 volunteer weed pull trips and six volunteer weed monitoring/scouting trips with an average of five volunteers per trip. Our outings are typically day trips ranging from 4-8 hours. In 2018, we had great success working with Patagonia Inc employees, and will work with them again this year. We will also reach out to other businesses, UNR clubs, local Meetups, the Reno Hiking Group, Keep Truckee Meadows Beautiful, Truckee Meadows Parks Foundation, One Truckee River, and the Truckee Meadows Weed Coordinating Group with whom we meet quarterly. In addition to direct contact, we use a variety of outreach methods to recruit volunteers such as tabling, flyer placement, social media, and volunteer recruitment websites such as www.volunteermatch.com and www.idealists.org.
11. **Time Line:** Outreach for volunteers and partner groups will start immediately upon project approval. Logistical planning and monitoring will begin in April. Our first treatment project will be April 27th, 2019, followed by more projects May-July. We will complete all of our treatments by July 2019. We will also plan monitoring projects for the fall to monitor plant growth over the season. Reporting will occur in early 2020.
12. **Success:** We will inform the committee know of our successes with written quarterly reports accompanied by photographs. We invite the committee to join us on any of our volunteer events to see progress firsthand. We will communicate our efforts through press releases, bi-annual newsletters, monthly E-newsletters, and we will update our accomplishments often on our social media platforms such as Twitter, Facebook, and Instagram. Last season, KTVN Channel 2 News produced a short piece highlighting the program and its success over the years. We hope to receive more media coverage next year to further highlight the program and the Community Foundation's generous community support.
13. **Grant match.** Please see Grant Match Template on page 5.
14. **Project budget** Please see Budget Template on Page 6



FRIENDS of NEVADA WILDERNESS

Grant Match

Match amount to be provided:	\$12,526				
Match details: We will be using matching funds from a National Forest Foundation (NFF) grant which we have already secured. We will also match with a pending grant application with the National Environmental Education Foundation (NEEF). If we do not receive the NEEF grant, these funds will be matched with the NFF and individual contributions. These funds will help support and enhance funding for the Mt. Rose Wilderness noxious weed program.	Please provide the form of your matching funds. If match is made up of both cash and in-kind, fill in both sections. Match is: <table border="1" style="width: 100%;"> <tr> <td>Cash</td> <td>\$2,446</td> </tr> <tr> <td>In-kind</td> <td>\$10,080</td> </tr> </table> <p>Note: Volunteer and in-kind hours may be calculated at a maximum rate of \$20/hour per individual. Indirect cost may not be counted as match.</p> <p>For the cash portion of your match, is the funding already being held by the applicant for this project? Yes <u>X</u> No <u> </u></p>	Cash	\$2,446	In-kind	\$10,080
Cash	\$2,446				
In-kind	\$10,080				
Description of matching funds/in-kind donations:	Matching funds will be for transportation, volunteer supplies, tools, planning, outreach, labor, and training. In-kind matches will be made with volunteer hours.				

ATTACHMENTS

You may be asked to submit the following attachments via email. If you are asked to submit the attachments, clearly label each file with your organization's name. If you do not have the ability to email them, place each of the items listed below on a separate page and submit just one copy.

Nonprofits submit:

- ☒ Last audited financial statements if your organization has been audited
- ☒ List of Board of Directors
- ☒ Copy of agency's IRS 501(c)(3) Tax Determination Letter
- ☒ Copy of the agency's most recent IRS Form 990

Governmental entities submit:

- ☐ Departmental budget in lieu of audited financial statements



FRIENDS of NEVADA WILDERNESS

Budget Item Description	Truckee River Fund	Match Source	Match Amount	Total
Payroll Expenses	\$17,261	NFF-MAP & NEEF	\$1,944	\$19,205
AmeriCorps Stipend	\$2,926			\$2926
Volunteer Labor (504 hrs at \$20/hr)		In-Kind Volunteer Labor	\$10,080	\$10,080
Printing and Reproduction	\$400	NFF-MAP & NEEF	\$280	\$680
Project Supplies	\$500			\$500
Training Expenses	\$305			\$305
Vehicle Travel (150 miles at 5.80/mile)	\$87			\$87
Volunteer Food	\$425			\$425
Subtotal	21,904		\$12,304	\$34,208
Overhead (at 15%)	\$2,190		\$222	\$2,412
		<i>Cash Match Total</i>	<i>\$2,446</i>	
TOTAL	\$24,094	TOTAL	\$12,526	\$36,620

BUDGET NARRATIVE

Payroll Expenses: Payroll expenses include all project planning, facilitation, data entry, program oversight, as well as follow up, volunteer recruitment, outreach and communications, GIS, and Truckee Meadows Weed Coordinating Group meetings.

AmeriCorps Stipend: This helps cover the cost of one of our AmeriCorps Service members for a portion of the field season.

Volunteer Labor: This is calculated at \$20.00/hr for 14 volunteer events with at least 6 people at each event for 6 hours; \$20/hr x 6 volunteers x 6 hrs x 14 projects = \$10,080.

Printing and Reproduction: This will go towards printing flyers and brochures for advertising our events and volunteer recruitment as well as a portion of our twice-yearly newsletter. It will also go towards the creation and promotion of social media content to support the program and the Community Foundation of Western Nevada.

Project Supplies: This will be used to help cover the cost for first aid kits, tool/supply updates and maintenance, and volunteer appreciation, etc. Additional funds will be put towards a heavy-duty camera used to capture photos of volunteers and better tell the story of our weed pulls.

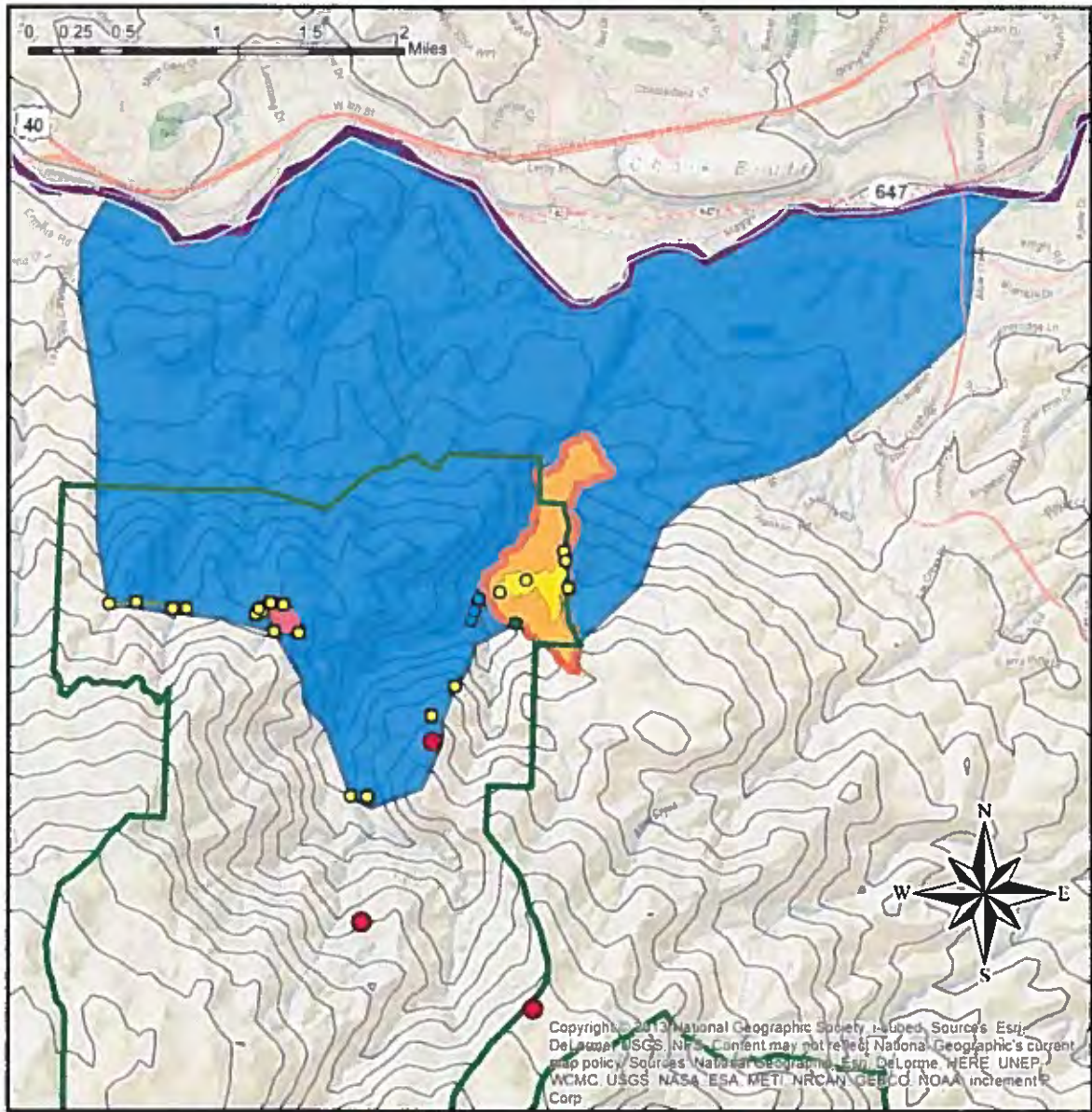
Training Expenses: This will cover relevant classes, possibly the Weed Warrior class hosted by the University of Nevada, Reno Cooperative Extension, and a portion of the Wilderness First Aid training for our seasonal AmeriCorps and staff. In addition, we will continue to update our invasive weed reference materials for staff/volunteers.

Vehicle Travel and Volunteer Food: This portion accounts for the use of a company vehicle and UTV which may be used to access the Hunter Creek Road, as well as mileage reimbursement for distances driven with personal vehicles. It also accounts for volunteer food such as trail snacks and our end of season volunteer appreciation event.



FRIENDS of NEVADA WILDERNESS

Mt. Rose Wilderness Noxious Weed Monitoring and Treatment Project: Impacted Watershed



Friends of Nevada Wilderness
1360 Greg St #111 / Sparks, NV 89431
Mount Rose Noxious Weed Monitoring and Treatment #7



United States
Department of
Agriculture

Forest
Service

Humboldt-Toiyabe National Forest

Carson Ranger District
1536 South Carson Street
Carson City, NV 89701
775-882-2766

File Code: 1580
Date: February 8, 2019


Truckee River Fund
Community Foundation of Western Nevada
50 Washington St.
Suite #300
Reno, NV 89503

To Whom It May Concern:

On behalf of the Humboldt-Toiyabe National Forest, Carson Ranger District, I am expressing my support of Friends of Nevada Wilderness' (FNW) proposed projects in and around the Mt. Rose Wilderness. FNW has been working closely with the Carson Ranger District for over 10 years to treat invasive plants in and around the wilderness area. As a result of this work, we have seen a reduction in musk thistle which is of direct benefit to the habitat and ecosystem of the Truckee River Watershed. I highly value our partnership which goes beyond invasive weed treatment and monitoring to include education projects, solitude monitoring, impact monitoring, trail maintenance, and other projects. FNW has a track record of effectively executing many grants from a variety of sources. I am confident that FNW will do the same with this funding.

Please accept this letter in support of the proposed projects, and we thank you for your generous consideration and support of these important restoration efforts.

Sincerely,

for 
IRENE DAVIDSON
District Ranger



#220

Cover Sheet

Date: 2/7/2019

Organization Name:	Washoe County Parks and Open Space																				
Type:	Local Government - County	Governmental entity? Yes																			
Address:	1001 E. 9 th St. Reno, NV 89512																				
Project Name:	Washoe County Parks and Open Space Weed Treatment and Revegetation Project along the Truckee River																				
Amount requested: \$45,000	Website: https://www.washoecounty.us/parks/																				
This funding will be used to (complete this sentence with a max of 2 sentences):	This funding will be used to remove noxious weeds and re-establish native vegetation in Washoe County Parks and Open Space areas along the Truckee River and its tributaries. The project includes weed inventory, GIS mapping, chemical and mechanical treatments, re-vegetation, and monitoring.																				
Key People:	Director:	David Solaro, Assistant County Manager/Director of Community Services Department																			
	BoardChair:																				
	Project Contact:	Name:	Joanne Lowden																		
		Position:	Natural Resource Planner																		
		Phone:	(775) 328-2039																		
		Fax:	(775) 328-3699																		
		Email:	JLOWDEN@WASHOECOUNTY.US																		
Organization Mission:	Our mission is to provide exceptional parks, open space and recreational opportunities while preserving our natural, historical and cultural resources.																				
Has your organization received other grants from the Truckee River Fund? Yes X* No	<p>*In partnership with the Nevada Land Trust (Lynda Nelson). For prior year grants, grantee may have been Washoe County or Nevada Land Trust.</p> <table border="1"> <tr><td>Date awarded:</td><td></td></tr> <tr><td>Project title:</td><td></td></tr> <tr><td>Amount of Award:</td><td></td></tr> <tr><td>Date awarded:</td><td></td></tr> <tr><td>Project title:</td><td></td></tr> <tr><td>Amount of Award:</td><td></td></tr> <tr><td>Date awarded:</td><td></td></tr> <tr><td>Project title:</td><td></td></tr> <tr><td>Amount of Award:</td><td></td></tr> </table>			Date awarded:		Project title:		Amount of Award:		Date awarded:		Project title:		Amount of Award:		Date awarded:		Project title:		Amount of Award:	
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DESCRIPTION OF PROJECT UNDER CONSIDERATION

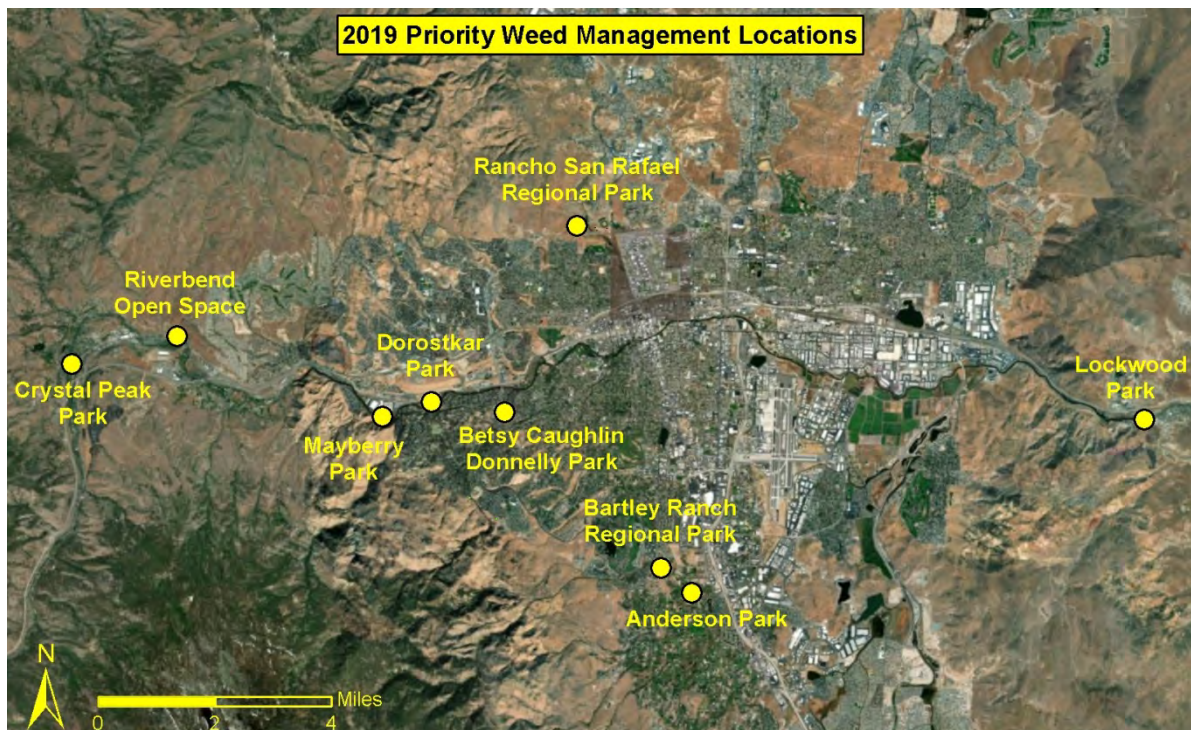
- ☒ A. Projects that improve bank or channel stabilization and decrease erosion.
- ☐ B. Structural controls or Low Impact Development (LID) projects on tributaries and drainages to the Truckee River where data supports evidence of pollution and/or sediments entering the Truckee River.
- ☐ C. Projects that remove pollution from the Truckee River.
- ☒ D. Projects that remove or control invasive aquatic species or terrestrial invasive plant species that are adverse to water supply.
- ☐ E. Other projects that meet the evaluation criteria.

PROJECT NARRATIVE

- 1. Project Goals and Measurable Outcomes and How You Will Measure and Report Them** Project goals include identifying, mapping, and treating noxious weeds in Washoe County Parks and Open Spaces along the Truckee River corridor. Inventories would be conducted to determine the location and size of weed infestations. Pre-treatment maps would be generated showing the number of acres inventoried and the number of acres needing treatment. Success of weed treatments would be evaluated by visually estimating the amount of dead weed vegetation or eliminated weeds in the treatment areas compared to pre-treatment levels (expressed as a percentage). In addition to weed treatments, project goals include re-establishment of native vegetation through seeding and planting container stock. Success of seeding and planting efforts would be monitored over subsequent years. Results would be measured by the total number of acres inventoried, treated, seeded, and planted. Results would also include the estimated success rate of weed treatments.
- 2. Project Location** The project would be located in several Washoe County Parks and Open Space areas along the Truckee River and its tributaries. Priority treatment areas identified for 2019 include Crystal Peak Park (Verdi, NV), Riverbend Open Space (Verdi, NV), Mayberry Park (Reno, NV), Dorostkar Park (Reno, NV), Betsy Caughlin Donnelly Park (Reno, NV), Bartley Ranch Regional Park (Reno, NV), Anderson Park (Reno, NV), Rancho San Rafael Regional Park (Reno, NV), and Lockwood Park (Sparks, NV).
- 3. Project Description** This project would remove noxious and invasive weeds and re-establish native vegetation in Washoe County Parks and Open Space areas along the Truckee River corridor. Project implementation would include weed inventory, GIS mapping and reporting, chemical and mechanical treatments, re-vegetation, and monitoring. A combination of Washoe County staff time, contracts, and volunteer efforts would be used to implement the project. In previous years, a majority of the weed inventory and treatment in Washoe County Parks and Open Spaces along the Truckee River was conducted by the Nevada Land Trust using Truckee River Funds and in partnership with the Nevada Division of Forestry (NDF) using Medusahead Grant funds. Since the Nevada Land Trust weed program has ended, Washoe County Parks would like to continue with noxious weed monitoring and treatments to improve fish and wildlife habitat, enhance recreational opportunities, improve water quality through soil stabilization, reduce fire hazard, and increase the visual quality of parks.

Priority treatment areas identified for 2019 include Crystal Peak Park, Riverbend Open Space, Mayberry Park, Dorostkar Park, Betsy Caughlin Donnelly Park, Bartley Ranch Regional Park, Anderson Park, Rancho San Rafael Regional Park, and Lockwood Park. Each of these parks was inventoried and treated at least once between 2015 and 2017. Previous treatment areas would be monitored and new weed infestations would be documented as part of inventory efforts. Pre-treatment maps would be generated showing the number of acres inventoried and the number of acres needing treatment. A variety of treatments may be used including mowing, hand pulling, and herbicide application. Target weed species based on past data include, but are not limited to, hoary cress (*Cardaria draba*), musk thistle (*Carduus nutas*), diffuse knapweed (*Centaurea diffusa*), yellow starthistle (*Centaurea solstitialis*), Canada thistle (*Cirsium arvense*), poison hemlock (*Conium maculatum*), perennial pepperweed (*Lepidium latifolium*), purple loosestrife (*Lythrum salicaria*), scotch thistle (*Onopordum acanthium*), teasel (*Dispacus spp.*), and medusahead (*Taeniatherum caput-medusae*).

Re-vegetation efforts would include seeding and planting of native vegetation and be focused on areas with larger weed infestations and areas with previous disturbances such as wildfire. The Caughlin Fire burned in Bartley Ranch Regional Park in 2011 and restoration efforts have been ongoing. Approximately 22 acres of upland area along the Last Chance and Lake Ditches would be a priority area for weed treatments and re-vegetation. Washoe County Parks used Nevada Division of Forestry Medusahead Grant funding to obtain native seed mix and Washoe Nursery native plant stock. These materials would be used for re-vegetation projects between Fall of 2019 and Spring of 2020. Monitoring of re-vegetation sites would occur for several years post-treatment to determine if the plantings are successful.



- 4. Grant Priorities** The proposed project advances Truckee River Fund grant priorities II, IV, VII, and VIII. Managing noxious weeds and re-establishing native vegetation along the Truckee River corridor helps to improve water quality by stabilizing soils and reducing erosion potential and sedimentation as identified in Priority II. The proposed project advances Priority IV through re-vegetation of upland areas which will help to improve watershed resiliency and targeted efforts in Bartley Ranch Regional Park which will focus on restoring native upland vegetation in a previously burned area. Priority VIII is advanced through Washoe County's partnership with multiple stakeholders including the Nevada Land Trust (One Truckee River Initiative), Keep Truckee Meadows Beautiful, Nevada Department of Wildlife, Nevada Department of Agriculture, and Nevada Division of Forestry to identify restoration needs and leverage funding sources for projects in the Truckee River Corridor.
- 5. Permitting** Permits are not required for the proposed project.
- 6. Future Land Use** No known or reasonably foreseeable zoning, land use, or development plans would affect the proposed project.
- 7. Future Phases** Monitoring and treating noxious weeds in Washoe County Parks and Open Spaces is an ongoing effort that will continue into future years. Washoe County will continue working with the Washoe Storey Cooperative Weed Management Area group and partners such as the Nevada Land Trust, Keep Truckee Meadows Beautiful, Nevada Department of Wildlife, Nevada Department of Agriculture, and Nevada Division of Forestry to identify and leverage funding sources as they become available.
- 8. Principals Involved** Joanne Lowden, Natural Resource Planner for Washoe County Parks and Open Space, will be the project manager. Joanne is a member of the Washoe Storey Cooperative Weed Management Area group and attends quarterly meetings. She is currently a certified government applicator for restricted use pesticides for both terrestrial and aquatic weeds.
- 9. Staff Positions Involved** At least 5 Washoe County staff positions will be involved part-time with the project including the Natural Resource Planner (Project Manager), District Park Manager, 2 Park Rangers, and the Volunteer Coordinator.
- 10. Volunteers Involved** At least one volunteer planting and seeding event will be planned through the Washoe County Parks Volunteer Coordinator with an estimate of 80 total hours. Additional volunteer events may be coordinated internally or with partners.
- 11. Time Line** Weed inventory and treatments would occur between April 2019 and October 2019. Seeding would take place between November 2019 and January 2020 depending on weather conditions. Some planting may be done in Fall 2019, but a majority would likely occur in Spring 2020 (March – May). A final report would be completed once re-vegetation projects are completed no later than June 30, 2019.

12. Success The number of acres inventoried, treated, and re-vegetated would indicate the overall success of the project.

13. Grant Match

Match amount to be provided:	\$17,800					
Match details:	<p>Please provide the form of your matching funds. If match is made up of both cash and in-kind, fill in both sections.</p> <p>Match is:</p> <table border="1"> <tr> <td>Cash</td> <td>\$16,200</td> </tr> <tr> <td>In-kind</td> <td>\$1600</td> </tr> </table> <p>Note: Volunteer and in-kind hours may be calculated at a maximum rate of \$20/hour per individual. Indirect cost may not be counted as match.</p> <p>For the cash portion of your match, is the funding already being held by the applicant for this project? Yes <u>X</u> No <u> </u></p>		Cash	\$16,200	In-kind	\$1600
Cash	\$16,200					
In-kind	\$1600					
Description of matching funds/in-kind donations:	<p><u>Cash Contributions:</u></p> <p>\$4,320 Medusahead Grant (NDF) funds were used to purchase native seed mix for coverage of 15 acres or more (\$288 per acre). \$5,000 Medusahead Grant (NDF) funds were used to purchase 2,500 container plants from the Washoe Nursery (\$2 per plant). \$6,880 Washoe County paid staff labor (160 hrs.) includes staff time for project management, weed inventory, GIS mapping and reporting, weed and re-vegetation treatments, and coordinating volunteer events.</p> <p><u>In-Kind:</u></p> <p>\$1,600 Volunteer labor (80 hrs. @ \$20/hr.) for volunteer seeding and planting event(s).</p>					

14. Project budget

Budget Item Description	TRF \$	Other Funding Name	Match \$	Total
Materials – seed (for 15 acres)	\$0	Medusahead Grant (NDF)	\$4,320	\$4,320
Materials – plants (2,500 plants)	\$0	Medusahead Grant (NDF)	\$5,000	\$5,000
Staff Labor – paid (160 hrs.)	\$0	Washoe County	\$6,880	\$6,880
Volunteer Labor (80 hrs. - \$20/hr.)	\$0	Washoe County	\$1600	\$1600
Contract – Labor and materials	\$45,000		\$0	\$45,000
TOTAL	\$45,000		\$17,800	\$62,800



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**TRUCKEE MEADOWS WATER
AUTHORITY**
Quality Delivered

#221

Cover Sheet**Date:** 2/8/19

Organization Name: One Truckee River (Nevada Land Trust as fiscal agent)	
Type:	501(c)(3) EIN# 88-0287591 Governmental entity? No
Address: 2601 Plumas Street, Reno, NV 89509; PO Box 20288, Reno, NV 89515	
Project Name: River Restroom Project lead by One Truckee River	
Amount requested: \$124,976	Website: www.onetruckeeriver.org
This funding will be used to:	<p>Funds requested will be used to support the establishment of the next public restroom along the Truckee River by:</p> <ol style="list-style-type: none"> 1. Expanding the project's concept to garner more support 2. Providing outreach to the currently homeless river users 3. Growing One Truckee River to increase engagement with the public <p>The aim is for these short-term goals to develop a foundation to support the project's long-term goal: to improve the Truckee River and Pyramid Lake's water quality by the establishment and support of 19 public restrooms along the Tahoe - Pyramid Trail, which follows the Truckee River for 114 miles from Tahoe to Pyramid.</p>
Key People:	Director: Alicia Reban
	Board Chair: Brian Bonnenfant
	Project Contact:
	Name: Iris Jehle-Peppard
	Position: One Truckee River Partnership Coordinator
	Phone: 775-851-5183
	Fax: 775-851-5181
	Email: iris@onetruckeeriver.org
Organization Mission:	One Truckee River works to ensure a healthy, thriving, sustainable river connected to the hearts and minds of its community.
Has your organization received other grants from the Truckee River Fund? Yes X No (use additional page if necessary)	If yes,
	Date awarded: Please see Attachment A
	Project title:
	Amount of Award:
	Date awarded:
	Project title:
	Amount of Award:
	Date awarded:
Project title:	
Amount of Award:	

The River Restroom Project best fits these categories:

- ☒ C. Projects that remove pollution from the Truckee River.
☒ E. Other projects that meet the evaluation criteria.



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1. Specific project goals and measurable outcomes and how you will measure and report them.

The River Restroom Project's (the Project) goal is to improve the Truckee River and Pyramid Lake's water quality by the establishment and support of 19 public restrooms along the Tahoe- Pyramid Trail, which follows the Truckee River for 114 miles from Lake Tahoe to Pyramid Lake. Since 2018, OTR's core staff has focused on supporting collaborations with local government entities and nonprofits to increase public restrooms along the Truckee River. From that work these short-term goals emerged to support the Project: 1) Expand the Project concept to garner more support, 2) Provide outreach and connection with currently homeless river users, and 3) Grow One Truckee River to build capacity and engage with residents along the river.

The measurable Project outcomes are to:

- A. Finalize the River Restroom Project Plan with key stakeholders by:
 - a. Securing at least two more key partners who will financially support the Project
 - b. Developing and implementing a strategic communication plan
 - c. Conducting a series of OTR partner retreats and meetings to build capacity and develop metrics to track OTR's phase one management plan's level of success
- B. Increase the understanding and respect for the Truckee River from Brodhead to John Champion parks by engaging with currently homeless river users and local residents within a one-mile radius of Brodhead Park. This work will aim to:
 - a. Decrease the trash within that area
 - b. Understand the perspectives of currently homeless river users and local residents surrounding river related issues and share this information with the OTR partnership
 - c. Increase participation in OTR Month, river walks, and Keep Truckee Meadows Beautiful (KTMB) river cleanups
- C. Increase OTR followers (newsletter subscribers, Facebook, Twitter, and Instagram) by 200% by:
 - a. Directing OTR AmeriCorps to be present at river-related events to encourage residents to follow OTR in real-time with incentive
 - b. Collaborate with other entities to lead public river-related events
 - c. Deepen relationships with key partners to utilize their audiences to promote OTR efforts

The outcomes will be measured by work completed, partners secured, capacity built, engagement conducted, decreased trash, participant lists from events, and OTR's follower numbers. Reporting will take place each quarter, in line with the TRF grant report deadlines.

2. Project location: Truckee River watershed within Washoe County, NV.

3. Project description: The Truckee River flows for approximately 121 miles from Lake Tahoe to Pyramid Lake. Along the river, basic facilities (the most critical being public restrooms) are few and far between, with approximately nine restrooms available. Approximately 10 more restrooms are needed to meet the growth of recreational users and urban population expanding near the Truckee River.

The most acute need for restrooms is within in the river's urban middle reaches in Nevada, where currently homeless individuals live along the river banks. In 2017, Washoe County reported a 60% increase in homelessness in less than a year. A common response to the challenge of currently homeless individuals utilizing natural resources is for local law enforcement to increase the implementation of illegal camping laws, as many of these individuals are in violation of these laws.



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Yet, with population growth, increased homelessness, and government budget constraints, law enforcement struggles to keep up with addressing these violations. While law enforcement does conduct arrests for illegal camping, there is minimal recourse to deter these individuals from returning to the banks of the river after they are released.

Currently, groups within the region are conducting research, raising funds, and expanding efforts to increase services to address homelessness. The expansion of homeless shelters, the increase of case workers, and the development of more affordable housing are underway. Comprehensively addressing the many issues surrounding homelessness will positively impact the river. However, human services professionals recognize there is a segment of this population that is very “service-resistant” and will always access common resource areas to reside. Common precursors of homelessness include major mental illness, AIDS, degenerative diseases, alcoholism, drug addiction, and accidental injuries. Regardless of the expansion of human services, public restrooms along the Truckee River are necessary for these individuals as well as resident and visiting users.

Lack of sanitation services has created a human waste issue that impacts the water quality of the Truckee River and Pyramid Lake, which serve as drinking water sources, recreational waters, irrigation water sources, and habitat to the federally-listed Lahontan cutthroat trout (*Oncorhynchus clarkii henshawi*) and Cui-ui sucker (*Chasmistes cujus*). The presence of visible feces also discourages residents and visitors to walk, bike, or enjoy green infrastructure along the river.

In 2017, key OTR stakeholders identified management plan action item 1.3.c, focused on increasing public restrooms along the river, as a high priority because of health risks associated with the pervasive problem. With this priority set, OTR’s core staff focused to support collaboration to increase public restrooms along the Truckee River. As part of the project’s momentum, OTR’s Housing and Sanitation 2018 working group began researching options to add more restrooms. After extensive study, the group majority agreed that the “Portland Loo” restroom is a viable option for Truckee River placement. Interviews with other city staff where Portland Loos are established were conducted, summarized, and shared. Proposed time lines, marketing tools, and design plans were created or collected.

Over the course of eight months, OTR core staff had conversations, group meetings, and field trips with cities of Reno and Sparks staff and elected officials to examine the issue. General support for the project was given by the Downtown Reno Partnership. For multiple reasons, staff from both cities felt it was not the right time to install more restrooms along the river under their entities. The City of Reno explored investing in a new restroom, but the long-term cost to maintain the facilities was of concern. More planning efforts were discussed. Truckee Meadows Water Authority (TMWA) obtained property located near Brodhead Park along the Truckee River. TWMA and OTR staff explored the opportunity this location could serve for much needed river restroom options.

With more public restrooms along the Truckee River, all river users can utilize these public facilities instead of the riverbank. TMWA and other governmental agencies have consistently recorded elevated levels of *Escherichia coli* (*E. coli*) in the river, and while the source of *E. coli* has not been tied directly to a single source, human waste is a probable contributor. To establish a public restroom is expensive, and once installed, they require on-going funding for maintenance. Local government agencies struggle to find enough resources to fill this need with declining park/recreational funding and increasing population growth.

So, where do we start? The Project’s short-term goals support the success of the next river restroom once additional backing is gained from an entity outside of TMWA, TRF, and NDEP, and the TMWA board approves supporting the Project.



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OTR has engaged Keep Truckee Meadows Beautiful (KTMB) to lead the Project's educational efforts and has secured a qualified professional to conduct currently homeless outreach. OTR staff continues to build the clear environmental, social, and eco-tourism connections with the Project.

4. Grant priorities. OTR meets the following grant priorities:

VI. Stewardship and Environmental Awareness: The Project is developing connections in the region to increase the understanding and engagement of the Truckee River ecosystem and related issues. Engagement will focus on nurturing a respect for the river. It will utilize KTMB's Watershed Warriors and (to be developed) river education focused on supporting the Project. The goal is to increase awareness of river-related issues and increase OTR followers. Connections will develop or increase within these populations;

- The currently homeless river users from Brodhead to John Champion parks
- Local residents within a mile radius of Brodhead Park
- Downtown residents from Mayberry to Rock parks
- Followers of key OTR partners
- Participants who attend river events

The Project will also support KTMB's River Clean-Up to cover Brodhead to John Champion parks, OTR Month, neighborhood river walks, hosting a collaborative event with Truckee Meadows Tomorrow, work with Change Point to enhance needle return, work with Turning Point to build OTR capacity and develop trackable metrics for OTR success.

VII. Meet Multiple Objectives: The Project's short-term goals will...

- Support the establishment of a new restroom along the Truckee River, which will support the long-term goal to meet the total restroom need from Tahoe to Pyramid. With the restroom need met, all river users will be able to urinate and defecate in the proper facilities instead of along the river banks entering the region's drinking water source
- Create opportunities to connect with residents by utilizing KTMB's Watershed Warriors education and supporting this education to incorporate Project goals
- Develop a connection with the currently homeless river users to foster an increased respect for the river and build a stronger network from this subculture to the OTR partnership

VIII. Leverage Stakeholder Assets and Participation: One Truckee River will...

- Align the Project's goals with these key Project partners: TMWA, NLT, and KTMB
- Recognize, honor, and work to leverage past TRF support of OTR and KTMB
- Work to engage additional partners to align with the Project: Tahoe-Pyramid Trail, Downtown Reno Partnership, and Renown Health
- Engage with other nonprofits to explore collaboration and possible partnership: Change Point, Community Health Alliance, Truckee Meadows Tomorrow, and Crossroads

One Truckee River, through this grant request, is leveraging its recent second grant award from NDEP and will continue to seek opportunities to leverage funding and sponsorship opportunities.

5. Permitting. TMWA, with board approval, will lead the installation permitting process for the new Truckee River public restroom. In December 2018, OTR and TMWA staff met with City of Reno staff to discuss the possibility of TMWA executing the installation of a new public restroom near the Truckee River. At this meeting, OTR and TMWA staff received verbal approval from city staff to construct the new restroom. No other permitting issues present themselves at this time for the Project's plans for the next two years.



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6. Future land use. In 2018, TMWA obtained property (parcel number 012-15-07) along the river. The property is right behind Brodhead Park and could serve as a possible location for a new public restroom. The biggest restroom need is from Brodhead to Fisherman's parks. After one new restroom is established, the process to explore the other locations will be expanded.

7. Near future project phases: OTR, with fiscal agent NLT, is currently applying for a National Fish and Wildlife Foundation grant (titled Resilient Communities) to assist with funding of future restrooms along the river in both Nevada and California. Additionally, OTR has discussed with TMWA the action of requesting sponsorship from Renown Health.

8. Principals: OTR Partnership Coordinator, Iris Jehle-Peppard, with the support of: OTR Outreach Coordinator, Alex Hoeft; River Coordinator TBD (candidate Austin Pollard has been identified); and two AmeriCorps

9. Number of staff positions involved in Project: Fulltime 2 Part-time 3

10. Number of volunteers involved. Currently, OTR staff doesn't have the capacity to manage volunteers. KTMB will engage volunteers with the River Restroom Project. OTR will work to engage Change Point, Community Health Alliance, Truckee Meadows Tomorrow, and Crossroads. OTR encourages separate proposal requests to equal the total of the whole project. This will allow groups engaged to increase their stakeholder ability in the Project.

11. Project Timeline: For full Project details see Attachment B: *Activities Timeline for the River Restroom Project*. A summary of the project's timeline is below.

Phase 1: February to June 2019 – Finalize the plan, gain financial support, and prepare/move forward with the implementation of TMWA's Loo

Phase 2: July to December 2019 – Develop the strategic communication plan focused on supporting the Project and educational material by utilizing KTMB's Watershed Warriors tools, establish the Project's public relations support, and begin river outreach and neighborhood river walks

Phase 3: January to June 2020 – Deepen and expand partner relationships and engagements, continue with public event connections, river outreach, and neighborhood river walks

Phase 4: July to December 2020 – Creatively engage government, human service entities, and currently homeless individuals with art projects focused on the conjunction of environmental and social issues along the river, quantify and evaluate the Project, and develop a plan (from lessons learned) to continue the goal of increasing more public restrooms along the river.

12. Success. The Project will be successful if the short-term goals met build a strong base of Project allies, supports, and lessons learned to launch a restroom package at the end of 2020. This package will aim to immediately add three more restrooms, with multiple supporters engaged after the first one is already established. With package efforts successful, a model will be developed to address public restroom needs surrounding natural resources for the region and other areas facing similar challenges. When more than three restrooms are established within a 50-mile radius of each other, the Project would expect to see the long-term goal of increased quality of water met, measured by the decreased levels of E. coli in the Truckee River. TMWA continually tracks this data and it would be utilized to determine the level of long-term Project success.



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River Restroom Project Budget from Feb. 2019 to Dec. 2020

	Funds request to TRF	Match secured NDEP #2	Match to launch the Project	Total
Personnel: Alicia Reban, NLT Executive Director			\$9,360	\$9,360
Alex Hoeft, OTR Outreach Coordinator	\$23,000			\$23,000
TBD, River Coordinator			\$8,970	\$8,970
Contractual: Iris Diana Peppard, Partnership Coordinator		\$31,244		\$31,244
Two AmeriCorps	\$24,000			\$24,000
Turning Point, Inc. to conduct OTR capacity building, coaching and technical support for OTR metrics	\$30,600			\$30,600
Facilities: Restroom established			\$130,000	\$130,000
Maintenance for the restroom			\$14,000	\$14,000
Engagement: Two iPads with a 3GB wireless mobile share plan to allow OTR AmeriCorps to sign up individuals on-site as an OTR followers	\$4,356			
Printing of bilingual (English and Spanish) direct mailers to residents within a mile radius of the Truckee River from Mayberry to Rock Parks focused on connecting with OTR (19,674 residents x .10 per mailer)	\$1,967			\$1,967
Printing of bilingual (English and Spanish) direct mailers to residents within a mile radius of Brodhead Park focused on river walks and KTMB's River Clean-up (2,186 residents x 0.10 per mailer)	\$2,186			\$2,186
Printing of flyer to be distributed by other OTR partners (50,000 pieces x 0.10 each)	\$5,000			\$5,000
Direct mailing of print flyer to residents within a mile radius of the Truckee River from Mayberry to Rock Parks focused on connecting with OTR (19,674 mailers x .20 per mailing)	\$3,935			\$3,935
Direct mailing of print flyer to residents within a mile radius of Brodhead Park focused on river walks and KTMB's River Clean-up (2,186 mailers x .20 per mailing)	\$437			\$437
Food to support public event hosted in collaboration with Truckee Meadows Tomorrow focused on the Truckee River	\$1,500			\$1,500
Social Media advertisements to increase OTR's followers	\$500			\$500
Radio advertisements to increase OTR's followers	\$2,500			\$2,500
Total Direct	\$99,981	\$31,244	\$162,330	\$293,555
<i>In-direct percentage of total budget at 25% to support administrative and operating costs</i>	<i>\$24,995</i>			<i>\$24,995</i>
TOTAL	\$124,976	\$31,244	\$162,330	\$318,550

Note: Oct. 1, 2018, OTR was awarded a second grant from NDEP. To launch the Project, financial support from another entity is to be secured for the maintenance and River Coordinator position. Additionally, TMWA Board will need to vote yes to support the purchase and installation of a restroom on its property. KTMB engagement in the Project is not included in this budget, as they are submitting a separate proposal for their Project work. Change Point Project engagement is not in this budget. They plan to submit a proposal to TRF at the next grant RFP cycle.



**COMMUNITY
FOUNDATION**
of Western Nevada

TRUCKEE RIVER FUND
Enhancing and protecting our water resources



Grant Match

Match amount to be provided:	\$31,244				
Match details:	<p>Please provide the form of your matching funds. If match is made up of both cash and in-kind, fill in both sections.</p> <p>Match is:</p> <table border="1"> <tr> <td>Cash</td> <td>\$31,244</td> </tr> <tr> <td>In-kind</td> <td>\$</td> </tr> </table> <p>Note: Volunteer and in-kind hours may be calculated at a maximum rate of \$20/hour per individual. Indirect cost may not be counted as match.</p> <p>For the cash portion of your match, is the funding already being held by the applicant for this project? Yes X No ___</p>	Cash	\$31,244	In-kind	\$
Cash	\$31,244				
In-kind	\$				
Description of matching funds/in-kind donations:	Oct. 1, 2018, OTR was awarded a second grant from Nevada Division of Environmental Protection. One Truckee River, through this grant request, is leveraging this award and will continue to seek opportunities to leverage funding and sponsorship opportunities.				

ATTACHMENTS

You may be asked to submit the following attachments via email. If you are asked to submit the attachments, clearly label each file with your organization's name. If you do not have the ability to email them, place each of the items listed below on a separate page and submit just one copy.

Nonprofits submit:

- ☒ Last audited financial statements if your organization has been audited
- ☒ List of Board of Directors
- ☒ Copy of agency's IRS 501(c)(3) Tax Determination Letter
- ☒ Copy of the agency's most recent IRS Form 990

Governmental entities submit:

- ☐ Departmental budget in lieu of audited financial statements

Attachment A: Nevada Land Trust Truckee River Fund Grant History

Date Awarded:	March 30, 2018
Project Title:	TRF #203: One Truckee River Watershed Management and Source Protection Plan, Partnership Support
Amount of Award:	\$173,580
Date Awarded:	March 22, 2017
Project Title:	TRF #188: One Truckee River – Phase 1 Action
Amount of Award:	\$256,220
Date Awarded:	September 23, 2016
Project Title:	TRF #180: One Truckee River – Phase 1 Implementation
Amount of Award:	\$98,534
Date Awarded:	March 21, 2012
Project Title:	TRF #104: Washoe Drive Fire Stabilization and Restoration Effort
Amount of Award:	\$115,000
Date Awarded:	December 12, 2011
Project Title:	TRF #99: Caughlin Fire Emergency Watershed Stabilization & Restoration Effort
Amount of Award:	\$219,856
Date Awarded:	October 11, 2011
Project Title:	TRF #90: Weed Treatments & Revegetation, Truckee River & Tributaries
Amount of Award:	\$127,500
Date Awarded:	July 21, 2009
Project Title:	TRF #70: Weed Treatments & Revegetation, Truckee River & Tributaries
Amount of Award:	\$125,000
Date Awarded:	July 21, 2009
Project Title:	TRF #66: Scope of Work for Truckee River Ecosystem Restoration Coordination, Creation of a Five-Year Weed Control and Restoration Plan for the Truckee River
Amount of Award:	\$10,000
Date Awarded:	July 17, 2008
Project Title:	TRF #46: Weed Treatments & Revegetation, Truckee River & Tributaries
Amount of Award:	\$112,500

Attachment B: PROJECT ACTIVITIES TIMELINE FOR THE RIVER RESTROOM PROJECT 2019-2020 – Updated 2/5/19

LEAD	ACTIVITIES	2019						2020					
		Jan	March	May	July	Sept	Nov	Jan	March	May	July	Sept	Nov
	General Project Tasks	Feb	April	June	Aug	Oct	Dec	Feb	April	June	Aug	Oct	Dec
OTR PARTNERSHIP COORDINATOR/TMWA/NLT	Finalize project plan												
OTR PARTNERSHIP COORDINATOR/NLT	Develop job description including responsibilities, hours per wk., and hrly rate for River Coordinator (to be employed under OTR's fiscal agent, NLT) to conduct outreach to currently homeless river users												
OTR PARTNERSHIP COORDINATOR	Confirm identify experienced individual to serve as OTR River Coordinator												
OTR PARTNERSHIP COORDINATOR /KTMB/TMWA	Organize a meeting with Renown and/or other possible sponsors and TMWA staff to evaluate possible project sponsorship for restroom maintenance and outreach for two years												
TMWA/OTR	With project sponsorship identified, move forward with TMWA Board reviewing/approving the project												
TMWA/CITY OF RENO/OTR STAFF/NLT	Complete MOU with TMWA, OTR/NLT, and the City of Reno. TMWA proceeds with the purchase and installation of a restroom on property near Brodhead Park												
OTR PARTNERSHIP COORDINATOR	Assess the total restroom need along the 114-mile Tahoe-Pyramid Trail (PTP) following the Truckee River												
OTR STAFF/TMWA	Complete the project plan and submit to TMWA Board for review to proceed												
OTR STAFF/KTMB/CHANGE POINT	Submit proposals to the Truckee River Fund and the National Fish and Wildlife Foundation for project support Note: Change Point to submit application in TRF during summer RFP cycle												
OTR STAFF/NLT	Hire and employ a River Coordinator starting at two hours a week												
OTR RIVER COORDINATOR	Conduct interviews with currently homeless river users about what the river means to them, summarize their responses, and share with OTR Partnership. Through these interactions, inform currently homeless river users about the project and the importance of the project's success												
OTR RIVER COORDINATOR	Track illegal camping activity and garbage from Brodhead Park to Wells Avenue												
OTR OUTREACH COORDINATOR	Develop OTR's strategic communication plan focused on reaching the general public specifically downtown Reno residents within a one-mile radius of the river including messaging tools for OTR and the project												
OTR AMERICORPS	Interview local businesses and encourage engagement with OTR Month												
OTR OUTREACH COORDINATOR	Use the public messaging throughout OTR Month												
OTR STAFF/OTR PARTNERSHIP/TURNING POINT	Conduct capacity building, coaching, and technical support services to OTR partnership to support developing the evaluation process of the OTR Management Plan. Develop collaboratively metrics to rate OTR success and determine data collection methods for tracking progress accomplishing OTR Action Item priority 4.2.b												
OTR AMERICORPS	At OTR Month events, OTR staff (with an email sign-up incentive) sign residents up for OTR email newsletter and encouraging liking OTR Facebook page with iPads												
OTR PARTNERSHIP COORDINATOR	Engage with local entities, especially the human service sector, to discuss the project												
OTR AMERICORPS	Determine survey and email sign-up incentives for resident surveys and walks to be mailed out												
OTR OUTREACH COORDINATOR	Mail surveys (with clear direction to receive survey incentive TBD) to residents within one mile of Brodhead Park. Survey topics include thoughts on the Truckee River, awareness of OTR Month, and promotion of organized one-hour river walks in collaboration with the River Coordinator and KTMB on watershed ed												

Attachment B: PROJECT ACTIVITIES TIMELINE FOR THE RIVER RESTROOM PROJECT 2019-2020 – Updated 2/5/19

LEAD	ACTIVITIES	2019						2020					
		Jan Feb	March April	May June	July Aug	Sept Oct	Nov Dec	Jan Feb	March April	May June	July Aug	Sept Oct	Nov Dec
TMWA	Installation of a restroom on TMWA property completed, open to the public, and maintained daily												
OTR RIVER COORDINATOR/KTMB	Conduct one-hour river walks with short watershed/river education where incentives are distributed and residents' contact info. is collected: emails, mailing addresses, and phone numbers. Residents are encouraged to like OTR's Facebook page for another incentive TBD. OTR will work to engage Community Health Alliance												
OTR RIVER COORDINATOR	Interview currently homeless river users about ideas to improve the Tahoe-Pyramid Trail (TPT) and Truckee River area while encouraging basic respect for the river and TMWA restroom												
OTR AMERICORPS AND PARTNERSHIP COORDINATOR	Evaluate surveys collected during walks and determine if feedback can improve the project												
KTMB	Develop Truckee River specific educational material to support the Project from KTMB's existing Watershed Warriors education including videos and lesson plans												
OUTREACH COORDINATOR/TRUCKEE MEADOWS TOMORROW	Conduct a public event where OTR partners are encourage to sit down and enjoy a farm-to-fork meal together while sharing how they value and support the Truckee River. Utilize this event to increase OTR's email list and Facebook likes and gain input about the Truckee River from the attendees												
OTR RIVER AND PARTNERSHIP COORDINATORS	Evaluate interviews and determine if feedback can improve the project												
KTMB/ OTR RIVER COORDINATOR	Determine how to include KTMB's river clean-up to cover from Brodhead Park to John Champlon Park and send event announcement in the mail to residents within a one-mile radius of Brodhead Park												
CHANGE POINT/OTR PARTNERSHIP COORDINATOR	Distribute client incentives (backpacks with basic hygiene supplies) to Change Point clients for returning all their needles to the Change Point Center. Explore with Change Point staff ways to explore nurturing an increased interest in the Truckee River												
OTR RIVER COORDINATOR	Identify popular opinion leaders within the currently homeless river user population and continue to engage with currently homeless river users to nurture a culture of respect for the Truckee River												
ALL PROJECT PARTNERS/OTR PARTNERSHIP COORDINATOR	Monitor, evaluate, and adjust project to reflect lessons learned												
OTR PARTNERSHIP COORDINATOR	Determine ways OTR can support and engage a human service entity into OTR's work following recommendations from A SUMMARY OF SOCIAL ISSUES PERTAINING TO THE 2016 ONE TRUCKEE RIVER MANAGEMENT PLAN written by Richard Bartholet and Frederick A. Steinmann at the University of Nevada, Reno												
KTMB/OTR PARTNERSHIP COORDINATOR	Identify additional river adopters for KTMB's Adopt-A-River program and possible additional sponsors for the project from Reno's City Plaza to Rock Park in Sparks												
OTR STAFF/HUMAN SERVICE AND GOVT. ENTITIES TBD	Plan three different art exhibits in collaboration with local human service and govt. entities to explore the conjunction of environmental and social issues along the Truckee River												

Truckee River Fund Grant Proposal**Fiscal YR 2019****Date:** 2/8/2019**Organization Name:** Great Basin Institute**Type: 501c3 ID#:** 88-043-1016**Government Entity:** No**Address:** 16750 Mt. Rose Hwy. Reno, NV 8951, Suite 101**Project Name:** Galena Creek Ecological Restoration & Demonstration Project**Amount Requested:** \$50,803 (Funding amount requested decreased to \$35,054)**Website:** <https://www.thegreatbasininstitute.org/>

This funding will be used to: Establish demonstration plots for restoration of riparian ecosystems while engaging student in service-learning in the STEM disciplines. Students & educators will increase their understanding of water quality and watershed dynamics, thereby supporting career development and interests in the STEM fields. Project funds will be applied to University of Nevada, Reno teacher education credits, AmeriCorps education stipends, planting materials, and bus transportation.

Key People: Jerry Keir, Executive Director, Great Basin Institute; Dr. Glenn Miller, University of Nevada, Reno; Dr. Stephen Lafer, Professor, Emeritus, College of Education, University of Nevada, Reno

Project Contact: Jerry Keir, Executive Director, Great Basin Institute

Phone: 775.846.9310

Email: jkeir@GBInstitute.org

Organization Mission: GBI advances applied research to support science-based adaptive management of public lands. The Institute is dedicated to the promotion of science through field studies programs, conservation practices, and public outreach.

Has your organization received other grants from the Truckee River Fund? Yes

Date Awarded: November 2007 **Project Title:** Truckee River Invasive Plant Eradication & Restoration Demonstration Project **Amount of Award:** \$134,396

Description of Project under Consideration:

A. Projects that improve bank or channel stabilization and decrease erosion; C. Projects that remove pollution from the Truckee River.

Galena Creek Restoration & Demonstration Project

1. Project Goals and Measureable Outcomes. The Great Basin Institute proposes to unite K-12 educators, restoration ecologists, and agency personnel to improve water quality through the restoration of upstream conditions along the Galena Creek drainage. As part of the Institute's established curricula at Galena Creek Visitor Center, student groups and educators will complete a restoration site plan using a variety of STEM-based learning tools. Students will then restore and monitor stream plots to create a living laboratory for ongoing field study. Located within Washoe County's Galena Creek Regional Park, the project will also support public education through GBI guided interpretive hikes of the restoration area and by constructing interpretative signage that focuses on the project goals, methods, and intended outcomes. As such, the environmental and educational goals of the project, and those metrics that indicate success, are as follows:

Environmental Goals. This project restores degraded sections of Galena Creek to proper functioning condition and will improve water quality within the watershed. The re-introduction of native species will reduce erosion by stabilizing soil along incised stream bank. Increased riparian vegetation will provide shade cover, reducing temperatures and increasing dissolved oxygen, in turn maintaining macroinvertebrate species. Increased native shrubs, grasses, and forbs will improve habitat for critical aquatic and terrestrial organisms.

Successful restoration will be assessed and quantified using core indicators identified in the Bureau of Land Management's Program's Aquatic Monitoring Framework. The approach characterizes trend and condition of pH, specific conductance, temperature, pool depth, length, and stream bed particle size, bank stability and cover. The assessment also includes measurement of macroinvertebrate biological integrity, riparian vegetative type, cover, and structure, and canopy cover. Measurements will be taken to demonstrate improved conditions and will be reported seasonally on our website, including before/after photos of the project for subsequent years.

Student Educational Goals. Through field-based programs, this project increases student learning outcomes in the STEM disciplines while fostering an interest in the natural sciences. Service-learning elements will promote inquiry-based educational processes and further an awareness of behaviors that affect positive environmental change. This project will also increase ecological literacy among K-12th grade students about aquatic systems and the methods and technologies used for watershed assessment. Students will learn how to establish monitoring plots, quantify baseline conditions, and characterize restoration success by utilizing current technologies that capture biological and physical conditions. Some 1,600 students will participate in this project over a two year period.

Achievement will be measured through assignments designed to allow students to demonstrate understanding and proficiency in the STEM disciplines. Successful field instruction will be measured through assessments at the beginning and end of the project. Prior to field work, students will pre-test to determine existing knowledge and attitude towards the natural

environment, including the use of a Likert scale for quantitative assessment. The same test is again administered to establish knowledge and attitudinal change.

Teacher Education Goals. This project provides educators with the methods and tools needed to effectively deliver lessons that address theories and concepts related to water quality and watersheds. GBI ecologists and UNR educators will provide field instruction to facilitate learning experiences that will help them in teaching their students to think scientifically. Next Generation Science Standards, with their emphasis on science as process, are addressed through interactive learning modules keyed to the field work that support professional development goals related to the development of scientific literature and critical thinking.

This integrated approach, concepts taught in the context of hands on application to achieve meaningful ecological goals, will allow educators to enhance their understanding of the field course material while working with our established summer programs at Galena. The Institute will draw teachers to the program by offering continuing education credits in conjunction with the University of Nevada Extended Studies program. Program success will be measured by the total number of educators completing this accredited summer program. Teachers will also be given a Likert scaled evaluation to assess the success of the field study and its potential application to their classroom instructional approach.

Public Outreach Goals. Restoration sites will be identified through signage that interprets the importance of watershed stewardship for user groups at the park. Public lectures and nature hikes hosted by GBI at the Visitor Center will utilize the sites for demonstration and ongoing learning of adaptive management practices. Additional outreach on the project will include press releases, updates on social media, and project information posted on the Galena Creek Visitor Center website. Outreach will also incorporate the work of educators in the summer institute, thus encouraging county educators to engage their cohorts in similar hands-on education experiences.

Success will be measured by capturing total outreach events completed and number of participants in attendance at lectures and hikes and surveys will capture benefits of the program for various user groups within the recreation area. Feedback received from participants will be used to inform future educational outreach programs for the general public. GBI naturalists and educators will complete an evaluation of the program to consider the resources they would need to implement outdoor education and other settings where they may work.

National Service Goals. Through the use of service-learning methodologies and stewardship actions, this project will also engage AmeriCorps members in community-based restoration and conservation efforts. The Nevada Conservation Corps, a program of the Institute, will dedicate a restoration team to participate in this project, establishing the initial demonstration site. These recent college graduates will have the opportunity to apply their formal education to nearby restoration efforts that can be assessed and monitored over time. Success will be measured by the number of AmeriCorps members participating in the project and those volunteers who will join the team during National Public Lands service days.

2. Project Location. Galena Creek Regional Park, Truckee River Watershed, Galena Creek Tributary (Latitude: 39.354398, Longitude: -119.858144)

3. Project Description. GBI seeks to expand learning opportunities, specifically for Title I students, in service-based outdoor education through collaboration with teachers, educational institutions, land management agencies, and local foundations. The Institute delivers educational programs while serving as lead organization at the Galena Creek Visitor Center, a partnership with Washoe County and the US Forest Service now entering its eleventh year. This collaboration aims to ensure students and teachers have access to integrated educational activities at outdoor sites of learning, regardless of financial limitations. Utilizing the infrastructure at the Regional Park, including the interpretative center, residential facility and historic fish hatchery, the Institute provides field study programs for schools and the general public. This project builds upon the successful partnerships made possible at this unique urban forest location, further expanding educational programs to include service-learning and ecological restoration.

For this project, the Institute will establish restoration sites along Galena Creek, an at-risk tributary of the Truckee River. Project staff will engage teachers and students in STEM-based learning relevant to curricula used in Washoe County schools and will introduce teachers and students to theories and concepts of applied restoration ecology and watershed stewardship. Students will be challenged with inquiry-based field studies at Galena where students actively develop site plans, then participate in hands-on restoration and monitoring activities. A post-trip classroom visit will capture learning outcomes through testing. This project addresses the need for civic local engagement in active restoration activities, providing integrated learning opportunities and ongoing stewardship of our local watershed.

4 Grant Priorities. This project supports multiple Truckee River Fund priorities that seek watershed improvements by reducing sediment, suspended solids, or TDS discharges to the Truckee River. The project also supports the development and implementation of educational programs relative to water, water quality and watershed protection.

5 Permitting. Project site is located within Galena Creek Regional Park and does not require special permitting.

6 Future Land Use. Land use status will remain protected under the Washoe County Parks and Open Space Plan.

7 Future Phases. Future restoration sites at Galena Creek will be identified based on the successful restoration trials completed during this pilot phase. Funding sought the EPA 319 grant program, as well ongoing foundation support, will continue the restoration and monitoring programs. Fees from teacher institutes and our residential camps will also contribute to sustaining the project.

8 Principals Involved. Jerry Keir, GBI Executive Director. Colleen Wallace, Washoe County Parks Regional Manager, Dr. Stephen Lafer, Professor of Education, Emeritus, University of Nevada, Reno. Dr. Glenn Miller, Professor, College of Natural Resources, University of Nevada, Reno.

9 Staff Positions Involved. GBI Educators, Naturalists, Restoration Ecologists, and Administrators will support the implementation of this project.

10 Volunteers Involved. Volunteers in this project include AmeriCorps restoration team members, participants in National Public Lands Day service events and educational docents serving at the Galena Creek Visitor Center. Total of 112 episodic and ongoing volunteers for 2,300 hours.

11 Time Line.

Spring/Summer 2019. GBI ecologists and agency representatives will review discrete restoration tasks during site inspection. GBI will follow best practices for riparian restoration and will support the testing of multiple techniques to determine the most effective and least costly strategies for restoration of disturbances.

Fall 2019. After establishing monitoring plots and transects, initial restoration begins at demonstration site. Species selection and ordering will be made through NDF nursery and Comstock Seed. Moderate terracing of streambed will allow for seedling planting, willow waddling, staking, seed dispersal and jute mat coverage. Treatment area will be secured with Tenax snow fencing, and temporary signage will be installed for protection and interpretation.

Spring / Summer 2020. Course packets developed for educators. Classroom visits with schools to introduce core STEM concepts completed. Monitoring of initial site with student groups in late spring. Educational programs delivered to summer camps, teacher institutes, and public outreach events.

Fall 2020. Secondary restoration trials implemented with the support of student groups and GBI restoration teams. Additional monitoring plots established and databases archived for legacy data and project reporting.

Spring/Summer 2021. Course packets developed for educators. Classroom visits with schools to introduce core STEM concepts. Monitoring of initial site with student groups in late spring. Educational programs delivered to summer camps, teacher institutes, and public outreach events.

Fall 2021. Monitoring restoration sites continues with the support of student groups and GBI restoration teams. Additional treatments for adaptive practices completed. Monitoring continues twice annually by GBI Galena staff. Completed evaluations and reporting done by calendar year end.

12 Success. Success will be characterized by completed restoration on the Galena drainage with ongoing monitoring sites established by teachers and students from Title One schools. Completed course work and curricula development by educators will also demonstrate success.

13 Grant Match. Match is provided by grants made possible by the Nell J. Redfield Foundation, the William Pennington Foundation, AmeriCorps, and through program fees and contributions provided by school groups and the general public.

14 Project Budget. See attachment.

Project Budget

Budget Item Description	TRF \$	Other Funding Name	Match Cash	Match In-kind	Total
Program Director	0	Great Basin Institute	60,427.00	-	60,427.00
Environmental Educator Labor	11,363.00	Great Basin Institute	26,610.00	-	37,973.00
2 AmeriCorps Member (Naturalists) Living allowance	12,468.88	*Neil J. Redfield Foundation	48,119.12	5,000.00	65,588.00
Summer Teacher Institute Stipends	3,750.00		-		3,750.00
GBI Restoration Crew Labor	11,250.00	Nevada Conservation Corps	-	5,000.00	16,250.00
Planting Materials	5,576.80	Great Basin Institute	-	-	5,576.80
Aquatic Equipment and Samples	-	Nevada Conservation Corps	3,683.25	-	3,683.25
Curriculum Packets and Lesson Materials	1,890.00	*Neil J. Redfield Foundation	472.50	-	2,362.50
Travel/Transportation	3,437.50	*Pennington Foundation	859.38	-	4,296.88
Overhead	1,067.00	Great Basin Institute	21,025.69	-	22,092.69
Total	50,803		161,196.93	10,000.00	222,000.11

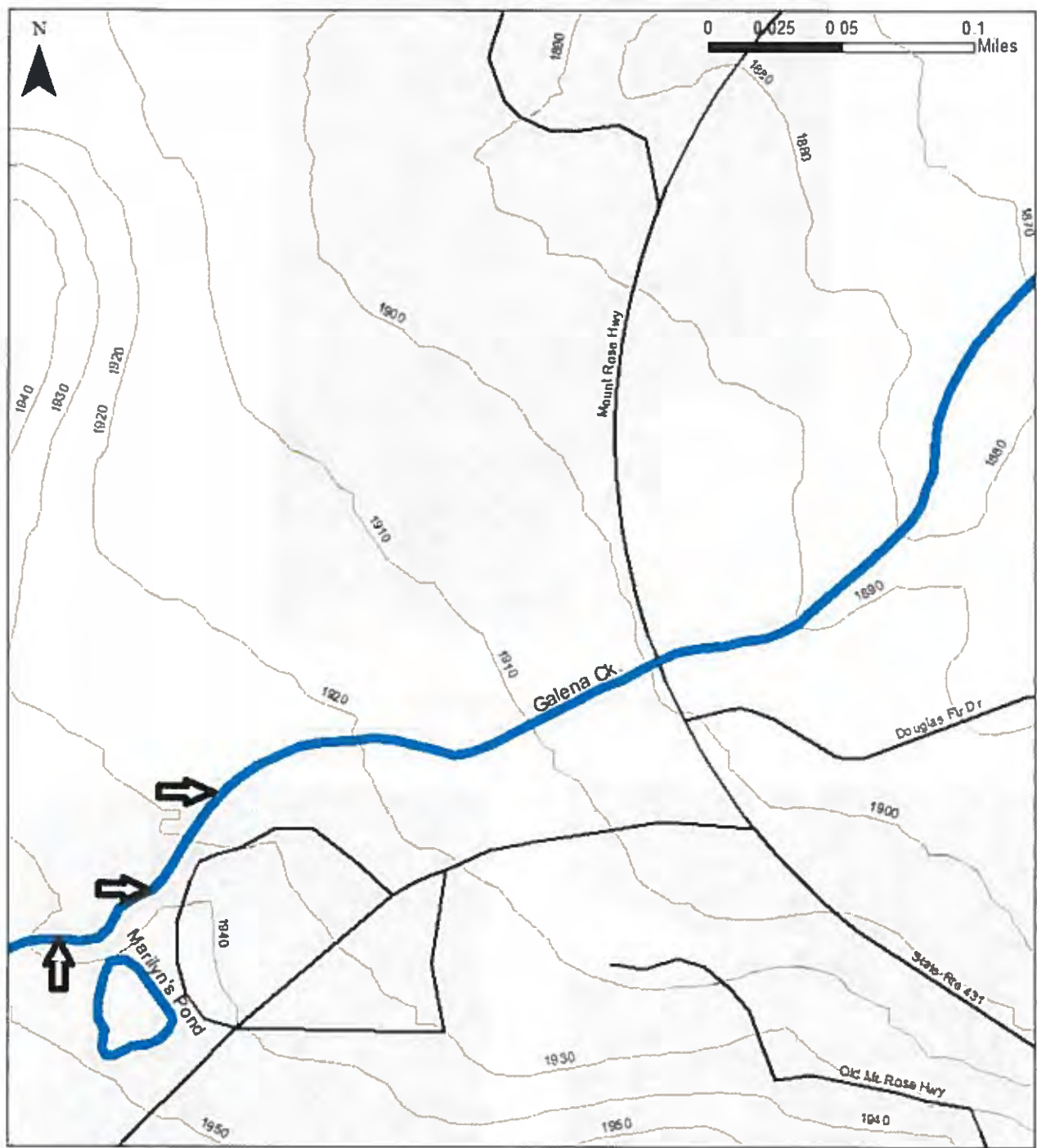
*Redfield Foundation and Pennington Foundation have consistently pledged in support of ongoing educational projects. 2018 support totaled \$105,000.

Grant Match				
Match amount to be provided	\$	171,196.93		
Match Details:	Match is:			
	Cash	\$ 161,196.93		
	In-Kind	\$ 10,000.00		
Description of matching funds/in-kind donations:	For the cash portion of your match, is the funding already being held by the applicant for this project? No			
	Contributions through local foundations, AmeriCorps, and Program Fees will be contributed to this project.			






Sample Areas for Ecological Restoration





Legend

-  Waterbodies
-  Roads
-  Contour Lines



Education. Research. Service.
www.theGreatBasinInstitute.org

TO: Truckee River Fund Grant Review Committee
FROM: Jerry Keir, Executive Director
RE: Grant Request for Galena Creek Ecological Restoration & Demonstration Project
DATE: August 24, 2018

As Executive Director of Great Basin Institute, I am writing to confirm our staff support and fiscal contribution to the NDEP 319 grant application. Our organization operates environmental programming at Galena Creek Regional Park and seeks to further our efforts toward promoting service-learning and stewardship activities through this grant proposal.

To provide background, the Institute operates field studies at the Galena Creek Visitor Center and the WeChMe Lodge at the Galena Creek Recreation Area, six miles from south Reno. The Field Studies program through GBI supports youth engagement strategies to achieve improved academic outcomes through field-based service-learning. Our collaboration with school systems improve school readiness for economically disadvantaged Washoe County children, and enhance educational and behavioral outcomes of students in low-achieving elementary, middle, and high schools. The programs aid the preparation for successful transitioning to post-secondary educational institutions for economically disadvantaged students.

The field studies have grown in seven years to serving 4,180 student days in calendar year 2018 with robust, Next Generation Science Standards-based curriculum in a discovery-based outdoor setting. Our emphasis is to provide academic enrichment for at-risk youth, and, as such, the percentage of Title I students served in the 2018 calendar year was 62.3% of the total 4,180 students. The program has received recognition from Washoe County and the US Forest Service, and educational awards from the federal Corporation for National and Community Service.

Since 2009, the US Forest Service and Washoe County Regional Parks and Open Space have provided in-kind support for learning facilities for our educational programs. Additionally, direct cash support from the Redfield Foundation (\$78,000), and the Pennington Foundation (\$22,000) will contribute to the match for this project. Academic support and direction is also provided by our Board of Advisors, which includes Washoe County Science Coordinator, the STEM Coalition, and NWRPDP Science Learning Facilitators.

Your generous support will make such important learning experiences accessible to those who otherwise would be left inside the classroom. Please feel free to contact me directly should you have any questions regarding the programs or proposed activities for Galena.

Sincerely,

Jerry Keir

Executive Director, Great Basin Institute
775-846-9310
jkeir@gbinstitute.org



College of Agriculture,
Biotechnology, and Natural Resources
University of Nevada, Reno

Glenn C. Miller, Professor

January 28, 2019

Dear Grant Review Committee,

I am pleased to offer my support for the Great Basin Institute's proposal for the Galena Creek Ecological Restoration Project which is being proposed for funding by the Truckee River Fund. As a faculty member at the University of Nevada, Reno, and as Chair of the Institute's Board of Directors, I endorse such collaborative efforts and seek to further promote our involvement in science-based educational outreach and public land management.

The scope of the project well represents the best of outcomes when we contemplate informed environmental education and stewardship practices. The project brings together universities, agencies, and NGOs to accomplish the greatest good during a time when forest and riparian health seems to struggle the most. The board of GBI, most of whom are faculty from the University, seeks to further such efforts aimed at advancing applied science to support educational programming and teacher training. I believe this project accomplishes such goals admirably and I look forward to working with cohorts to ensure all project deliverables are met. The work as outlined in the proposal offers the sort of planning and execution of conservation initiatives that speaks well of all those involved and rightfully deserves support from the Fund.

Please feel free to contact me directly at 775-784-4108 or 775-846-4516 (C) should you have any questions or concerns. I look forward to your favorable consideration.

Sincerely,

Glenn C. Miller, Professor



WASHOE COUNTY

COMMUNITY SERVICES DEPARTMENT

Operations

3101 LONGLEY LANE
PO BOX 11130
RENO, NEVADA 89520-0027
PHONE (775) 328.2181
FAX (775) 328.2110

TO: Truckee River Fund Grant Review Committee

RE: Great Basin Institute Grant Request for Galena Creek

DATE: Febraury 8, 2019

I am writing in support of Great Basin Institute's application for restoration and educational outreach at Galena Creek Regional Park. Since 2008, the Institute has successfully operated the Galena Creek Visitor Center. Each year, the organization has improved upon the delivery of services to the park and the public, achieving a reputation for professional competency among our county staff and cooperators. The staff at Galena are diligent, effective, and committed to programmatic excellence.

The proposed enhancements to Galena Creek and the associated environmental programs build upon GBI's successes at the visitor center and extends vital public outreach that is important to our shared mission. The project incorporates innovative learning strategies, increases student participation at the park, and supports ecological resiliency for the public lands we collaboratively manage.

I support this project without qualification and look forward to collaborating with GBI on delivering exceptional programming to our county students, educators, and visiting public.

Sincerely,

A handwritten signature in black ink, appearing to read "Colleen Wallace Barnum".

Colleen Wallace Barnum
Park Operations Superintendent



INTEGRITY



EFFECTIVE
COMMUNICATION



QUALITY
PUBLIC SERVICE

1755 E. PLUMB LANE, SUITE 212
RENO, NEVADA 89502
TEL: (775) 323-1373



POST OFFICE BOX 61
RENO, NEVADA 89504
FAX: (775) 323-4476

March 23, 2018

Mr. Jerry Keir
Executive Director
Great Basin Institute
16750 Mt. Rose Highway
Reno, NV 89511

Re: The Nell J. Redfield Foundation
January 11, 2018 Grant Application

Dear Mr. Keir:

We are pleased to enclose herewith The Nell J. Redfield Foundation draft in the total sum of \$78,000.00 which represents a grant approved by the Directors at their March 1, 2018 meeting.

This grant is to be applied to your school break camps, school residential program partial sponsorships and teen camp scholarships as detailed in your January 11, 2018 application.

As a part of their grant review procedures, the Directors will look forward to receiving a full report relating to the utilization of these grant funds.

The Directors are pleased to once again have the opportunity to share in your most worthy undertakings.

Sincerely yours,

Gerald C. Smith

GCS:dw
Enclosure (1 check)
XC: Distribution List



STAFF REPORT

TO: TMWA Board of Directors
THRU: Mark Foree, General Manager
FROM: Michele Sullivan, Chief Financial Officer/Treasurer
Matt Bowman, Financial Controller
Joe Petrelli, Principal Financial Analyst
DATE: March 12, 2019
SUBJECT: **Discussion and action on the TMWA Tentative Budget for the Fiscal Year ending June 30, 2020 and Draft Capital Improvement Plan for Fiscal Years 2020 through 2024**

Recommendation

Staff recommends the TMWA Board and SAC review the tentative budget report for the fiscal year ending June 30, 2020 and preliminary Five Year Capital Improvement Plan 2020-2024 (CIP). This allows the Board and SAC to provide input and direction to TMWA management in advance of the public hearing on the budget and CIP on Wednesday, May 23, 2019. The tentative budget will be filed with the Nevada Department of Taxation by April 15, 2019 in compliance with statutory requirements.

Schedule of Revenues and Expenses Summary- See Attachment A

Operating Revenues

Water demands have been projected based on an average of calendar year 2016 to 2018 water usage per service type and by service size. This methodology projects water sales revenue at \$102.5 million for Fiscal Year 2020. This is an increase from the FY 2019 budget of \$1.9 million and 2%. The FY 2020 budget is less than 1% higher than the FY 2020 projection used in the most recent five year funding plan, presented to the BOD in the December 2018 board meeting. As approved by the BOD in the December 2018 meeting, the FY 2020 water sales includes no assumed rate increase in May 2019. Further, conservatively, no rate increase is assumed in May 2020. Should this rate increase be implemented, FY 2020 revenue would be approximately \$0.5 million more than what is currently proposed in the budget. The fiscal year 2019 budget anticipates the addition of 2,557 service connections over the course of the year.

Hydroelectric revenues are expected to be \$3.3 million in FY 2020. This is an increase of \$531 thousand or 19% from the FY 2019 budget. Given the current snowpack, river flows are expected to be available throughout the year for maximum utilization by each plant.

Additionally, we have no major maintenance expected in FY 2020, so the plants should remain operational for most of the year.

Other miscellaneous operating revenues are estimated at \$3.5 million. This line item consists of late payment fees, turn-on and turn-off fees, construction water sales, cell phone tower rents, inspection services on new business and interruptible water sales. Depending on the pace of residential/commercial construction there could be more or less construction water sales and inspection fees than projected.

Operating Expenses

Total operating expenses are expected to increase by \$6.4 million or 7% from the fiscal year 2019 budget. This change consists of an increase of \$7.2 million in operating expenses before depreciation, offset by a decrease in depreciation of \$0.7 million. Within the increase to operating expenses before depreciation, salaries and wages are up \$2.1 million (10%), employee benefits are up \$2.2 million (22%), and services and supplies are up \$2.9 million (10%).

Wages and salaries costs are expected to increase due to increases in salaries of \$1.2 million (5.9%) from contract negotiated increases of 3.0% and increases in employees working through steps and apprenticeships of 2.9%. Staffing is expected to increase from 221 full time equivalents (FTEs) in FY 2019 budget to 231 FTEs in FY 2020 budget. Increases in staff include 6 MPAT employees and 4 IBEW employees for a total increase of \$0.9 million (4.1%).

Helper - Overstaff	1	IBEW
Meter Specialist Customer Service - Overstaff	1	IBEW
Supervisor Distribution Maint - Overstaff	1	MPAT
Equipment Operator	2	IBEW
Electrical Engineer	1	MPAT
Network Analyst	1	MPAT
Associate MIS Analyst	1	MPAT
GIS Analyst	1	MPAT
Potable Reuse Administrator	1	MPAT

Three of the additional headcount are to prepare for retirements in the next 3 years. Also, growth in the service territory has led to the need to hire individuals for positions that have been outsourced in the past including a network analyst and electrical engineer. The remainder of the additional employees will be added due to growth and the changing responsibilities TMWA continues to address. In FY 2019, IBEW employees were hired to begin apprenticeships to backfill retiring IBEW employees. Due to the addition of 2 Water Operators in the prior year, TMWA should begin experiencing savings in overtime in FY 2020. However, overtime for SCADA technicians and Inspectors has increased due to expansion in the service territory. SCADA technician overtime should also decrease when employees hired in the last two years are finished with apprenticeships (which are 4 years) in FY 2021-FY 2022.

Employee benefits are expected to increase \$2.2 million (21.7%) for FY 2020. Benefits expense increased significantly more than wages expense mainly due to noncash amortization of deferred outflows for PERS benefits.

Services and supplies are increasing due to several factors. A summary of costs by expense item is included at **Attachment C**. This increase is made up several factors, the largest of which are listed below –

- \$1.0 million is included as an estimate for implementing TMWA's new Customer Information System (CIS). This amount represents the non-capitalizable costs of the project.
- \$0.9 million in higher general maintenance and repair costs. These costs have steadily increased as TWMA facilities age and the service territory grows.
- \$0.5 million in additional power costs due to the utilization of Fish Springs groundwater which is expected to run for the full year.
- \$0.5 million increase is due to several less impactful increases including increased software costs, increase in the estimate to repair the diversion at the Glendale Water Treatment Plant, and implementation of Automated Meter Infrastructure system.

As mentioned above, included in the services and supplies budget is estimated repair costs for the Glendale Water Treatment Plant diversion. These costs are carried forward from FY 2019, as the project was delayed due to a longer than anticipated permitting process. Total estimated costs for this project are \$3.2 million in FY 2020, with half of the costs capitalizable and half non-capitalizable. TMWA has applied for FEMA funding to recoup a portion of these costs.

Nonoperating Revenues and Expenses

Investment income is expected to increase \$0.6 million due to higher rates of return on some investments made in FY 2019, and higher cash balances.

Interest expense is expected to fall slightly in FY 2020 due to principal reductions in debt. During FY 2019 TMWA will have reduced outstanding debt principal by \$9.2 million, of which \$6.5 million was commercial paper. As shown in **Attachment B** we expect to pay down another \$2.8 million of DWSRF and Senior Lien debt plus \$5.0 million of commercial paper for a total debt reduction of \$7.8 million. Of note, immediately following FY 2020, on July 1, 2020, we begin making annual principal payments on our Series 2017 refunding notes, the first of which is \$10.5 million.

Capital Contributions

There are two FEMA grants we are expecting to be reimbursed for, one is the repair at the Glendale diversion as discussed above, the second is related to repairs on the access road to Fish Springs. The total expected reimbursement of these two projects is \$1.9 million.

The estimated resource sustainability contributions are expected to be \$0.9 million, higher than the FY 2019 budget but consistent with projected FY 2019 actual.

For the first time, TMWA is budgeting for non-cash developer contributed assets. Although this number is difficult to predict and has historically fluctuated substantially, we believe we can make a reasonable estimate such that our end of year actual financials are more closely aligned to the budget. The budgeted amount of \$15.8 million reflects a 5% increase from FY 2018 as this item is reflective of growth and development in the area.

Developer will-serve, capital and facility contributions are estimated at a total of \$20.3 million and are based on historical averages and assumed continued growth.

Draft Capital Improvement Plan for Fiscal Years 2020-2024

TMWA plans to spend \$213.4 million over the next five years on a variety of construction projects and capital outlays of which \$56.2 million is expected to be spent in fiscal year 2020 and \$45.9 million in fiscal year 2021. Please refer to *Attachment D*.

Of the total \$56.2 million in capital spending in fiscal year 2020, \$11.4 million (20%), will be for a number of distribution system improvements. The Spanish Springs Main Replacement project totaling \$1.2 million is to replace 5,200 linear feet of Schedule 40 PVC pipe on various streets in the Spanish Springs Valley. The California – Marsh 24” Main Replacement, totaling \$1.2 million is scheduled ahead of the City of Reno Neighborhood Street Rehabilitation project. The Boomtown Water System has recently been acquired by TMWA. The following projects are all associated with the Verdi Area expansion: Completion of the Verdi Main \$0.5 million, Boomtown Water System Connection to TMWA \$0.7 million and Boomtown Water System Improvements \$2.6 million.

Treatment plant Improvements account for \$15.5 million (28%) with \$11.0 million comprising the major construction phase of the Mt. Rose/Galena Fan Water Treatment Facility which began in fiscal year 2019.

Potable Water Storage Improvements account for \$5.2 million (9%) with \$3.1 million comprising the construction of the STMGID East Zone 11 Tank.

Pressure Improvements account for \$8.9 million (16%) with \$2.2 million and \$2.3 million comprising the Kings Row Booster Pump Station and Common (Stonegate) Booster Pump Station, respectively.

Customer Service Outlays account for \$2.4 million (4%) with \$1.8 million comprising the installation of Automated Meter Infrastructure.

Administrative Outlays account for \$3.5 million (6%) with \$1.4 million comprising the implementation of a new Customer Information System for customer billing, dispatch and a customer portal.

For FY 2021 - 2024 capital spending at a reduced, but relatively level scale as compared to FY 2020, will include a combination of rehabilitation construction projects and construction to expand water system capacity to accommodate growth in the community. Total spending on water system rehabilitation projects (funded by customer water sales) is expected to be \$145.3 million over five years. This is slightly lower than prior year's five year plan which included \$149 million in rehabilitative projects, which helps keep the five year capital spending consistent for customer rate planning. The bulk of the remaining balance of project spending will be for water system expansion. After board input TMWA staff will finalize and present a final comprehensive CIP at the May 23, 2019 public hearing.

Cash Position and Coverage Ratios

At this time, TMWA expects to begin fiscal year 2020 with approximately \$207.0 million in total cash and investments, and end the fiscal year with \$194.3 million based upon planned spending levels. These projections can be found in *Attachment C*.

This is a projected decrease in cash of \$12.7 million, and includes pay down of Commercial Paper notes by \$5.0 million. Of the total ending cash and investments estimated at the end of FY 2019, \$55.5 million will be restricted for debt service payments and reserve requirements under TMWA's bond indentures and \$151.5 million will be unrestricted to be used for future operating expenses, capital improvements and any other necessary outlays. This unrestricted cash includes \$21.5 million in flood insurance settlements related to the Farad facility, and \$10 million in settlements related to bank delivery agreements. These unusual nonoperating transactions have helped strengthen TMWA's cash reserves.

TMWA's senior lien debt coverage ratio (DSC ratio), excluding system development charges, is estimated to be 2.62x by the end of fiscal year 2020. This level of debt service coverage preserves the ability to access senior lien capital markets, if necessary, under favorable terms. TMWA's senior lien bond covenants require a minimum coverage ratio of 1.25x. TMWA's financial goals adopted in August 2003 established a debt coverage goal of approximately 1.50x (excluding developer fees) to maintain mid-level to higher level investment grade credit ratings and pay-as-you-go funding for water system rehabilitation construction projects. TMWA has maintained its credit ratings from Standard and Poor's and Moody's of AA+ and Aa2, respectively.

TRUCKEE MEADOWS WATER AUTHORITY
Comparative Statements of Revenues, Expenses and Changes in Net Position

	Tentative Budget 2020	Final Budget 2019	Variance \$	Variance %
OPERATING REVENUES				
Charges for Water Sales	\$ 102,508,086	\$ 100,626,513	\$ 1,881,573	2%
Hydroelectric Sales	3,343,517	2,812,568	530,949	19%
Other Operating Sales	3,518,950	3,404,500	114,450	3%
Total Operating Revenues	109,370,553	106,843,581	2,526,972	2%
OPERATING EXPENSES				
Salaries and Wages	23,183,489	21,078,273	2,105,216	10%
Employee Benefits	12,324,771	10,125,916	2,198,855	22%
Services and Supplies	31,125,499	28,268,124	2,857,375	10%
Total Operating Expenses Before Depreciation	66,633,759	59,472,313	7,161,446	12%
Depreciation	33,136,227	33,862,476	(726,249)	-2%
Total Operating Expenses	99,769,986	93,334,789	6,435,197	7%
OPERATING INCOME	9,600,567	13,508,792	(3,908,225)	-29%
NONOPERATING REVENUES (EXPENSES)				
Investment Earnings	3,409,815	2,833,548	576,267	20%
Net Increase (Decrease) in FV of Investments	-	-	0	-
Gain (Loss) on Disposal of Assets	-	-	0	-
Amortization of Bond/note Issuance Costs	(190,800)	(215,748)	24,948	-12%
Interest Expense	(13,052,442)	(13,436,520)	384,078	-3%
Other Nonoperating Revenue	-	-	0	-
Other Nonoperating Expense	-	-	0	-
Total Nonoperating Revenues (Expenses)	(9,833,427)	(10,818,720)	985,293	-9%
Gain (Loss) Before Capital Contributions	(232,860)	2,690,072	(2,922,932)	-109%
CAPITAL CONTRIBUTIONS				
Grants	1,937,500	1,700,000	237,500	14%
Resource Sustainability/Water Meter Retrofit	926,425	676,020	250,405	37%
Developer Infrastructure Contributions	15,768,318	-	15,768,318	-
Developer Will-serve Contributions (Net of Refunds)	5,067,536	3,470,232	1,597,304	46%
Developer Capital Contributions - Other	6,697,000	5,922,000	775,000	13%
Developer Facility Charges (Net of Refunds)	8,517,248	4,950,708	3,566,540	72%
Contributions from Others	-	-	0	-
Net Capital Contributions	38,914,027	16,718,960	22,195,067	133%
CHANGE IN NET POSITION	38,681,167	19,409,032	19,272,135	99%
NET POSITION, BEGINNING PERIOD	620,493,077	602,342,294	18,150,783	3%
NET POSITION, END OF PERIOD	659,174,244	621,751,326	37,422,918	6%

Expense Element	Budget	Budget	Variance \$	Variance %
	FY 2020	FY 2019		
Professional Services	3,671,642	2,536,440	1,135,202	45% A
Contracted Services	9,529,083	8,480,760	1,048,323	12% B
Electric Power	5,688,120	4,878,820	809,300	17%
Postage/Printing	975,780	828,840	146,940	18%
Supplies/Equipment Rental	3,026,134	2,893,984	132,150	5%
Hardware/Software	1,505,000	1,376,040	128,960	9%
Phone/Other Utility	607,400	543,960	63,440	12%
Bank Fees	30,000	0	30,000	0%
Resource Fees	835,000	805,440	29,560	4%
Sponsorships/Community	908,000	884,920	23,080	3%
Land	60,000	50,040	9,960	20%
Employee Related	459,040	453,000	6,040	1%
Permits/Licenses	764,525	809,160	(44,635)	-6%
Insurance/Claims	688,000	770,040	(82,040)	-11%
Property Taxes	652,400	735,000	(82,600)	-11%
Agency Reimbursements	(222,000)	(33,120)	(188,880)	570%
Street Repairs	175,200	215,160	(39,960)	-19%
Chemicals	2,255,918	2,530,080	(274,162)	-11%
Overhead Allocations	(483,742.77)	(490,440.00)	6,697.23	-1%
	31,125,498.99	28,268,124.00	2,857,374.99	10%

A) This increase is driven primarily by support required to implement a new CIS system.

B) This increase is driven by several factors, but mostly due to higher third party maintenance costs at TMWA facilities including buildings, landscape, well, pump and plant maintenance.

TRUCKEE MEADOWS WATER AUTHORITY**Statements of Cash Flows**

	Tentative Budget 2020	Final Budget 2019	Variance \$	Variance %
OPERATING ACTIVITIES				
Cash Received From Customers	\$ 109,370,553	\$ 106,843,581	\$ 2,526,972	2%
Cash Paid to Employees	(35,508,260)	(31,204,190)	(4,304,070)	14%
Cash Paid to Suppliers	(31,125,499)	(28,268,124)	(2,857,375)	10%
Net Cash From Operating Activities	42,736,794	47,371,267	(4,634,473)	-10%
CAPITAL AND RELATED FINANCING ACTIVITIES				
Acquisition & Construction of Capital Assets	(56,181,000)	(48,441,000)	(7,740,000)	16%
Interest Paid on Financing	(17,765,145)	(17,103,819)	(661,326)	4%
Principal Paid on Financing	(2,829,056)	(2,738,723)	(90,333)	3%
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	676,020	250,405	37%
Contributions From Developers-Will-Serve Letters	5,067,536	3,470,232	1,597,304	46%
Contributions from Developers - Other	6,697,000	5,922,000	775,000	13%
Contributions from Developers - Facility Charges	8,517,248	4,950,708	3,566,540	72%
Grants	1,937,500	1,700,000	237,500	14%
Bond/Note Issuance Costs	(190,800)	(215,748)	24,948	-12%
Net Cash Used For Capital & Relating Financing Activities	(58,820,292)	(56,780,330)	(2,039,962)	4%
INVESTING ACTIVITIES				
Interest Received	3,409,815	2,833,548	576,267	20%
Net Cash From Investing Activities	3,409,815	2,833,548	576,267	20%
NET CHANGE IN CASH AND CASH EQUIVALENTS	(12,673,683)	(6,575,515)	(6,098,168)	93%
CASH AND CASH EQUIVALENTS, BEGINNING PERIOD	207,000,000	180,000,000	27,000,000	15%
CASH AND CASH EQUIVALENTS, END OF PERIOD	194,326,317	173,424,485	20,901,832	12%

TMWA Draft Captial Improvement Schedule FY 2020 - FY 2024

Funding Source	TMWA 5 Year Draft Capital Plan Summary	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	Proposed Five Year CIP Total
	Raw Water Supply Improvements						
CR	Highland Canal-Upgrades-Downstream	225	225	225	225		900
CR & SF	Indirect Potable Reuse	200	200	200	200	200	1,000
CR	Highland Canal-Upgrades-Diversion to Chalk Bluff	100	1,000	100	100		1,300
CR	TROA Drought Storage / Implementation	100	50	50	50	50	300
CR	Donner Lake Outlet Improvements Phase 2	200	200				400
CR	Independence Lake Permitting Study	50					50
	Total Raw Water	875	1,675	575	575	250	3,950
	Ground Water Supply Improvements						
CR & SF	Bedell Flat Water Bank	500	500	500	250	250	2,000
CR & SF	Well Head TTHM Mitigation	500	500	500	500	500	2,500
CR	Truckee Canyon Well 3 Site Modifications	50					50
CR & SF	Spring Creek Well #7 Recharge	425					425
CR	NDEP Monitoring Wells	100	100				200
CR	Well Rehabilitation Improvements	400	400	400	400	400	2,000
CR	Kietzke, High, Morrill PCE Treatment	500					500
DF	Campello Capacity Increase	70					70
DF	STMGID 6 Generator	281					281
DF	Spring Creek Well #8 - Donovan			30	910	1,060	2,000
CR	Well Fix & Finish	200	200	200	200	200	1,000
DF	Double Diamond #5 and Equipping	50	450		60	1,140	1,700
CR	Thomas Creek Well Replacement and Spring Creek SC5	1,250	1,250				2,500
CR	Sunrise Well #3 Replacement	100					100
CR	Callamont Well South Equipping			60	1,140		1,200
CR	Air Guard Well Replacement Equipping				1,100		1,100
CR	Well Plugging / Conversion		110				110
CR	Callamont Well North Equipping				60	1,140	1,200
CR & DF	Lemmon Valley Well #8 Replacement					1,000	1,000
	Total Ground Water	4,426	3,510	1,690	4,620	5,690	19,936
	Treatment Plant Improvements						
CR	Chalk Bluff Treatment Plant Fix & Finish	600	450	350	350	350	2,100
CR	Chalk Bluff Filter Underdrains	500	1,000	1,000	1,000	1,000	4,500
CR	Glendale Treatment Plant Fix and Finish	400	400	100	100	1,000	2,000
CR	SCADA Rehab / Plant Operating Software	1,000	800	500	500		2,800
CR & DF	Mount Rose Surface Water Treatment Plant	11,000	2,000				13,000
GR	Glendale Diversion Emergency Flood Repairs (FEMA)	1,600					1,600
CR & DF	Spanish Springs Nitrate Treatment Facility	200	500	3,000	3,000		6,700
CR	Orr Ditch Pump Station Rehab	100	500	500	500		1,600
CR	Truckee Canyon Water Treatment Improvements	60	60	35	20	20	195
CR	Lightning W Treatment Improvements	10	60	20	20	20	130
CR	Longley Plant HV 3 and HV 4 Treatment Improvements	40	500	800			1,340
CR	Glendale Lighting Upgrade		250				250
CR	Chalk Bluff Lighting Upgrade			350			350
	Total Treatment Plant Improvements	15,510	6,520	6,655	5,490	2,390	36,565
	Pressure Improvements						
CR	Pressure Regulators Rehabilitation	500	500	500	500	500	2,500
CR	Kings Row 1 Booster Pump Station	2,200					2,200
CR	Twin Lakes Booster Pump Station	400					400
CR	Chalk Bluff Additional Backup Generator	700					700
CR	Pressure Reducing Valve (Roll Seal) Removal	400	400	400	400	400	2,000
CR	Land Acquisitions	500	500	250	250	250	1,750
DF	Longley Booster Pump Station / Double R Capacity Increase	425					425
CR	Pump Station Oversizing	100	100	100	100	100	500
CR	Pump Station Rebuilds, Rehabilitations	500	1,500	1,000	1,000	1,000	5,000
CR	Mount Rose Well #3 Pump Station Improvements		250				250
CR	Standby Generator Improvements	150	150	150	150	150	750
CR	Spanish Springs #1 Pump Zone Intertie	600					600
DF	STMGID Tank #4 Booster Pump Station / Transmission Line	150	2,300	550			3,000
CR	Idlewolf Booster Pump Station Improvements		100	1,200			1,300
CR	Desert Fox Standby Generator		150				150
DF	Disc Drive Low Head Pump Station and Mains		130	3,170			3,300
CR & DF	Sullivan #2 Booster Pump Station Replacement		80	1,150			1,230
CR & DF	Southwest Pump Zone Consolidation Phase 1			330	6,330		6,660
DF	Raleigh to Fish Springs Booster Pump Station			300	1,600		1,900
CR & DF	Southwest Pump Zone Consolidation Phase 2				50	990	1,040
CR	Sierra Summit-Kohl's Zone Consolidation				50	400	450
CR	Wild Mustang Regulated Pressure Zone				50	380	430
CR	Thomas Creek #4 PRS					170	170
DF	Spring Creek Tanks #3&4 Booster Pump Station Modifications					600	600
DF	Lazy 5 Low Head Pump Station & Mains					150	150
DF	Wildwood Pressure Regulating Station Scada Control				50		50
DF	Common (Stonegate) Booster Pump Station	2,250					2,250
	Total Pressure Improvements	8,875	6,160	9,100	10,530	5,090	39,755
	Water Main-Distribution-Service Line Improvements						
CR	Street & Highway Main Replacements	3,000	5,000	5,000	5,000	5,000	23,000
CR	California-Marsh 24" Main Replacement	1,150					1,150
DF & GR	Verdi Main Extension	500					500
DF	Verdi Elementary Main Oversizing	200					200
DF	Boomtown Water System Improvements	2,550					2,550
DF	Boomtown to TMWA Connection	650	1,200				1,850
CR	Spring Creek South Zone Conversion	850	750				1,600
DF	Trademark 14" Main Tie	50	200				250
DF	Mount Rose 5 Distribution / Pressure Improvements	400					400
CR	Booth, Sharon Way, Monroe 24" Main Replacements	100	1,800	1,100	2,200		5,200
DF	South Virginia 24" Main (Kumle to Peckham)		900				900
CR	North East Sparks Feeder Main Relocation	50	950				1,000

TMWA Draft Captial Improvement Schedule FY 2020 - FY 2024

		FY	FY	FY	FY	FY	Proposed
Funding Source	TMWA 5 Year Draft Capital Plan Summary	2020	2021	2022	2023	2024	Five Year CIP Total
Water Main-Distribution-Service Line Improvements							
DF	South Truckee Meadows Capacity Improvements	350					350
DF	General Waterline Extensions	300	100	100	100	100	700
CR	Spanish Springs Main Replacement	1,200					1,200
CR	Goldeneye Parkway Main & CV Tie		180				180
CR	Mt Rose Tank 1 Fire Flow Improvements		400	570			970
CR	NE Sparks Feeder Main Ph. 8			50	2,050		2,100
CR & DF	Stead Golf Course Main Replacement				170	2,300	2,470
DF	Goldenrod Main			50	1,200		1,250
DF	Wildwood 2 PRS SCADA Control				100		100
CR & DF	Sullivan #1 Main Tie & PRS				620		620
CR	Montreux High Pressure ACP Replacement					520	520
CR	Galena Creek Main Crossing					40	40
CR	Off-River Supply Improvements - STM					50	50
CR	Off-River Supply Improvements - NVS Pump Station					400	400
CR	Somersett #6 Main Tie & PRS					280	280
CR	Lemmon Valley Sand Yard		530				530
Total Water Main-Distribution-Service Line Improvements		11,350	12,010	6,870	11,440	8,690	50,360
Potable Water Storage Improvements							
CR & GR	Tank Access Road Flood Repairs (FEMA)	350					350
CR	STMGID Tank East Zone 11 Tank	3,075					3,075
CR	Lightning W Tank 2	360					360
CR & DF	Sun Valley #2 Tank	420	2,980				3,400
CR	Storage Tank Recoats; Access; Drainage Improvements	900	900	900	900	900	4,500
DF	Rattlesnake Ring Addition	100	800				900
CR & DF	Highland Reservoir Tank		100	5,000	700		5,800
CR & DF	US 40 Tank & Feeder Main			170	300	2,730	3,200
CR & DF	Spanish Springs Altitude Valves (SC6 & DS#5)				300		300
DF	Lemmon Valley Tank #4				200	2,000	2,200
DF	Fish Springs Ranch 2 Tank					160	160
Total Potable Water Storage Improvements		5,205	4,780	6,070	2,400	5,790	24,245
Hydroelectric Improvements							
CR	Washoe Flume Reconstruction Design	250	2,200				2,450
CR	Forebay, Diversion, and Canal Improvements	100	100	100	100	100	500
CR	Hydro Plant Generator Rewinds	650	650	650			1,950
CR	Orr Ditch Hydro Facility	50					50
CR	Flume Rehabilitation		350	350			700
Hydroelectric Improvements		1,050	3,300	1,100	100	100	5,650
Customer Service Outlays							
CR	Galvanized / Poly Service Line Replacements	250	250	250	250	250	1,250
DF	New Business Meters	175	100	100	100	100	575
CR	AMI Automated Meter Infrastructure	1,750	2,100	2,100	2,100	2,100	10,150
CR	Mueller Pit Replacements former Washoe County	125	125	125	125	125	625
CR	Meter Reading Equipment	100		60		75	235
Total Customer Service Outlays		2,400	2,575	2,635	2,575	2,650	12,835
Administrative Outlays							
CR	GIS / GPS System Mapping Equipment	60		20		20	100
CR	Computers						0
CR	IT Server Hardware	370	180	30	45	30	655
CR	IT Network Security Upgrades	30	45	160	70	10	315
CR	IT Physical Access Security Upgrades	60	60	60	60	60	300
CR	Printer / Scanner Replacement	40	40	50		100	230
CR	CIS System Replacement	1,400	600				2,000
CR	Crew Trucks / Vehicles	585	650	750	750	850	3,585
CR	Emergency Response Projects	150	150	150	150	150	750
CR	System Wide Asphalt Rehabilitation	200	200	200	200	200	1,000
CR	Emergency Operations Annex Design / Construction			250	250	1,500	2,000
CR	TMWA Refueling Facility	500					500
CR	Physical Access Control System Upgrade	75	200				275
Total Administrative Outlays		3,470	2,125	1,670	1,525	2,920	11,710
Total Capital Spending Outlays		53,161	42,655	36,365	39,255	33,570	205,006
Special Projects Funded by Development							
MR	Water Meter Retrofits	100	100	100	100	100	500
DF	Water Right Purchases	150	150	150	300	300	1,050
Total Special Projects Funded by Development		250	250	250	400	400	1,550
Total Projected Capital Spending Including Projects Funded By Development		53,411	42,905	36,615	39,655	33,970	206,556
Former STMGID System Improvements							
STMGID	STMGID Roll Seal Replacements						
STMGID	STMGID Conjunctive Use Facilities	1,500	600				2,100
STMGID	STMGID Well Bypass & Chlorine Room Improvements Phase 2	350					350
STMGID	STMGID NAC Deficiencies - Saddlehorn, Upper Toll, STMGID East	360	1,653	350			2,363
STMGID	STMGID NAC Deficiencies Ph2 - Sioux Trail, Geiger Grade, Westwind Cr	360	347				707
STMGID	STMGID Well Fix & Finish	150	150	150	150	150	750
STMGID	STMGID Tank Recoats		220		300		520
STMGID	STMGID Mueller Pit Replacements	50	50				100
Total Former STMGID Capital Spending - Allocated Funding		2,770	3,020	500	450	150	6,890
Total Projected Capital Spending Including STMGID - Allocated Funding		56,181	45,925	37,115	40,105	34,120	213,446
Funding Source Summary							
Customer Rates (CR)		32,438					
New Development (DF)		17,973					
STMGID Reserve Funds (STMGID)		2,770					
Water Meter Retrofit Reserves / Water Rights Purchases (MR/DF)		250					
Sustainability (SF)		813					
Grants (GR)		1,938					
Total		56,181					

DRAFT

FY 2020 – 2024

Capital Improvement Plan



Truckee Meadows Water Authority FY 2020 - 2024 Capital Improvement Plan

DRAFT

Table of Contents

<u>INTRODUCTION</u>	<u>1</u>
<u>DEFINITIONS</u>	<u>5</u>
<u>PRIORITIZATION OF PROJECT/OUTLAYS</u>	<u>6</u>
<u>FUNDING of CAPITAL SPENDING</u>	<u>7</u>
<u>FISCAL YEAR 2020 CAPITAL SPENDING - THE CAPITAL BUDGET</u>	<u>11</u>
<u>SUMMARY OF PROJECTS FOR THE FISCAL YEAR 2020 BUDGET</u>	<u>11</u>
<u>CAPITAL EXPENDITURES BY FUNCTION</u>	<u>14</u>
<u>PRELIMINARY FUNDING PLAN FUNDING SOURCES</u>	<u>15</u>
<u>FUNDING BY PRIORITY</u>	<u>16</u>
<u>PROJECT FUNCTIONS AND DESCRIPTIONS</u>	<u>17</u>
<u>RAW WATER SUPPLY IMPROVEMENTS Summary</u>	<u>17</u>
<u>Raw Water Supply Improvements Map</u>	<u>18</u>
<u>Highland Canal-Upgrades-Downstream</u>	<u>19</u>
<u>Highland Canal - Upgrades - Diversion to Chalk Bluff</u>	<u>20</u>
<u>Independence Lake Permitting Study</u>	<u>21</u>
<u>Indirect Potable Reuse</u>	<u>22</u>
<u>TROA Drought Storage/Implementation</u>	<u>23</u>
<u>Donner Lake Outlet Improvements Phase 2</u>	<u>24</u>
<u>GROUND WATER SUPPLY IMPROVEMENTS Summary</u>	<u>25</u>
<u>Ground Water Supply Improvements</u>	<u>26</u>
<u>Well Rehabilitation Improvements</u>	<u>27</u>
<u>Double Diamond #5 Equipping</u>	<u>28</u>
<u>Campello Capacity Increase</u>	<u>29</u>
<u>Callamont Well South Equipping</u>	<u>30</u>
<u>Air Guard Well Replacement</u>	<u>31</u>
<u>Sunrise #3 Replacement</u>	<u>32</u>
<u>Bedell Flat Water Bank</u>	<u>33</u>
<u>Lemmon Valley Well #8 Replacement</u>	<u>34</u>
<u>Well Fix & Finish</u>	<u>35</u>
<u>Well Plugging / Conversion</u>	<u>36</u>
<u>NDEP Monitoring Wells</u>	<u>37</u>
<u>Thomas Creek Well Replacement & Spring Creek SC5</u>	<u>38</u>
<u>Truckee Canyon Well 3 Site Modification</u>	<u>39</u>
<u>Well Head TTHM Mitigation</u>	<u>40</u>
<u>Spring Creek Well #7 Recharge</u>	<u>41</u>
<u>Kietzke, High, Morrill PCE Treatment</u>	<u>42</u>
<u>Callamont Well North Equipping</u>	<u>43</u>
<u>STMGID 6 Generator</u>	<u>44</u>
<u>Spring Creek Well #8 - Donovan</u>	<u>45</u>
<u>TREATMENT PLANT IMPROVEMENTS Summary</u>	<u>46</u>
<u>Treatment Plant Improvements</u>	<u>47</u>
<u>Chalk Bluff Treatment Plant Fix & Finish</u>	<u>48</u>
<u>Glendale Treatment Plant Fix & Finish</u>	<u>49</u>

Truckee Meadows Water Authority FY 2020 - 2024 Capital Improvement Plan

DRAFT

<u>Chalk Bluff Filter Underdrains</u>	50
<u>Chalk Bluff Lighting Upgrade</u>	51
<u>Glendale Lighting Upgrade</u>	52
<u>Orr Ditch Pump Station Rehab</u>	53
<u>Truckee Canyon Water Treatment Improvements</u>	54
<u>Lightning W Treatment Plants</u>	55
<u>SCADA Rehab/Plant Operating Software</u>	56
<u>Mt. Rose Surface Water Treatment Plant</u>	57
<u>Longley Lane HV 3 & 4 Treatment</u>	58
<u>Glendale Diversion Emergency Flood Repairs</u>	59
<u>Spanish Springs Nitrate Treatment Facility</u>	60
<u>DISTRIBUTION SYSTEM PRESSURE IMPROVEMENTS Summary</u>	61
<u>Pressure Improvements Map</u>	63
<u>Pressure Regulators Rehabilitation</u>	64
<u>Pressure Reducing Valve (Roll Seal) Removal</u>	65
<u>Land Acquisition</u>	66
<u>Desert Fox Standby Generator</u>	67
<u>Disc Drive Low Head Pump Station & Mains</u>	68
<u>Longley Booster Pump Station/ Double R Capacity Increase</u>	69
<u>Pump Station Oversizing</u>	70
<u>Pump Station Rebuilds, Rehabilitations</u>	71
<u>Sullivan #2 Booster Pump Station Replacement</u>	72
<u>Mount Rose Well #3 Pump Station Improvements</u>	73
<u>Standby Generator Improvements</u>	74
<u>Idlewild Booster Pump Station Improvements</u>	75
<u>Raleigh-Fish Springs Booster Pump Station</u>	76
<u>SW Reno Pump Zone Consolidation Phase 1</u>	77
<u>Spanish Springs #1 Pressure Zone Intertie</u>	78
<u>STMGID Tank #4 Booster Pump Station / Transmission Line</u>	79
<u>Wildwood Pressure Regulating Station/Scada Control</u>	80
<u>SW Pump Zone Consolidation Phase 2</u>	81
<u>Sierra Summit-Kohl's Zone Consolidation</u>	82
<u>Chalk Bluff Additional Backup Generator</u>	83
<u>Wild Mustang Regulated Pressure Zone</u>	84
<u>Twin Lakes Booster Pump Station</u>	85
<u>Thomas Creek #4 Pressure Regulating Station</u>	86
<u>Kings Row 1 Booster Pump Station</u>	87
<u>Spring Creek Tanks #3 & 4 Booster Pump Station Modifications</u>	88
<u>Lazy 5 Low Head Pump Station & Mains</u>	89
<u>Common (Stonegate) Booster Pump Station</u>	90
<u>WATER MAIN DISTRIBUTION & SERVICE LINE IMPROVEMENTS Summary</u>	91
<u>Water Main Distribution Map</u>	93
<u>Street & Highway Main Replacements</u>	94
<u>Spring Creek S. Zone Conversion</u>	95

Truckee Meadows Water Authority FY 2020 - 2024 Capital Improvement Plan

DRAFT

<u>California-Marsh 24" Main Replacement</u>	96
<u>Booth, Sharon Way, Monroe 24" Main Replacements</u>	97
<u>South Virginia 24" Main (Kumble to Peckham)</u>	98
<u>North-East Sparks Tank Feeder Main Relocation</u>	99
<u>Goldeney Parkway Main & CV Tie</u>	100
<u>Trademark 14" Main Tie</u>	101
<u>Spanish Springs Main Replacement</u>	102
<u>Mt. Rose Tank 1 Fire Flow Improvement</u>	103
<u>South Truckee Meadows Capacity Improvements</u>	104
<u>Stead Golf Course Main Replacement</u>	105
<u>General Waterline Extensions</u>	106
<u>NE Sparks Feeder Main Phase 8</u>	107
<u>Goldenrod Main</u>	109
<u>Boomtown Water System Improvements</u>	110
<u>Boomtown to TMWA Connection</u>	111
<u>Lemmon Valley Sand Yard</u>	112
<u>Wildwood 2 Pressure Regulator Station SCADA Control</u>	113
<u>Sullivan #1 Main Tie & Pressure Regulator Station</u>	114
<u>Montreux High Pressure ACP Replacement</u>	115
<u>Galena Creek Main Crossing</u>	116
<u>Off-River Supply Improvements - STM</u>	117
<u>Off-River Supply Improvement - NVS Pump Station</u>	118
<u>Somersett #6 Main Tie & Pressure Regulator Station</u>	119
<u>Verdi Main Extension</u>	120
<u>Verdi Elementary Main Oversizing</u>	121
<u>POTABLE WATER STORAGE IMPROVEMENTS Summary</u>	122
<u>Potable Water Storage Improvements Map</u>	123
<u>Sun Valley #2 Tank</u>	124
<u>Rattlesnake Ring Addition</u>	125
<u>Fish Springs Ranch #2 Tank</u>	126
<u>Storage Tank Recoats; Access; Drainage Improvements</u>	127
<u>Highland Reservoir Tank</u>	128
<u>STMGID Tank East (Zone 11 Tank)</u>	129
<u>Tank Access Road Flood Repairs (FEMA)</u>	130
<u>Lightning W Tank 2</u>	131
<u>US 40 Tank & Feeder Main</u>	132
<u>Spanish Springs Altitude Valves</u>	133
<u>Lemmon Valley Tank #4</u>	134
<u>HYDROELECTRIC IMPROVEMENTS Summary</u>	135
<u>Hydroelectric Map</u>	136
<u>Forebay, Diversion, and Canal Improvements</u>	137
<u>Flume Rehabilitation</u>	138
<u>Hydro Plant Generator Rewinds</u>	139
<u>Washoe Flume Reconstruction</u>	140

Truckee Meadows Water Authority FY 2020 - 2024 Capital Improvement Plan

DRAFT

<u>Orr Ditch Hydro Facility</u>	141
<u>CUSTOMER SERVICE OUTLAYS Summary</u>	142
<u>Customer Service Area Map</u>	143
<u>Meter Reading Equipment</u>	144
<u>New Business Meters</u>	145
<u>Mueller Pit Replacements Former Washoe County</u>	146
<u>Galvanized/Poly Service Line Replacements</u>	147
<u>AMI Automated Meter Infrastructure</u>	148
<u>ADMINISTRATIVE OUTLAYS Summary</u>	149
<u>Administrative Outlays Map</u>	150
<u>GIS/GPS System Mapping Equipment</u>	151
<u>IT Server Hardware</u>	152
<u>IT Network Security Upgrades</u>	153
<u>IT Physical Security Upgrades</u>	154
<u>Printer/Scanner Replacement</u>	155
<u>TMWA Refueling Facility</u>	156
<u>Crew Trucks/Vehicles</u>	157
<u>Emergency Response Projects</u>	158
<u>CIS System Replacement</u>	159
<u>Emergency Operations Annex-Design / Construction</u>	160
<u>System Wide Asphalt Rehabilitation</u>	161
<u>Physical Access Control System Upgrade</u>	162
<u>FORMER STMGID SYSTEM IMPROVEMENTS Summary</u>	163
<u>STMGID Area Map</u>	164
<u>Well Bypass and Chlorine Room Improvements (former STMGID wells)</u>	165
<u>STMGID Well Fix & Finish</u>	166
<u>STMGID Conjunctive Use Facilities</u>	167
<u>STMGID Tank Recoats</u>	168
<u>Mueller Pit Replacements Former STMGID</u>	169
<u>NAC Deficiencies-Saddlehorn, Upper Toll Road, STMGID East</u>	170
<u>NAC Deficiencies Phase 2 - Sioux Trail, Geiger Grade, Westwind Circle</u>	171

Truckee Meadows Water Authority FY 2020 - 2024 Capital Improvement Plan

DRAFT

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.

Truckee Meadows Water Authority FY 2020 - 2024 Capital Improvement Plan

DRAFT

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 \$213.4 million with approximately 68.1% or \$145.3 million dedicated to upgrades or replacement of existing infrastructure, and approximately 25.7% or \$54.8 million allocated to construction of new water system capacity projects, conjunctive use construction projects, retrofit of remaining unmetered services, and potential opportunistic acquisition of water rights. Construction and capital outlays associated with the former STMGID service area are estimated to be approximately 3.2% or \$6.9 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 \$213.4 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 1.9% 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.

Truckee Meadows Water Authority FY 2020 - 2024 Capital Improvement Plan

DRAFT

Distribution System Pressure Improvements contains 18.6% or approximately \$39.8 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, as well as reconstruction of pressure regulating valves.

Water Main Distribution & Service Line Improvements contains 23.6% or approximately \$50.4 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 11.4% or approximately \$24.2 million of total spending in the CIP. These projects are comprised mainly of new treated water storage tank construction to serve new and expanded service (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 \$12.7 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

Truckee Meadows Water Authority FY 2020 - 2024 Capital Improvement Plan

DRAFT

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.

Bonds and Other Financing/Funding Tools

New money revenue bond issuance has been historically an integral part of funding construction spending. TMWA prefers to not use senior lien debt, but rather rely on subordinated debt financing obtained through the Drinking Water State Revolving Loan

Truckee Meadows Water Authority FY 2020 - 2024 Capital Improvement Plan

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

At the time of the acquisition of the water assets of Sierra Pacific Resources (SPR), TMWA established a \$40.1 million capital improvement project fund from proceeds of Series 2001-A acquisition bonds issuance. Since inception, TMWA has primarily relied upon operating cash flow, investment income and developer fees to fund capital projects. However, during fiscal year 2005, TMWA was able to utilize a low cost *Drinking Water State Revolving Fund (DWSRF)* loan for \$4.8 million to fund arsenic removal projects and to issue \$40.0 million in additional senior lien bonds to fund various capital improvements. The \$40.0 million Series 2005 Revenue bond proceeds (totaling a net \$37.2 million to apply to construction) were fully expended before the end of fiscal year 2008, primarily to construct the North Virginia-Stead pump station and transmission pipelines. TMWA inaugurated a tax-exempt commercial paper program in August 2006; initially to fund water right purchases with two issues that totaled \$43 million. Moreover, the program provides another resource to draw upon for additional funding for capital projects and water rights acquisitions. Market conditions were extremely favorable in February 2008, at which time TMWA took the opportunity to issue an additional \$25 million at an initial rate of 1.59% which includes letter of credit fees and commercial paper remarketing costs. TMWA has taken advantage of 0% interest rate federal stimulus funding and obtained a \$2.3 million loan through the DWSRF program to partially fund the Mogul Bypass Siphon Project. In December 2009 TMWA obtained an \$8.5 million DWSRF loan authorization to construct the Glendale Raw Water Diversion and Intake Structure which was completed in fiscal year 2011. TMWA drew only \$4.4 million on this facility and de-obligated the remaining authorization. TMWA extended its tax-exempt commercial paper program in fiscal year 2012 and completed the process of extending the direct pay liquidity facility with two banks, Wells Fargo N.A and J.P. Morgan N. A. to substitute Lloyds TSB, the originator of the first liquidity facility. Subsequently in fiscal year 2014 TMWA extended the tax-exempt commercial paper program again and replaced Wells Fargo N.A and J.P. Morgan N. A. liquidity facility with an expanded liquidity facility with Bank of Tokyo-Mitsubishi UFJ. The new liquidity facilities provide for a direct-pay letter of credit to support remarketing of TMWA's commercial paper and also supports an A-1/P-1 rating (highest rating) for TMWA's short term variable rate debt program. This has resulted in favorable interest rates, ranging from less than 1/10 of 1% to 1.4% which was continually experienced throughout the last three years. Due to recent and projected federal interest rate hikes, in 2018 TMWA successfully reduced \$44.2 million of its variable rate commercial paper with a new bond offering with fixed interest rate payments, and replaced its liquidity facility with a five year agreement with Wells Fargo N.A. In the fourth quarter of fiscal year 2015, TMWA applied for a DWSRF Loan for \$15.0 million to fund the construction phase of the North Valleys Integration Project. Draws on this loan total \$8.9 million and were used to fund the North Valleys Integration Pipeline Project. 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.

Rule 5 and Rule 7 Fees

These fees are collected from the development community. Rule 5 fees are paid by developers to TMWA for the construction of new water feeder mains, new treatment/supply capacity, new storage capacity, and for new or rebuilt pump stations to meet demand resulting from new and expanded service. Rule 7 Fees are derived from will-serve sales to development. TMWA historically purchased water rights on the open market and reserves these rights for will-serve letters to be sold to development. TMWA also recovers a modest amount of administrative and financing costs with the sale of each will-serve. The title to water rights are retained by and dedicated to TMWA. TMWA has sufficient inventory of water rights to meet the demands for new and expanded service for the foreseeable future.

Water Meter Retrofit Fees

TMWA has been retrofitting flat rate water services with meter boxes, setters and meters. The intent is to meter the entire water system which is now in the final 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 forego any potential customer rate increases since the last rate increase that occurred in March 2005. The TMWA Board did approve a 4.5% general rate increase for fiscal year 2010 and another 4.4% general rate increase for fiscal year 2011. The TMWA Board has approved and implemented a 3.5% general rate increase that was put into effect February 1, 2012 and a 3.4% water rate increase in February 2014. As a consequence of the water utility consolidation any review of water rate adjustments was forestalled until TMWA had at least one full year of operating history as a consolidated water utility. Consequently an additional water rate increase of 3.0% was put into effect in May of 2017 and 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 \$56.2 million for fiscal year 2020, the first year of the FY 2020-2024 CIP. Of this total \$32.4 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 \$19.9 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 \$56.2 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

Truckee Meadows Water Authority FY 2020 - 2024 Capital Improvement Plan

DRAFT

Summary of Projects for FY 2020 (continued)	Amount
Treatment Plant Improvements	
Chalk Bluff Treatment Plant Fix & Finish	780
Glendale Treatment Plant Fix and Finish	485
Chalk Bluff Filter Underdrains	150
Orr Ditch Pump Station Rehab	100
Truckee Canyon Water Treatment Improvements	60
Lightning W Treatment Improvements	10
SCADA Rehab / Plant Operating Software	1,000
Mount Rose Surface Water Treatment Plant	11,000
Longley Plant HV 3 and HV 4 Treatment Improvements	40
Glendale Diversion Emergency Flood Repairs (FEMA)	1,600
Spanish Springs Nitrate Treatment Facility	200
Total	15,510
Pressure Improvements	
Pressure Regulators Rehabilitation	500
Pressure Reducing Valve (Roll Seal) Removal	400
Land Acquisitions	500
Longley Booster Pump Station / Double R Capacity Increase	425
Pump Station Oversizing	100
Pump Station Rebuilds, Rehabilitations	500
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	8,875
Water Main-Distribution-Service Line Improvements	
Street & Highway Main Replacements	5,000
Booth, Sharon Way, Monroe 24" Main Replacements	1,100
Mt. Rose Tank 1 Fire Flow Improvements	570
General Waterline Extensions	100
NE Sparks Feeder Main Phase 8	50
Goldenrod Main	50
Total	6,870
Potable Water Storage Improvements	
Storage Tank Recoats; Access; Drainage Improvements	900
Highland Reservoir Tank	5,000
US 40 Tank & Feeder Main	170
Total	6,070

Truckee Meadows Water Authority FY 2020 - 2024 Capital Improvement Plan

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Project Summary for FY 2020 (continued)	Amount
Hydroelectric Improvements	
Forebay, Diversion, and Canal Improvements	100
Flume Rehabilitation	350
Hydro Plant Generator Rewinds	650
Total	1,100
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	2,635
Administrative Outlays	
GIS / GPS System Mapping Equipment	20
IT Server Hardware	30
IT Network Security Upgrades	160
IT Physical Access Security Upgrades	60
Printer / Scanner Replacement	50
Crew Trucks / Vehicles	750
Emergency Response Projects	150
CIS System Replacement	100
Emergency Operations Annex Design / Construction	250
System Wide Asphalt Rehabilitation	200
Total	1,670
Special Projects Funded by Development	
Water Meter Retrofits	100
Water Right Purchases	150
Total	250
Former STMGID System Improvements	
STMGID Well Fix & Finish	150
STMGID NAC Deficiencies - Saddlehorn, Upper Toll, STMGID East	350
Total	500

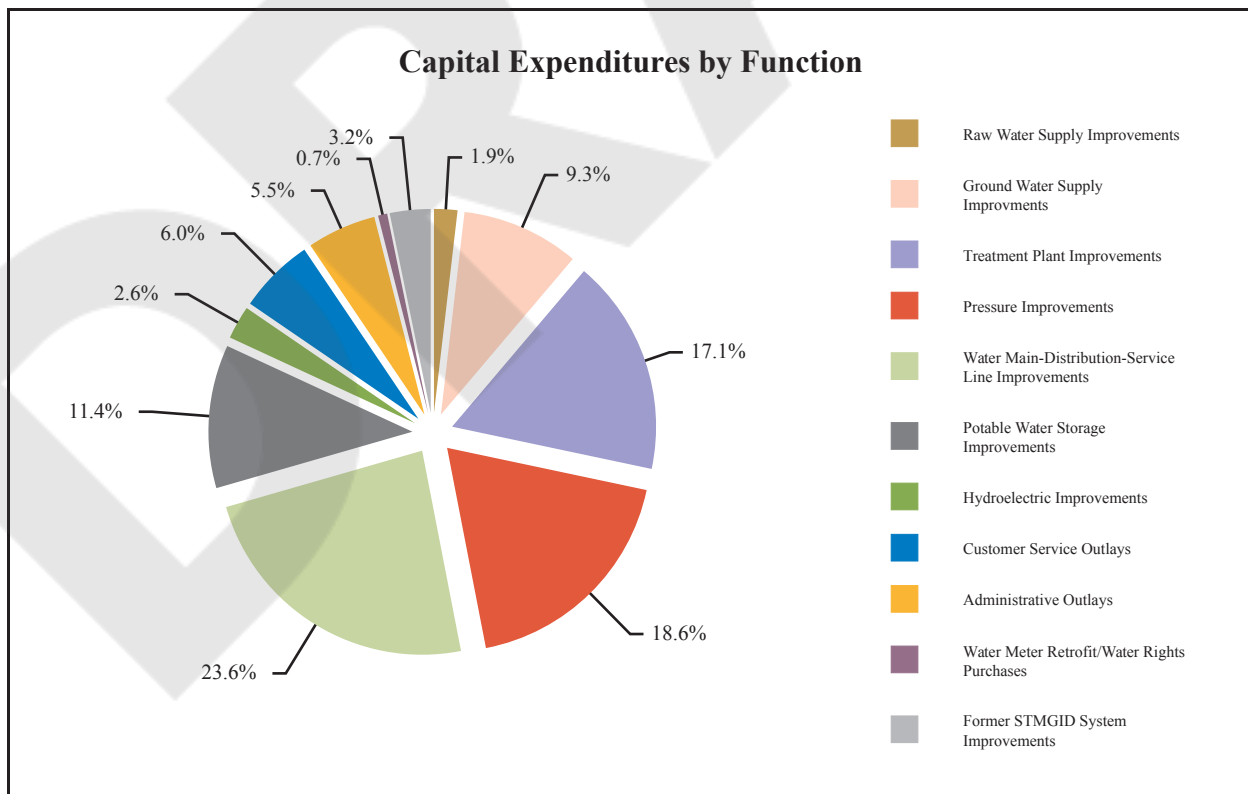
Truckee Meadows Water Authority FY 2020 - 2024 Capital Improvement Plan

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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	8,875	6,160	9,100	10,530	5,090	39,755
Water Main Distribution Service Line Improvements	11,350	12,010	6,870	11,440	8,690	50,360
Potable Water Storage Improvements	5,205	4,780	6,070	2,400	5,790	24,245
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 Right Purchases	250	250	250	400	400	1,550
Sub-Total TMWA Construction Spending & Outlays	53,411	42,905	36,615	39,655	33,970	206,556
Former STMGID System Improvements	2,770	3,020	500	450	150	6,890
Total Projected Capital Spending, Including STMGID	56,181	45,925	37,115	40,105	34,120	213,446

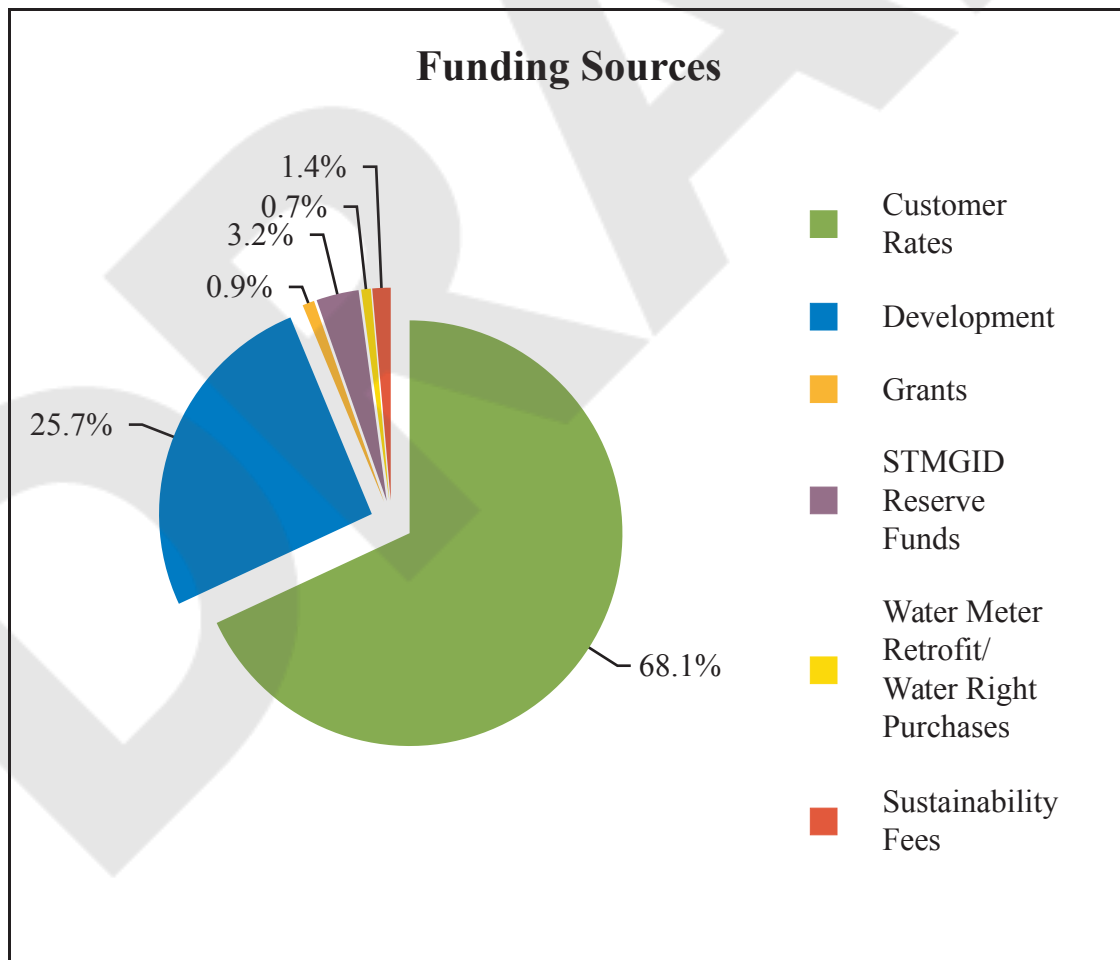


Truckee Meadows Water Authority FY 2020 - 2024 Capital Improvement Plan

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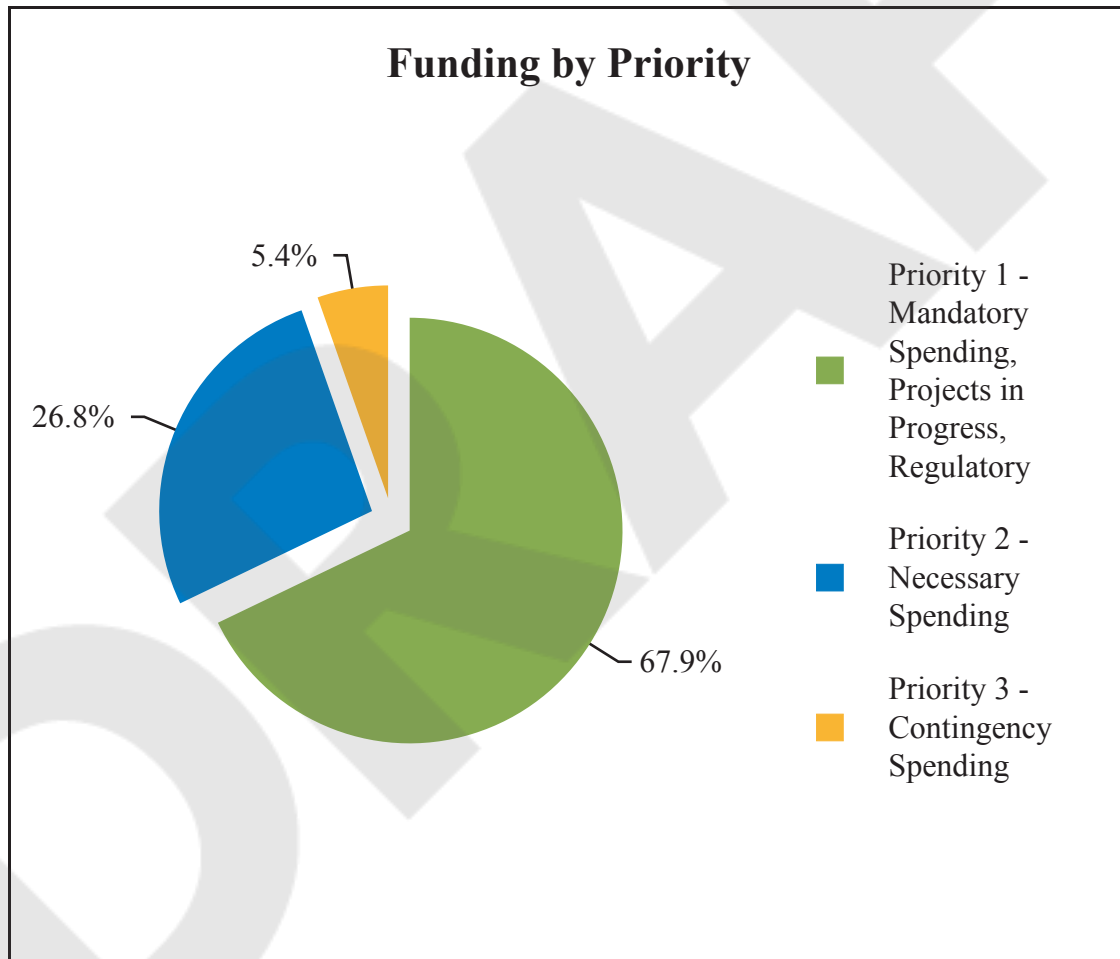
PRELIMINARY FUNDING PLAN
FUNDING SOURCES
(Amounts in thousands of dollars)

Summary of Funding Sources	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	Five Year CIP Total
Capital Improvements Funded by Customer Rates	32,438	34,059	26,985	27,311	24,498	145,291
Capital Improvements Funded by Development	17,973	7,996	8,780	11,469	8,597	54,815
Capital Improvements Funded by Grants	1,938	—	—	—	—	1,938
Capital Improvements Funded with former STMGID Reserve Funds	2,770	3,020	500	450	150	6,890
Water Meter Retrofit / Water Right Purchases	250	250	250	400	400	1,550
Sustainability Fees	813	600	600	475	475	2,963
Total Projected Capital Spending	56,182	45,925	37,115	40,105	34,120	213,446



FUNDING BY PRIORITY
(Amounts in thousands of dollars)

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	47,846	35,280	21,045	21,600	19,085	144,856
Priority 2 - Necessary Spending	5,750	8,095	13,260	16,805	13,210	57,120
Priority 3 - Contingency Spending	2,585	2,550	2,810	1,700	1,825	11,470
Total Projected Capital Spending	56,181	45,925	37,115	40,105	34,120	213,446



Truckee Meadows Water Authority FY 2020 - 2024 Capital Improvement Plan

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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.

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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.

Truckee Meadows Water Authority FY 2020 - 2024 Capital Improvement Plan
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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 "exceptional 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 FY2024.

Truckee Meadows Water Authority FY 2020 - 2024 Capital Improvement Plan

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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 and Equipping	50	450	—	60	1,140	1,700
1	Developer Fees	Campello Capacity Increase	70	—	—	—	—	70
2	Customer Rates	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 /	Bedell Flat Water Bank	500	500	500	250	250	2,000
2	Customer Rates / Developer Fees	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 and Spring Creek SC #5	1,250	1,250	—	—	—	2,500
2	Customer Rates	Truckee Canyon Well #3 Site Modifications	50	—	—	—	—	50
1	Customer Rates /	Well Head TTHM Mitigation	500	500	500	500	500	2,500
1	Customer Rates /	Spring Creek Well #7 Recharge	425	—	—	—	—	425
1	Customer Rates	Kietzke, High, Morrill PCE Treatment	500	—	—	—	—	500
2	Customer Rates	Callamont Well North Equipping	—	—	—	60	1,140	1,200
1	Developer Fees	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.

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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.

Truckee Meadows Water Authority FY 2020 - 2024 Capital Improvement Plan
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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 and Equipping	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 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	Customer Rates	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 / Developer Fees	Lemmon Valley Well #8 Replacement	—	—	—	—	1,000	1,000

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

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

Ground Water Supply Improvements

Well Fix & Finish

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 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 FY21.

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 FY20-21.

Truckee Meadows Water Authority FY 2020 - 2024 Capital Improvement Plan
DRAFT

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 and 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 FY20 and well equipping in FY21.

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 FY19 and construction will be completed in FY20.

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 FY20.

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 Fees	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 FY20.

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 FY23 and the pumping facilities are constructed in FY24.

Truckee Meadows Water Authority FY 2020 - 2024 Capital Improvement Plan

DRAFT

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 and 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	Customer Rates	Glendale Diversion Emergency Flood Repairs (FEMA)	1,600	—	—	—	—	1,600
2	Customer Rates / Developer Fees	Spanish Springs Nitrate Treatment Facility	200	500	3,000	3,000	—	6,700
Subtotal Treatment Improvements			15,510	6,520	6,655	5,490	2,390	36,565

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

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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 FY2019, 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 FY2020. 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 and 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 FY24. 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 FY20 and construction taking place in at least FY's 21-24.

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 FY22.

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	0	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 FY20. Construction will commence in FY20-21 and scheduled to be completed by FY23.

Truckee Meadows Water Authority FY 2020 - 2024 Capital Improvement Plan
DRAFT

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 WELL #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 – FY 2024 are contingent spending related to treatment efficiency and for chemical changes in the raw water.

Truckee Meadows Water Authority FY 2020 - 2024 Capital Improvement Plan
DRAFT

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 FY2019, and completion of construction in FY 2020.

Truckee Meadows Water Authority FY 2020 - 2024 Capital Improvement Plan
DRAFT

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 FYs 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	Customer Rates	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 / Developer Fees	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 FYs 2020 through 2021.

Truckee Meadows Water Authority FY 2020 - 2024 Capital Improvement Plan

DRAFT

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	425	—	—	—	—	425
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 /	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	Developer Fees	Southwest Pump Zone Consolidation Phase 2	—	—	—	50	990	1,040

Truckee Meadows Water Authority FY 2020 - 2024 Capital Improvement Plan

DRAFT

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	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-Total Pressure Improvements			8,875	6,160	9,100	10,530	5,090	39,755

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

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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 anew 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	425	—	—	—	—	425

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.

Truckee Meadows Water Authority FY 2020 - 2024 Capital Improvement Plan
DRAFT

**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 FY21. Construction is scheduled for FY22.

**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 FY2022. 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 FY22 and construction in FY23.

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.

Truckee Meadows Water Authority FY 2020 - 2024 Capital Improvement Plan
DRAFT

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 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	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	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 FY24.

Truckee Meadows Water Authority FY 2020 - 2024 Capital Improvement Plan
DRAFT

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 FY19. Construction will occur in FY20.

Truckee Meadows Water Authority FY 2020 - 2024 Capital Improvement Plan
DRAFT

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 FY24.

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 FY24 with construction scheduled in FY24-25.

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
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.

Truckee Meadows Water Authority FY 2020 - 2024 Capital Improvement Plan

DRAFT

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	3,000	5,000	5,000	5,000	5,000	23,000
2	Customer Rates	Spring Creek South Zone Conversion	850	750	—	—	—	1,600
1	Customer Rates	California-Marsh 24" Main Replacement	1,150	—	—	—	—	1,150
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	—	900	—	—	—	900
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	200	—	—	—	250
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 Fees	General Waterline Extensions	300	100	100	100	100	700
1	Customer Rates	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	1,200	—	—	—	1,850
2	Customer Rates	Lemmon Valley Sand Yard	—	530	—	—	—	530
1	Developer Fees	Wildwood 2 PRS SCADA Control	—	—	—	100	—	100
2	Customer Rates /	Sullivan #1 Main Tie & PRS	—	—	—	620	—	620

Truckee Meadows Water Authority FY 2020 - 2024 Capital Improvement Plan

DRAFT

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Customer Rates	Montreux High Pressure ACP Replacement	—	—	—	—	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	Somerset #6 Main Tie & PRS	—	—	—	—	280	280
1	Customer Rates / Grant	Verdi Main Extension	500	—	—	—	—	500
1	Developer Fees	Verdi Elementary Main Oversizing	200	—	—	—	—	200
Subtotal Water Main Distribution Improvements			11,350	12,010	6,870	11,440	8,690	50,360

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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	3,000	5,000	5,000	5,000	5,000	23,000

PROJECT DESCRIPTION: Provision is made each year for water main replacements in conjunction with repaving efforts by the City of Reno, City of Sparks, 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 FY21.

Water Main-Distribution Service Line Improvements California-Marsh 24" Main Replacement

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Customer Rates	California-Marsh 24" Main Replacement	1,150	—	—	—	—	1,150

PROJECT DESCRIPTION: When TMWA evaluated the alternatives to replacing the 24-inch main on Plumb Lane (installed in 1949) when the west end of Plumb Lane was widened in 2012-2013, it was decided to abandon that section of the pipeline, ultimately saving about \$4 million in replacement costs. The alternate plan for providing water service to the Hunter Creek gravity zone should a main break occur on the existing 42-inch Mayberry main, or if transmission capacity from Chalk Bluff was disrupted requires replacement of existing 24-inch mains on Booth, Sharon and Monroe (installed in 1948) to allow transfer of adequate capacity through the Idlewild transfer facilities. The construction of the California-Marsh Ave Intertie will be installed in FY 2019-2020 so that a significant amount of pipe that is located under private property between California and Marsh can be retired.

SCHEDULE: The pipeline will be constructed in fiscal year 2020.

**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.

Truckee Meadows Water Authority FY 2020 - 2024 Capital Improvement Plan
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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	—	900	—	—	—	900

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 regulator station is required.

SCHEDULE: Implementation and construction will be completed in FY21.

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	200	—	—	—	250

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 FY20-21.

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 FY20.

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 1 0" 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 FY21. Construction will occur in FY21-22.

Truckee Meadows Water Authority FY 2020 - 2024 Capital Improvement Plan
DRAFT

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 14-inch steel pipe installed around 1945. The pipe provides an important hydraulic tie between the Stead tanks and the northeast extremities of the Stead distribution system. The pipeline may also be useful to alleviate an existing bottleneck between the Stead wells and the distribution system.

SCHEDULE: The project is scheduled for construction in 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 Fees	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 NE Sparks Feeder Main Ph. 8

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
1	Customer Rates	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 FY20.

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	1,200	—	—	—	1,850

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 FY23.

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 FY23.

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 FY24.

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 FY24.

Water Main-Distribution Service Line Improvements Off-River Supply Improvements - STM

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 FY24.

Water Main-Distribution Service Line Improvements Off-River Supply Improvements - NVS 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 FY24.

Water Main-Distribution Service Line Improvements
Somerset #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	Somerset #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 Somerset 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 / Grant	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 FY2019.and may extend into FY2020 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 Fees	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.

Truckee Meadows Water Authority FY 2020 - 2024 Capital Improvement Plan

DRAFT

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	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
2	Developer Fees	Lemmon Valley Tank #4	—	—	—	200	2,000	2,200
Subtotal Storage Improvements			5,205	4,780	6,070	2,400	5,790	24,245

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

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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.

Truckee Meadows Water Authority FY 2020 - 2024 Capital Improvement Plan
DRAFT

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	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 FY20.

Truckee Meadows Water Authority FY 2020 - 2024 Capital Improvement Plan

DRAFT

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 FY20.

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 22-23 and construction in FY 23-24.

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 FY23.

**Potable Water Storage Improvements
Lemmon Valley Tank #4**

FUNDING TIMELINE:

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Developer Fees	Lemmon Valley Tank #4	—	—	—	200	2,000	2,200

PROJECT DESCRIPTION: The project involves construction of a 1.5 MG gallon steel tank with site improvements, utilities, drain line and access road and about 6,300 LF of 20” feeder main. The project will serve growth on the east side of Lemmon Valley and may eventually become a developer design-build-dedicate storage project.

SCHEDULE: Design and permitting is scheduled for FY 2023 and construction is scheduled for FY 2024.

Truckee Meadows Water Authority FY 2020 - 2024 Capital Improvement Plan

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HYDROELECTRIC IMPROVEMENTS**Summary**

Priority	Funding Source	Description	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	CIP Total
2	Customer Rates	Forebay, Diversion, and 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

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

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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, and 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 FY20.

Truckee Meadows Water Authority FY 2020 - 2024 Capital Improvement Plan

DRAFT

CUSTOMER SERVICE OUTLAYS**Summary**

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

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

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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.

Truckee Meadows Water Authority FY 2020 - 2024 Capital Improvement Plan

DRAFT

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.

Truckee Meadows Water Authority FY 2020 - 2024 Capital Improvement Plan
DRAFT

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.

Truckee Meadows Water Authority FY 2020 - 2024 Capital Improvement Plan

DRAFT

ADMINISTRATIVE OUTLAYS**Summary**

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
2	Customer Rates	Physical Access Control System Upgrade	75	200	—	—	—	275
Subtotal Administrative Outlays			3,470	2,125	1,670	1,525	2,920	11,710

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

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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 11K 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 FY20.

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 FY20.

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
2	Customer Rates	Physical Access Control System Upgrade	75	200	—	—	—	275

PROJECT DESCRIPTION: Replacement of legacy readers and employee cards with multi-frequency 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 FY20. Construction is scheduled for FY21.

Truckee Meadows Water Authority FY 2020 - 2024 Capital Improvement Plan

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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 STMGID 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.

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

SCHEDULE: Construction of the pipeline was completed in FY19 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 FY2019 and go into FY2020 depending on customer needs and coordination.



STAFF REPORT

TO: Standing Advisory Committee
FROM: Sonia Folsom, TMWA SAC Liaison
DATE: March 11, 2019
SUBJECT: **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 April 1, 2019 to December 31, 2021 from the following pool of candidates listed in alphabetical order: Susan Hoog and Karl Katt**

Recommendation

Staff is presenting to the Standing Advisory Committee (SAC) for its review, and possible recommendation to the Board, applications submitted by local residents to fill two vacancies.

Background

The SAC was created in 2005 to review budgets, rate proposals and other matters as directed by the Board. In 2016, the TMWA Board decided to remove the two appointments made by the Northern Nevada Water Planning Commission and the Office of Consumer Advocate and replace those with two at-large positions. The committee currently consists of Board-appointed representatives of ten customer classes and four other seats held by representatives of community-interest groups (Attachment 1). TMWA customers interested in becoming a SAC member can submit a letter of interest at any time and will be presented to the SAC when a vacancy opens for consideration.

Discussion

TMWA received two applications for the two vacant positions:

- At-Large – One (1) Vacancy; 1 Applicant
- Irrigation Alternate – One (1) Vacancy; 1 Applicant

The applications submitted are compiled in Attachment 2. In addition, Attachment 3 is a map showing locations of all current SAC members, as well as all applicants.

Staff is pleased to have such skilled and diverse applicants express interest in representing customer issues to the TMWA Board as part of the SAC.

TMWA Standing Advisory CommitteeTerm Appointments
2019 Membership List

Customer Class	Primary Representative	Member Since	Term Ends	Alternate Representative	Member Since	Term Ends
Wholesale (Sun Valley)	Fred Schmidt	2005	12/31/2019	N/A		
Irrigation	Neil McGuire	2005	12/31/2020	Vacant		
Multi-family Residential	Mike Schulewitch	2013	12/31/2020	Jonnie Pullman	2012	12/31/2019
Commercial	Donald Kowitz	2017	12/31/2020	Bruce Gescheider	2009	12/31/2019
Senior Citizen	Robert Chambers	2005	12/31/2020	Karl Katt	2013	12/31/2020
At-Large 1	Ken McNeil	2013	12/31/2020	Ken Becker	2017	12/31/2020
At-Large 2	Jordan Hastings	2017	12/31/2020	Vacant		
Residential:						
Representative 1	Carol Litster	2014	12/31/2020	Dale Sanderson	2017	12/31/2020
Representative 2	Harry Culbert	2006	12/31/2020	Fred Arndt	2017	12/31/2020
Representative 3	Jerry Wager	2014	12/31/2020	Scot Munns	2017	12/31/2020
Appointments:						
BANN	Colin Hayes	2010	12/31/2019	Jim Smith	2010	12/31/2019
Reno-Sparks Chamber	Ann Silver	2019	12/31/2019	Bill Hughes	2016	12/31/2019

Submitted January 10, 2019

Dear Sonia,

Here is the certifications that you requested for the position of Irrigation Alternate for the SAC Committee:

1. Water Management and Landscape Irrigation Auditor Class by the Irrigation Training and Research Center, Cal Poly, San Luis Obispo - 4/4/03, recognized by the Regional Water Planning Commission and TMWA
2. Certified Landscape Irrigation Auditor by the Irrigation Association -- 3/18/05, with the California-Nevada Section of American Water Works Association
3. Water Distribution Operator Grade D1 by the Division of Environmental Protection Bureau of Safe Drinking Water -- 10/5/06
4. Water Distribution Operator Grade D2 by the Division of Environmental Protection Bureau of Safe Drinking Water --4/16/07
5. Conservation Practitioner Grade 1 by the American Water Works Association, California-Nevada Section (Cert #1521) -- 3/30/10

In addition, I am a Board member of the Vistas Homeowners Association, as well as a member of their Architectural Control Committee. If you wish for me to provide you with copies of the certifications listed above, please let me know.

Sincerely,

Karl W. Katt

February 14, 2019

To the Standing Advisory Committee,

I am interested in becoming a member of TMWA's Standing Advisory Committee. I was a member of Ward 1 Neighborhood Advisory Board for 2 years, 2016-2018. I participated in the Reno Citizens Institute Program and learned about how the City of Reno works in 2011.

Water management in the Truckee Meadows is important for our community. I would look forward to learning more about it and suggesting ideas from the perspective of a homeowner and Realtor in our community.

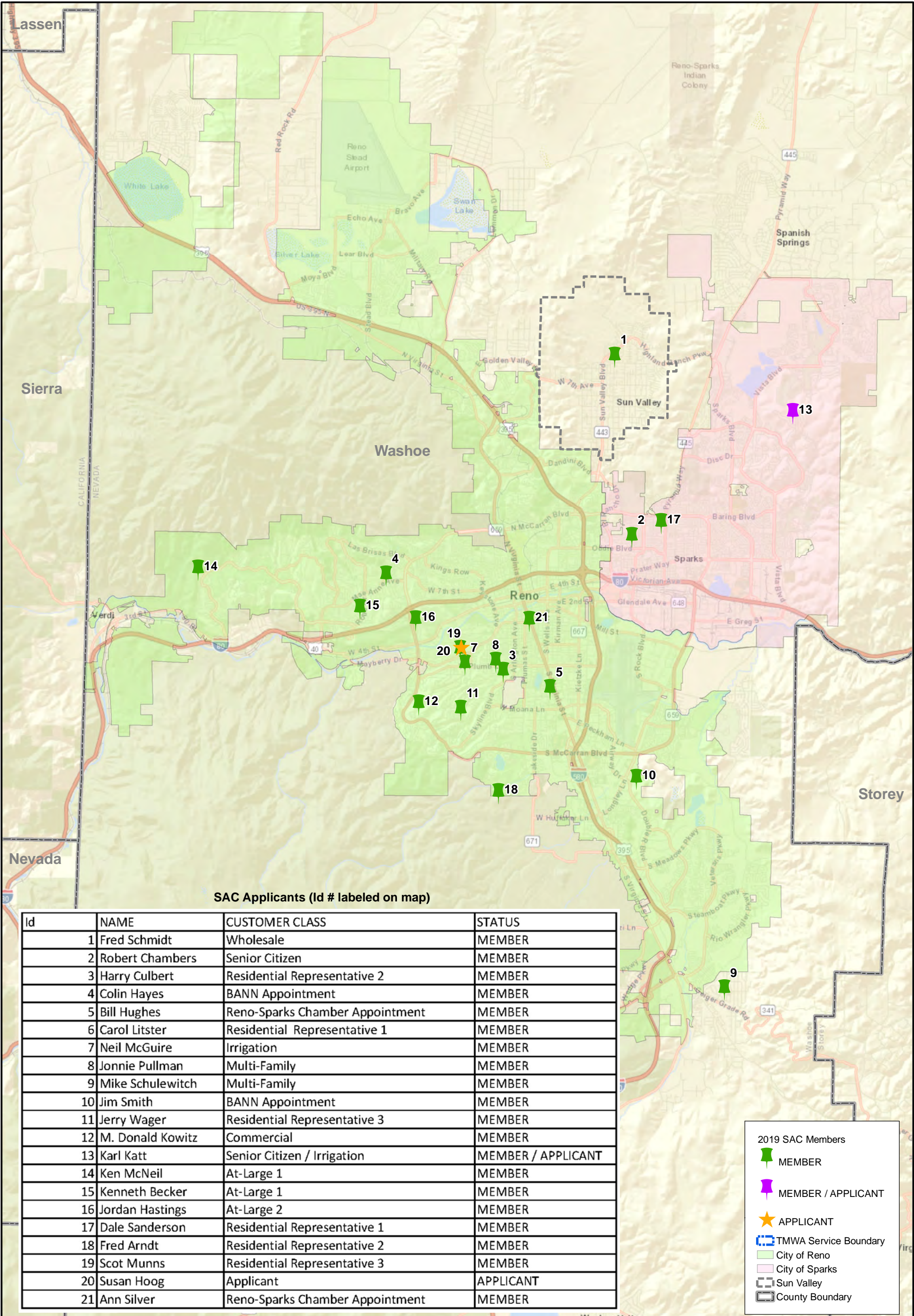
I am a current member of Sierra Sunrise Toastmasters and I am familiar with Robert's Rules.

I would attend each monthly meeting with consistency and enthusiasm. I will prepare for each meeting I attend and participate to the best of my ability at each meeting.

Thank you for your consideration,

Susan Hoog

Reno, NV 89509



Distribution of SAC Members & Applicants

DATE 3/12/2019
MAP BY: JAK
REQUESTED BY: SF
SCALE: 1 in = 2 miles





STAFF REPORT

TO: Board of Directors
FROM: Mark Foree, General Manager
DATE: March 11, 2019
SUBJECT: General Manager's Report

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

Included in your agenda packet are press clippings from February 14, 2019 through March 13, 2019. Also, a *Tell the Board Submission* was received from a customer regarding their concern of debris left by a crew in Last Chance Ditch. Pat Nielson, TMWA Director of Distribution, Maintenance and Generation, responded that TMWA does not own or maintain the Last Chance Ditch and directed them to contact the Last Chance Ditch Company with their concerns.



STAFF REPORT

TO: Board of Directors
THRU: Mark Foree, General Manager
FROM: Scott Estes, Director of Engineering
BY: Bill Hauck, Senior Hydrologist
DATE: March 11, 2019
SUBJECT: **March 2019 Operations Report**

Summary

- The overall water supply outlook for the region as of March 01 couldn't be better
- Lake Tahoe is 83% of maximum storage capacity (and 1.0' from full)
- Combined upstream Truckee River Reservoir storage is at 80% of capacity
- Snowpack is approximately 180% of normal in both basins
- Streamflow runoff projections are significantly above average
- Hydroelectric revenue for February 2019 was \$144,454
- Customer demands are still at wintertime lows

(A) Water Supply

- **River Flows** - Truckee River flow at the CA/NV state line is above average for this time of year at 1,650 cubic feet per second (CFS). This is primarily due to the release of excess water from Lake Tahoe. The average flow for March 11th based on 109 years of record is 732 CFS.
- **Reservoir Storage** - Reservoir storage is in excellent shape. The elevation of Lake Tahoe is currently within a foot of its maximum legal elevation of 6229.10 feet. Lake Tahoe rose a foot during the month of February alone. Overall, Truckee River reservoir system storage is in extremely good shape as well at 80% of maximum capacity. Storage values for each reservoir as of 3/11 are as follows:

Reservoir	Current Storage (Acre-Feet)	% of Capacity (Percent)
Tahoe	619,100	83%
Boca	17,537	43%
Donner	3,624	38%
Independence	14,830	85%
Prosser	9,632	32%
Stampede	194,200	86%

In addition to the 18,454 acre-feet of storage in Donner and Independence reservoirs, TMWA has approximately 11,700 acre-feet of water stored between Tahoe, Boca and Stampede reservoirs under the terms of TROA. TMWA's total combined upstream reservoir storage is approximately 30,150 acre-feet as of this morning.

- **Snowpack** - We are winding down the traditional snowpack building season and the region really couldn't be in a much better position. After a slow start in December, a decent January was followed up by a blockbuster February in terms of precipitation and snowfall. This has Lake Tahoe Basin snowpack at 180% of normal and Truckee River Basin snowpack at 175% of normal as of this morning.
- **Outlook** - The water supply outlook for the region absolutely could not be any better. February was a truly staggering month in terms of precipitation and snowfall in the Sierra Nevada. We are winding down the traditional snowpack building season with significantly above average numbers (roughly of 180% of normal). Streamflow runoff projections are also significantly above average and as such, all reservoirs on the Truckee River system will not only fill this year but will spill (including Lake Tahoe which has been under precautionary drawdowns for the last couple of weeks to prevent the lake from over-filling). The water supply reset button has been pushed in 2019 with a full Lake Tahoe and a stuffed Truckee River reservoir system, which will ensure an adequate water supply and normal river flows over the next several years.

(B) Water Production

Demand - Customer demand is still at wintertime lows. Consumption averaged 36 million gallons per day (MGD) last week. Surface water from the Chalk Bluff water treatment plant provided 92% and groundwater the other 8% of supply required to meet demand. Customer demands will begin climbing in the coming weeks as springtime is right around the corner.

(C) Hydro Production

Generation - Average Truckee River flow at Farad (CA/NV state line) for the month of February averaged 650 cubic feet per second (CFS). TMWA's Verdi Hydroelectric plant was on the line for the entire month and 100% available. The Fleish plant was off-line the entire month for scheduled improvements and maintenance, and the Washoe hydroelectric plant was off-line for three days due to significantly high river flows. Monthly statistics are as follows:

Hydro Plant	Days On-Line	Generation (Megawatt hours)	Revenue (Dollars)	Revenue (Dollars/Day)
Fleish	0	0	\$ 0	\$ 0
Verdi	28	1,172	\$ 85,040	\$ 3,037
Washoe	25	810	\$ 59,414	\$ 2,122
Totals	53	1,982	\$ 144,454	\$ 5,159



STAFF REPORT

TO: Chairman and Board Members
THRU: Mark Foree, General Manager
FROM: John Zimmerman, Manager, Water Resources
DATE: 11 March 2019
SUBJECT: Report Water Resources and Annexation Activity

RULE 7

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

Beginning Balance	4,593.91 AF
Purchases of water rights	0.30 AF
Refunds	0.00 AF
Sales	– 19.66 AF
Adjustments	0.00 AF
Ending Balance	4,574.55 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	7,873.19 AF
Committed water rights	16.66 AF
Ending Balance	7,856.53 AF

Price per acre foot at report date: \$35,000¹

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

WATER SERVICE AREA ANNEXATIONS

There have been no annexations since the date of the last report.



STAFF REPORT

TO: Board of Directors
THRU: Mark Foree, General Manager
FROM: Marci Westlake, Manager Customer Service
DATE: March 20, 2019
SUBJECT: **February Customer Service Report**

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

Ombudsman

- Customer called for landlord information regarding 300 accounts, we had the call center lead call back and handle the request.
- Customer called requesting assistance with high usage, we had conservation follow up with customer.

Communications

Customer outreach in February included:

- Danny Rotter attended a Municipal Water Systems and TMWA presentation for Continuing Education for NACRI members and 20 people attended.
- James Bryant had a Water quality/water treatment presentation for the Girl Scouts and 11 girls attended.
- Marci Westlake and April Goins attended the Resource Fair at Old Town Mall for the Government workers that were furloughed, 15 people attended.

Conservation (January 1 – February 28)

- 0 Water Watcher Contacts
- 97 Water Usage Reviews

Customer Calls – February

- 7,799 phone calls handled
- Average handling time – 4 minutes, 29 seconds per call
- Average speed of answer – 18 seconds per call

Billing – February

- 128,867 bills issued
- 5(<.1%) corrected bills
- 18,634 customers (14.0%) have signed up for paperless billing to date.

Service Orders –February (% is rounded)

- 7,188 service orders taken
- 2,974 (41%) move-ins / move-outs
- 1,046 (15%) cut-out-for-non-payment and cut-in after receiving payments, including deposits and checks for tamper
- 1057 (15%) zero consumption meter checks
- 430 (6%) re-read meters
- 714 (10%) new meter sets and meter/register/ERT exchanges and equipment checks
- 415 (6%) problems / emergencies, including cut-out for customer repairs, dirty water, no water, leaks, pressure complaints, safety issues, installing water meter blankets, etc.
- 119 (1%) high-bill complaints / audit and water usage review requests
- 433 (6%) various other service orders

Remittance – February

- 31,650 mailed-in payments
- 27,550 electronic payments
- 33,294 payments via RapidPay (EFT)
- 18,476 one-time bank account payments
- 6,971 credit card payments
- 954 store payments
- 2,143 payments via drop box or at front desk

Collections –February

- 16,319 accounts received a late charge
- Mailed 8,585 10-day delinquent notices, 6.6% of accounts
- Mailed 1,722 48-hour delinquent notices, 1.3% of accounts
- 356 accounts eligible for disconnect
- 326 accounts were disconnected (including accounts that had been disconnected-for-non-payment that presented NSF checks for their reconnection)
- 0.13% write-off to revenue

Meter Statistics – Fiscal Year to February 28

- 0 Meter retrofits completed
- 645 Meter exchanges completed
- 947 New business meter sets completed
- 125,970 Meters currently installed



TMWA Board Meeting

Wednesday, March 20, 2019

Press Clippings

February 13, 2019 – March 13, 2019



TMWA Water Tank

Water meters market to be one-third smart by 2025

February 12, 2019



22147382_I Earth melting into water Copyright Bruce Rolff

The global water meters market totaled 118 million units shipped in 2017, of which one in every four meters had communications, according to utility markets research firm *IHS Markit*. Smart meters will grow to account for more than one-third of all unit shipments by 2025 as communicating meters continue to displace basic ones at increasing rates, forecasts the smart utilities team at IHS Markit.

For the last decade the communicating water meter market has primarily grown in regions such as Europe and North America, where existing market drivers such as ageing infrastructure and high labor costs have made smart metering investments cost-effective.

In new markets such as the Middle East, India, Australia and China, environmentally oriented policies and the declining cost of technology are starting to provide growth.

However, Latin America continues to lag behind the rest, as technical and economic factors are pushing utilities away from more expensive, challenging technologies and towards cheaper options.

The overall global result is therefore one of increasing growth for the water meters market through 2025.

Smart metering potential in Latin America fades

The overall global result is therefore one of increasing growth for the water meters market through 2025.

Whilst some considered Latin America to have high future potential for smart metering, the current reality is that utilities in the region tend to lack the same level of access to workforces with IT skills and training as in other regions.

Combined with the growing presence of Chinese manufacturers offering low cost basic meters in markets (such as Brazil, Central America, Mexico, and various South American countries), utilities are pushing forward with the lowest possible cost options.

China lifts the global communicating meters market to new heights

In contrast, IHS Markit forecasts show that global communicating meter shipments will more than double in size by the end of 2024. Asia Pacific is the most influential market behind this trend due to the overwhelming dominance of China globally.

The continuous displacement of basic meters with communicating meters in China is largely driven by policies that support new network technologies and a growing middle class, which increases the cost of labor and strengthens the business case for automation.

Nonetheless, the North American and EMEA markets still account for over 40% of communicating meter shipments in 2017 collectively and maintain growth over the long-term. In these more established markets, the conversation increasingly moves towards the total metering solution and related software/services as part of the utility's investment.

No single technology will dominate the communications landscape of the future

One of the key considerations for the total metering solution is the connectivity technology, but the future communications market will be a hybrid landscape.

Technical specifications are not necessarily the primary drivers of technology decision-making – the total cost of ownership is a larger factor (read more [here](#)). Moreover, cost is often strongly influenced by specific regional factors and thus the popularity of a technology tends to cluster by region: In China, NB-IoT will increase quickly because of state-backed initiatives and large investments by Huawei to build out the network; In Europe, the region had many pilots for LoRa meters in 2017/2018 and will start to see full scale projects rolling out by 2020; and in North America (where many utilities typically want to own their networks) fixed network categories such as RF Mesh continue to dominate the region.

In all cases, the increased focus on total solution and the ongoing rollouts in several key regions point to prolonged and strong growth for communicating water meters for several years to come.

This insight is from the IHS Markit Smart Utilities team, with data citations from the latest publication on the global water meters market. IHS Markit produces global data for the entire smart metering market in our [Smart Utility Meter Intelligence Service](#)

February 13th, 2019 - 2:15am

A center-pivot irrigation system that replaced a less efficient irrigation system in Diamond Valley through a Nevada Department of Agriculture grant. (Courtesy of Nevada Department of Agriculture)

Farmers, ranchers appeal Diamond Valley ruling to create a water market



[Daniel Rothberg](#)

February 13th, 2019 - 2:15am

An effort to fix water scarcity in a Nevada basin that stands as a case study for groundwater issues in the arid West is going to court, kickstarting a lengthy legal process that will test the flexibility of state water law.

Farmers and ranchers in Diamond Valley, which sits on an overstressed aquifer outside the town of Eureka, are appealing [a decision by state regulators](#) to create a groundwater market whereby rights to water could be bought, sold and traded. Although expected, this recent action adds to a number of water management issues to account for excess rights in the valley.

The goal of the state's effort, known as a [Groundwater Management Plan](#), is to reduce pumping in a valley where past regulators had issued more rights to water than there was actual water to go around. A declining water table in Diamond Valley has forced water users to dig deeper wells and dozens of agricultural operators to reconsider the long-term viability of their businesses.

But in at least three complaints filed in a Eureka County District Court on Friday, water lawyers for the farmers and ranchers argued that the plan would harm their clients' priority rights to water. They also said the state failed to conduct a proper hearing and violated due process.

Water law across the West usually places water users in two categories: junior or senior. Senior rights-users, those with early claims to water, have a priority to water in shortages. Using a strict application of "prior appropriation," regulators are required to curtail all junior rights-users before senior rights-users lose a single drop of water. But curtailment is often seen as a blunt instrument that could create more conflict, and it is a tool that the state has often avoided.

Instead, the plan would turn groundwater rights into shares for most water users in Diamond Valley. Each share would represent a certain amount of water. And each year, the amount of water represented by a share would gradually decrease until water use reached an equilibrium.

To a majority of water users, the plan was preferable to curtailment. Last year, a majority of the water users approved of the plan, including about 47 percent of users with senior rights. There could be severe economic consequences to a curtailment; in public comments, some farmers with junior rights said they could be forced to declare bankruptcy and leave the valley.

“The irrigators that support this plan understand that we all need to sacrifice for the long-term benefit of the community and the long-term continued success of the farming industry,” [said one irrigator](#) and proponent of the plan at a public hearing last year.

Yet there were some users with senior rights who objected to the deal, which the state engineer said would apply to them even if they had voted against the adoption of the water market.

“The adopted [plan] violates Nevada’s bedrock and sacrosanct doctrine of prior appropriation, illegally reducing and/or curtailing the Baileys’ use and enjoyment of their senior groundwater rights,” reads a brief filed by the Bailey family, which has ranched in Diamond Valley since 1863.

The state engineer did not respond to a request for comment.

But state regulators have argued in the past that they have wide latitude to approve of the plan, even if it departed from some of the traditional tenets of Western water law. In 2011, lawmakers passed a bill, with vague language that allowed local water users to band together and create plans to reduce pumping, if the plans were approved by a majority of groundwater users. The Diamond Valley appeals are expected to test the limits and authority of that legislation.

In approving the plan, the state argued that it complied with the priority system, citing a [New Mexico](#) precedent, and noting that the plan would reduce junior water shares faster than senior shares. Through a formula, the plan allocates more shares per water right to senior users.

An unsettled question looming over the plan is how much water is actually at issue.

The state has never formally quantified — or adjudicated — the total amount of claims to water in Diamond Valley. The state is now doing so in an exhaustive adjudication process that pulls on thousands of pages of historical records. On Tuesday, the state continued to hold hearings on the Diamond Valley adjudication in Carson City. One of the biggest claims is from Sadler Ranch, which was first developed in the late 1800s by Nevada’s ninth governor, Reinhold Sadler. The ranch has pushed the state to curtail pumping, which has dried out some of its historic streams.

Sadler Ranch was also one of the entities that appealed the groundwater management plan.

Its lawyers argued that the state should have dealt with the issue long ago, and it is unfair to penalize senior rights users for historical missteps by state regulators. The legal filing alleges that past water regulators knowingly issued more rights to water in the 1960s, despite warnings.

“Rather than take action to prevent it [in the 60s], the state engineer chose to disregard those warnings,” reads the filing on behalf of Sadler Ranch and another rancher. “As a result, holders of the most senior water rights in the basin have had their springs dry up. These senior users have been denied access to the water needed to operate their ranches and farms while junior-priority users continue to prosper by exploiting what is left of the basin’s groundwater.”

A District Court will now weigh in on the appeal, but the plan could be appealed to the Nevada Supreme Court. In addition to appealing the plan on its merits, all three filings argue that the state violated due process by failing to hold an unbiased evidentiary hearing on the plan.

As Western water managers turn to cloud seeding, Nevada's program faces funding uncertainty in the Legislature



Daniel Rothberg

On a cold January day, a technician from the Desert Research Institute holds a vial next to a propane tank and a control center at the top of Alpine Meadows Ski Resort near Lake Tahoe.

Jeff Dean is holding the small bottle, which contains silver iodide, and he's about to burn it through a process known as cloud seeding. His goal is to bring more snowfall to a basin that feeds the Truckee River, a critical waterway for Reno, the Pyramid Lake Paiute Tribe and farmers as far away as Fallon. For decades, researchers have used the compound to induce the formation of ice crystals, a technique that can create more snow under the right conditions.

"This is 1.4 grams, which can equate to an acre-foot of water, if all is right," he said. To put that into perspective, an acre-foot is the amount of water that can fill about one football field with one foot of water, or enough water to serve more than two homes in Reno for a year.

Where water is scarce and becoming scarcer in the West, any added supply is valuable. That's why Nevada water managers see cloud seeding as one potential tool to offset the drought. In 2018, the Southern Nevada Water Authority chipped in \$250,000 to efforts aimed at seeding clouds in the mountains that feed the Colorado River. A year earlier, the Legislature restored state funding for the Desert Research Institute to seed clouds in watersheds across the state.

Now the Desert Research Institute is asking the Legislature for funding to maintain and expand its program. An expansion of the state program was listed as one of the Nevada System of Higher Education's supplemental funding requests. But cloud seeding was

not included in Gov. Steve Sisolak's [proposed budget](#), which only incorporates one supplemental funding request. As a result, it's uncertain whether the cloud seeding program will receive state funds next year.

Even so, a number of lawmakers view cloud seeding as a necessary drought tool.

"I definitely support it, and I think it's a good program," Republican Sen. Pete Goicoechea said last week. "Even today with the winter we've had so far — and I know they have a ton of snow on the Sierra — I look at the drought numbers and we're still in a moderate drought statewide."

Cloud seeding gets funding from big players across the West. Energy giants such as Idaho Power and Southern California Edison have used it to fill reservoirs, making hydropower more efficient. Colorado ski resorts, like Vail and Winter Park, have shot silver iodide up into winter storms, kickstarting a chemical reaction in the hopes of inducing more precipitation.

But it also has plenty of skeptics.

Can you really burn silver into the atmosphere and release more snowfall? Frank McDonough, who leads Nevada's state project for the Desert Research Institute, says the answer is yes.

"The payback is humongous," he said. "We estimate that we can make water at about \$10 to \$15 an acre-foot, but we estimate that the value of that water is \$250 to \$500 an acre-foot."

In 2017, the [Legislature contributed about \\$684,000](#) in funding for cloud seeding in various places, including the Sierra Nevada near Reno, the Spring Mountains near Las Vegas and the Ruby Mountains near Elko. The request this year, part of the Nevada System of Higher Education's [supplemental funding requests](#), would appropriate about \$1.8 million to maintain those activities and expand the program to more mountain ranges across Nevada.

McDonough cited multiple studies showing, with a high confidence, that cloud seeding was effective in basins throughout the West. One 2010 study he cited [showed a Southern California Edison project boosted runoff yields](#) in California's San Joaquin Basin by about 5 percent.



Still, he acknowledges that there are gaps in validating the efforts. Studies have shown that cloud seeding works as a technique, but it is difficult to quantify with exact certainty how much of an effect the process has on one particular storm and to what extent the added snow contributes to seasonal runoff. The natural variability of storms can sometimes outweigh the effects of cloud seeding, and the fundamental research into cloud structures is still evolving.

“We’re trying to do a better job of understanding...how clouds are changing over time,” he said.



The top map shows the current basins (in red) where cloud seeding activities occur under Nevada’s state program. The lower map shows basins (in blue) where cloud seeding could expand. (Desert Research Institute)

Then there is the problem of weather.

Researchers can only attempt to wring more precipitation from winter storms under the right conditions. The process works best during colder storms, McDonough says. And although the process kicks in over 30 minutes, it does not work at all if there are no clouds to seed. During heavy storms, like those in recent weeks, researchers [stop seeding because of safety concerns.](#)

All told, McDonough estimated that, on average, cloud seeding efforts in the Tahoe Basin have contributed about 14,000 acre-feet more water to the Truckee River, enough to supply about 35,000 homes. And they created the water at a cost lower than the amount it costs to purchase.

"It's substantial," he said. "And it's cheap and it's clean and it's safe."

In practice, cloud seeding has existed since the early 1900s. One of the first researchers to use silver iodide in the 1940s was [Bernard Vonnegut, the older brother of novelist Kurt Vonnegut Jr.](#) Since then, the technology has improved, but the basic premise is the same. Cloud seeding functions by releasing silver iodide into a cold weather event. Particles from the compound provide extra condensation nuclei, small bits of matter that help boost the growth of ice crystals in clouds.

Yet until last year, researchers had never validated the process outside of a lab. [A study](#) led by Jeffrey French, an atmospheric scientist at the University of Wyoming, showed that, under the right conditions, cloud seeding can in fact produce snow that would not have formed otherwise.

"The full chain of events had never been documented," he said.

Although the study was significant and grabbed major headlines when it was released in early 2018, French said a lot of questions around cloud seeding need to be investigated. What are the best conditions? How can water users quantify its impacts with a firm degree of certainty?

"If water managers and legislators are really interested in cloud seeding as a methodology for mitigating water supplies, they should place some emphasis or importance on engaging the scientific community on what those uncertainties are," French said in an interview.

Despite the unanswered questions, water managers are funding cloud seeding across the West. The seven states that rely on the Colorado River — Arizona, California, Colorado, Nevada, New Mexico, Utah and Wyoming — are funding cloud seeding in an attempt to boost flows on the river.



A view of Hoover Dam is seen from the Mike O'Callaghan-Pat Tillman Memorial Bridge on Wednesday, Aug. 28, 2018. (Jeff Scheid/The Nevada Independent)

In a nearly two decade drought, the average streamflow on the Colorado River [has fallen far below the amount of water Western water managers](#) once thought they could depend on.

James Eklund, Colorado's negotiator on river issues, said cloud seeding is not a "panacea." But he said that it is a way to blunt the drought by creating new water supplies at an affordable cost.

"It's a pretty cost-effective investment if you are looking to create new water," said Eklund, who is also former director of the Colorado Water Conservation Board, a state water agency. In addition to its state program, Nevada's Desert Research Institute is also sponsored by [the Colorado agency](#) and local groups. They have collaborated on projects in Western Colorado, including on the San Juan Mountains and Grand Mesa, part of the Colorado River watershed.

Joe Busto, who runs the cloud seeding program for the Colorado Water Conservation Board, said the Desert Research Institute, which has been cloud seeding since its inception, has a track-record of researching cloud seeding and helping Western water managers with projects.

"They wrote the book on modern-day cloud seeding," he said.

Part of the hesitation around cloud seeding likely has to do with perception. Some see cloud seeding as an antidote to water scarcity, when it should be viewed as a tool, McDonough says. Others look at the weather in good water years and argue that the program is not necessary.

The perception of heavy winter storms might be a roadblock in the Legislature this session when lawmakers are faced with the tough choice of deciding what to fund. Although the interim Committee on Public Lands advocated to continue funding the program [as part of its final recommendations](#), a line item was not included in Sisolak's proposed budget. If the Legislature pulls state funding, the cloud seeding program would likely have to look for funding elsewhere.

Republican Sen. Ben Kieckhefer said he thinks it is still possible that the Legislature could fund cloud seeding for the next two years, noting that the biennial budget is not set in stone.

"We're obviously in the midst of a very wet winter, which is an incredibly good thing," he said. "But let's not fool ourselves into thinking that one weather system is indicative of broader weather patterns."

When the state stopped funding the program as the recession hit in 2008, other water users, including the Southern Nevada Water Authority, chipped in to help make up for the cuts. It's possible that could happen again. But a lapse in state funding would make it difficult for the Desert Research Institute to fully use all of its equipment, let alone expand the program.

Jeff Fontaine, who leads the Humboldt River Basin Water Authority, cast it as a "cost-effective" way to produce water, which can often cost thousands of dollars per acre-foot in the West.

"To the extent that cloud seeding can increase snowpack during the winter and then produce more water in rivers — and groundwater recharge in the spring and summer — that's a good thing," he said. "It's cost-effective, and it's a way to bring more water to Nevada."

NASA gives view of healthy Sierra snowpack from space



NASA tweeted this photo showing the Sierra snowpack on Feb. 14, 2019. Image courtesy of NASA.

By: [KTVU Staff](#)

Posted: Feb 15 2019 08:40AM PST

Updated: Feb 15 2019 08:58AM PST

- **OAKLAND, Calif. (KTVU)** - The Sierra snowpack is looking very robust from outer space. NASA tweeted satellite images Wednesday showing a side-by-side of the image of the snowpack from Feb. 15, 2018 compared to Feb. 11, 2019. NASA wrote, "The Sierra Nevada is really living up to its name 'snowy mountain range' this year. With snow reports coming in feet and snow storms still moving in, it's now home to the snowiest ski resort in the U.S."

According to NASA recent storms dumped 11 feet of snow on Mammoth Mountain. At 37 feet of snow - Mammoth can claim the accolades as the snowiest ski resort (at the moment) in the United States.

by [Taboolaby Taboola](#)

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According to the [Department of Water Resources](#) the Northern Sierra snow water equivalent is 96-124 percent above normal, the Central Sierra is 105-139 percent of normal while the Southern Sierra is 103-142 percent of normal.

As the snowpack melts in the spring and summer water will recharge our reservoirs.

According to NASA, "California drought watchers are cautiously optimistic that the boost to the snowpack will insulate the state from drought this summer."

[View snowpack water equivalents here.](#)

Water-efficient landscape training and certification offered

Cooperative Extension class prepares landscapers for Qualified Water Efficient Landscaper certification

2/28/2019 | By: Hannah Alfaro |

[University of Nevada Cooperative Extension](#) invites local green-industry professionals, including landscapers, groundskeepers and nursery workers, to attend the [Qualified Water Efficient Landscaper \(QWEL\) training](#) in Reno, March 12-19. The training will prepare participants to take the certification exam on March 19 to become certified professionals.

"This training provides the opportunity for green industry professionals to step up their education, making them more competitive in the industry and training them to help Nevadans become more water efficient," Cooperative Extension Northern Area Horticulture Specialist Heidi Kratsch said.

The training is part of Extension's [Qualified Water Efficient Landscaper Certification \(QWEL\) Program](#). Professionals certified by the program, which was designed by the Sonoma-Marín Saving Water Partnership and is recognized by the Environmental Protection Agency, will be listed on the [EPA's WaterSense website](#) and on the [QWEL.net website](#), where local landowners can find them for hire. In addition, certified QWEL professionals can use the QWEL logo on their vehicles and business cards as a means of marketing their qualifications to their customers.

Classes are taught by Cooperative Extension and Truckee Meadows Water Authority faculty, staff and industry professionals. Participants will be provided with local water, soil and plant information; basic and advanced irrigation principles; and hands-on water audit skills they can use in the field.

Anyone can take the training for personal knowledge, and professionals are encouraged to take the exam to become certified. Workshops will be held:

- March 12, 9 a.m. - 1 p.m., lunch will be provided
- March 13, 9 a.m. - 4:15 p.m., lunch will be provided
- March 15, 8:30 a.m. - 4:15 p.m., lunch will be provided
- March 18, 1 - 4:15 p.m.
- March 19, 9 a.m. - noon: certification exam

Cost for the training is \$100 and includes the hands-on water audit, class supplies and lunches. The certification exam is 9 a.m. - noon, March 19, and the cost is \$50. Both the training and the certification exam are at the Washoe County Cooperative Extension office, 4955 Energy Way in Reno.

Registration is a two-step process, beginning at the [QWEL-Reno webpage](#). For more information on classes or certification, contact Cooperative Extension Commercial Landscape Horticulture Program Coordinator Jenn Fisher at fisherj@unce.unr.edu or 775-336-0249. Persons in need of special accommodations or assistance should call at least three days prior to the beginning of the workshops.

Share:

Arsenic in water won't close Nevada boarding school, official says

February 4, 2019 - 5:40 pm



Northwest Academy in Amargosa Valley.
(Selwyn Harris/ Pahrump Valley Times)

By [Jessie Bekker](#) / Las Vegas Review-Journal

The Nevada Department of Health and Human Services has decided against shuttering an Amargosa Valley boarding school after a visit to the facility showed that steps were being taken to ensure students' safety, a department representative said Monday.

Officials revealed last week that they were [investigating reports of child abuse and water contamination at Northwest Academy](#), located near the Nevada-California border about 100 miles northwest of Las Vegas in Nye County.

Students are being served bottled water while several government offices work with the school to treat its water for high levels of arsenic and fluoride.

Though a physician's report supported students' claims that rashes on their skin was linked to the water contamination, Margot Chappel, deputy administrator for regulatory and planning services for the Nevada Division of Public and Behavioral Health, said a state epidemiologist found that evidence of the link was inconclusive.

"Without that definitive information, it seems premature to shut it down and have to displace and disrupt these kids' lives and the treatment they may be in," Chappel said.

According to a December report from the state Department of Conservation and Natural Resources, the facility's water, which comes from a well, had fluoride levels measuring 2.9 milligrams per liter, above the U.S. Environmental Protection Agency's recommendation that drinking water not exceed 2.0 milligrams per liter of fluoride.

At its highest, levels measured 3.8 milligrams per liter.

Though the substance, naturally occurring in Nevada's soil, is added into drinking water to promote dental health, an excess can lead to damage of the teeth, said UNLV assistant professor Dan Gerrity, who studies water treatment. The school's water supply contained 0.032 milligrams per liter of arsenic, three times above the EPA's recommended 0.01 milligrams per liter, though that falls below the EPA's former cutoff of 0.05 milligrams per liter.

Updated in 2001, the newest recommendation came after the agency found that the benefits of treating water to attain lower levels of arsenic, also found naturally in the soil, outweighed the costs of treatment, Gerrity said.

"The goal for just about everything is zero, but really that's unattainable," he said. "It would be costly to achieve."

Under 0.05 milligrams per liter, the EPA does not anticipate that arsenic-contaminated water would cause short-term effects. And under 0.5 milligrams per liter, the water is safe for bathing, according to the EPA.

At its highest, the arsenic levels in the water sat at 0.104 milligrams per liter. Still, long-term exposure could lead to cancer. How long that would take varies from person to person, Gerrity said.

The Department of Conservation and Natural Resources' Division of Environmental Protection has been working with Northwest Academy since January 2017 to treat its water for contaminants, spokeswoman JoAnn Kittrell

said in an emailed statement Monday. The facility stopped treating its water in October 2016.

The division gave the school formal notice in February 2018 that it would need to treat the water by Dec. 31, but the school missed the deadline.

The health department gave parents and guardians the opportunity to pull students from the school Thursday, Chappel said. By Friday afternoon, 12 of the school's 37 students were removed from the program, leaving 25 under the supervision of eight staff members, she said.

At the time of her visit Thursday, the school had eight, 40-bottle cases of water and eight, 5-gallon jugs of water.

"I flew at 6 in the morning on Thursday from Reno to Las Vegas and drove out to the Amargosa Valley with the explicit purpose of looking to see if the place should be shut down," Chappel said Monday. "By the end of the day, all of the issues that were being investigated had been addressed in some way or another, and all of the parents had been called to give them a choice."

Contact Jessie Bekker at jbekker@reviewjournal.com or 702-380-4563.

Follow [@jessiebekks](https://twitter.com/jessiebekks) on Twitter.

Related

[New details released on investigation of Nevada boarding school](#)

LETTERS TO THE EDITOR

Why should city finance Stonegate's infrastructure?

Dear Reno City Council,

Why would you even consider floating a bond issue and going \$56 million in debt on behalf of Stonegate developers? What a slap in the face to all the other local developers who have had to pay for their own infrastructure over the years. And I will bow to North Reno residents who have many real objections to this fiasco.

If you're going to raise money with bonds, use it for low-cost housing as well as sheltering and feeding the homeless. Right now, hundreds of middle-class Reno citizens from countless houses of worship are doing *your* work. Back them up!

Mary Lee Fulkerson, Reno

Roseville Testing Groundwater Storage Plan

Posted 7:05 PM, February 20, 2019, by [Lonnie Wong](#), Updated at 06:36PM, February 20, 2019

[Link to video report at well head](#)

<div>Please enable Javascript to watch this video</div>

ROSEVILLE -- The city of Roseville is taking full advantage of the recent storms and water surplus going into Folsom Reservoir to fully test its groundwater storage plan.

The city currently has six groundwater pumping stations that were used during the drought. But the stations have the ability to pump water back into the aquifer as well.

The Folsom Dam currently has three gates open to release enough water so it has room to capture flood water.

Roseville Utility officials say it's just the right time to do a larger scale test of its water injection strategy.

For the next two weeks, two of the stations will pump water back into the ground to be used later during water shortages. The water comes from the Folsom Reservoir and goes through the city's water treatment plant first.

The testing will give utility workers experience in monitoring the system at higher capacities.

It will also give operators an idea of what rates the water can be pumped into the ground. Water migration will also be studied. The information will be shared with other communities that are looking at groundwater storage to diversify water supplies.

Water officials say the Folsom Reservoir is the primary water source for Roseville which can be augmented significantly when water levels go down through the use of groundwater.

The city is already planning more pumping stations to add to the six already in place.

We can't assume our water is safe to drink. But we can fix it.

One-fourth of Americans drink water from systems that don't meet safety standards.

5 MINUTE READ
BY RHEA SUH

This story appears in the [March 2019](#) issue of *National Geographic* magazine.

WHEN MY YOUNG daughter says she's thirsty, I take for granted that the water from our kitchen tap is clean and safe. In fact, that's what most Americans assume. But should we?

As we mark [World Water Day](#) on March 22, the disturbing truth is that roughly a quarter of Americans drink from water systems that violate the Safe Drinking Water Act. Violations range from failing to properly test water to allowing dangerous levels of lead or arsenic—and occur everywhere: in rural communities and big cities, in red states and blue ones.

[The lead contamination crisis in Flint, Michigan](#), was extreme—and shocking because of the role that race played. However, it was not an isolated case, and we need to consider it a national wake-up call.

Across the country, water systems are old, badly maintained, and in dire need of modernizing—from lead service lines in Milwaukee, Wisconsin, and Newark, New Jersey, to silt and debris in drinking water after heavy rain in Austin, Texas, to fecal contamination in Penn Township, Pennsylvania. Worse, some are managed by dysfunctional agencies where incompetence and socioeconomic and racial bias may determine whether a community is made sick by its drinking water. The reality is that we can no longer assume that our water is safe to drink.

How unsafe is it? Depending on the source of contamination and the exposure, health effects include neurological problems and developmental disabilities in children (lead), interference with hormones (perchlorates), and increased risk of cancers of the skin, bladder, and kidney (arsenic). The Environmental Protection Agency regulates more than 90 contaminants—but a hundred more that are tracked are so far unregulated.

Everyone has a right to clean water, no matter what you look like, how much money you make, or which political party you favor. In America, that right is enshrined in law.

Everyone has a right to clean water, no matter what you look like, how much money you make, or which political party you favor. In America, that right is enshrined in the Clean Water Act of 1972, which defines how the EPA regulates pollutants in U.S. waters, and the Safe Drinking Water Act of 1974, which establishes maximum amounts of pollutants in all public water systems. Those federal laws were passed at the peak of environmental degradation in our country—a time when smog choked our cities and rivers were so contaminated they regularly caught fire.

Those laws and many other regulations at state and city levels have made great progress toward reducing pollution and addressing public health. Some of us now don't worry about the toxicity of the air for our children's afternoon soccer games or the flammability of the local

river, primarily because our environmental protections have worked. But in far too many places around the country, those basic laws are not being upheld or enforced, and people are suffering the consequences.

Look at Puerto Rico. The water situation there was unacceptable—the worst in the nation—even before [Hurricane Maria in 2017](#). An analysis by my organization, the Natural Resources Defense Council (NRDC), showed that almost all of Puerto Rico’s residents in 2015 got their water from systems that violated the Safe Drinking Water Act and nearly 70 percent of them got their tap water from sources contaminated with coliform bacteria, disinfection by-products, and more.

Maria created [a full-blown humanitarian crisis](#). People had no choice but to get their drinking water from toxic sources, and scores ended up in emergency rooms with gastrointestinal illnesses. Even now, more than a year after the storm, Puerto Ricans are still warned to boil water before drinking it.

[As climate change increases the intensity and duration of hurricane season](#), Puerto Rico will likely find itself in even more dire circumstances. That means we need to invest significant resources now in the island’s water and power infrastructure, which remains fragile at best.

So far, U.S. leaders have approved only a small fraction of what Puerto Rico needs to protect itself. By shortchanging this American island, we are condemning it to more climate-related destruction and an ongoing water crisis. And many other vulnerable communities are in the same fix.

PFAS: CHEMICALS MOST OF US CARRY

What are perfluoroalkyl substances? Generally known as PFAS, they’re a class of human-made chemicals found in everything from nonstick pans to raincoats and firefighting foam. They’re also known to harm human health.

Two of these chemicals, PFOS and PFOA, are present at unsafe levels in the drinking water of six million Americans and found in the bodies of 98 percent of Americans. They enter water supplies when manufacturers dispose of PFAS or, in the case of firefighting foam, when used at places such as airports and naval bases.

The world around us is full of PFOS and PFOA. They don’t break down in the environment or degrade easily when they enter the human body. Even at low levels, PFAS are linked to a range of serious illnesses, including cancer of the kidneys and testicles, thyroid and liver disease, lower fertility in women, and birth defects.

Ask your local representatives what they’re doing about PFAS and safe drinking water. —RS

Lead makes headlines, but it’s not the half of it. The more we look for pollution, the more we’ll find, and the list of contaminants is long.

Across America, the first step in securing clean drinking water is better information. In 2016, New York became the first state in the country to require school districts to test drinking water sources for lead, something the Safe Drinking Water Act fails to do.

NRDC looked at the data on drinking water from New York State's public schools. Our analysis showed that 82 percent of public schools in New York had one or more taps that exceeded the state's lead action level—and as you might expect, the problem was worse in lower-income schools.

New York already is one of 10 states (along with the District of Columbia) that require universal blood tests for lead before age three. Now, newly armed with data on lead sources, the state has an opportunity to protect the 2.7 million children in public schools (including my daughter) and to become an example for other states.

Lead makes headlines, but it's not the half of it. The more we look for pollution, the more we'll find, and the list of contaminants is long: Coliform bacteria near dairy farms in Wisconsin. Nitrates from fertilizers in Iowa's rivers. Lead, mercury, and uranium in fracking fluid in places like Ohio, Oklahoma, Pennsylvania, and North Dakota. Toxic chemicals such as those in Teflon that are so ubiquitous they're found in the blood of 98 percent of people in the United States and nearly every country in the world. (For more on this topic, visit thedevilwewknow.com.)

The problem may feel overwhelming, but together we can solve it. We need to start with the basics, like replacing lead pipes and fixing deteriorating mains. Then we can modernize our aging water infrastructure with more filtration or treatment processes to better purify wastewater before it enters the drinking water system. We need to better regulate pollutants, strengthen protections for drinking water, and improve testing. A bonus: We can do all of these things *and* create good-paying new jobs in communities throughout the country.

2.1 billion people worldwide lack access to safe drinking water systems, according to the United Nations organization UN-Water. unwater.org

It all begins by insisting that clean water not be treated as a partisan issue. No matter how you voted in the past two elections, you didn't vote for contaminated drinking water. So, together we need to hold government officials to account at all levels. We can start with leaders in Washington who, in my estimation, are trying to shrink government's role in protecting public health.

In 1970 millions of Americans rose up and demanded stronger environmental and public health protections—and won them. Nearly 50 years later we need to rise up again.

This is where you come in. You can join the many people taking to the streets to march for a clean environment. You can read up on water issues in your community, then attend town hall or water department hearings. You can call your representatives and tell them that water quality matters to you and your family. Your voice is exactly what's required now to defend and make real our right to clean water.

Rhea Suh is president of the Natural Resources Defense Council, an environmental action organization with some two million members. Before joining NRDC in 2015, she was an assistant secretary at the U.S. Department of the Interior, where she led initiatives on land conservation, climate change, and other environmental issues.

Visalia makes first ever deliveries of recycled waste water to irrigate crops, golf course, and landscaping

Posted by: [Reggie Ellis](#) Posted date: February 20, 2019 In: [Breaking News, News](#) | comment : 0



By Reggie Ellis [@Reggie_SGN](#)

VISALIA— More than a decade after initiating a plan to turn waste into water, the city of Visalia has made its first delivery of nearly drinkable recycled water.

In December, the city began delivering recycled water through its purple pipeline to the Tulare Irrigation District (TID) following approval by the Department of Drinking Water (DDW). Under an agreement signed in 2013, the city is obligated to deliver 11,000 acre feet of recycled water to TID per year in exchange for 5,500 acre feet of surface water used to recharge the city's groundwater. Since 2016, the city has received enough surface water from TID to off set one year of groundwater pumping for the entire city.

"A few years ago, CalWater pumped 26,000 acre feet out of the ground and TID has delivered 25,000 acre feet since 2016," Public works manager Jim Ross told the Visalia City Council at its Feb. 4 meeting.

Groundwater recharge will become increasingly important after 2020 when the Sustainable Groundwater Management Act (SGMA) takes affect requiring water agencies to recharge the groundwater with at least the amount of water it pumped out of the aquifer.

The water was recycled at the city's Water Reclamation Facility (WRF) which uses an innovative yet elaborate three-step treatment process to remove solid waste and sanitize bacteria from waste water to create nearly potable water.

"Water from your showers, sinks, and toilets finds its way to the water treatment facility," Ross said. "After it leaves the plant, you can put it in your swimming pool and swim in it."

The state-of-the-art facility allows the city to use recycled water in ways that were not allowed under its previous system. For decades, the city has used recycled water to irrigate non-consumable crops, such as cotton, as well as pastures for animals not producing milk for human consumption. Under its new system, the city's recycled water can additionally be used for parks and playgrounds, school yards, cemeteries, landscaping, golf courses, and edible crops.

"It can be used for anything except drinking," Ross said.

About 11.6 million gallons of waste water per day or 4.2 billion per year finds its way to the WRF. That waste water is then recycled into 13,000 acre feet of almost potable water per year. While 85 percent of the recycled water is already promised to TID the remaining 2,000 acre feet of water per year will be split between Valley Oaks Golf Course, Plaza Park, and city-owned farm land near the facility. The pipeline running to the golf course received DDW approval on Nov. 26, 2018 and deliveries began last month. Ross said the golf course is expected to receive 1,130 acre feet of water per year, enough to irrigate the course for the entire year.

The city is also producing enough recycled water to irrigate landscaping and ball fields at Plaza Park for an entire year. The only hold up is that the pipes that carry water to drinking fountains and sprinklers are the same. In order to get DDW approval, Ross said the city will have to separate the potable water system from the irrigation system. That could take some time as the city will have to install new potable water lines, a project for which there is not a budget at this time. Once permitted, Plaza Park is expected to receive 153 acre feet of water annually.

Just over 700 acre feet per year will be delivered to the city-owned farmland near the Water Reclamation Facility on Avenue 288 southwest of town. The city has been using recycled water to irrigate its row crops for the last 10 years and delivered more than 6,000 acre feet in the last two years. As the transitions from row to nut crops, Ross said the city will be able to meet about 20% of the orchard's irrigation needs. The city also owns another 322 acres of farmland near the airport which needs about 1,288 acre feet of water per year. Ross said there are not currently plans to deliver water to this property because it is low on the priority list.

As the facility processes more waste water into more recycled water, Ross said the city already has plans to sell recycled water to local farmers. Ross said there are thousands of acres of privately owned farmland surrounding the facility that could potentially use the vast majority of recycled water produced by the Water Reclamation Facility. He said two local farmers have already gone through the permitting process but it is costly and time consuming, so other farmers may not see the benefit.

"TID is the furthest the water goes," Ross said. "The water can't go any further than the county boundary."

After flushing your toilet, the "gray water" enters the headworks at the facility where scrapers remove large pieces of waste and grit that can damage the pumps that move water from one level of treatment to the next.

From there the water is pumped into clarifier beds or large pools where paddles skim the top of the water to remove floating waste, such as fat, grease and oils, and then scrapes the bottom for heavier waste. This process is known as primary treatment which also slows down the water to avoid overwhelming the pumps.

Water is then sent through a fine screening process where unsettled solids are removed from the water before heading back to a pooling area known as aeration basins. Large air pumps blow millions of small bubbles into the water to facilitate bacteria that convert ammonia to nitrites and then into nitrogen gas that is released into the atmosphere and removed from the water. The water is then sent to one of the most unique aspects of the facility, the membrane bioreactor (MBR), where it is sucked through millions of straws perforated with holes half the diameter of a human hair. Any remaining solids are squeezed out through these microscopic holes as the water is carried from the secondary treatment to tertiary treatment. Visalia's facility is the 13th largest MBR plant in the world and the fifth largest in the United States.

After the MBR, water is slowly flowed through a UV Disinfection area where hundreds of ultraviolet bulbs sterilize any micro-organisms that may have survived the primary and secondary treatments and disinfects the water without the use of chlorine, which is hazardous to house in large quantities on site. After the third level of treatment, the water meets all of California's standards for drinking water.

With a price tag of \$152 million, the facility is the largest public works project in the City of Visalia's history. The facility is the second largest of its kind in the state, fourth largest in the country and the 20th largest in the world.

"You pulled off one of the most sophisticated public works projects we have ever faced," said Councilmember Greg Collins.

Tahoe-Reno Industrial Center says water supply solid as pipeline moves forward, state denies extra groundwater permits



Daniel Rothberg

Sept. 12, 2018. (David Calvert/The Nevada Independent)

Even with a recent denial of extra groundwater by state regulators, a lawyer for the Tahoe-Reno Industrial Center (TRIC) said the expansive park — home to the Tesla Gigafactory and a Switch data center — remains on firm footing when it comes to its most valuable resource.

Last month, Nevada's top water regulator denied nine applications to expand the industrial center's groundwater use. But an attorney for the development said the decision would have no impact on the water supply, as the applications hadn't been factored into TRIC's resource plans.

"It doesn't affect the water supply at all that is planned to be used by [TRIC] for growth," said Robert Sader, an attorney for the developer and the site's general improvement district.

The decision comes as TRIC looks to secure more water through a 13-mile effluent pipeline that will convey treated wastewater from the region's main sewage plant in Sparks. Sader said TRIC expects to complete the engineering for the pipeline by this spring and put out a bid for construction soon after. The pipeline would allow companies at the park to use 4,000 acre-feet of treated wastewater for industrial use, adding to a portfolio at TRIC that includes rights to pull water from the Truckee River and an adjacent aquifer (an acre-foot is about the amount of water than can fill a football field to a depth of one foot). Sader said the pipeline is proceeding even after [companies nixed](#) a state-backed funding package.

An interim legislative board had originally approved \$35 million in bonds to build the pipeline if the companies paid into a Special Assessment District and accepted liens on their property. After one company pulled out of the financing plan, the deal was restructured, and it ultimately fell apart. The remaining companies decided to front the cost of the pipeline, with the potential of being paid back through a Tax Increment Area that was approved by Storey County.

Between the existing rights and the water piped in from Truckee Meadows Water Reclamation Facility, TRIC should have enough water to meet growth at the industrial park, Sader said. The additional applications for extra groundwater were filed in 2012, about two years before the state approved a tax incentive package to lure Tesla to the site. Seven years later, [those applications were denied by state water officials](#), who determined on Jan. 25 that there was no water left to appropriate.

Sader said TRIC would not appeal the ruling. The industrial park, he said, would be unlikely to prevail. Obtaining the extra groundwater rights had been a longshot, given that they sit within the Truckee River basin, which is highly regulated by historic court decrees and agreements. As a result, he said the industrial park never incorporated them into their planning for growth.

“We have never planned on resources that we didn’t have,” Sader said.

The groundwater permits, filed before other water users foresaw the industrial park being built out to the extent it is today, were protested by several Truckee River users as “speculative in nature.”

The protests and denial of the groundwater applications reflect the Truckee’s complicated water rights structure and the growing acceptance by the water community to manage groundwater and surface water as a connected resource. In the past, the two had been viewed as separate. But studies have shown that over-pumping groundwater can diminish adjacent streamflows. TRIC’s permits were protested by downstream water users, including the Pyramid Lake Paiute Tribe, Churchill County and the Truckee Carson Irrigation District, which serves water to Fallon farmers. It was also protested

by the Bureau of Reclamation, which oversees the Truckee Canal, a diversion from the river that carries water from Sparks to Fernley and Fallon farmers. If too much groundwater or surface water is diverted out of the upstream portions of the Truckee River, users downstream could be detrimentally affected, especially during dry years. It could mean, for instance, a reduction in flows to Pyramid Lake, the river's terminus, that could harm efforts to increase populations of endangered fish like Lahontan cutthroat trout and the Cui-ui.

In addition to the use of public funds, it is one reason some have criticized the effluent pipeline.

Wild horses at the Tahoe Regional Industrial Center on Wednesday, Sept. 12, 2018. (David Calvert/The Nevada Independent)



City planners for Reno and Sparks have cast the deal as a win-win. On one hand, it would help the companies meet their demand for future water with recycled wastewater. At the same time, the deal would solve a looming issue facing the municipalities.

Because of regional growth, driven in part by the presence of those companies, Reno and Sparks will likely face a sewage capacity issue in the coming years. Regulations limit how much treated effluent water managers can discharge into the Truckee River. As a result of the discharge standards and more demand for growth, the municipalities would have to expand the plant's capacity or find a place to move effluent, which they can achieve through leasing it to TRIC.

But delivering the treated wastewater to TRIC came with its own set of challenges. As a result of the deal, 4,000 acre-feet of treated wastewater would no longer be discharged to the river, potentially reducing the streamflow. To offset the reduction of water to users downstream, TRIC had pledged 1,500 acre-feet of water rights and the state had pledged about 1,500 and 2,200 acre-feet of rights. The **Truckee Meadows Water Authority** will make up the remaining 300 to 1,000 acre-feet.

As with the use of public funds, some have criticized the use of publicly owned water rights to offset the diversion. [The Reno Gazette Journal](#) reported last year that Reno Assemblywoman Teresa Benitez-Thompson questioned the water rights aspect of the deal.

“In a state where water is everything ... I have never heard of water just being given away,” she said. “We are essentially giving this water, we will not be getting any compensation for this water.”

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L.A.'s ambitious goal: Recycle all of the city's sewage into drinkable water

By Bettina Boxall
FEB 22, 2019 | 9:30 AM



Los Angeles officials have set a 2035 goal of recycling all the treated wastewater produced by the Hyperion Water Reclamation Plant, which processes most of the city's sewage. (Christina House / Los Angeles Times)

Los Angeles has a new water project in mind that could cost \$8 billion, take 16 years to complete and provide as much as one-third of the city's supply.

Local officials aren't talking about building a new dam or lining the coast with desalination plants or towing icebergs from the Arctic. They are eyeing the river of treated sewage that pours into the Pacific Ocean, day in and day out, from L.A.'s wastewater plants.

In a dramatic shift for a city notorious for looking afar for most of its water, Mayor Eric Garcetti vowed this week that the city will be recycling all of its wastewater by 2035 and using it to reduce its need for imported supplies.

"It is really a game-changer," said Richard Harasick, senior assistant general manager at the L.A. Department of Water and Power. Currently, recycling provides only 2% of the city's water. The Garcetti administration says that figure can jump to 35% if L.A. stops dumping its treated effluent into the sea and instead uses it to replenish the local groundwater reserves that help supply municipal customers.

Doing that will require costly equipment upgrades at the Hyperion Water Reclamation Plant, new groundwater wells, construction of a 15-mile pipeline and as much as \$8 billion financed by DWP to pay for it all. The plan will also require a change of heart by L.A. residents, who 18 years ago succeeded in killing a city project that would have used treated sewage to recharge the San Fernando Valley aquifer.

City officials are optimistic. They say years of drought, declining imports and the high profile of a similar program in Orange County have softened resistance.

"People are accepting it now," Harasick said. "We don't see that as an issue going forward."

For a decade, Orange County water agencies have used purified wastewater to recharge a regional aquifer used for drinking supplies. Sanitation districts in southeast L.A. County have been doing the same thing since 1962.

[What role should the L.A. River play in a future Los Angeles? »](#)

The key to L.A.'s water recycling ambitions is the Hyperion plant near Dockweiler State Beach. It processes 81% of the city's sewage and discharges an average of 190 million gallons a day into a five-mile outfall pipe in Santa Monica Bay.

The city wants to upgrade Hyperion with advanced treatment technology, pipe the purified water inland and inject it into the aquifers that underlie much of the L.A. Basin. Plenty of underground storage space is available thanks to recent legal judgments that freed up capacity in local groundwater basins.

"We have the technology, we have the background on what we need to do," said Traci Minamide, chief operating officer of the L.A. Bureau of Sanitation. "We feel we're there."

One thing they don't have is the funding. "Money's going to be the big thing," said Mark Gold, UCLA's associate vice chancellor for environment and sustainability. "It's a bold move by the city," he added. "But if you look at water planning going back to the early [aughts], there's been talk about this. This is not a new concept."

Harasick said he was confident the city can fund the program through bonds, grants and low-interest government loans. He also predicted that by 2035, recycled supplies — which are now significantly more expensive than imported water — would cost roughly the same as imports.

Currently, it is against state policy to put recycled water directly into municipal systems. It must first spend some time in aquifers or reservoirs and mix with other sources. But the state is considering new standards that would allow agencies to skip that step. If that happens, Harasick said DWP would use some of the scrubbed wastewater for groundwater recharge and would send some directly into the city's distribution system.

As L.A. strives to capture more of the torrents of urban runoff that drain to the ocean during winter storms, it could also divert stormwater into the sewer system, treat it and add it to groundwater reserves. Southern California cities are in the vanguard of diversifying their water sources, said Josué Medellín-Azuara, acting associate professor of environmental engineering at UC Merced. L.A.'s recycling goal is very ambitious, he added, "but I think it is achievable."

Don't change water laws to benefit the few



[Guest Contributor](#)

February 26th, 2019 - 1:55am

By Abby Johnson

A small but powerful cluster wants big changes to Nevada water law this legislative session. A hearing this week will shine a light on the dangerous proposals pitching “modernizations” and “fixes” for an old system known as prior appropriation.

Sounds harmless, right? Don’t let the friendly language fool you.

From ranchers to environmentalists, there is a consensus that we don’t need to fix what isn’t broken. Nevada water law has served Nevadans well for more than 100 years and continues to serve the public interest. That success, however, has stymied a select few.

Real estate developers and government entities such as the Southern Nevada Water Authority have not had much luck in recent years getting what they want under the current legal and regulatory framework. Why? Because what they want is to facilitate unsustainable over-pumping of the state’s fragile, limited groundwater resources. Behind the scenes and in the Legislature they are working hard to change the law to enable projects like SNWA’s 300-mile, \$15.5 billion pipeline to Eastern Nevada.

The problem — for all of us — is that they want water that either doesn’t exist or already belongs to someone else.

In order to protect Nevada’s water future, we must be wary of this attempt to tar our existing system as ineffectual and outdated. The truth is, existing Nevada water law is one of the most progressive and protective of the public interest in the West.

In particular, [AB30](#) and [AB51](#), two bills designed to upend longstanding pillars of Nevada water law, would do much more harm than good. These bills attack the doctrine of prior appropriation, which guarantees that those who have senior rights to use ground or surface water are protected from those who come later and are granted junior rights to water from the same aquifer or river.

AB30 and AB51 provide no long-term due process protections for senior water rights holders and would pull the rug out from under the current water law’s protections for the public interest and the environment, jeopardizing the long-term well-being of our flora, fauna, and rural communities in the State. The legislation would provide Nevada’s top water regulator, the state engineer, with czar-like powers to unilaterally choose winners and losers without regard to senior water rights holders’ existing property rights. The bills also would allow deep-pocketed junior water rights holders to outspend and outmuscle Nevadans with senior rights who are harmed by those with junior rights. So, under AB30 and AB51 the state engineer would be encouraged to adopt a new approach to water rights management that is prone to result in unconstitutional takings of senior water rights holders’ property rights, which would mire Nevada water rights owners and the state government in complex and unpredictable litigation for years.

The legislation also would authorize the state engineer to mend any harms or conflicts caused by junior water rights holders with monetary payments, the promise to provide water from somewhere else, or a tax on junior water rights holders. Those limited remedies offer no assurance that senior water rights holders' livelihoods (such as ranching and farming) won't be devastated or that precious environmental resources won't be destroyed. Money and power should not determine how Nevadans access water and protect those precious resources in the desert.

If water officials and business interests were serious about making sound updates to our law, they would not be disguising their tactics for facilitating more unsustainable water grabs as a new kind of responsible management. An astounding one-third of Nevada's hydrologic basins are at 100 percent capacity or over-appropriated but these bills will do nothing to solve that problem.

Instead of weakening our laws under the guise of modernization, we must change the way we think about how we appropriate and consume water in the arid, drought-stricken West to ensure that the public interest and the long-term viability of that limited resource is protected. Finally, we must be careful not to take justifications for changes to current water law at face value. We must dig deeper to ensure that any proposed changes truly are in the public interest — not the financial interest of a select few.

Abby Johnson is president of Great Basin Water Network, which opposes the Las Vegas pipeline project.

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Legislature | Water & Land

Opponents, legislators raise questions that bills could enable Las Vegas pipeline, depart from Western water law



[Daniel Rothberg](#)

February 28th, 2019 - 2:05am

An Assembly committee heard two water bills Wednesday amid criticism from a varied group of water users who worry that the legislation could undermine the historic application of Western water law and enable large-scale projects, including the controversial Las Vegas pipeline.

The Southern Nevada Water Authority, which is pushing the project, testified neutral on the bill.

The legislative package was proposed at the end of Gov. Brian Sandoval's administration by then-state engineer Jason King. In an interview with *The Nevada Independent*, King argued that the bills would bring more flexibility to Nevada water law. The legislation, he said, would help the state better manage water claims and resolve conflicts between users.

Tim Wilson, the acting state engineer who took over when King retired in January, said that the bills, taken together, would bring "needed consistency and clarity" to Nevada water law.

"These bills are the division's best efforts to address real challenges and issues that the division grapples with regularly in all parts of the state," Wilson said in his opening testimony.

But opponents [cast the bills](#) as a giveaway to big developers and water users with a lower priority to water. A motley coalition of irrigators, environmentalists, tribes and rural officials directed much of their ire toward [Assembly Bill 30](#), which would codify the state engineer's ability to approve complex mitigation plans, known as 3M plans, in resolving conflicts between water users. Several critics tied the legislation to the Southern Nevada Water Authority's proposed project to pump water from Eastern Nevada to Las Vegas, a plan that uses 3M for mitigation.

Opponents included the Great Basin Water Network, the Center for Biological Diversity, the Nevada Farm Bureau, the Confederated Tribes of Goshute, the Central Nevada Regional Water Authority, the Humboldt River Basin Water Authority, the Sierra Club and the Nature Conservancy. Several legislators also expressed some concerns about the bill.

Assemblywoman Shannon Bilbray-Axelrod, who represents Las Vegas, went so far as to ask Wilson if the water authority had any role in crafting the bill.

"Quite bluntly, absolutely not," Wilson said. "They did not offer us any language."

Assemblywoman Sarah Peters, an environmental consultant who represents Reno, said that she had "concerns" that the bill did not adequately address environmental concerns.

Others worried it would give the state engineer too much authority.

A bucket protesting the Southern Nevada Water Authority's proposed pipeline project outside of Baker, Nevada. (Courtesy of the Great Basin Water Network)



Minority Leader Jim Wheeler worried the bill would let the state engineer “have unlimited power to give water and take water away from someone regardless of right in the end. I’m not saying you would do that. What I’m saying is this particular bill does give you that power.”

[Despite having working on a 3M bill in 2017, the water authority testified neutral.](#) The water authority’s lobbyist, Andy Belanger, said the water authority’s focus this year is on completing a [worst-case-scenario pump station](#) at Lake Mead, a [Westwide drought plan](#) for the Colorado River and conservation. But he said that the Legislature should take action on water law in the future to avoid litigation, as costs for defending lawsuits has increased for the state.

“We can’t support the bill in its current form,” Belanger said. “We don’t oppose the bill in its current form. But we do believe that if the Legislature does not act, at some point in the future you are going to spend a lot more money in the courts than you are today.”

Under Western water law, those with the oldest claims to water — senior rights holders — have the first opportunity to use water in times of scarcity. Any water users with later claims — those with junior rights — are the first to get their water curtailed off if there’s not enough to go around.

The tension between the two groups is a factor in most conflicts over water in Nevada and across the West. When water users apply for permission to pump groundwater, a user with senior rights can protest the application if there is a concern that issuing a permit would pose a conflict. For instance, if a mine applied to pump groundwater but there was a possibility it could draw down a spring, a rancher with senior rights to the spring could protest the application.

If there is a conflict, Nevada statutes are typically read as prohibiting the state engineer from approving an application, even if there is water available to appropriate from an aquifer. But Nevada’s top water regulator has, in many cases, allowed for applications to proceed with mitigation. In one case, the state has approved a 3M plan for mining project in Kobeh Valley.

Under a 3M plan, which stands for monitoring, management and mitigation, a water user could resolve a conflict by providing substitute water.

Although current statutes mention 3M plans, there remains uncertainty about the extent to which they can be used. In the case of the rancher’s spring, the water user could pump or truck in replacement water to ensure that the spring remained filled with water. The Supreme Court, in the Kobeh Valley case, did not say whether 3M plans were permissible but questioned the reliability of the concept — if pipes freeze in the winter — and the quality of replacement water.

Despite the criticism, the state said the legislation, codifying the use of 3M plans to resolve disputes between water users, was necessary to clear up conflicting language in the state’s water statutes.

“Without it, we are left with two conflicting directions in our statute,” said Brad Crowell, who leads the Department of Conservation and Natural Resources. “No matter which one we follow, we end up in

court over our decision. I personally don't think we should be abdicating the decisions on water policy to the court... As the law stands now, there is the inevitability of litigation."

Wilson also rejected the rhetoric "villainizing" the bills for enabling large-scale water projects and favoring developers who can afford to pay for mitigation.

"While the terms mitigation and 3M plans have been somewhat villainized due to conflict over a particular groundwater development project, the fact is that current law authorizes the state engineer to resolve a conflict based on the principle that any impacted senior water rights holders are made whole and the overall public interest remains balanced," he said.

The issue of senior rights is at the heart of the second bill that the Assembly Committee on Natural Resources, Agriculture and Mining heard Wednesday evening. [Assembly Bill 51](#) would give state regulators the authority to adopt regulations and levy some special assessments to "conjunctively" manage rivers and aquifers as a connected resource.

Although the law used to treat each supply as separate, the best science shows that diversions from streams affect groundwater levels and vice versa. Despite some progress in the last session, the state engineer argued the law is still vague on how regulators should enact "conjunctive management" plans.

AB 51 would help fix that problem, state regulators said. It could also be used by state officials to finalize regulations to mitigate the impacts of groundwater pumping near the Humboldt River. Pumping has led to a loss in streamflow that has, in turn, affected water deliveries to senior users at the end of the river.

But the proposed fix also drew opposition from several groups, including the Nevada Farm Bureau, the Pyramid Lake Paiute Tribe, Douglas County, Storey County and the Pershing County Water Conservation District (PCWCD), which represents farmers with rights going back to the 1860s.

The Humboldt River flows near Elko on Tuesday, Feb. 6, 2018. (Jeff Scheid/The Nevada Independent)



Although many opponents support "conjunctive management" in theory, they feared that the legislation, as written, would give the state engineer more power and could strip away the ability of senior rights holders to exercise their claims. They worry mitigation programs, funded through a potential special assessment, could leave senior rights holders with money but no water.

"PCWCD constituents don't want money, they want their water," said Bennie Hodges, who runs the Pershing County district, which sued the regulators in 2015 to halt groundwater pumping.

Prior to the hearings, Crowell said the state faced three realities as it related to water. Crowell, who also worked for Sandoval, said because Nevada is the most arid state, the fastest-growing state and threatened by climate change, lawmakers should take a "proactive approach."

"Climate change is real," he said. "The impacts are being felt here in Nevada. And it is our responsibility to take the impacts into account in managing Nevada's water resources."

UV LIGHT DEEMED EFFECTIVE FOR TREATING AQUATIC INVASIVE WEEDS IN LAKE TAHOE

Tahoe Fund's Environmental Venture Trust provided seed funding for innovative environmental project

Lake Tahoe, Calif and Nevada. (Feb. 26, 2019) – According to [a new report released by the Tahoe Resource Conservation District](#) (Tahoe RCD), an ultraviolet (UV) light project designed to combat aquatic invasive weeds in Lake Tahoe has proven successful. Results of the pilot project, the first to be supported by the Tahoe Fund's Environmental Venture Trust, found that most of the plants treated with UV light exhibited signs of deterioration or complete collapse within seven to 10 days following treatment.

Aquatic invasive species (AIS) pose a serious threat to the recreational and natural resources of the Lake Tahoe watershed as they compete with native species and can increase algae growth that contributes to the decline of Lake Tahoe's famous water clarity. Thick aquatic vegetation also provides an unnatural habitat that allows other non-native species to establish.

"Our first investment through the Tahoe Fund Environmental Venture Trust was to provide seed funding for the UV light pilot project to test a new treatment of aquatic invasive weeds in Lake Tahoe," said Amy Berry, CEO of the Tahoe Fund. "We are excited to see that the pilot was a success and there will now be a new way to treat aquatic invasive weeds in Tahoe."

The initiative was led by the Tahoe RCD in collaboration with Inventive Resources, Inc., and was made possible thanks to a Proposition 1 grant from the California Tahoe Conservancy and private contributions from the Tahoe Fund. Tahoe RCD is currently working on an environmental document analysis that expands available methods and techniques to implement lake-wide control methods for treatment of aquatic invasive plants at Lake Tahoe.

"Invasive plant populations can be reduced, and with continued treatments and a combination of tools available, we will be better equipped to manage populations around the lake in the future," said Nicole Cartwright, executive director for Tahoe RCD. "We are encouraged by the results and look forward to additional UV-C light treatment projects to explore the full potential of this new tool."

The Tahoe Fund Environmental Venture Trust funds innovative early-stage projects that benefit environmental initiatives affecting Lake Tahoe and was launched with the support of a \$25,000 matching grant from the Robert and Dorothy Keyser Foundation. The intention of the trust is to support projects deemed to have good potential, but no other source of early-stage funding.

The Tahoe Fund was created to be a major source of private funding for environmental projects around the Lake Tahoe Basin with an emphasis on lake clarity, outdoor recreation, stewardship, forest health and transportation. Learn more at www.tahoefund.org.

High-tech fight on aquatic invasive plants in Lake Tahoe shows promising results

Submitted to the Sierra Sun
March 1, 2019



Courtesy of Tahoe Resource Conservation District

President of Inventive Resources, Inc. John Paoluccio operates the ultraviolet light treatment boat at Lakeside Marina.

Tahoe Resource Conservation District, in collaboration with Inventive Resources, Inc., has found promising results using a new approach to combat aquatic invasive plants, one of the greatest threats to Lake Tahoe's ecology and clarity.

Results from the first ever pilot project support initial laboratory findings that the application of ultraviolet-C light results in observed mortality of submerged aquatic plants.

Most submerged aquatic plants treated with the light exhibited signs of deterioration or complete collapsing within 7 to 10 days following treatment. As a result, Tahoe Resource Conservation District is recommending continued use and analysis of ultraviolet light as a control tool at Lake Tahoe.

The initiative was made possible thanks to a Proposition 1 grant from the California Tahoe Conservancy and private contributions from the Tahoe Fund. The project served two main purposes; to determine the success of the UV-C light treatments as a tool for aquatic invasive plant control in Lake Tahoe, and to provide information to support future environmental document analysis. Ultraviolet-C light works by damaging the DNA and cellular structure of invasive plant life that currently threaten the health of the Lake.

"We are pleased that our company was able to participate in such an exciting project that demonstrates the innovative positive impact technology can have on the environment and our community," said John J. Paoluccio, President of Inventive Resources, Inc. "We are so proud that we were able to help add a new treatment control method to combat the spread and reduce the amount of aquatic invasive plants in Lake Tahoe."

Paoluccio brought the idea of using this technology to treat aquatic invasive plants at the late after successful treatment of algae in sensitive cave environments.

Inventive Resources initiated a project using the light to treat aquatic plants in their laboratory and it was very successful, showing five to 15-minute exposure times deteriorated the plants. Complete eradication of aquatic invasive plants may not be achieved with only one treatment, but a decrease in plant percent cover, mean plant height, and plant density, was observed. It is believed that with a consistent and comprehensive treatment plan, Ultraviolet-C will be a successful tool to control aquatic invasive plants in Tahoe waterways, paired with other approved techniques.

"Invasive plant populations can be reduced, and with continued treatments and a combination of tools available, we will be better equipped to manage populations around the lake in the future," said Nicole Cartwright, executive director for Tahoe RCD. "We are encouraged by the results and look forward to additional UV-C light treatment projects to explore the full potential of this new tool."

Tahoe Resources Conservation District is currently working on an environmental document analysis that expands available methods and techniques to implement lake-wide control methods for treatment of aquatic invasive plants at Lake Tahoe. This revised document will include Ultraviolet-C light along with other proven mechanical techniques.

Aquatic invasive species pose a serious threat to the recreational and natural resources of the Lake Tahoe watershed. The invasive species compete with native species and can increase algae growth that contributes to the decline of Lake Tahoe's famous water clarity. Invasive aquatic plants threaten the abundant recreational opportunities and natural wonders Lake Tahoe offers. Thick aquatic plant growth hinders navigation and can tangle on rudders, hulls and paddles. This thick aquatic vegetation also provides an unnatural habitat that allows other non-native species to establish.

For the full final monitoring report, please visit <https://tahoercd.org/tahoe-aquatic-invasive-species-resources/>.

Prado Ranch: A Master-Planned Community

February 27, 2019 ThisIsReno

[Link to video](#)

SPONSORED POST

Prado Ranch, a proposed Lemmon Valley development is a master-planned community that will introduce a mix of affordable housing, and Industrial and commercial real estate, as well as stormwater mitigation to ensure that the development both elevates the quality of life for residents and preserves the character of the region—allowing the peaceful, idyllic standard to living to continue, while helping local residents thrive even as more homes, businesses and critical services like fire and emergency response serve the region.

Some of the benefits of the proposed Prado Ranch community include elevating and widening Lemmon Drive to provide continuous safe access to the community for residents and first-responders; connection of Lear Boulevard from Lemmon Drive west towards Military Road at the existing terminus to allow for improved emergency response times and 130+ acres of open space adjacent to Swan Lake to be used for stormwater mitigation.

The Prado Ranch project makes infrastructure solutions a priority in Lemmon Valley well in advance of any public capital improvement plan and is entirely developer funded. This commitment to regional partnership is a cornerstone of the Lansing development model and confers benefits on existing residents that are otherwise unavailable through government processes alone.

Lemmon Valley's Swan Lake continues to rise as more storms take aim at Northern Nevada

by Melissa Matheney

Saturday, March 2nd 2019

The water level in Swan Lake sits about six inches below its highest level recorded following the historic 2016-17 winter.

[A graph on the Washoe County website shows a dramatic fluctuation between Fall 2018 and March 1, 2019.](#)



Washoe County officials say they anticipate seeing the water levels continue to climb.

"Based on the next two storm that are predicted and knowing we just started March, [which] March has historically been a pretty wet month for us, there's a high likelihood that we'll hit the same level that we saw in 2017," said Eric Crump with Washoe County's Community Services Department.

Crump says they recently installed about 2,500 feet of additional barrier near Swan Lake to contain the water and prevent damage to homes. He adds water pumps remain all around the lake.

County officials say they are also collaborating with other agencies to keep an eye on the water levels in Swan Lake to try to get ahead of any issues that may arise.

"We're working very closely with the National Weather Service's Reno office. We are talking to them on a daily basis. We're getting timely information from them so we're able to respond," said Crump.

On average, every inch of rainfall brings up the water level of Swan Lake and Silver Lake by four to six inches.

The water level of Silver Lake in Stead is also rising and can be [monitored here](#).

Lawmakers again hear divisive proposal to keep public pension recipients' names private

James DeHaven, Reno Gazette Journal Published 6:06 p.m. PT March 1, 2019

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Images from the first day of the 80th session of the Nevada Legislature on Monday Feb. 4, 2019. (Photo: Andy Barron/RGJ)

It could soon get a lot harder [to find out who is receiving a public pension](#) in Nevada.

A deeply divisive [bill](#) heard at the Legislature on Friday would make the names of retirees enrolled in the state-run Public Employees' Retirement System confidential and exempt from public records requests.

Current state law requires PERS to disclose the type and amount of pension paid to retirees, as well as their name, last employer, years of service and years of retirement.

Senate Bill 224, sponsored by Sparks Democrat Julia Ratti, would allow the public to access almost all of that information — except the names. Ratti and other bill supporters say the provision is simply meant to protect pensioners from identity theft.

Opponents say it looks a lot more like an end-run around the Nevada Supreme Court, which has ordered PERS to hand over the names of more than 57,000 people receiving payments through the system.

The state's highest court in January declined to revisit that decision, dealing PERS the latest in a long series of legal blows inflicted by news outlets and government watchdog groups that have spent years pressing to make the names public.

They say passage of SB 224 would leave taxpayers in the dark, inviting double dipping and other forms of pension fund fraud and abuse.

Richard Karpel, executive director of the Nevada Press Association, said taxpayers have a fundamental right to know who is benefiting from public pension payments.

"Taxpayers, including PERS members themselves, serve as the ultimate backstop to the retirement system," Karpel told the Senate Committee on Government Affairs. "They are the ones required to pay when there's a shortfall, as they have been repeatedly over the last decade.

"I think we would all agree there should be a high bar before a legislature makes public information confidential. We don't believe proponents have even come close to doing that."

Related: [The fight over making PERS records public continues in the Nevada Supreme Court](#)

Lobbyist: releasing information 'unnecessarily invasive'

Dozens of current and former state workers turned up in support of the bill. They fear that access to pensioners' names could provide criminals the key to much more private information, such as passports and birth certificates.

"Just what is the public purpose in this release?" asked Marlene Lockard, a lobbyist defending the bill on behalf of former public employees. "Releasing this information is unnecessarily invasive. ... It places (PERS members) at risk for their own personal safety."

Robert Fellner, policy director at the Nevada Policy Research Institute, a conservative think tank, pushed back on that claim.

Fellner argued the measure would outlaw the type of transparency databases that help identify potential misuses of public funds in states such as California, Illinois and New York.

"If publishing name and pension amount would actually cause harm to government retirees, these states, which are home to the most powerful government unions in the nation, would be the last to disclose this information," he told lawmakers. "Yet they, and numerous others do, and the alleged harms have simply never materialized, further demonstrating that there is no problem for SB224 to fix."

Attorneys for PERS have spent years in court arguing pensioners' names are confidential, and that they would have to create a new record in order to disclose them — something the agency is not required to do under the state's public records law.

Similar setback dealt in 2013

Courts have regularly disagreed.

In January 2017, Carson City District Judge James Wilson ordered the agency to hand over requested information on pensioners' names, benefit amounts, year of retirement and former employer. That decision was held up by the state Supreme Court in October.

PERS was dealt a similar setback in 2013 — the first time a judge struck down the agency's claim that pensioners' names were confidential. The order also granted the Reno Gazette Journal's 2011 request for information on agency payments.

If passed, SB 224 may mark a final front in the long-running public records battle. Records deemed confidential by the Legislature are considered exempt from the state's existing public records law.

Lawmakers took no action on the measure. Democrats managed to pass a similar bill out of the Legislature in 2017, only to see it vetoed by then-Gov. Brian Sandoval.

James DeHaven is the politics reporter for the Reno Gazette Journal. He covers campaigns, the Nevada Legislature and everything in between. [Support his work by subscribing to RGJ.com right here.](#)

Plans to rewrite Nevada water law get rough reception at Legislature

[Benjamin Spillman](#), Reno Gazette Journal

Published 10:25 a.m. PT Feb. 28, 2019

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Ben Spillman writes about the environment and the outdoors in Nevada. [Support his work by subscribing to the Reno Gazette Journal.](#)

Plans to give Nevada's top water official more flexibility to wade into water rights disputes got a rough reception in the state Legislature.

Farmers, conservationists and American Indians from Nevada and Utah turned out in opposition to the proposals in two bills while no one spoke in support of measures critics say would direct more water toward urban and suburban development at the expense of farming, ranching and the environment in rural valleys.

The testimony before the Assembly Committee on Natural Resources, Agriculture and Mining was the first chance for the public to speak in person before lawmakers about Assembly bills 30 and 51.

The bills, sponsored by the Division of Water Resources, seek to provide Nevada's state engineer, the state's top water official, more options when it comes to settling disputes over water rights.

- AB30 would enhance the state engineer's authority to resolve conflicts over water rights through monitoring, management and mitigation agreements, also known as "3M plans."
- AB51 would similarly give the state engineer more options when it comes to resolving conflicts related to the relationship between groundwater and surface water.



Rye Patch State Recreation Area: All that remained of the Humboldt River is seen below the dam at the Rye Patch Reservoir northeast of Lovelock on Aug. 6, 2015. (Photo: Jason Bean/RGJ file)

What the backers say

Officials from the Division of Water Resources said they proposed both bills to better implement water rights management mandates from past legislative sessions.

"This effort is the division's attempt to implement the direction of the legislature," said acting state engineer Tim Wilson.

Bradley Crowell, director of the Nevada Department of Conservation and Natural Resources, which oversees the Division of Water Resources, said prior legislation puts pressure on water managers to use 3M plans when water is available but current water law still requires them to deny applications when conflicts exist.

"We are stuck in a lose-lose situation from a management perspective," Crowell said.

Opponents fear southern water grab

But opponents said the bills would concentrate too much power in the hands of the state engineer. They fear that power could be used to push forward a foundering proposal by the Southern Nevada Water Authority to pipe water from rural communities in eastern Nevada to Las Vegas.

"We would be left high and dry," said Rupert Steele, chairman of the Confederated Tribes of Goshute, which is based in Utah and Nevada.

Steele said he fears provisions in the proposed legislation would make it easier for backers of the pipeline to circumvent court rulings that have held up the project.

Specifically, he said he's worried for the future of Swamp Cedars that are important to tribal people. The trees survive in a lush zone in the Spring Valley, a contrast to the landscape of much of Nevada which is the driest state in the U.S.

"We have been fighting the good fight to protect this special place," Steele said.

Rural farming and ranching interests also spoke out against the bills.

Rob McDougal, a commissioner in rural Pershing County, said the agricultural economy around Lovelock relies on laws that put senior water rights holders firmly in command when it comes to managing water.

McDougal said 3M plans, as proposed, would open the door to resolving conflicts over harm to water rights by paying money instead of preserving the rights.

While such an approach provides compensation for farmers, it doesn't address what happens to the local economy if farming activity declines.

He said drought in recent years has already shown a downturn in farming activity takes a toll on the vibrancy of the community by forcing people who work on farms to move away.

"They left permanently because there is not work to be done or they have gone to the mines," McDougal said.

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Norman Frey, a farmer from Fallon, said drafting 3M plans can put individual farmers at a disadvantage if the other parties have more money. That's because the plans, he said, are complex and require hefty amounts of consultation.

"We don't have the expertise, that expertise needs to be hired," Frey said. "It is very, very expensive." Conservationists said both bills lacked provisions to ensure future water deals wouldn't harm the land or wildlife.

The bills, they said, stack the deck in favor of people seeking to move water to Las Vegas by allowing inadequate mitigation measures for potential environmental damage.

For example, they say importing water is an inadequate measure for restoring depleted springs.

"We do not believe replacement water for environmental resources is a viable approach," said Laurel Saito, Nevada water program director for The Nature Conservancy.

Saito said Nevada is home to 170 endemic species, with many of them living in isolated springs and valleys.

"These are species found nowhere else in the world," she said, adding their unique nature suggests it would be difficult to replicate their living conditions with imported water.

No action taken yet

Lawmakers on the committee didn't cast votes on either bill but several members, both Democratic and Republican, asked questions that suggested they were skeptical of the plans as described.

"Doesn't that very first line upend the very tenets of our water law in Nevada since our inception, meaning that the first in time is first in rights," said Assemblywoman Robin Titus, R-Smith Valley. "You're saying the person with the senior right ... you are forcing them into a negotiation."

Assemblyman Howard Watts, D-Las Vegas, said he worried the bills lack provisions to protect communities and the environment from potentially harmful ramifications.

"We could end up with things like aquifer decline, groundwater mining or other things that have negative impacts," Watts said.

Ben Spillman writes about the environment and the outdoors in Nevada. [Support his work by subscribing to the Reno Gazette Journal.](#)

By [Will Nicol](#) — Posted on March 5, 2019 1:00AM PST 03.5.19 - 1:00AM PST [EMERGING TECH](#)

Blockchain is overhyped, but it's also perfect for California's drought problem

Will Hawkins/Digital Trends

California has a water problem.

The state is an agricultural powerhouse, [producing over a third](#) of the United States' vegetables and generating over \$50 billion in a year, but its vast and varied output requires a similarly colossal amount of water.

For decades, farmers and businesses have pumped groundwater out of California's aquifers, the permeable layers of rock that hold water underground, and the results have been frightening. As aquifers drain faster than rain can replenish them, the ground actually sinks, a phenomenon called "subsidence." In areas where building and roads rest atop the ground, this can cause damage.

"California is huge for American agriculture," Alex Johnson, Freshwater Fund Director for The Freshwater Trust, told Digital Trends. "But it's heavily groundwater dependent, and there are some basins in the central valley that have been so depleted over the last couple decades that they are 20 feet lower in elevation because those aquifers have been drained and all the ground is settling."



The Freshwater Trust

As the aquifers sink, they don't merely pose a risk to infrastructure on the ground. Rock and soil collapse together, removing the space where water could once accumulate. This could be catastrophic, as [according to the California Department of Water Resources](#), in average year groundwater accounts for 38 percent of the state's water supply; in dry years that number can jump beyond 46 percent.

If California is going to prevent further depletion of aquifers and survive droughts like the one that afflicted it from 2011 to 2017, the state will need to manage its groundwater usage. In the central valley, a group of organizations is working on a project that could stem the tide by combining two technologies: the internet of things (IoT) and Blockchain.

A project born in the cradle of humanity

The first big challenge was figuring out how to monitor groundwater levels across the state. Luckily, this is an issue that people in other regions of the globe have been grappling with for years, and have already developed solutions for.

“We’re primarily doing this today in East Africa,” says Evan Thomas, CEO of SweetSense, a company that uses satellite-connected sensors to monitor rural water supplies. “There’s actually 30 percent less rainfall over East Africa over the past every year for 30 years,” he explains, “so drought is basically every year now, instead of every ten or 20 years, and the consequences of drought are really severe. 250,000 people died in 2011 because of the drought in Ethiopia and Kenya, and almost ten million people were impacted.”

In Kenya, SweetSense partnered with IBM Research, and with support from the United States Agency for International Development (USAID), they built a system to use IoT sensors to “monitor groundwater use and demand, correlate that to rainfall surface water availability, and then also, most importantly, use that data to identify when a water pump fails so that we can go out and get it fixed and make sure that people have access to water year round.”

The use of IoT is exciting: Here is a technology many people associate first with kitchen appliances and Alexa speakers, being used to save lives from drought. IoT, the internet of things, refers, broadly, to the ability of machines to communicate with each other.

Here is a technology many people associate first with appliances and Alexa speakers, being used to save lives from drought.

Imagine the modern, techie apartment: You might have a smart home hub that, when the clock strikes 7 a.m., tells your smart speaker to play an alarm, your coffee machine to start brewing a pot, your TV to turn on and change the channel to the morning news. If the temperature outside is below a certain threshold, your smart thermostat cranks up the heat. Although you may have programmed these instructions initially, the machines can “talk” to each other and carry out instructions without a human micromanaging them.

Importantly, devices can communicate with each other without syncing up with the wider internet, and this is crucial for SweetSense’s work in Africa.

“The reason that it’s IoT is we’re completely off-grid,” Thomas explains. “There’s no cellular service, there’s no power, there’s no utility hookups, so we have a self-contained, solar-powered sensor that’s attached to these pumps that can monitor water supply and connect it over satellite networks.”

The sensors can fit in a person’s palm, and are powered by a “2-watt solar panel which is the size of a small paperback book.”

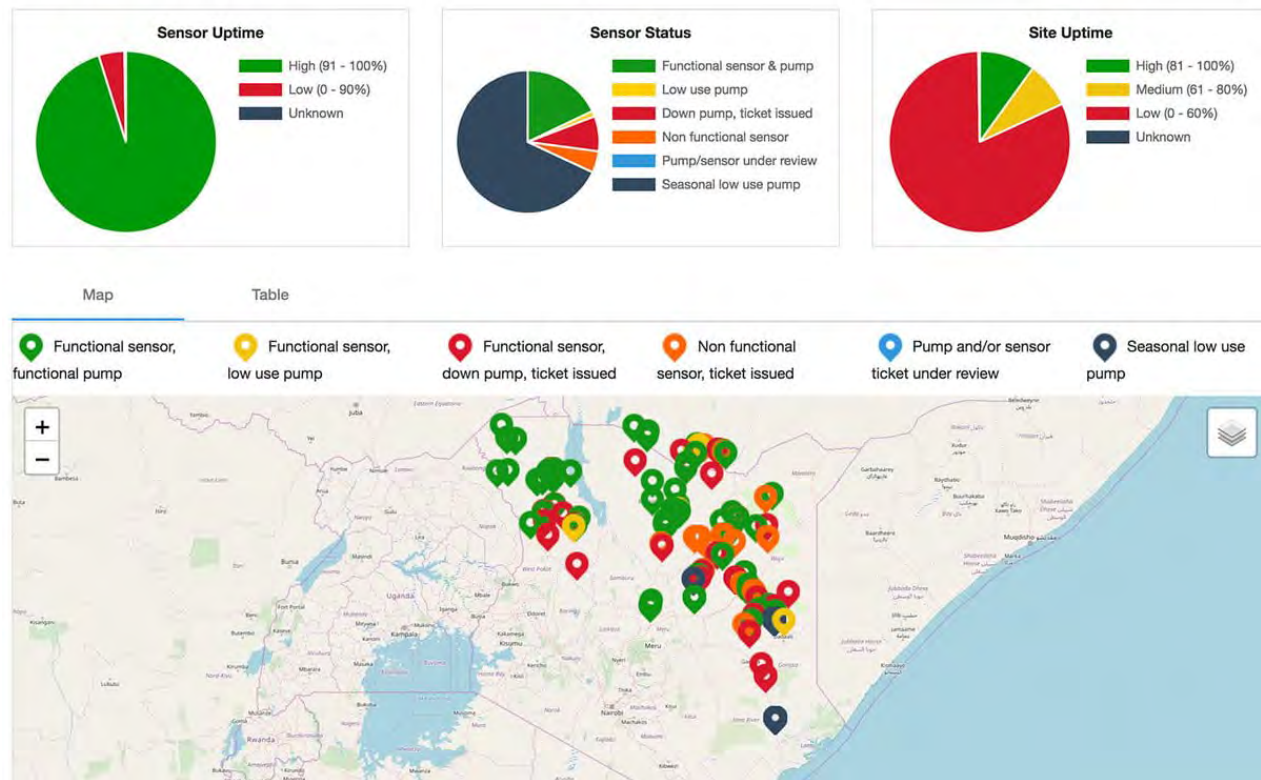
A shared resource requires shared information

Being able to accurately measure groundwater use is a crucial step, but it’s not enough to simply have accurate instruments. Groundwater is a uniquely complicated resource to manage. It all lies underground, out of sight, and because of how crucial it is to a variety of industries, everybody wants their sip at the fountain.

“I think there’s an inherent difficulty in water management and natural resource management where it’s hard to track who does what and keep track of that over time,” Johnson says.

“There’s not a lot of trust between users, especially between users and the government or local management agencies to other entities wanting the same resource.”

Sensors Overview



The Freshwater Trust

Groundwater usage is an excellent example of the [tragedy of the commons](#), the idea that presented with a shared resource, individuals will decide to maximize their own use of it, despite the fact that, if everybody does so, it could deplete the resource and doom the group.

Management of a shared resource like water, one that people feel naturally entitled to, requires not just the survival of the group depends on everyone rationing their use. It requires trust. Each individual wants to know that everyone else is playing by the same rules.

“Water is a shared resource,” says Nathan Wangusi, Technical Lead for Water at IBM Research Africa, “which means if we are extracting from the same aquifer we need to have conditions about how much we’re extracting, what rate we’re extracting at ... so that idea of consensus is very important.”

A market-based approach

Wangusi and his team work in Kenya, in a region he describes as “sparsely populated” and “largely pastoral ... heavily dependent on groundwater.” It’s also a region in which it’s hard to deploy many technological solutions. Wangusi and his team decided to focus on how to monetize water rights.

“You think of any other natural resource, like minerals, land, access to ability to pollute,” Wangusi explains, “you get those rights through some permit ... if you have a carbon credit, you get some permit to put a certain amount of carbon into the environment.”

Likewise, if you own land, you can grow crops and have a right to sell those crops. If you own a mine, you can extract minerals from it and sell them. Groundwater is trickier though.

“What’s different about water rights, more so than other natural resource rights, is that you cannot convert water rights directly ... into a commercial instrument.”

Wangusi and his team settled on the idea of groundwater credits. A credit provides the owner the right to extract a set amount of water from the ground, and if the owner doesn't want to make use of that right themselves, they can "convert them into commercial instruments that you can trade in an open market."

Markets are about trust, however. The people involved need to trust that the product they are buying — in this case the right to extract groundwater — is valid, and they need to trust that nobody else is gaming the system. Why would a farmer restrict themselves to only the water they can afford to buy a permit for if they suspect their neighbor is pumping water with reckless abandon? Everyone needs to have access to that information, and know that the information is trustworthy.

A system that everyone can trust

"The technology that is designed to support consensus and democratized access to information," Wangusi says, "is by definition Blockchain, because you have this idea of a ledger that is immutable, and then you have the idea of a smart contract that can move transactions within that Blockchain network."



The Freshwater Trust

[Blockchain is the technology](#) that underlies cryptocurrencies like Bitcoin, but it has a lot of potential for other applications. Put simply, a Blockchain is a decentralized ledger, shared among everybody who wants access to it.

When any number of parties make a transaction or other deal (say, registering a "smart contract") on the Blockchain, the other parties on the network verify it and secure its place in the record. The information is available to all users, and nobody can alter it after the fact, because the data has to line up with the copies everyone else has.

SweetSense's sensors can accurately track the amount of groundwater pulled up from any pump in the system, and convey that information to IBM's Blockchain via satellites, so the data flows even in remote areas. On the Blockchain, users can buy and sell their water credits, even registering smart contracts to automatically buy or sell when the price is right, and everyone can see which pumps are functional or not, where water is being pumped, and so on.

From Kenya to California

The system, developed in Africa, is a boon for the pastoral communities that depend on groundwater there. To the Freshwater Trust, it also appeared to have a lot of potential for California. Although people might not immediately link Kenya and California in their minds, both regions rely on agriculture, and both rely on groundwater.

Thomas had worked with the Freshwater Trust in the past, and they saw a chance to collaborate.

“Because TFT was trying to figure out how to help farmers actually monitor water and how to help farmers comply with the Groundwater Sustainability Act,” Thomas says, “and most importantly, how to help them in a way that eases the pain of new regulations and creates market incentives for participating.”

The creators of the project were excited by the prospect of what they call “reverse technology transfer,” of a system engineered in the developing world coming to help California, the heart of the tech world.

“It’s easy, I think, in American culture, to feel like we’re the best,” Johnson says. “Because we’ve been told that, or we’ve told ourselves that a lot. There are lots of places where innovation is happening, and I think the speed of technology has democratized where some of those really interesting technological advancements come from.”

Given California’s central role in the tech industry, there is a bit of irony there, the great exporter of innovation drawing on technology from a far-away land.

“California is pretty techy in a very specific sense,” Johnson says, “and that generally isn’t around agriculture. So I think there’s probably lots of areas where the developing world has teachings and has innovations that can teach the developed world that.”

Humanity’s back may not be pressed against the wall yet, but we can feel it looming.

What this IoT/Blockchain system offers is a way of regulating groundwater usage that is transparent and incorruptible, which is helpful given that farmers, whether in Kenya or California, can be wary of government mandates.

“If we can create a system that is credible, that is immutable, and shows that overall that resource, month after month, year after year, is being managed sustainably, but gives the users the privacy and the security that they need to actually use that system,” Johnson says, “now we’re talking.”

“The legislation is going to force demand for these new types of systems,” he adds, and so organizations like the Freshwater Trust are trying “to figure stuff out before everybody’s back is against the wall ...”

The Earth is getting parched

Humanity’s back may not be pressed against the wall yet, but we can feel it looming.



The Freshwater Trust

“We don’t have water available year-round, really anywhere in the world, and it’s becoming a crisis,” says Thomas. “Drought is exacerbating this issue, demand is exacerbating this issue, and we need to make sure that water is available where it needs to be and when it needs to be. And we aren’t going to be able to do that the old way,” he adds. “We’re not just going to build new dams again, or steal all of the water out of the mountains. We need to be able to manage the water where it is.”

Drought doesn’t just hurt agriculture. A recent statement from the USDA Forest Service [states that](#) 18 million trees have died in California since 2017, bringing the total dead since 2010 to 149 million. Those husks stretch across millions of acres, a sea of kindling waiting for a spark. California’s prolonged drought has coincided with an increase in wildfires, including the 2018 Camp Fire, [the deadliest wildfire](#) in California’s history.

It’s going to take robust public policy and technological innovation to stave off disaster, and California is leveraging both.

“We as humans have access to almost godlike technology right now,” Johnson says. “Let’s have a sense of urgency and try things and apply some of these technologies where they are most needed.”

Editors' Recommendations

- [What is a blockchain?](#)
- [The HTC Exodus smartphone: Here’s everything we know](#)
- [Sirin Labs Finney review](#)
- [Imagine yourself doing the backstroke in one of the 11 largest pools in the world](#)
- [Cities looking to get smart take a lesson from an iconic shopping mall](#)

USFS backs Mt. Rose ski resort expansion, bridge over Highway 431

NNBV staff and wire reports

March 6, 2019



Courtesy USFS

This map of the project area shows the proposed bridge and other amenities.

RENO, Nev. — The U.S. Forest Service has tentatively approved a plan for Mt. Rose Ski Tahoe to build two chairlifts and a snow bridge across Highway 431 to access 11 new trails proposed farther down the resort located between Incline Village and Reno.

Officials for the Humboldt-Toiyabe National Forest released a draft record of decision Monday, March 4, approving the resort's expansion planned across 112 acres north of the Mount Rose Highway.

According to the Associated Press, the plan includes a new restroom, water pipeline and 5-million-gallon water tank to support snowmaking operations in the resort's Atoma Area.

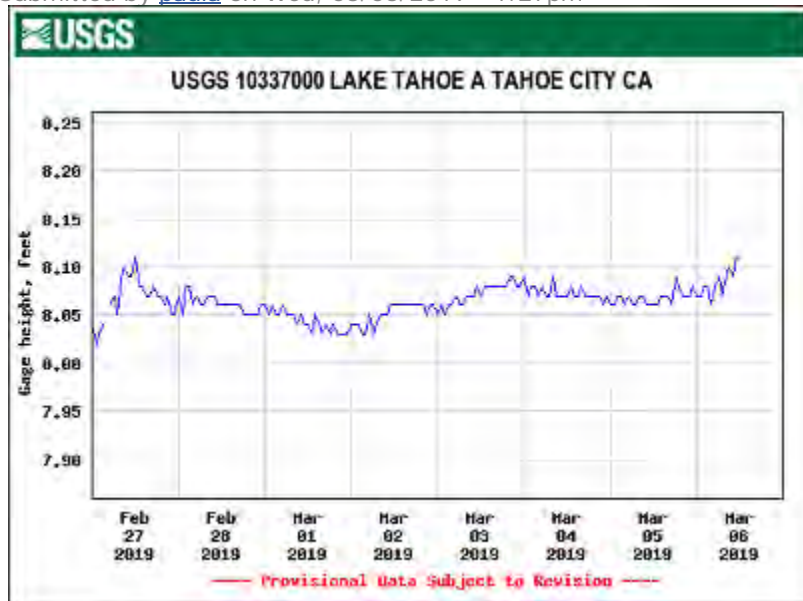
The project has been years in the making, with an initial proposal being put forth in 2012, according to previous reports, which suggested [the project at the time would cost nearly \\$24 million and take a decade to complete.](#)

It would prohibit future development of commercial uses across all but about 180 of the 3,446 acres on bordering national forest land. It's subject to a 45-day public comment to field objections from those who already commented.

Go [here to learn more about the project](#) from the Humboldt-Toiyabe National Forest.

How full is Lake Tahoe?

Submitted by [paula](#) on Wed, 03/06/2019 - 1:27pm



Paula Peterson

LAKE TAHOE, Calif. - The Sierra Nevada has seen epic amounts of snowfall this winter and recent measurements at both Phillips and Mt. Rose show water content of the snowpack well above normal.

Mountains around the Lake Tahoe Basin are currently holding 168 percent of the median amount of water. On March 1, 2019, the 16 measuring stations around the lake recorded a low of 36" of snow (176 percent of the median) at the Upper Truckee River to a high of 211" at Lake Lucille (178 percent of the median). When the snow melts, or it rains as it has been over the last couple of weeks, the lake gets more runoff that perhaps it can legally hold.

As of Wednesday, March 6, 2019, the gauge height of Lake Tahoe at Tahoe City is at 6,228.10 feet above sea level. The legal limit of the lake is 6229.10 feet and the natural rim rests at 6,223 feet.

While the lake is only about one foot from the legal limit, the Federal Water Master office in Reno keeps a close eye on the situation.

They can start spilling water from Lake Tahoe when two variables are analyzed: The water is at a height of 6228 feet and the forecast runoff shows them the lake would exceed the maximum legal limit when the snow melts or heavy rain is on the horizon.

Chief Deputy Federal Water Master Dave Wathen said they opened the dam gates at Tahoe City on February 23 and began spilling water from the lake into the Truckee River. He said they expect 2.1 feet of water to hit Lake Tahoe during the spring (April through the high, usually July) snowmelt runoff which would put more water into the lake than legally allowed. Out of the 17 gates, 11 are open.

The water at the dam has been running at a rate of 1200 cubic feet per second (cfs) which is equal to two-hundredths of a foot of water from the lake. 1200 cfs is equal to 2380 acre feet per day.

Why a legal limit?

Federal law prohibits storage of water in Lake Tahoe above 6,229.1 feet, which is the limit decreed in the 1935 Truckee River Agreement. The same agreement appointed a Federal Water Master to manage storage and diversions on the Truckee River and established certain minimum and maximum flows at the Farad gaging station near the state line.

From author Mark McLaughlin:

The epic winter of 1906-07 dumped a record 73.5 feet of snow on the Sierra. The deep snowpack melted rapidly when torrential rain soaked the region in late February and March. Concerned about dangerously high water levels behind the dam, the power company prematurely released too much water, which cut short the amount available for Nevada farmers. The on-going Tahoe water war generated intense passion and anger between neighbors in the watershed. Despite their conflicts, the many users of Lake Tahoe's water—property owners at the lake, the power company and its customers, farmers, ranchers, and Indians—all realized they had a vital interest in anticipating the seasonal rise and fall of the lake.

During the snowmelt period in spring, high water in Lake Tahoe frequently eroded the lake's shoreline. In 1909 lakeside residents issued an ultimatum to the Truckee River General Electric Company (the predecessor of present-day Sierra Pacific Power Company) insisting that Lake Tahoe must be lowered sufficiently each winter to preclude all possibility of spring flooding. Dissatisfied with the utility's response to their demands, in 1913 residents sued claiming that artificially high water levels were damaging the Tahoe shoreline and eroding tons of soil, which affected water quality and clarity. The Truckee River is probably one of the most litigated waterways in the country.

Sky Vision Explores The Truckee River Off Mayberry Drive in Reno, NV

by Brian Kulpa

Thursday, March 7th 2019

Watch News 4- Fox 11's Sky Vision drone explore the snow capped Sierra's and Truckee River along Mayberry Drive in Reno, NV. News 4-Fox 11 operates Sky Vision in partnership with Reno-Tahoe Auto Group.

[Link to video here](#)



Sky Vision Explores The Truckee River Off Mayberry Drive in Reno, NV

Legislature | Water & Land

Senate measure would reserve water to avoid over-appropriation

By



[Daniel Rothberg](#)

March 7th, 2019 - 2:10am

Environmentalists and rural water users expressed broad support last week for a bill that would create small water reserves in aquifers across the state.

[Senate Bill 140](#), sponsored by Republican Sen. Pete Goicoechea of Eureka, aims to prevent regulators from issuing more rights to water than there is water available, an issue already playing out in more than 100 groundwater basins.

In the dry Great Basin where surface water is scarce, groundwater is a primary water source for towns, ranchers and the environment. But about half of the state's 256 groundwater basins are over-appropriated because of past regulatory decisions and federal policies used to settle the West.

Goicoechea's legislation is aimed at preventing the problem from getting worse. It would require Nevada's top water regulator, the state engineer, to set aside reserve water as a buffer against overappropriation in the roughly 125 aquifers that have not been fully allocated.

Goicoechea called it "a line in the sand" to prevent future overappropriation. The dynamic is at the heart of many conflicts over water from Diamond Valley to Coyote Springs.

"This bill doesn't really deal with any of the major issues," [he said at a hearing last week](#), after noting that the audience was unusually sparse for a water bill. "But it does, I think, tend to reflect that water in this state is a finite resource and we're going to have to take a long, hard look at it."

At the hearing before the Senate Natural Resources Committee, of which Goicoechea is a member, no one stood in opposition to the bill. Several municipal water utilities, including the Southern Nevada Water Authority, testified neutral, as did acting State Engineer Tim Wilson, whose testimony identified "numerous concerns regarding implementation of the bill."

But the legislation was broadly supported by environmentalists and rural water users, bringing together groups that often find themselves clashing on a number of issues. The dynamic was similar to the [two groups' opposition](#) to a legislative package proposed by the state engineer.

Representatives from the Nevada Farm Bureau, Nevada Cattlemen's Association, the Nature Conservancy and the Center for Biological Diversity all voiced their support for the bill.

"This does give us a chance to try and get a handle on the situation in the basins that are not quite there yet and hopefully gives us a little bit of a buffer zone for water to protect important environmental functions," said Kyle Davis, a lobbyist for the Nevada Conservation League.

If the bill passes, the state engineer would be required to reserve 10 percent of a basin's water as buffer. Water users could only call on the buffer water during an emergency, like a drought, and only on a temporary basis, Goicoechea said. For instance, if there was 1,000 acre-feet remaining in a basin, the state would be required to protect 100 acre-feet from appropriation (an acre-foot describes the amount of water that can fill an acre of land to a depth of one foot).

Several commenters criticized the use of an arbitrary 10 percent cap. But Goicoechea said he decided on that number — and using a percentage reserve — because of its simplicity.

"The simpler we can keep this bill, the better it's going to be," he said.

Sen. Pete Goicochea said the working group would explore ways to better the initial attack in fighting wildfires. (David Calvert/The Nevada Independent)

In total, the legislation would only reserve about 30,000 to 50,000 acre-feet of water, depending on how the state engineer rules on pending applications. Much of the state's water has been claimed and basins where it hasn't are often places where there is not much development.

But commenters applauded it as a good start. Patrick Donnelly, the state director for the Center for Biological Diversity said he hoped the bill would start a conversation about creating a process where science is used to determine the best amount of water to hold as a buffer.

"This [10 percent cap] is not necessarily a scientifically-derived number," he said in his testimony.

"I think we're aware of that. It is rather arbitrary, but it's a start."

"When you find yourself in a hole, stop digging," Donnelly added. "And in many basins, we are in holes right now. So let's not create more problems by over-allocating [more] basins."

Wilson, who became the interim state engineer in January, said that his office had concerns with how temporary "emergency" permits would be issued and why it didn't apply to domestic wells.

"While the division takes the position of neutral regarding the intent of the bill, we have numerous concerns regarding implementation of the bill under the language of SB 140 as currently introduced," [he said in written testimony](#).

Warren Hardy, a lobbyist for the Virgin Valley Water District also testified in neutral. Hardy noted that the purveyor for Mesquite shares a groundwater basin with Arizona and wanted more clarification about how the proposed legislation would handle aquifers that cross state lines.

But he said the utility supported the concept: "We've got to get this issue under control."

NRCS: Nevada water outlook strong

Nevada Appeal staff report
March 7, 2019

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Nevada Appeal file

Snowpacks across the state have already exceeded median peak amounts and Nevada's water supply is in great shape, according to the NRCS.

RENO — The Natural Resources Conservation Service's March Water Supply Outlook report states Nevada's water supply "is in great shape."

The report stated January and February 2017 produced heavy rainfall and then there was the March Miracle of snowfall in 2018. The report stated February 2019 turned into another record setter.

"February 2019 produced staggering snowfall totals, incredibly light powder, lots of shoveling, and plans to keep ski lifts running past Independence Day. NRCS snow surveyors sampled snow 13.5 feet deep at Mt. Rose Ski Area SNOTEL," said NRCS Nevada State Hydrologist Jeff Anderson. "NRCS data shows that a number of SNOTEL and snow courses across the region set new records for the biggest increase in snow water for the month of February,"

Snowpacks across the state have already exceeded median peak amounts and Nevada's water supply is in great shape, the report stated. Across Northern Nevada, streamflow forecasts are far above average and forecasted volumes are well beyond the amount needed to fill reservoirs. The report stated streams should have prolonged high flows and snow to linger on the mountains into summer with elevated streamflow through late summer and fall, keeping reservoir carryover storage high for the following season as well.

Conditions in the report are based on data through March 1.

SNOWPACK

Squaw Valley ski resort in the Tahoe region set a new monthly snowfall record at 315 inches. At Mt. Rose Ski Area SNOTEL, snowfall was recorded by the snow pillow 24 out of 28 days last month. SNOTEL and snow course measurements saw record or near record increases in snow water between February 1 and March 1. March 1 basin snowpacks are: 164-172 percent of median in the Sierra basins (Lake Tahoe, Truckee, Carson and Walker) and 128-145 percent of median across the rest of Northern Nevada.

The report stated even if there's no more snow, all of Northern Nevada has already achieved an above normal winter.

PRECIPITATION

Precipitation amounts in February ranked second highest or highest on record at a number of SNOTEL sites across the region. Monthly precipitation in February was twice normal across the Northern Great Basin, Humboldt, and Clover Valley basins, bringing water year totals to 110-123 percent of average. The Owyhee Basin and Eastern Nevada had slightly less than twice normal for the month and have water year totals at 108 percent and 124 percent respectively. Precipitation was nearly three times the monthly average in the Lake Tahoe, Truckee, Carson and Walker basins, bringing water year totals to 133-146 percent of average. These amounts are already 90-97 percent of the average annual total in these eastern Sierra basins.

STREAMFLOW FORECASTS

Streamflow forecasts for most of Nevada increased 40 to 70 percent from Feb. 1 forecasts to March 1 forecasts. March 1 streamflow forecasts are now greater than 160 percent of average in the Lake Tahoe, Truckee, Carson and Walker Basins. Forecasts in the Humboldt Basin range from 115-150 percent of average. Forecasts in Eastern Nevada are between 115-125 percent. The Colorado River Lake Powell Inflow forecast is 108 percent.

To learn more go online at <http://www.nv.nrcs.usda.gov>. RCS Nevada's Snow Survey website is <http://www.nv.nrcs.usda.gov/snow/>.

With the drought over, will cities loosen their strings on watering?

[Joshua Yeager](#), Visalia Times-Delta Published 6:56 a.m. PT March 11, 2019

Nothing says you've got your stuff together as much as having a green, lush and healthy front yard. Susana Victoria Perez has more. Buzz60

CONNECT [TWEET](#) [LINKEDIN](#) [COMMENT](#) [EMAIL](#) [MORE](#)

Josh Nauman left an indicator flag and a "fix-it" notice for water ordinance violations in the 5000 block of West Feemster Avenue in Visalia on Tuesday, July 1, 2014. He is a Water Conservation Education Coordinator for the the City. (Photo: Ron Holman, Ron Holman)

Months of record rain and snowfall has officially lifted the Central Valley — and much of the state — out of official drought conditions.

Just 1 percent of California is experiencing moderate drought conditions, according to the [U.S. Drought Monitor](#). That's a far cry from 2014 when 54 percent of the state was in severe drought.

With the drought declared dead in California, will Tulare County cities begin to ease restrictions on residential watering?

More: [California snowpack surges after slow start. Will it be enough to combat years of drought?](#)

[Under current guidelines](#), Visalians who live in odd-numbered addresses may water before 8 a.m. and after 6 p.m. from March through November on Tuesdays, Thursdays and Saturdays. Even-numbered addresses may water on Wednesdays, Fridays and Sundays.

No watering is permitted on Mondays.

[In Tulare](#), the schedule is the same except watering is only permitted from 10 p.m. to 4 a.m. and from 9 a.m. to 11 a.m.

Education, not punishment

Visalia issued 3,860 "Waste of Water" notices in 2018, resulting in 522 citations.

Tulareans were hit with 3,238 violations in 2018, with less than half of Visalia's population.

More than 2,300 were first-time offenders.

Fines range from \$35 for a first-time offense in Tulare to \$625 for a third-time offense in Visalia. A resident may be cited for obvious infractions like watering on a wrong day, but also for broken sprinklers or even for washing sidewalks, driveways and other hard surfaces that cause runoff.

Councilmembers say the fines are still necessary because the complex system of wells that deliver thousands of gallons-per-minute of water to residents' hoses every day remain critically low despite the recent influx of rain and snow.

"We are seeing plenty of rain, which is a great thing, but it's like a savings account," said Tulare Councilman Carlton Jones. "We need our aquifers to be ready for when the next drought inevitably comes."

Officials say education, not punishment, is their aim with the fines.

"Ultimately, the city's goal is to educate the community, not issue citations," said Nathan Garza, Visalia's water conservation supervisor.

Residents react

Visalia resident David Mitchell doesn't see it that way, though.

He says the current ordinance is too strict and can target people who are trying their best to be water wise.

"I think the city should give more warnings and fewer fines," he said after a malfunctioning breaker caused his sprinkler to go off on a wrong day, resulting in a \$125 fine.

Earlier this year, Mitchell spent nearly \$10,000 re-landscaping his backyard into a drought-tolerant configuration.

"It's frustrating to invest in a water-friendly landscape but still get hit with a fine," he said.

While cited residents can enroll in an educational conservation class to waive their first fine, those meetings are only held bi-monthly. Mitchell travels often for work so attending one isn't practical, he says.

Still, Mitchell says he's happy he made the change to a so-called "xeriscape," landscaping designed for drought-susceptible climates. (Xeros is Greek for "dry.")

He says the change made both financial and philosophical sense for his family.

"Water conservation is critical in the Central Valley. We live in a moderate desert climate — I'd rather that water go to our farmers," he said. "Of course, cheaper water bills are nice, too."

Compared to last year, Mitchell has cut his water usage by 20 percent, though he says his water bill is actually higher due to increasing utility rates.

Plummeting wells

Irrigation accounts for 60 percent of municipal water usage in Tulare County, according to Cal-Water. Visalia's average water table rests at 163 feet below ground, 3 feet higher than this time last year but still far below pre-drought levels.

The situation is worse in Tulare, where wells have plummeted by 30 feet on average since 2012, currently sitting at a depth of 183 feet.

While well depths have increased by an average of 8 inches annually, that number quadrupled during the height of California's historic drought to nearly 4 feet a year.

"While the snowpack is at 154 percent (of its year-to-date average), it takes years for that water to enter aquifers on the valley floor," said Tim Doyle, Tulare's water utility manager.

Garza echoed those words of caution.

"(Low water tables are) why we need to be mindful of our water usage even in wet years," Garza said. "It's nice to see water falling from the sky and snow on the mountains, but water conservation has to become a philosophy and way of life for people who live here."

Nursery plants are watered by a sustainable, hand-crafted drip irrigation system at Dry Creek Preserve, near Three Rivers, in this August 2018 file photo. (Photo: Joshua Yeager)



Water wisdom starts in your backyard

Many Tulare County residents have started to embrace that outlook in their own back yards, local landscapers say.

Nelms Landscape Contractors landscaped more than 300 homes and businesses around Tulare County last year. Owner James Nelms says drought-tolerant landscapes are on the rise, as residents become more conscious of their water footprint.

"Often, I'll come in and do one house with a drought-tolerant landscape, and then five other houses in the neighborhood will call wanting theirs done, too," he said.

Hardscapes are another popular option, Nelms says, which eschew lawns and plants altogether in favor of gravel and rock.

Retrofitting a yard to be drought-tolerant can be pricey. Nelms says a typical 1,000 square-foot space runs about \$2,500.

Fortunately, those who are looking to curb their water usage but can't plop down thousands of dollars for a new yard have options.

Switching to a drought-tolerant variety of grass, such as Bermuda, can significantly reduce lawn maintenance and water bills.

Nelms says a simple \$7 precision nozzle can also reduce sprinklers' water usage by up to 300 percent. Last year, Nelms' company fixed nearly 1,500 sprinklers, most of which had been cited by the city.

While good for business, Nelms empathizes with residents. He says cities should be more lenient in issuing fines.

Garza says he hears where Nelms and residents are coming from but doubled down on the importance of ongoing water conservation.

"We want folks' lawns to be watered and looking nice, but we must preserve water for our future generations and for our farmers," he said. "Water is our most precious resource."

*[Joshua Yeager](#) covers water, agriculture, parks and housing for the Visalia Times-Delta and Tulare Advance-Register newspapers. Follow him on [Twitter @VTD_Joshy](#). **Get alerts and keep up on all things Tulare County for as little as \$1 a month. [Subscribe today.](#)***

RTC updates City Council on Virginia Street Project, utility construction to begin soon

by Shah Ahmad

Wednesday, March 13th 2019



RENO, Nev. (News 4 & Fox 11) — The RTC met with Reno City Council today to give new updates on the Virginia Street Bus RAPID Transit Extension Project.

RTC officials say the next phase of construction will begin with utility work and companies like AT&T, NV Energy, and Truckee Meadows Water Authority will all be a part of it.



MODEL 1 OF VIRGINIA STREET CONSTRUCTION.jpg

So far, the RTC has invested more than 12.5 million taxpayer dollars in the project, including \$6.5 million to develop a design that reflects public input. The other \$6 million is meant for utility relocation and storm drain improvements.

The utility construction will begin with road work on the section between Plumb Lane and Mt. Rose Street and ultimately end on the roadway segment near Liberty Street.

In addition, the RTC will also reimburse the city (pending RTC board approval) for new artistic benches and bike racks added along the path.

The city will be in charge of that part of the project, including the design and the number of benches and racks. Once that is completed, the RTC will reimburse the city up to \$120,000.



MODEL 2 OF VIRGINIA STREET CONSTRUCTION.jpg

The next phase of [roadway] construction is going to start in summer of 2019, anticipating start of construction in July and then that will continue for the next year and a half," said Michael Moreno, public affairs manager for the RTC.



MODEL 3 OF VIRGINIA STREET CONSTRUCTION.jpg

The ultimate goal of the project is to improve travel between UNR and Midtown, by extending the RTC RAPID service by 1.8 miles from the UNR campus to the RTC 4th Street Station in Downtown Reno.

In terms of final design, the RTC aims to include wide sidewalks, on-street parking, a center median, and shared travel travel lanes. The final design is based on the Reno City Council's recommended action and was approved by the RTC Board of Commissioners.



MODEL 4 OF VIRGINIA STREET CONSTRUCTION.jpg

[Visit the Virginia Street Project website for the newest updates on the project.](#)

Badger Meter to Provide Smart Water Solution to Columbia

Zacks Equity Research March 12, 2019

Badger Meter, Inc. (BMI - [Free Report](#)) recently announced that it is going to provide smart water technologies and services to the City of Columbia, SC to aid its vision of offering high-quality municipal amenities to residents.

Notably, the company's comprehensive solution will likely improve the city's efficiency as well as cut water loss by providing real time access to water usage data and better customer service. Installations are expected to begin this spring with a three-year estimated project timeline for the complete rollout.

Badger Meter will provide its BEACON Advanced Metering Analytics Software-as-a-Service offering that collects and analyzes data within the water distribution network to increase operational efficiency. The ORION Cellular endpoints chosen by the city will use the latest LTE-M network. The network is dedicated to machine-to-machine devices deployed as part of a smart water solution, and is compatible with present LTE and 5G network technology.

Badger Meter's products are known for accuracy, durability and for providing valuable and timely measurement data. Management remains optimistic about 2019 and beyond on the back of solid backlog, overwhelming customer acceptance of new products. The company is making steady progress in its various innovative technologies, including D-Flow ultrasonic technology, which has the dual benefit of providing additional features for customers while improving its cost position.

Furthermore, the company focuses on enhancing shareholder value through organic and inorganic investments supported by its healthy balance sheet. Badger Meter is poised to benefit from the increasing market traction of E-Series meters and ORION cellular endpoints, as well as BEACON Advanced Metering Analytics managed solution. In addition, the inclusion in AT&T Smart City Alliance has enabled it to explore new ways for its smart water solutions to join forces with industry-leading cellular networks.

Backed by proper execution of operational objectives, shares of Badger Meter have recorded an average return of 18.5% compared with the industry's rise of 4.2% over the past year.



Badger Meter currently has a Zacks Rank #3 (Hold). A few better-ranked stocks in the broader industry are Comtech Telecommunications Corp. (**CMTL** - [Free Report](#)), Harris Corporation (**HRS** - [Free Report](#)) and Clearfield, Inc. (**CLFD** - [Free Report](#)). While Comtech sports a Zacks Rank #1 (Strong Buy), Harris and Clearfield carry a Zacks Rank #2 (Buy). You can see [the complete list of today's Zacks #1 Rank stocks here](#).

Comtech has a long-term earnings growth expectation of 5%.

Harris has a long-term earnings growth expectation of 8%.

Clearfield currently has a forward P/E (F1) of 48x.

UNR Cooperative Extension offers water-efficient landscape training and certification

by Jordan Hicks

Tuesday, March 12th 2019



Participants will learn how to conduct a water audit on an existing landscape during the QWEL training. Photo by Leilani Konyshyev, Cooperative Extension.jpg

RENO, Nev. (News 4 & Fox 11) — The University of Nevada Cooperative Extension is inviting local professionals to attend the Qualified Water Efficient Landscaper (QWEL) training from March 12 to 19, in Reno.

The training will prepare participants for the certification exam on March 19 to become certified professionals.

"This training provides the opportunity for green industry professionals to step up their education, making them more competitive in the industry and training them to help Nevadans become more water efficient," Cooperative Extension Northern Area Horticulture Specialist Heidi Kratsch said.

The training is part of Extension's Qualified Water Efficient Landscaper Certification (QWEL) Program.

Professionals certified by the program, which was designed by the Sonoma-Marín Saving Water Partnership and is recognized by the Environmental Protection Agency, will be listed on the [EPA's WaterSense website](#), and on the [QWEL.net](#) website, where local landowners can find them for hire.

Classes are taught by Cooperative Extension and Truckee Meadows Water Authority faculty, staff and industry professionals. Participants will be provided with local water, soil and plant information; basic and advanced irrigation principles; and hands-on water audit skills they can use in the field.

Anyone can take the training for personal knowledge, and professionals are encouraged to take the exam to become certified. Workshops will be held:

- March 12 from 9 a.m. until 1 p.m., lunch will be provided
- March 13 from 9 a.m. until 4:15 p.m., lunch will be provided
- March 15 from 8:30 a.m. until 4:15 p.m., lunch will be provided
- March 18 from 1 p.m. until 4:15 p.m.
- March 19 from 9 a.m. until 12 p.m.: certification exam

Both the training and the certification exam are at the Washoe County Cooperative Extension office, 4955 Energy Way in Reno.

For more information on classes or certification, contact Cooperative Extension Commercial Landscape Horticulture Program Coordinator Jenn Fisher at fisherj@unce.unr.edu or 775-336-0249.

From: Nielson, Pat
Sent: Monday, March 11, 2019 8:50 AM
To: [REDACTED]
Subject: RE: Flood hazard?

Zac

The area that you have e-mailed us about is not owned, operated or maintained by TMWA, and the crew that you saw working in the Last Chance Ditch are (presumably) Last Chance Ditch employees not TMWA employees.

Please feel free to direct your concern to the Last Chance Ditch Company 786-2677.

Regards

Pat Nielson
Truckee Meadows Water Authority
Director, Distribution Maintenance & Generation
Office 775-834-8034

From: Zack Tolen [REDACTED]
Date: March 10, 2019 at 4:40:35 PM PDT
To: bkflow@tmwa.com, conservation@tmwa.com, waterquality@tmwa.com
Cc: tmwaboard@tmwa.com
Subject: Flood hazard?

Hello,

On February 22nd around 8:30am, I spotted a crew (presumably TMWA) clearing some vegetation around Last Chance Ditch behind my apartment. Afterwards they just left most of the branches in the ditch, resulting in debris and trash piling up near my apartment (see attached images of crew, debris pile, and location). I'm no hydrologist, but aside from looking terrible, I suspect it may be a potential flood hazard as there is a grate in the ditch not far down stream. It would be very much appreciated if this debris pile could be removed.

Thank you,
Zack