



Carson Water Subconservancy District Finance Committee

*A healthy watershed
that meets the water
needs of all users*

NOTICE OF PUBLIC MEETING

DATE: February 27, 2023
TIME: 8:30 am – 2 pm
LOCATION: CWSD Conference Room /Zoom Meeting
777 E. William Street, Suite 209, Carson City, 89701

Committee Members are encouraged to attend in person for this meeting.
Lunch will be provided. Virtual attendance will be available via [Zoom](#). To phone in call (669)900-9128 and use Meeting ID: 896 4682 4559 and Passcode: 661935

AGENDA

Please Note: The CWSD Finance Committee may: 1) take agenda items out of order; 2) combine two or more items for consideration; and/or 3) remove an item from the agenda or delay discussion related to an item at any time. All votes will be conducted by CWSD Finance Committee members. Reasonable efforts will be made to assist and accommodate individuals with limited ability to speak, write, or understand English and/or to those with disabilities who wish to join the meeting. Please contact Catrina Schambra at (775)887-7450 or email: catrina@cwsd.org at least two business days in advance so that arrangements can be made.

1. Call to Order the CWSD Finance Committee
2. Roll Call
3. For Discussion Only: Public Comment - Action may not be taken on any matter brought up under public comment until scheduled on an agenda for action at a later meeting.
4. For Possible Action: Approval of the Finance Committee Meeting Minutes of September 2, 2022
5. For Discussion Only: Review the Tentative General Fund FY 2023-24 Budget and hear presentations for proposed projects; review the Tentative Acquisition/Construction Fund FY 2023-24 Budget; and review the Tentative Floodplain Management Fund FY 2023-24 Budget
6. For Possible Action: Make recommendations for the Tentative General Fund, Acquisition/Construction Fund, and Floodplain Management Fund FY 2023-24 Budgets
7. For Discussion Only: Public Comment - Action may not be taken on any matter brought up under public comment until scheduled on an agenda for action at a later meeting.
8. For Possible Action: Adjournment

Supporting material for this meeting may be requested from Catrina Schambra at 775-887-7450 (catrina@cwsd.org) and is available on the CWSD website at

CWSD FINANCE COMMITTEE

February 27, 2023

Approximate Time Schedule

- 8:30 a.m.** Budget Overview
- 8:40 a.m.** Proposed COLA Adjustment for FY 23-24
- 8:50 a.m.** Income Sources (CWSD staff)
- 9:00 a.m.** Administrative budget for FY 2023-24 (CWSD staff)
- 9:15 a.m.** Multi-Year, On-going Projects, or Grant (CWSD staff)
- 7114 -00 Professional Outside Services
 - 7117 & 7118 Lost and Mud Lake Expenses
 - 7120-00 Integrated Watershed Projects
 - 07 Watershed Tour
 - 7120-41 & 42 Watershed Coordination Program (Grant)
 - 7404-00 Noxious Weeds Control
 - 7406-00 208 Water Quality Plan (Grant)
 - 7441-00 FEMA Floodplain Mapping Program MAS # 12 (Grant)
 - 7442-00 FEMA Floodplain Mapping Program COMS 1 (Grant)
 - 7433-10 State Park – Aquatic Trail (Grant)
 - NDEM 30-Year Regional Water Plan – (Grant)
 - 7600-09Alpine County- CASGEM & Mesa Study (Grant)
 - 7610-10 Regional Pipeline Payment to Douglas County
 - 7620-11 Regional Pipeline Payment to Carson City
 - 7630-12 HWY 50 ROW Project
 - 7640-20 Lahontan Valley Water Level (1)
 - 7640-18 Dixie Valley Study (2)
- 9:45 a.m. to 10 am** Break
- 10:00 a.m.** **Carson River Projects**
- Carson Valley Conservation District Projects (3)
 - Dayton Valley Conservation District River Project (4)
 - Lahontan Conservation District (5)
 - River Wranglers - Carson River Workdays (6)
 - Alpine Watershed Group Watershed Programs - (7)
- 10:50 a.m.** **New Projects**
- Alpine County Geomorphological Assessment (8)
 - TCID Carson River Diversion Dam (9)
 - Sierra Nevada Journey (10)
- 11:20 a.m.** USGS Stream Flow Gages (11)
USGS GW Levels and Water Quality Measurements (12)
- 11:40 a.m.** Acquisition/Construction Budget for FY 2023-24
Floodplain Management Budget for FY 2023-24
- 11:45 a.m.** Lunch, Review Budgets & Make Recommendations to the Board

AGENDA ITEM #4
MINUTES OF LAST **FINANCE**
COMMITTEE MEETING

CARSON WATER SUBCONSERVANCY DISTRICT FINANCE COMMITTEE

DRAFT Meeting Minutes
September 7, 2022, 2-3pm

Committee Members Present:

David Griffith, Alpine County (via Zoom)
Ernie Schank, Churchill County
Lisa Schuette, Carson City (via Zoom)
Mike Workman, Lyon County
Jim Hindle, Storey County (via Zoom)

Staff Present:

Edwin James, General Manager
Catrina Schambra, Secretary to the Board (Zoom)

The meeting was called to order at 2:04 pm by Committee Member Schank. The meeting was held via Zoom and with in-person attendees at the Conference Room of the Carson Water Subconservancy District, 777 E. William St., #209, Carson City, Nevada. Roll call was taken, and a quorum of the Finance Committee members were present.

Item #3 – For Possible Action: Approval of Finance Committee Minutes of February 22, 2022

Committee Member Griffith made a motion to approve the minutes of the Finance Committee meeting of February 22, 2022. The motion was seconded by Director Workman and approved unanimously by the Finance Committee.

Item #4 – Discussion Only: Public Comment - None

Item #5 - Discussion Only: Review projected budgets for the next five years.

Committee Member Griffith asked if Ad Valorem Taxes (which funds CWSD) would be affected and possibly go down quickly given a downturn in the economy. Mr. James explained the abatement that affects the taxes CWSD receives is large in each county. The property tax would have to fall quite a bit to affect our tax income. The downturn in 2008 took several years to affect CWSD income.

Mr. James presented a 5-year projection of income and expenses for based on this current fiscal year budget and using the assumptions as outlined in the agenda package. The spreadsheet showed the current year budget and proposed tentative budget through fiscal year 2027-28. He explained the reasoning and math used in his projections.

No action was taken.

Item #6 - Discussion Only: Discussion of setting aside funding to go into the Floodplain Management Fund

In discussing Floodplain & Acquisition/Construction Funds Director Schank commented that we should have clear guidelines for requesting funds to be used from these two accounts. Mr. James explained this discussion should be brought to the Regional Water System & Floodplain Committee first, and then the recommendation would go to the full Board. Director Workman agrees that guidelines are important. Mr. James mentions implementing Flood projects in the future are at \$1million plus level. We will need to build these accounts if we want to fund construction projects. The consensus of committee was that specific guidelines need to be put in place. Once money goes

DRAFT Meeting Minutes
September 7, 2022, 2-3pm

into a specific account it should be earmarked for a specific project. Director Hindle brought up Storey County issues where the controversy is wells going dry and people trucking in water. He says water use parameters need to be set with flexibility. Mr. James says the Regional Water System & Flood Committee will consider guidelines at their next meeting.

No action was taken.

Item #7 - For Discussion Only: Discussion regarding future funding for CRC/Watershed Coordination Program

Mr. James explained the way funding works for the Watershed Coordination Program and its special projects. Committee Member Griffith says it sounds like we need to find more money. We are fully allocated now or we must prioritize spending. Mr. James noted that CWSD did apply for a Conserve Nevada Grant to conduct a Geomorphology Study and it was accepted. The total funding request is \$750,000 with a 10% match requirement. This study could possibly start in 2024. The financial picture is better than he thought it would be. There are funding opportunities out there.

No action was taken.

Item # 8 – Discussion Only: Public Comment –

Mr. James mentioned that there may not be a Board of Directors meeting in September due to lack of pressing agenda items. He will be discussing this with Chairman Giomi to see if a meeting is necessary and advising the directors of the decision.

There being no further business to come before the Finance Committee, Director Schank adjourned the meeting at 2:57pm.

Respectfully submitted,

Catrina Schambra

Secretary to the Board

AGENDA ITEM #**5**

CARSON WATER SUBCONSERVANCY DISTRICT

TO: FINANCE COMMITTEE MEMBERS

FROM: EDWIN D. JAMES

DATE: FEBRUARY 27, 2023

SUBJECT: Agenda Item #5 - For Discussion Only - Review the Tentative General Fund FY 2023-24 Budget and hear presentations for proposed projects; review the Tentative Acquisition/Construction Fund FY 2023-24 Budget; and review the Tentative Floodplain Management Fund FY 2023-24 Budget

DISCUSSION:

Attached are the Tentative FY 23-24 budgets for the General Fund, Acquisition/Construction Fund, Floodplain Management Fund, and the proposed funding requests. For the Tentative General Fund, the total grant requests add up to \$674,932. What makes this next fiscal year budget difficult is CWSD has not heard if we will receive any NDEP 319 funding for 2023. There is a possibility that CWSD will not be able to receive any NDEP 319 funding in the future. For 2023, CWSD requested approximately \$146,700. This included \$35,000 to hire contractors to help with social media outreach and continue work on the Web Access Viewer. It is possible that CWSD will receive from \$0 to \$100,000 from NDEP this fiscal year. Since most of the funds are used to help cover some of CWSD's staff costs, some of the funds could help offset the amount that needs to be cut.

The amount that needs to be cut to have a balance the budget is approximately \$175,000. The amount that needs to be cut has been reduced based on the announcement that Shane Fryer will be retiring at the end of this fiscal year. Instead of filling his position right away, staff is proposing entering a contract with Mr. Fryer to help finish up several of the projects he has been working on. This will give us some time to evaluate if we will receive any future NDEP 319 funding and if we need to refill this position.

The Items shown in blue on the attached budget are grant incomes and expenses. These are estimates based on program schedules. Actual costs are based on invoices. The expenditures are offset by grants funds. Items shown in black are generally fixed costs. Items shown in red can be reduced and will be discussed further down.

Included in the General Fund Tentative Budget is \$75,000 to be transferred to the Acquisition/Construction Fund. This was a direction provided by CWSD board a couple years ago.

The projected income from Ad Valorem taxes is staff's best guess. The actual projected

2/27/2023 CWSD Finance Committee Meeting
Agenda Item #5

tax figures from the State will not be available until March 25.

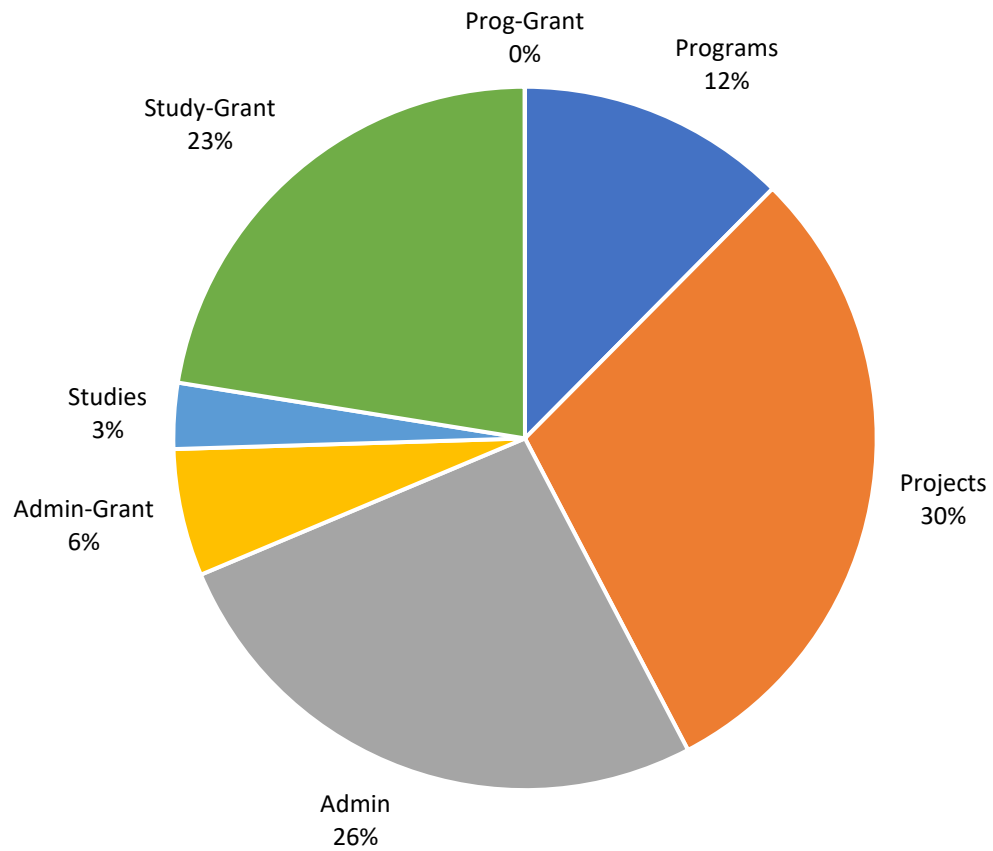
Attached is a pie chart that shows the percentage of expenses in the General Fund by categories of Administration, Projects, Studies, Programs, Projects Funded by Grants, Programs Funded by Grants, and Studies Funded by Grants.

As the committee evaluates how to balance the budget, below are a couple of suggestions:

- According to CWSD Cost of Living Adjustments (COLA) policy the increase is based on the prior calendar year annual CPI for the West Region. The CPI for 2022 is 8 %. The committee has the authority to reduce the percentage by 0.5 %. Anything greater reduction will require the full board's approval. For every percent decrease will save CWSD approximately \$6,300 which includes benefit savings.
- Suspend the General Manager's car allowance for FY 2034-24. This will save approximately \$3,000.
- In the past CWSD would provide each county in the watershed \$12,000 for noxious weed treatment. Ten years ago, this amount was increased \$15,000. The budget amount for noxious weed treatment for fiscal year 2023-24, including \$15,000 for Storey County is \$90,000. If we reduce the amount to \$12,000 this will save \$18,000.
- Not all the proposed new projects need to be funded or the funding requests can be reduced.
- The proposed budget includes funds being transferred out of the General Fund to the Floodplain Fund. The board has not set a value to be transferred. The committee could reduce this amount.
- Outside Professional Services account is proposed to be \$75,000. This includes \$45,000 for a contract with Mr. Fryer. Approximately, \$10,000 is needed to cover expenses such as IT support. Another \$12,000 has in the past to cover the AmeriCorps expenses. This category could be reduced up to \$20,000.

STAFF RECOMMENDATION: Review the various funding requests for fiscal year 2023-24.

FY 2023-24
Tentative Budget



CARSON WATER SUBCONSERVANCY DISTRICT

Tentative General Fund

	Proposed Tentative Budget	Approved Final Budget	Projected Actual	
	Jul '23 - Jun '24	Jul '22 - Jun '23	Jul '22 - Jun '23	Notes
Income				
5007-00 · Storey County Ad Valorem	17,715.37	16,775.92	16,775.92	5.60%
5008-00 · Alpine County	12,963.53	12,276.07	12,276.07	5.60%
5009-00 · Churchill County Ad Valorem	260,192.21	244,771.60	244,771.60	6.30%
5010-00 · Lyon County Ad Valorem	228,671.90	216,545.36	216,545.36	5.60%
5011-00 · Douglas County Ad Valorem	743,564.37	701,475.82	701,475.82	6.00%
5012-00 · Carson City Ad Valorem	530,053.50	507,228.23	507,228.23	4.50%
5022-00 · Mud Lake Water Lease	58,000.00	58,000.00	58,000.00	
5023-00 · Lost Lake Water Lease	880.00	0.00	0.00	
5031-00 · Interest Income - St Pool Reg	16,286.41	2,110.04	17,300.00	3.00%
5050-13 · Watershed Coord Grant V 2022	0.00	64,677.65	88,730.00	Grant
5050-13 · Watershed Coord Grant VI 2023	0.00	0.00	0.00	Grant
5050-07 · CRC Donation	0.00	0.00	0.00	
Aquatic Trail Grant	13,670.00	60,000.00	32,582.00	Grant
NDEM - 30-Year Regional Water Plan	86,782.00	0.00	40,642.00	Grant
5058-04 · 208 Water Quality AG	0.00	18,924.00	38,888.00	Grant
5060-00 · Misc. Income / Watershed Tour	6,000.00	6,000.00	6,000.00	
5082-00 · CASGEM	1,250.00	800.00	2,500.00	Contribution
5083-00 · Alpine Co Mesa GW Study	0.00	800.00	3,716.00	Contribution
6006-00 · FEMA - MAS # 11	0.00	77,629.00	118,060.00	Grant
FEMA MAS 12	157,200.00	582,202.00	527,100.00	Grant
FEMA COMS 1	461,400.00	0.00	283,940.00	Grant
Total Income	2,594,629.29	2,570,215.70	2,916,531.00	
Expense				
ADMINISTRATIVE EXPENSES:				Notes
7015-00 · Salaries & Wages	534,000.00	506,147.00	520,000.00	8%
7020-00 · Employee Benefits	200,500.00	193,600.00	193,000.00	
7021-00 · Workers Comp Ins.	1,500.00	1,000.00	1,000.00	
7101-00 · Director's Fees	18,000.00	18,000.00	14,000.00	
7102-00 · Insurance	5,400.00	5,400.00	5,067.00	
7103-00 · Office Supplies	4,800.00	3,200.00	4,000.00	
7104-00 · Postage	1,600.00	1,500.00	1,500.00	
7105-00 · Rent	40,972.80	39,300.00	39,286.00	
7106-00 · Telephone	5,300.00	3,500.00	4,500.00	
7107-00 · Travel-transport/meals/lodging	16,000.00	16,000.00	13,000.00	
7108-00 · Dues & Publications	1,600.00	1,200.00	1,200.00	
7109-00 · Miscellaneous Expense	1,000.00	1,000.00	1,000.00	
7110-00 · Seminars & Education	3,500.00	1,700.00	2,600.00	
7111-00 · Office Equipment	6,600.00	6,000.00	6,200.00	Includes copier
7112-00 · Bank Charges	50.00	50.00	50.00	
7115-00 · Accounting	16,800.00	16,800.00	16,800.00	
7116-00 · Legal	30,000.00	30,000.00	30,000.00	
Subtotal-Administrative Expenses	887,622.80	844,397.00	853,203.00	

CARSON WATER SUBCONSERVANCY DISTRICT

General Fund

Multi Year, Studies, and Grants	Proposed	Revised	Projected	Notes
	Tentative	Final	Actual	
	Budget	Budget		
PROJECTS:	Jul '23 - Jun '24	Jul '22 - Jun '23	Jul '22 - Jun '23	
7114-00 · Professional Outside Services	75,000.00	30,000.00	30,000.00	\$45,000 Shane
7117-00 · Lost Lakes Expenses	15,000.00	14,700.00	14,700.00	
7118-00 · Mud Lake O & M	1,500.00	1,400.00	1,400.00	
7120-00 · Integrated Watershed Plan		0.00	0.00	
7120-07 · Watershed Tour	7,000.00	7,000.00	7,000.00	
7120-41 Watershed Coord Grant V 2022	0.00	14,373.65	35,579.00	Grant
7120-42 Watershed Coord Match V 2022	0.00	0.00	2,050.00	Grant
7120-?? Watershed Coord Grant VI 2023		0.00	0.00	Grant
7120-?? Watershed Coord Match VI 2023		0.00	0.00	Grant
7404-00 · Noxious Weeds Control	90,000.00	85,000.00	85,000.00	
7406-00 · 208 Planning - AG Runoff	0.00	2,200.00	4,830.00	Grant
7433-10 · State Park Aquatic Trail	300.00	40,000.00	15,000.00	Grant
7440-00 · FEMA MAS #11	0.00	43,206.00	92,632.00	Grant
7440-00 · FEMA MAS #11 Match (Flood Fund)	7,200.00	7,200.00	7,200.00	
7441-00 · FEMA MAS #12	126,400.00	541,300.00	491,465.00	Grant
7442-00 · FEMA COMS #1	432,700.00	0.00	244,000.00	Grant
7500-00 · USGS Stream Gage Contracts	0.00	81,089.00	81,089.00	
7508-03 · USGS Do. Co. & Lyon Co GW Collection	0.00	17,580.00	17,580.00	
7524-01 · USGS GW level & WQ Churchill Co.	0.00	4,921.33	4,921.33	
7526-01 · USGS Middle Carson Groundwater	0.00	15,250.00	15,250.00	
7529-01 · USGS Water Resources 2022-2024	0.00	44,375.00	44,375.00	
NDEM - 30-Year Regional Water Plan	60,000.00	0.00	25,000.00	Grant
7610-10 · Douglas Co Regional Pipeline	125,000.00	125,000.00	125,000.00	
7620-11 · Regional Pipeline Payment to CC	125,000.00	125,000.00	125,000.00	
Subtotal Multi Year & On-going Projects	1,065,100.00	1,199,594.98	1,469,071.33	

Counties and River Projects

	Notes		
7215-00 · Sierra NV Journeys - Family Night	See Proposal	0.00	
7332-00 · Carson River Work Days	See Proposal	30,000.00	30,000.00
7337-00 · Carson River Restoration			
7337-26 · CVCD West Fork Bank Stab 2021-22	See Proposal	210,000.00	210,000.00
7337-34 · DVCD Bank Stab & Dayton Bridge	See Proposal	163,000.00	163,000.00
7337-04 · LCD Clearing & Sand Bar Removal	See Proposal	27,000.00	27,000.00
7600-05 · Alpine Co. Watershed Group.	See Proposal	30,000.00	30,000.00
7600-09 · CASGEM	5.00	5.00	5.00
7600-10 · Mesa GW Measurement Project	0.00	2.00	83.47
7630-12 · HWY 50 ROW (Cap)	90,000.00	100,000.00	10,000.00
7640-20 · Lahontan Valley WTR Level 2021-2024	15,000.00	14,500.00	14,500.00
7640-18 · Dixie Valley WTR Level measurement	25,000.00	23,000.00	23,000.00
TNC Riparian Reveg & bank Stabilization	0.00	25,142.00	25,142.00
Subtotal Carson River Projects	130,005.00	622,649.00	532,730.47

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CARSON WATER SUBCONSERVANCY DISTRICT General Fund

New Projects

	Recommendation			Notes
	Fin Committee			
7500-00 · USGS Stream Gage Contracts	\$ 89,603			
750?- · USGS GW Level & WQ	\$ 44,200			
TCID Carson River diversion Dam Repairs	\$ 50,000			
Sierra Nevada	\$ 3,279			
7332-00 · Carson River Work Days	\$ 30,000			
7337-26 · CVCD Carson River repairs	\$ 215,000			
7337-34 · DVCD Bank Stab & Dayton Bridge	\$ 100,000			
7337-04 · LCD Clearing & Sand Bar Removal	\$ 29,500			
7600-05 · Alpine Co. Watershed Group.	\$ 30,000			
Alpine Co Geomorphological Assessment	\$ 83,350			
Total Expenses for New Projects	674,932.40	0.00	0.00	
Total Expenditures	2,757,660.20	2,666,640.98	2,855,004.80	
Net Ordinary Income	-163,030.91	-96,425.28	61,526.20	
Other Income/ Other Income				
Beginning Equity	542,880.20	703,347.45	650,954.00	*
Transfer from Floodplain Mgt to Gen Fd.	7,200.00	7,200.00	7,200.00	
Transfer from Acqu/Const. Fd to Gen Fd.	90,000.00	100,000.00	10,000.00	
	640,080.20	810,547.45	668,154.00	
Total Other Inc/ Other Expenses				
8008-00 · Preliminary Planning	400,000.00	400,000.00	0.00	
Transfer from Gen. Fd. to Floodplain Fd.	50,000.00	51,800.00	51,800.00	
Transfer from Gen. Fd. to Acqu./Const. Fd.	75,000.00	135,000.00	135,000.00	
Total Other Expenses	525,000.00	586,800.00	186,800.00	
Net Other Income	115,080.20	223,747.45	481,354.00	
ENDING BALANCE	-47,950.70	127,322.17	542,880.20	

* Based on the 2021-22 Audit
4 percent of expenditures

\$ 126,306.41

**CARSON WATER SUBCONSERVANCY DISTRICT
FLOODPLAIN MANAGEMENT FUND
Fiscal Year 2023-24 Tentative Budget**

FLOODPLAIN MANAGEMENT FUND	Proposed Tentative Budget	Adopted Final Budget	Projected Actual	Notes
	Jul '23- Jun '24	Jul '22- Jun '23	Jul '22- Jun '23	
Ordinary Income/Expense				
Income				
5032-01 · Interest Inc - Inv. Pool	11,613.60	918.60	6,430.00	3.00%
Net Income		918.60	1,000.00	
Other Income				
8000-01 · Beginning Balance	387,120.00	306,200.00	341,520.00	
8001-01 · Transfer In-General Fund	50,000.00	51,800.00	51,800.00	
Net Other Funds	437,120.00	358,000.00	393,320.00	
 Total Available Funds	 437,120.00	 358,918.60	 394,320.00	
 Expense				
7203-03 Floodplain Planning	350,000.00	300,000.00	0.00	
		0.00	0.00	
Net Expenses	350,000.00	300,000.00	0.00	
Transfers out-General Fund				
Web Access Hosting data	7,200.00	7,200.00	7,200.00	
Net Transfers Out-General Fund	7,200.00	7,200.00	7,200.00	
Total Expense	357,200.00	307,200.00	7,200.00	
 Ending Balance	 79,920.00	 51,718.60	 387,120.00	

**CARSON WATER SUBCONSERVANCY DISTRICT
ACQUISITION/CONSTRUCTION FUND
2023-24 TentativeFinal Budget**

ACQUISITION/CONSTRUCTION FUND	Proposed	Approved	Projected	
	Tentative	Final	Actual	
	Budget	Budget		
	Jul '23 - Jun '24	Jul '22 - Jun '23	Jul '22 - Jun '23	
Ordinary Income/Expense				
Income				
5032-01 · Interest Inc - Inv. Pool	35,446.32	2,971.24	19,400.00	3.00%
Net Income		2,971.24	19,400.00	
Other Income				
Beginning Equity	1,181,544.00	990,413.00	1,037,144.00	
Transfer In- General Fund	75,000.00	135,000.00	135,000.00	
Net Other Funds	1,256,544.00	1,125,413.00	1,172,144.00	
Total Available funds	1,256,544.00	1,128,384.24	1,191,544.00	
Expense				
Construction Projects	1,100,000.00	990,413.00	0.00	
Net Expenses	1,100,000.00	990,413.00	0.00	
Transfers Out to General Fund				
Right-A-Way Lyon County Utility to Silver Springs	90,000.00	100,000.00	10,000.00	
Net Transfers Out to General Fund	100,000.00	100,000.00	10,000.00	
Total Expenses	1,200,000.00	1,090,413.00	10,000.00	
Ending Balance	56,544.00	37,971.24	1,181,544.00	

Funding Requests FY 2023-24

**CARSON WATER SUBCONSERVANCY DISTRICT
REQUEST FOR FUNDING**

APPLICANT: Churchill County, c/o Jim Barbee, County Manager
Name
155 N. Taylor St., Ste 153
Address
Fallon Churchill NV 89406
City County State Zip Code
jbarbee@churchillcounty.org (775) 423-5136
Email Telephone #

APPLICANT'S AGENT (if different from Applicant):
Chris Mahannah, P.E. Mahannah & Associates, LLC
Name
P.O. Box 2494
Address
Reno Washoe NV 89505
City County State Zip Code
chris@mah2o.com (775) 323-1804
Email Telephone

PROJECT NAME: Lahontan Valley Water Level Measurement Program

PROJECT LOCATION/ADDRESS: Lahontan Valley – Churchill County

PROJECT DESCRIPTION: Briefly describe the project. Provide maps, drawings, photographs or other information. Additional sheets may be attached.

See attached Exhibit A

PROJECT GOALS AND BENEFITS: Briefly describe the project goals and benefits to be realized if the project is implemented. Additional sheets may be attached.

See attached Exhibit A & copy of Power Point presentation dated 12/14/20 which was presented to Churchill County BOC at a workshop for new Commissioners providing an overview of water resource related issues in Basin 101, including the water level monitoring program.

TOTAL ESTIMATED PROJECT COST: \$54,000.00

AMOUNT REQUESTED FROM CWSD: \$44,000

SOURCE OF OTHER FUNDS: List all other sources of funds to be used to match funds requested from CWSD. List the provider of the matching funds and the amount requested from each provider.

ESTIMATED DATE PROJECT TO BEGIN: 7/1/21

ESTIMATED TIME TO COMPLETE PROJECT: 6/30/24

(If completion date is greater than a year, please indicate how much funding is needed in each fiscal year.) FY21/22: \$14,500; FY22/23: \$14,500; FY23/24: \$15,000

PERMIT REQUIREMENTS: If your project requires a permit, license and/or approval from a governmental agency to proceed, please provide the current status of each requirement. If approval has not been requested or is in progress, please provide the estimated date on which approval can be expected. Additional sheets may be attached.

N/A

OTHER INFORMATION: Provide any other information that may be important to the approval of this application.

See attached Exhibit A & copy of Power Point presentation dated 12/14/20 which was presented to Churchill County BOC at a workshop for new Commissioners providing an overview of water resource related issues in Basin 101, including the water level monitoring program.

SIGNED:



NAME: Jim R. Barbee

TITLE: County Manager

DATE: 02/04/2021

THE CARSON WATER SUBCONSERVANCY DISTRICT RESERVES THE RIGHT TO DENY ANY AND/OR ALL APPLICATIONS FOR FUNDING.

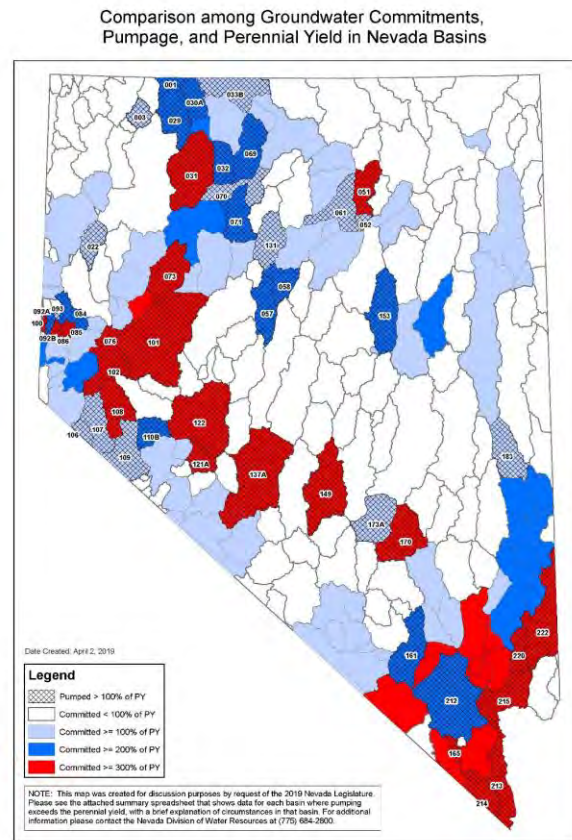
Exhibit A

Introduction:

The Lahontan Valley aquifer system consist of four aquifers as defined by the USGS: shallow, intermediate, deep and basalt aquifers. The shallow aquifer extends from 0-50', intermediate from 50-500/1000', deep greater than 500-1000' and the volcanic basalt aquifer in the central portion of the valley. There are approximately 5,000 domestic wells which tap the shallow aquifer and most quasi-municipal or public water supply wells in the unincorporated portion of the County tap the intermediate aquifer. The City of Fallon, Fallon Naval Air Station and Fallon Paiute-Shoshone Tribe have wells completed in the Basalt aquifer. The deep aquifer is saline and is generally considered non-potable. The State Engineer requires any new permitted wells be completed in the intermediate aquifer and sealed in the top 100'.

The natural recharge in the Carson Desert Hydrographic basin #101 has been estimated by the USGS at 1,300 afa from precipitation and 1,200 afa inflow from other basins for a total estimate of natural recharge or Perennial Yield (PY) of 2,500 afa. The committed underground water rights and domestic well use exceeds 21,000 afa, therefore the basin is over-appropriated without considering recharge from the Newlands Irrigation project. As shown on the State Engineer map below, committed rights exceed PY by over 300% and estimates of pumping exceed the PY as well. This map was presented in the last Legislative session by the State Engineer to demonstrate the status of basin over appropriation throughout the state. For this reason, the State Engineer issued Order# 1116 in 1995 limiting any new underground appropriations to 4,000 gallons per day (4.48 afa) or less. There are significant losses from unlined canals/laterals and on-farm losses to deep percolation which recharge the shallow aquifer. The shallow aquifer recharges the intermediate aquifer in the western portion of the basin which is hydraulically connected to the Basalt aquifer in the central portion of the valley.

The USGS has conducted two water level studies (WRIR 93-4118 & SIR 2004-5246) which focused on water level measurements primarily in the shallow aquifer and associated changes related to lands withdrawn from irrigation due to USFWS water right purchases and transfers to the Stillwater Wetlands. Some of the wells monitored in these studies are currently being



monitored by the USGS and are shown on the map included in the attached Power Point presentation given to the Churchill County Commissioners on 2/1/18. The USGS provides quarterly letter updates to Churchill County summarizing the measurements. Churchill County & CWSD entered into Interlocal Contract #2011-6 in July, 2011 to coordinate with the USGS and add wells to monitor Intermediate aquifer well water levels in the NW portion of the Valley where quasi-municipal growth has and will continue to occur. Given that all new permitted wells must be completed in the intermediate aquifer, basin over-appropriation, limited availability to appropriate new groundwater (Order# 1116), potential additional domestic wells in due to parcel splits, Churchill County and the State Engineer feel there is a need for an ongoing water level measurement program. Funding under the current CWSD Interlocal Contract #2018-13 in the amount totaling \$56,000 was provided for a 3-year term which ends 6/30/21. It is anticipated there will be a few thousand dollars remaining under the current contract, therefore this 3-year funding request was reduced to a request of \$44,000 from CWSD. This \$12,000 reduction in our request is more reflective of historical "actual" expenditures; and takes into account an increase in Churchill County's match. The county is proposing contribution of in-kind services for administrative costs as well as a direct match of \$10,000 of the total project cost. Therefore, the funding request for this application is seeking \$44,000 for a 3-year term. It was always anticipated in the original contract that this would be an ongoing effort, therefore this funding request seeks additional funding to continue the program for three more fiscal years, through FY23/24.

Project Description /Benefits:

The existing project entailed a detailed review of the USGS reports and water level measurements to identify potential gaps in aerial and vertical (shallow vs. intermediate aquifers) extent to determine where additional water level measurement would be useful. This resulted in approximately 28 wells completed predominately in the Intermediate aquifer being selected for water level measurement. These wells have been measured monthly since ~January 2012 and preliminary results were presented to the Churchill County BOCC and CWSD on 4/23/14 and updated again in a presentation to the Churchill County BOCC on 2/1/18. In May, 2014 approximately 7 more Intermediate aquifer wells were added to the program to fill in identified gaps in the NW portion of the valley. All wells have been surveyed with the County's survey grade Leica GPS unit to obtain accurate coordinates and well-head elevations such that vertical and horizontal gradients can be determined. The County's water level monitoring program which focuses primarily on the Intermediate aquifer compliments the USGS program which focuses mainly on the Shallow and Basalt Aquifers.

In the April 2014 presentation, no significant water level declines were being observed to date in the Intermediate aquifer excepting some localized decline and subsequent recovery of wells located adjacent to the Truckee Canal west of Hazen as a result of the canal being dry and refilling. Intermediate aquifer wells generally showed full recovery during winter months when pumping stresses were at a minimum whereas Shallow aquifer wells showed the just the opposite with full recovery during mid-summer when unlined irrigation laterals and canals were

charged and recharging the shallow aquifer. Vertical gradient measurements showed downward gradients and recharge from the Shallow to Intermediate aquifer. Additionally, there was a correlation between stage of the Carson River and adjacent Shallow aquifer wells.

The Carson Division frequently experiences shortages in surface water deliveries which are summarized since 2012 in the following table, followed by a record flood and water spreading year in 2017.

CARSON DIVISION ALLOCATIONS

YEAR	ALLOCATION	CUTOFF DATE
2012	90%	2-Nov
2013	75%	7-Sep
2014	45%	29-Jul
2015	21%	3-Jul
2016	75%	20-Sep
2017	100%	NONE

Because of the ongoing drought from 2012 – 2016 most of the Intermediate aquifer wells experienced a 1-2 foot/year decline in seasonal high and low water levels. Some localized declines of 2-3 feet/year have been observed near areas of heavy pumping near the Sand Creek municipal and golf course wells. The most heavily pumped area around the Wildgoose farm for irrigation have only shown ~ 0.5 feet/year decline and this is most likely due to recharge from the adjacent V-Line and Carson river. With increased deliveries in 2016 and record flooding and water spreading during 2017, seasonal high-water levels have returned to above 2012 levels in most Intermediate aquifer wells. With shortened irrigation seasons, one large farmer has acquired supplemental groundwater rights to continue irrigation after surface water deliveries have been shut off. If additional farmers adopt this practice and the State Engineer grants supplemental groundwater pumping during drought, this could cause further water level declines during shortage years.

This project is technically and environmentally sound and will assist the water users/managers and public in understanding water issues and the status of their aquifers. It will help identify potential areas where discharge exceeds recharge and aquifer storage change. If areas are identified where there are continued steady water level declines, it could improve and/or trigger additional administration and management in those areas. Since the current and near term quasi-municipal supply is almost entirely dependent upon ground water development in the intermediate aquifer and most of the recharge is associated with Newlands Project losses which are dynamic due to water right transfers and canal lining it is recommended to pursue this monitoring program and adaptive resource management. Part of the justification for the State Engineer issuing Order# 1116 was: 'the present recharge experienced from surface water



2

CARSON WATER SUBCONSERVANCY DISTRICT REQUEST FOR FUNDING FY 2022-23

APPLICANT: Jim Barbee, Churchill County Manager

Name
155 N. Taylor Street, Suite 153

Address
Fallon Churchill

City NV County 89406

State Zip Code

jbarbee@churchillcounty.org 775-423-5136

Email Telephone #

APPLICANT'S AGENT (if different from Applicant):

Chris C. Mahannah, P.E., WRS

Name
PO Box 2494

Address
Reno Washoe

City NV County 89505

State Zip Code

chris@mah2o.com 775-323-1804

Email Telephone #

PROJECT NAME: Dixie Valley Water Level Measurement & Precip Gage Monitoring

PROJECT LOCATION/ADDRESS:

Dixie Valley, NV
Churchill County

PROJECT DESCRIPTION: Briefly describe the project. Provide maps, drawings, photographs or other information. Additional sheets may be attached.

See attached Exhibit A

PROJECT GOALS AND BENEFITS: Briefly describe the project goals and benefits to be realized if the project is implemented, and how it is consistent with the CRASP and/or CRRFMP. Additional sheets may be attached.

See attached Exhibit A. A copy of the Bureau of Reclamation Dixie Valley Plan of Study, dated May 2009 was provided with the original application in February 2016. The project meets criteria 1, 5 & 6 listed above under CRASP & CRRFMP.

TOTAL ESTIMATED PROJECT COST: \$95,000

AMOUNT REQUESTED FROM CWSD: \$71,000

SOURCE OF OTHER FUNDS: List all other sources of funds to be used to match funds requested from CWSD. List the provider of the matching funds and the amount requested from each provider.

FY	CWSD	Churchill	Total
22/23:	\$23,000	\$8,000	\$31,000
23/24:	\$23,000	\$8,000	\$31,000
24/25:	\$25,000	\$8,000	\$33,000
Totals:	\$71,000	\$24,000	\$95,000

ESTIMATED DATE PROJECT TO BEGIN: 7/1/22

ESTIMATED TIME TO COMPLETE PROJECT: 6/30/25

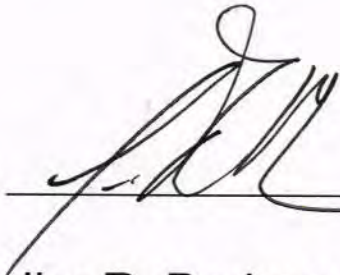
(If completion date is greater than a year, please indicate how much funding is needed in each fiscal year.)

PERMIT REQUIREMENTS: If your project requires a permit, license and/or approval from a governmental agency to proceed, please provide the current status of each requirement. If approval has not been requested or is in progress, please provide the estimated date on which approval can be expected. Additional sheets may be attached. Permitting previously acquired

OTHER INFORMATION: Provide any other information that may be important to the approval of this application.

See attached Exhibit A. A copy of the Bureau of Reclamation Dixie Valley Plan of Study, dated May 2009 was provided with the original application in February 2016

SIGNED: _____



NAME: _____

Jim R. Barbee

TITLE: _____

Churchill County Manager

DATE: _____

1/28/22

Carson Water Subconservancy District reserves the right to deny any and/or all applications for funding.

Exhibit A

Introduction: Churchill County's Water Resource Plans have identified Dixie Valley as a potential long-term underground supply for Quasi-municipal purposes in the Lahontan Valley. This would involve a groundwater importation project which would represent the only supply to Lahontan Valley totally independent of the highly litigated and contested waters of the Truckee and Carson River watersheds and associated underground aquifers. Churchill County currently has the senior most priority pending applications before the State Engineer dating from the mid-1980's to appropriate all remaining underground waters in Dixie Valley for export to the Lahontan Valley.

The natural recharge in to the Carson Desert Hydrographic Basin #101 has been estimated by the USGS at 1,300 afa from precipitation and 1,200 afa inflow from other basins for a total estimate of natural recharge of 2,500 afa. The committed underground water rights and domestic well use exceeds 21,000 afa, therefore the basin is over-appropriated without considering recharge from the Newlands Irrigation project. For this reason, the State Engineer issued Order# 1116 in 1995 limiting any new underground appropriations to 4,000 gallons per day (4.48 afa) or less. Additionally, the State Engineer has rejected recent proposals from developers seeking dedication rates less than 1.12 AF/EDU even when actual use is significantly less than the dedication rate due to the unique circumstances in Basin 101. There are significant losses from unlined canals/laterals and on-farm losses to deep percolation which recharge the shallow aquifer. The Bureau of Reclamation (BOR) has recently expressed interest in canal lining in portions of the basin which could reduce groundwater recharge. The shallow aquifer recharges the intermediate aquifer in the western portion of the basin which is hydraulically connected to the Basalt aquifer in the central portion of the valley. During the drought and reduced Newlands Project allocations, many of the 5,000+ shallow aquifer domestic wells went dry or experiencing water level declines demonstrating the reliance of the valley on recharge from Newlands Project deliveries. CWSD and Churchill County are currently funding water level monitoring projects with the USGS and Churchill County to monitor water levels in the Shallow, Intermediate and Basalt Aquifers.

Recognizing the competing interests for Truckee and Carson River waters and potential for an independent supply, legislation was enacted, and funds allocated under Public Law 110-161 (Sec. 208) to conduct a study to update and quantify the perennial yield or groundwater discharge from the Dixie Valley Flow System (DVFS) shown in Figure 1. This study was a component of the BOR's Desert Terminal Lakes Program, which was authorized by Public Law 107-171 (Sec. 2507). A copy of this Dixie Valley Export Study dated May, 2009 was attached to the original application in February 2016 for reference which explains the study in detail. The detailed study was initiated in 2008 and was completed in 2016. The study team consisted of an interdisciplinary team of experts from the BOR, USGS, DRI, Churchill County, State Engineer, and several private consultants.

The study has identified a potential range of groundwater available for appropriation between 11,200 – 15,600 afa, which assumes a median estimate of groundwater discharge from the DVFS and a range of potentially committed existing underground water rights. Additional water could be available if existing water rights were acquired from unused rights or marginally economical agricultural operations currently pumping groundwater with diesel motors. A

calibrated groundwater flow model has been constructed using data collected during the study. This model was also used to test various pumping scenarios where rates and locations for withdrawal were analyzed. In May 2019, a field trip to Dixie Valley was conducted and attended by CWSD Board members and representatives along with Churchill County representatives and consultants to tour the valley and discuss the study results and ongoing monitoring efforts requested in this funding request.

Project Description /Benefits: The Dixie Valley study included a significant amount of instrumentation and site-specific data collection throughout the DVFS which was described in detail in the BOR plan of study. As part of this study (13) high altitude precipitation storage type gages were installed in watersheds surrounding the DVFS as shown in Figure 2. These gages were installed in 2008 and are monitored semi-annually to determine summer, winter and total water year precipitation volumes. It was always envisioned that maintenance and data collection from these gages would continue beyond the study period several decades to develop a long-term period of record. Additionally, a well inventory was conducted for the study and quarterly water level data collection is ongoing in approximately (25) wells shown in Figure 3. The water level data is important to continue to develop baseline data prior to a possible export project and to identify any current trends from anthropogenic stresses and/or natural climatic variability. There were approximately 20 temporary stream gages installed during the study to quantify ephemeral and perennial streamflow at the mountain fronts and run-on to the playa. Two of these sites are still maintained to continue to develop baseline data from perennial mountain front streams. A complete weather station to collect meteorological data within Dixie Valley was installed and continues to be maintained. The primary purpose of this project and funding request is to maintain the ongoing semi-annual precipitation gage data collection and maintenance and quarterly water level data collection. Secondary benefits which do not add significant cost to the project are continued maintenance of the weather station and the perennial stream gages.

Following are some of the regional and flow system benefits for maintaining the ongoing data collection and equipment maintenance. Precipitation models such as PRISM, developed at Oregon State University were used extensively on many components of this study provide predicted long-term average annual precipitation over the Great Basin and in Dixie Valley. The models have limited actual measurements sites to constrain and calibrate to, especially in central Nevada. If the Dixie Valley precipitation network can be maintained over the long-term (several decades) it will provide valuable information for refinement of long-term precipitation models or trends in a geographic region with sparse data. Thirteen years of precipitation data have been collected thus far which is statistically significant for analysis now however. High altitude precipitation measurements are even sparser in the Great Basin - almost all long-term precipitation stations are situated on low altitude valley floors. Most of the precipitation that becomes available to streams, springs and groundwater recharge to the Great Basin aquifers is derived from high altitude precipitation, not low-altitude (valley floor) precipitation. Maintaining the high-altitude precipitation network in Dixie Valley provides valuable information where data are limited, and ongoing data collection is even more limited. The lack of long-term high-altitude precipitation data collection in the Great Basin is even more concerning given the acknowledged change in climate.

There is considerable geographic and temporal variability in precipitation in the Great Basin. Having basin-specific precipitation and complimentary hydrologic data (water level and stream/spring discharge) will provide needed data from which to define natural hydrologic responses to water resources. In Dixie Valley, a robust back-ground hydrologic baseline dataset will provide valuable information for long-term water resources management, and to identify current or future pumping effects, from potential freshwater development for export to Lahontan Valley and/or continued or expanded geothermal development within the basin. Use of long-term precipitation data from outside the near proximity of a basin, or from low altitudes within a basin, always presents complications and lowers confidence in estimating precipitation and groundwater recharge volumes, and when trying to differentiate natural climate responses from other potential causes to hydrologic changes such as pumping.

Baseline precipitation, groundwater level, and streamflow data collection will allow for refinements to groundwater flow simulations and improved estimates of groundwater recharge and discharge. Annual precipitation measurements are needed to compare, validate, and bias correct annual precipitation products such as PRISM, DAYMET, NLDAS and other gridded climate products that are commonly used as a starting point for estimating groundwater recharge and discharge. These products (including PRISM) are not just long-term average, they are daily, monthly, and annual. Because of this we can easily compare measured monthly and annual totals with the product totals. In addition, precipitation data can be integrated within the PRISM process developed and maintained by Oregon State University, which was done with all the USGS and State high elevation gauges, and now PRISM is using them. We plan on contacting the PRISM group to integrate the precipitation data collected in Dixie Valley into their mapping process. One aspect that is important to the PRISM group for integration into their mapping process is robust quality assurance and control, and the potential for continued operation and maintenance. Currently, we don't have any independent data to compare PRISM precipitation maps except this potential network, and all of Wynn Ross' network in Northern Washoe County.

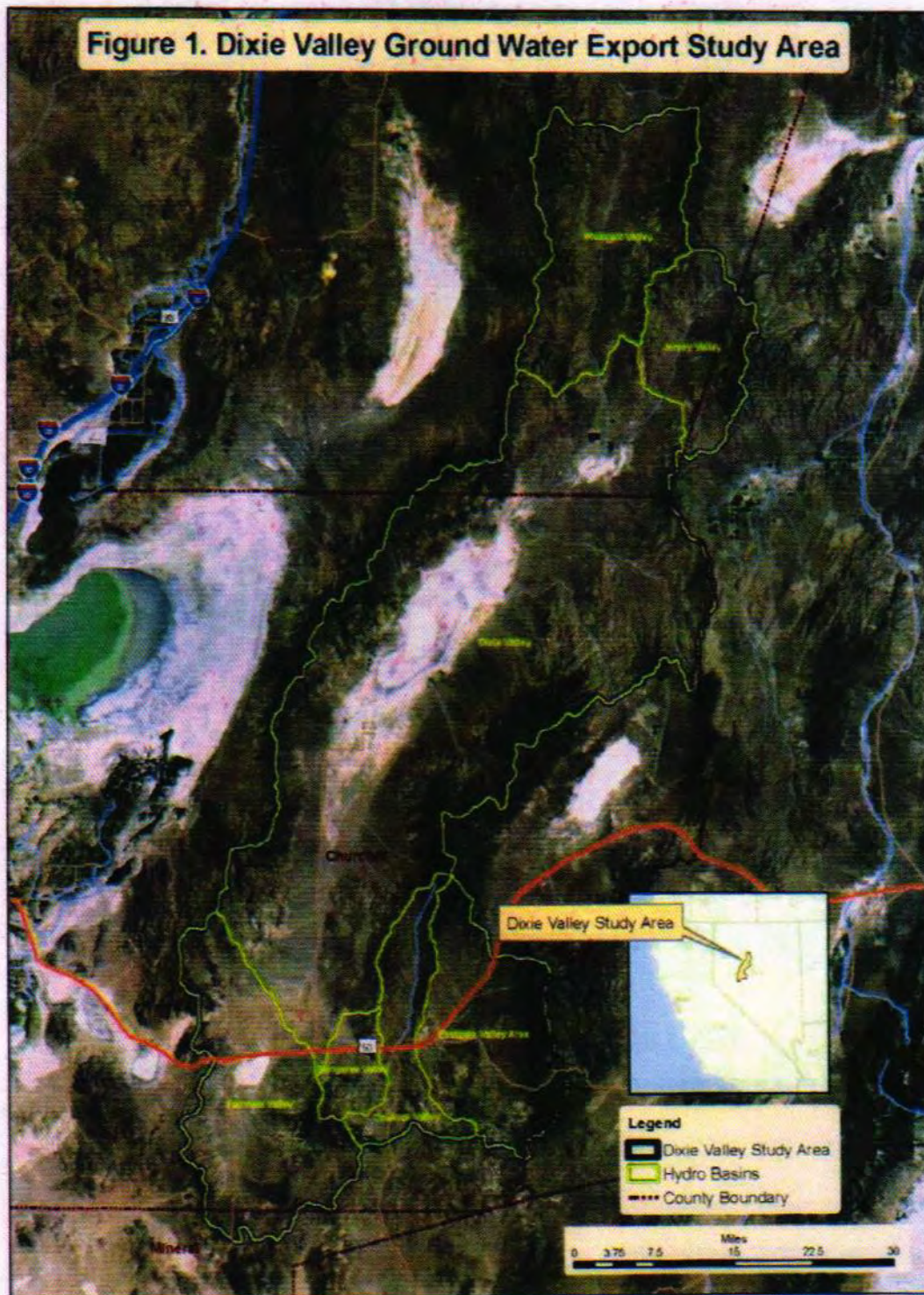
Coordination with Dr. Justin Huntington at DRI who is also affiliated with the Western Regional Climate Center (WRCC) is ongoing to host the data, so it can be made publicly available. Hosting the data is not expensive, however efforts are being taken to set up the database, make all the linkages, and integrate the data within the mapping environment. Additionally, one of Dr. Huntington's graduate students was made available for an in-kind contribution for their time to research integration and hosting the data at WRCC and make comparisons with PRISM, DAYMET and NLDAS which reduces the requested grant amount.

This project is technically and environmentally sound and will assist the water users, managers, hydrologists and public in understanding climate, water issues and the status of their aquifers. It will help identify potential areas where discharge exceeds recharge and aquifer storage change. The project has regional benefits to the Carson River watershed in that it is supporting data collection efforts for an importation project, which if constructed, would lessen the demand on the over allocated and contested waters of the Truckee and Carson River watersheds. There also exists the possibility of resource trading in the Carson watershed if the

importation project were implemented, however this would require additional consideration of feasibility and investigation of possible legal/physical constraints that would need to be overcome. The project also has a larger regional benefit for the west-central portion of Nevada in helping define high altitude precipitation distributions with site specific data where virtually none exists now, and reliance is currently on models such as PRISM.

This funding request is for another three-year term; however it is anticipated for this program to provide continued value as a long-term data collection and management tool, it be continued as an ongoing effort.

Figure 1. Dixie Valley Ground Water Export Study Area



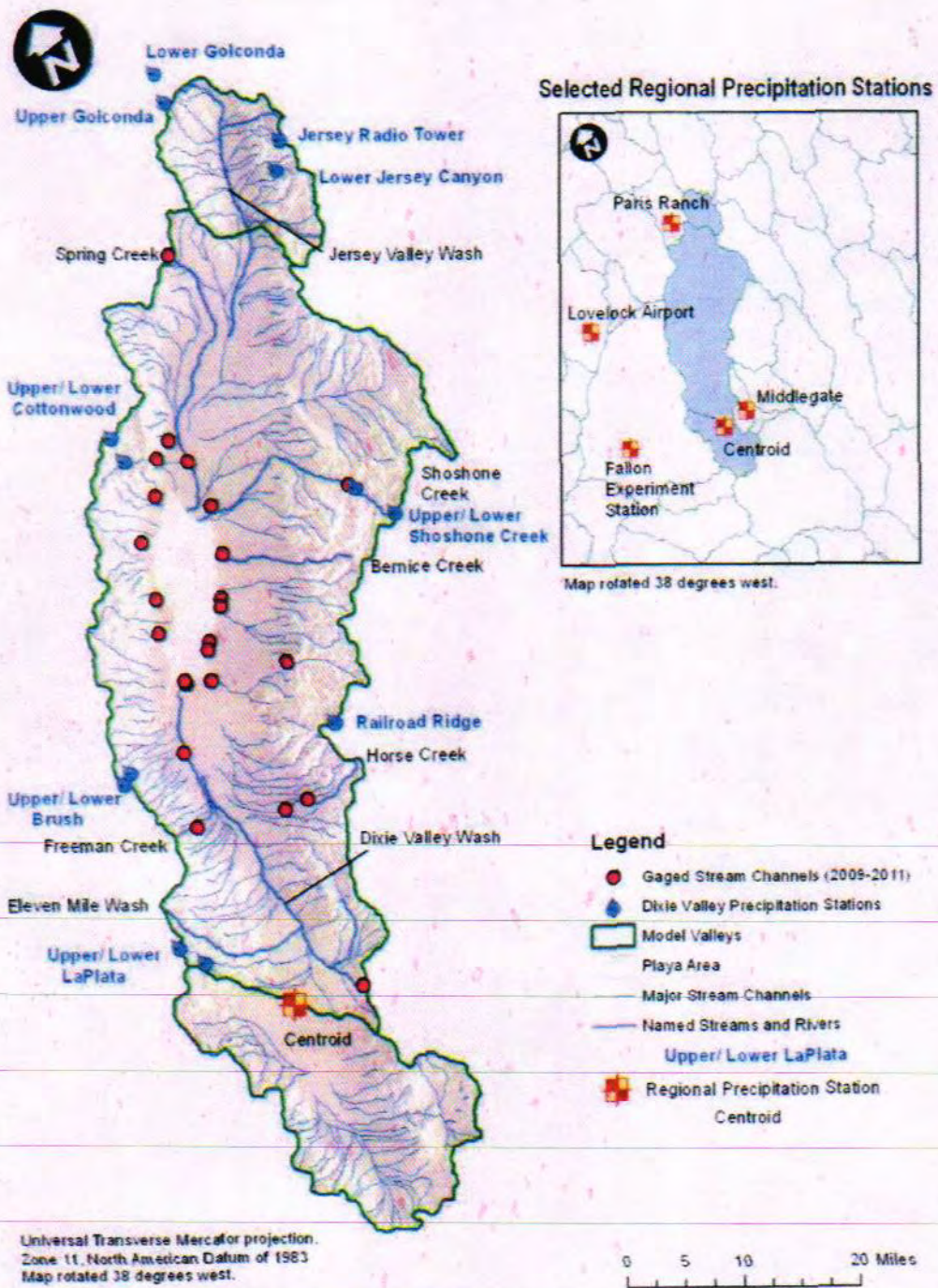


Figure 2. Stream flow and high-altitude precipitation networks within the study area.

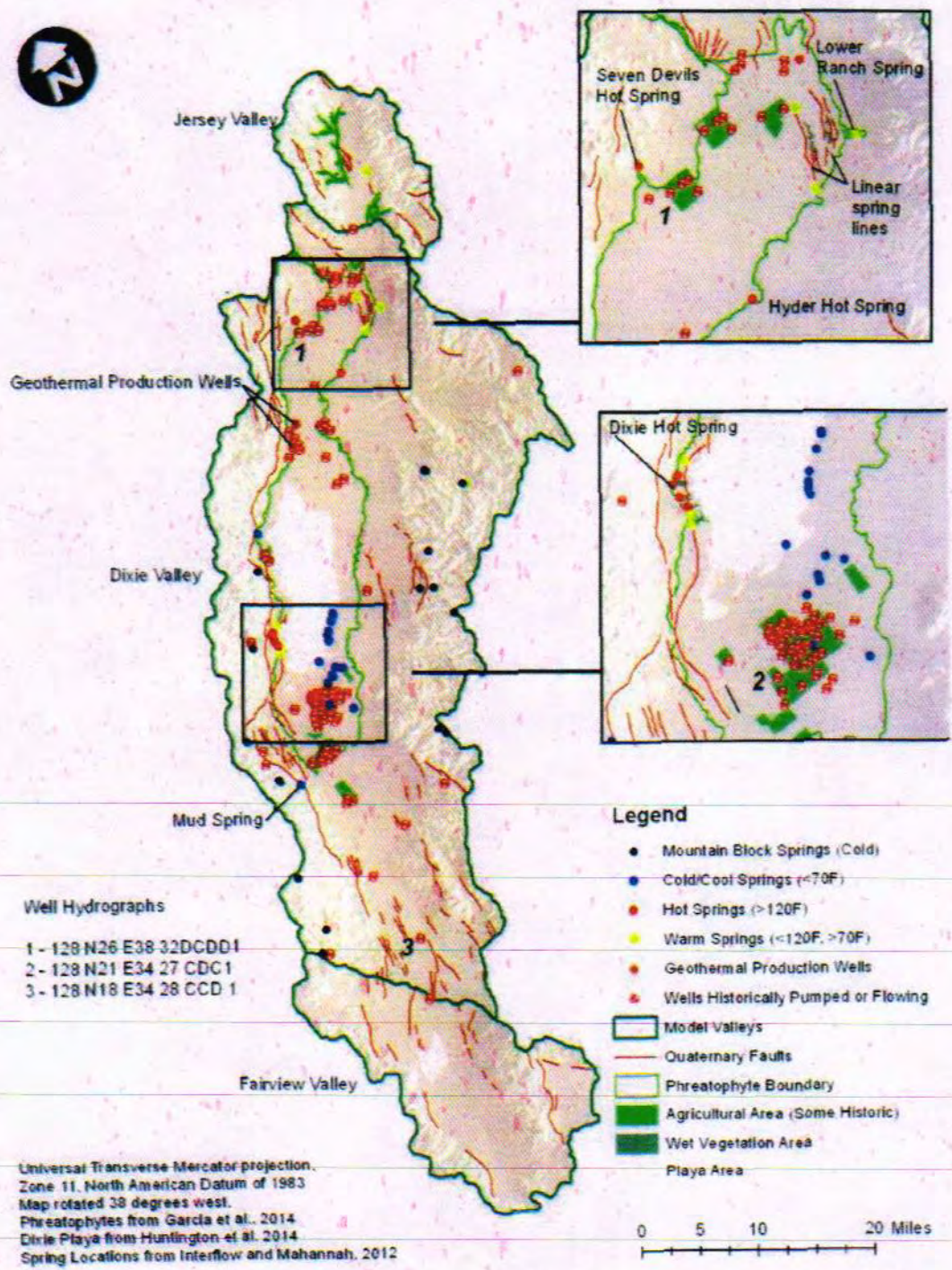


Figure 3. Springs and wells in Dixie Valley.

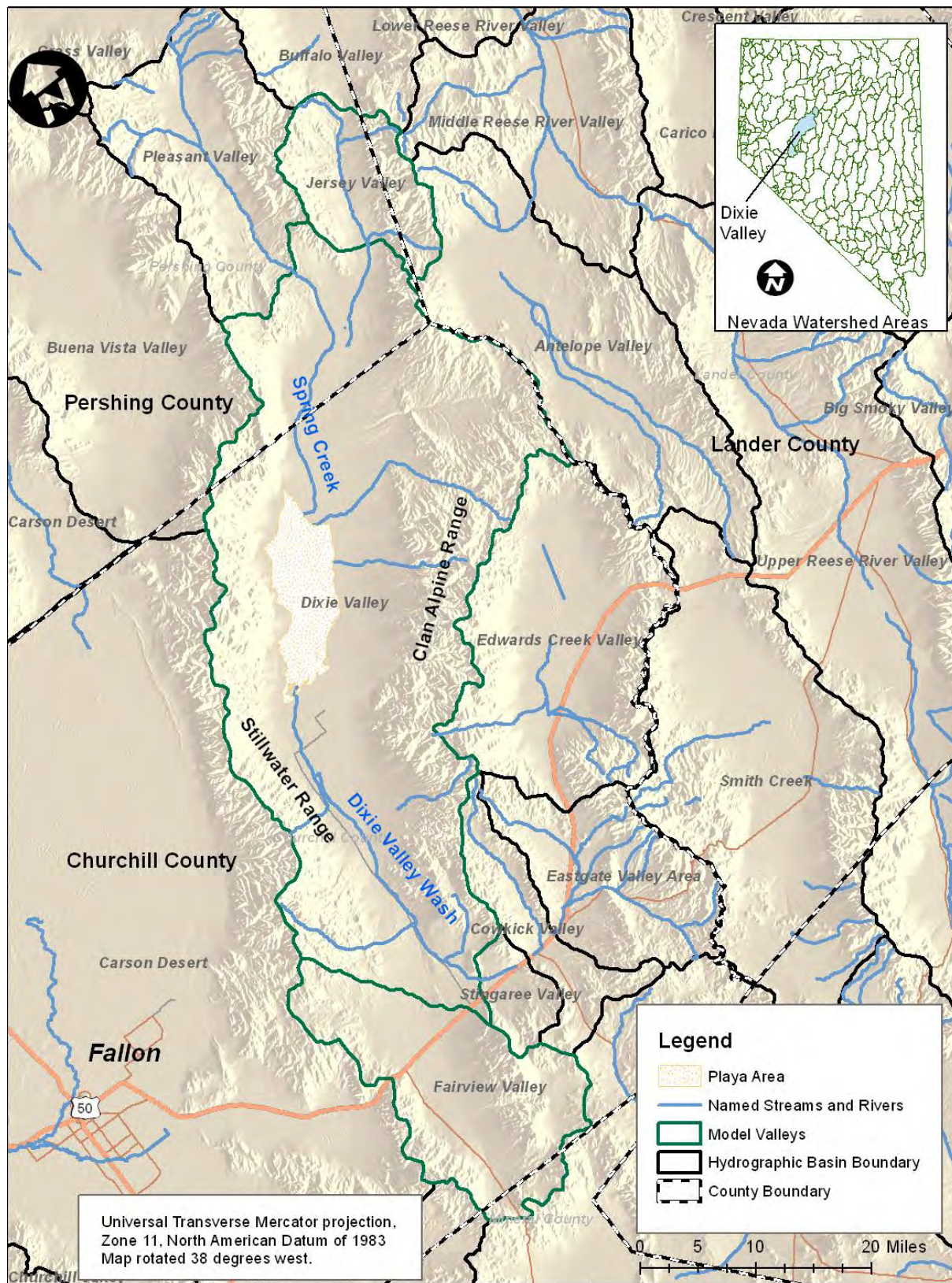


Figure 1. Area overview map for Dixie Valley and the model area.

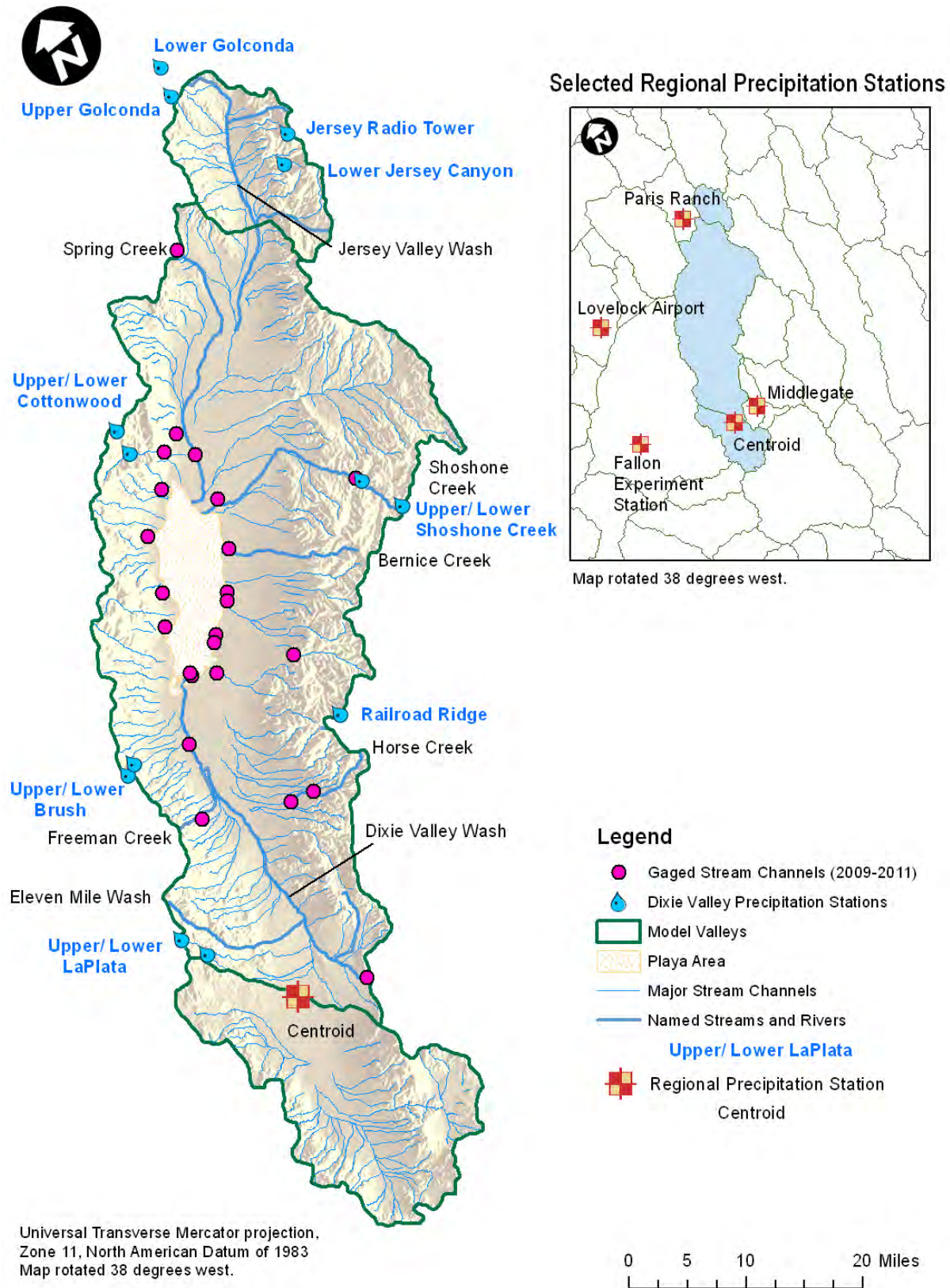


Figure 5. Stream flow and high-altitude precipitation networks within the study area.

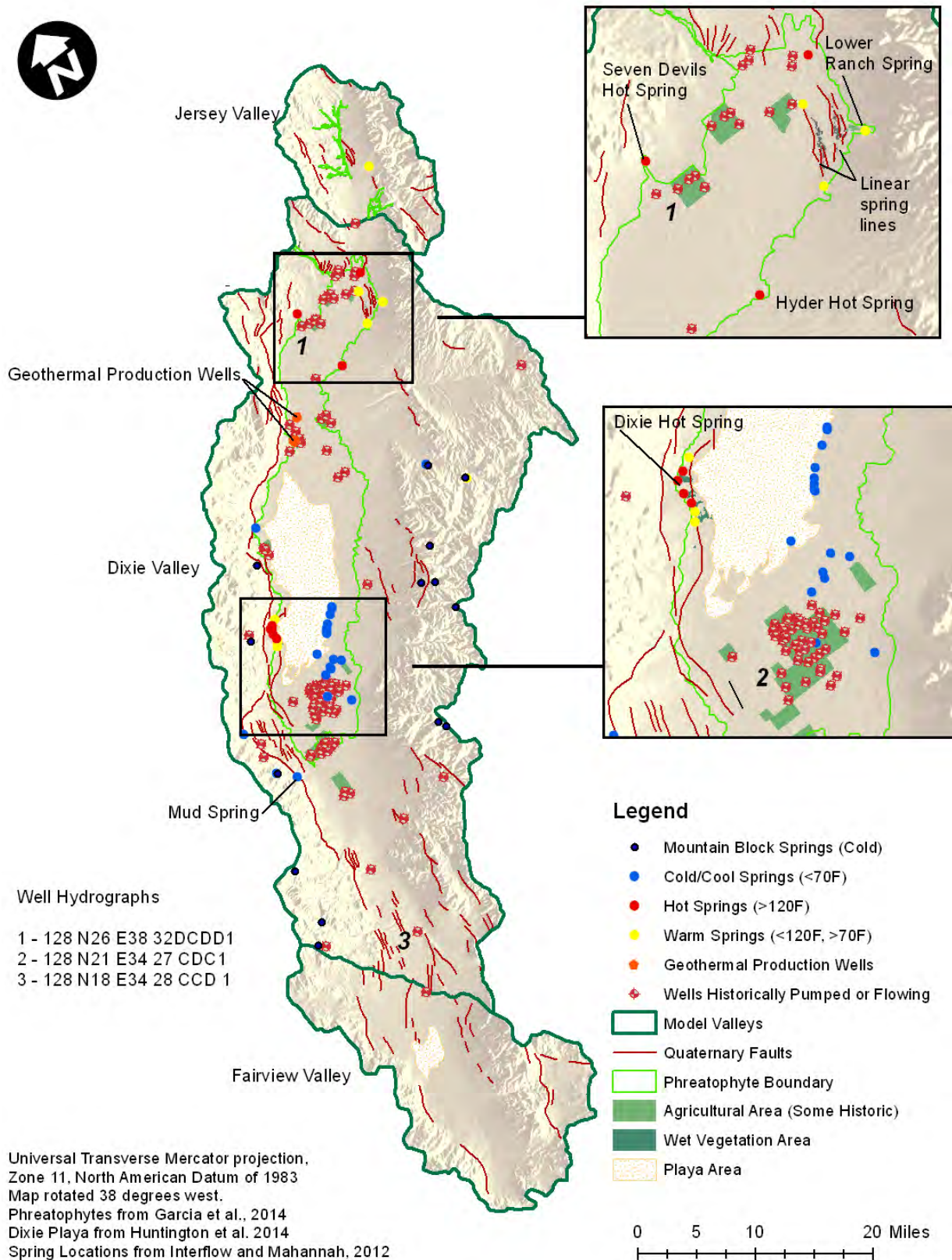


Figure 7. Springs and wells in Dixie Valley.



CARSON WATER SUBCONSERVANCY

APPLICANT: Carson Valley Conservation District

Name

1702 County Rd., Suite A

Address

Minden

Douglas

City

Nevada

County

89423

State

Zip Code

richard.wilkinson@nv.nacdnet.net

(775)782-3661 Ext. 3830

Email

Telephone #

APPLICANT'S AGENT (if different from Applicant):

Richard Wilkinson

Name

1702 County Rd., Suite A

Address

Minden

Douglas

City

Nevada

County

89423

State

Zip Code

richard.wilkinson@nv.nacdnet.net

775-782-3661 ext. 3830

Email

Telephone #

PROJECT NAME: Carson Valley River Projects Maintenance and Repairs

PROJECT LOCATION/ADDRESS:

Multiple locations on the Carson River in Douglas County, NV

PROJECT DESCRIPTION: Briefly describe the project. Provide maps, drawings, photographs or other information. Additional sheets may be attached.

Please See Attached

PROJECT GOALS AND BENEFITS: Briefly describe the project goals and benefits to be realized if the project is implemented, and how it is consistent with the CRASP and/or CRRFMP. Additional sheets may be attached.

Please See Attached

TOTAL ESTIMATED PROJECT COST: \$675,000.00

AMOUNT REQUESTED FROM CWSD: \$215,000.00

SOURCE OF OTHER FUNDS: List all other sources of funds to be used to match funds requested from CWSD. List the provider of the matching funds and the amount requested from each provider.

NDEP 319	\$150,000.00
NDWR	\$150,000.00
CTWCD	\$50,000.00
NDOW	\$25,000.00
DC	\$85,000.00
Total:	\$460,000.00

ESTIMATED DATE PROJECT TO BEGIN: July 1, 2023

ESTIMATED TIME TO COMPLETE PROJECT: June 30, 2024

(If completion date is greater than a year, please indicate how much funding is needed in each fiscal year.)

PERMIT REQUIREMENTS: If your project requires a permit, license and/or approval from a governmental agency to proceed, please provide the current status of each requirement. If approval has not been requested or is in progress, please provide the estimated date on which approval can be expected. Additional sheets may be attached.

Please See Attached

OTHER INFORMATION: Provide any other information that may be important to the approval of this application.

SIGNED: Richard Wilkinson

NAME: Richard Wilkinson

TITLE: Manager/Coordinator

DATE: 12/26/22

Carson Water Subconservancy District reserves the right to deny any and/or all applications for funding.

Projects Objectives:

The CVCD would like to request funding to repair or modify existing structures which include the Running River Ranch, Cradlebaugh, downstream of the Riverview Bridge and the channel clearing snagging work near the Highway 88 bridge. These projects need additional bioengineering treatments, sediment removal, shaping, and additional rock rip-rap barbs and bank protection. The objectives include:

Utilizing instream materials to replace eroded bank and protecting it with rock riprap and bioengineering techniques.

Stabilizing eroding banks and removing excess sand and gravel deposits and minimizing channel migration near the HWY 88 bridge.

Adding additional rock riprap stream barbs to ensure bank slope protection and push the thalweg to the center of the river channel near the running river ranch project.

Replace and add additional willow poles, container plants, and reseedling of the Cradlebaugh project. Install and maintain a temporary irrigation system to help germination of container plants and seeding. Purchase temporary water rights from CWSD to allow for legal irrigation for two consecutive seasons for the Cradlebaugh project.

Projects Overview:

The Carson Valley Conservation District has noted some minor impacts to existing riverbank stabilization projects in Carson Valley. The first location is the Running River Ranch Bank Stabilization which was completed in the Fall of 2021. At this location we noted significant sedimentation forming on the inside of the meander bend forcing more hydraulic energy toward the outside meander bend. This has caused some erosion within one section of the project. In addition to this repair, we have determined that there is a need to place two more stream barbs at this location which should improve the overall function of the restoration.

The district has also noted that the bioengineering treatments at the Cradlebaugh restoration site have been impacted by low natural spring runoff and precipitation over the last 3 years. The district would like to replace some of the containerized plants, seeds, and willow poles at this location. In addition to the planting, the district would like to help supplement the irrigation for this project by renting or purchasing a temporary irrigation system and purchasing temporary water rights from the Carson Water Subconservancy District. This supplemental irrigation would occur for two seasons helping with germination and providing the plants with enough water to become sustainable.

The project on HWY 88 has endured heavy sands and gravel accumulations causing accelerated erosion to the south bank (Once protected by a bioengineering project from 2017). The district would need to replace some materials on the south bank, shaping it to a 2-to-1 slope and protecting the bank with Rock riprap. Additional materials would need to be removed and taken out of the 100-year floodplain so the channel can accommodate additional flows without impacting the HWY 88 bridge and roadway.

Projects Methods:

CVCD would harvest and install willow poles, containerized plants, and native or desirable seed to help mitigate erosion. The district would utilize in-stream sand and gravel deposits to reshape the eroding riverbank and install rock riprap for slope protection. Additional materials will be removed and taken outside of the 100-year floodplain. The district would install a temporary irrigation system to supplement our plantings and seed. By purchasing water rights for two consecutive seasons, we feel that we can improve both germination and sustainable plant establishment. The district would install two additional stream barbs helping push the hydraulic energy away from the riverbank and improve sediment deposition between barbs.

Projects Goals:

Re-establish desirable vegetation

Stabilize eroding riverbanks

Improve water quality

Mitigate future sediment transport

Improve wildlife habitat
Increase channel capacity
Mitigate potential impacts on HWY 88 bridge and roadway
Mitigate potential impacts to a Nevada Energy easement road

Projects Tasks:

Initiate project stakeholder meetings
Start the process of renewing or applying for permitting
Establish landowner access with formal right-of-entry permits
Hire a consultant for support with design and bidding documents
Determine the need for repairs or modifications
Solicit formal bids from contractors
Start construction and harvesting of bioengineering materials and plants
Purchase or rent an irrigation system
Seasonal operation of irrigation system
Quarterly reporting and reimbursements
Complete construction
Submit final reports and reimbursements

Scope of Work (Workplan):

CVCD is mandated to maintain our existing projects installed on the bed and banks of the Carson River which is owned by the State of Nevada. To meet our objectives for keeping these existing projects functioning as designed, we intend on doing some minor maintenance or modification to several locations. The first location is the Cradlebaugh Bridge project completed in 2019. This project was completed with all bioengineering techniques and upon our most recent monitoring trip we noted that a lot of the planting and seeding completed had not germinated. The district feels that this is a direct result of little precipitation or spring runoff levels needed to irrigate these plantings. The district intends on replanting containerized plants and reseeding the banks and upland. In addition to replanting, we would like to supplement irrigation for this project site for two seasons. The district would rent or purchase a temporary irrigation system, purchase water rights, and irrigate out of the river until we see germination and sustainable growth.

The project that CVCD monitored and noted issues with was the Running River Ranch completed in the Fall of 2021. At this location, we noted 100 feet of scour which had impacted our rock riprap along the toe of the riverbank. In addition to this, we observed a lot of shear stress on the tip of the log vein. After meeting with our engineer, we determined that because the meander bend is so sharp that we may need to add a couple of small rock barbs to help deflect the flow from the banks and keep that thalweg in the center of the channel. The district would also repair the damaged toe trench during the construction.

The final location where the district would like to perform routine maintenance is at the Highway 8 bridge site. This location continues to see a significant build of sand and cobble bars which have forced the accelerated erosion of the south riverbank. This essentially destroyed our 150 feet of bioengineering work completed in 2020. The district has determined that we would like to utilize instream materials to replace the eroded riverbank. In addition, we would also like to remove excess materials to restore channel capacity and protect the south riverbank with rock riprap. In this location would be very difficult to establish vegetation due to the fact materials on site are not suitable for planting willows.

Measures of Success:

The district continues to monitor all projects that were designed and constructed by the conservation district. Annually staff returns to multiple locations to determine if the projects are intact and functioning as designed. Once we repair or slightly modify these projects, we hope to see improvements in the germination and growth of our willows, container plants, and seeding. As described earlier we intend on improving the function of the running river ranch project which has some erosion and scour noted. Our work will improve the project's ability to trap sediment, deflect hydraulic energy and

allow for the natural recruitment of water-loving plants. Our efforts near the HWY 88 bridge will re-establish slope protection and help mitigate impacts on the bridge structure. Our original bioengineering project at this location failed because it is very difficult to establish vegetation in cobbly soil.

Monitoring and Maintenance Program:

These projects are proof that the conservation district takes pride in annual monitoring. These existing projects are being considered because of our focus on annual photo monitoring and site visits. We will continue to visit each site and determine if it is still functioning as designed. One of the requirements with the Nevada Division of State Lands' right of entry permit is to actively maintain our project work for 20 years. We will continue to monitor and maintain these projects in the future.

PERMIT REQUIREMENTS:



United States Army Corp. of Engineers Nationwide Permit
Nevada Department of Environmental Protection Working Waterways Permit
Nevada Division of State Lands Right of Entry Permit
State Historic Preservation Office Archeological Section 106
CVCD Landowner Access Owners Right of Entry Permit

Cradlebaugh River Bioengineering Maintenance

Proposed erosion repair 500 feet



Legend

-  550 feet of erosion carson river
-  Erosion Downstream of Cradlebaugh Bridge











4

CARSON WATER SUBCONSERVANCY DISTRICT REQUEST FOR FUNDING FY 2023-24

APPLICANT: Dayton Valley Conservation District

Name
34 Lakes Blvd. PO Box 1807

Address
Dayton Lyon

City NV County 89403

State Zip Code

rholley.dvcd@yahoo.com 775-246-6220 ext. 1878

Email Telephone #

APPLICANT'S AGENT (if different from Applicant):

Rob Holley

Name
same

Address
same same

City same County same

State Zip Code

same

Email Telephone #

PROJECT NAME: Pradere & Ricci Stabilization/Channel Maint & Riparian/Bridge Protection

PROJECT LOCATION/ADDRESS:

Middle Carson River,
Upstream from Dayton Bridge

PROJECT DESCRIPTION: Briefly describe the project. Provide maps, drawings, photographs or other information. Additional sheets may be attached.

Reference attached

PROJECT GOALS AND BENEFITS: Briefly describe the project goals and benefits to be realized if the project is implemented, and how it is consistent with the CRASP and/or CRRFMP. Additional sheets may be attached.

Reference attached

TOTAL ESTIMATED PROJECT COST: \$745,000
AMOUNT REQUESTED FROM CWSD: \$100,000

SOURCE OF OTHER FUNDS: List all other sources of funds to be used to match funds requested from CWSD. List the provider of the matching funds and the amount requested from each provider.

Reference attached summary of awarded and pending funds

ESTIMATED DATE PROJECT TO BEGIN: survey/engineering already initiated

ESTIMATED TIME TO COMPLETE PROJECT: 12 months, or Spring of 2024
(If completion date is greater than a year, please indicate how much funding is needed in each fiscal year.)

PERMIT REQUIREMENTS: If your project requires a permit, license and/or approval from a governmental agency to proceed, please provide the current status of each requirement. If approval has not been requested or is in progress, please provide the estimated date on which approval can be expected. Additional sheets may be attached.

Reference attached

OTHER INFORMATION: Provide any other information that may be important to the approval of this application.

SIGNED: Robert K. Holley

NAME: Robert Holley

TITLE: District Mgr, DVCD

DATE: January 18th, 2023

Carson Water Subconservancy District reserves the right to deny any and/or all applications for funding.

PROJECT PURPOSE & DESCRIPTION:

The requested funds are intended to accompany other CWSD and matching funds in order to address the cost of cultural assessment, engineer's survey, engineering costs, permitting, and partial, if not complete construction of critical bank stabilization and channel maintenance at and directly upstream from the Dayton Bridge.

The Dayton Bridge has three passageways through which water flows. The primary passage (west and closest to Hwy 50) remains clear and free of restrictions, while the center passage has gathered sediment. The high water passage beneath the east end of the bridge is rendered minimally functional as a result of cottonwood/willow growth, and sediment deposition from Eldorado Canyon, which meets the Carson River immediately upstream from the bridge. Collectively, the restricted capacity of the center and east passages impacts the ability of the bridge to effectively pass high flows, impacting the safety of the bridge, access to adjoining communities, and flood damage to upstream properties in even moderate flood events such as 2017.

The Baroni diversion, ¼ mile upstream from the Dayton Bridge, frequently catches mature cottonwood trees which have fallen from eroding banks into the river channel. Should these deadfalls break loose during high water events (including annual spring runoff), they present a significant danger to the bridge, and will serve as strainers, catching additional debris on the upstream of the bridge, thereby raising water levels at the bridge.

Further exacerbating the situation is a large bar of cobble and sand at the Baroni diversion. This deposit was left after the two flood events of January and February 2017 and originated from a levee originally constructed by the US Army Corps of Engineers in the early 1960s. After its destabilization in 2017, the levee continues to erode during normal high water flows, adding sediment, and contributing more cottonwoods to the river.

Immediately upstream from the Baroni diversion are two long, actively eroding banks. Located on the Ricci and Pradere properties, these banks continue to erode in even normal water years, and are the source of the large cottonwood trees and significant amounts of sediment coming from the banks. These banks are the only sites upstream from Dayton Bridge that have not been stabilized since DVCD projects were implemented after the 1997 floods. They are the only active and significantly eroding sites in this stretch of river.

These banks are located within close proximity to numerous historic mill sites and areas of known high concentrations of mercury.

Additionally, in the area of and upstream from the eroding banks, the river channel has become narrow and choked with willows and woody vegetation. These areas constrict the flow, raise water levels onto adjoining private lands, and exacerbate the erosion of the banks and the deepening of the narrow river channel.

PROJECT GOALS AND BENEFITS:

This project is intended to address the following goals (working downstream):

1. Increase the capacity of the river channel in the area adjacent to and upstream from frequently flooded areas and eroding stream banks.
2. Stabilize and protect private property, restore actively eroding banks, sequester mercury and minimize its introduction into stream flows, and protect the mature cottonwood gallery in that area from continued loss.
3. Restore the location and function of the US Army Corp's levee in order to protect the Baroni diversion from continued obstruction, to reduce active sediment deposition in the river, and to prevent uncontrolled river flow from entering the Baroni ditch and adjacent private lands.
4. Restore and protect the capacity of the Dayton Bridge and remove willows, cottonwood trees and sediment at the bridge, below the confluence with Eldorado Canyon, and to a point near and below the bridge. Stabilize eroded banks at the terminus of Eldorado Canyon, left eroded by the 2017 floods.

This project site has long been identified as necessary for the protection of highly erodible riparian communities, irrigation infrastructure, vital transportation corridors, and adjacent agricultural, residential, and commercial/industrial properties.

PROJECT PLANS:

A complete site survey has been completed, and detailed engineering plans are in development.

The erosion sites are characterized by steep vertical banks devoid of vegetation. Mature cottonwood trees survive in the floodplain adjacent to the banks, and fall into the river annually. The base of the bank has minimal vegetation, leaving the escarpment prone to continued severe erosion at even normal flows. This project has been identified for several years as a high priority. The design will include stream barbs, four (4) rock refusal trenches, and rip-rap toe protection. Bio-engineering will be incorporated, as will erosion matting, and native seed mixes. The riverbank will be reshaped to a 3 to 1 slope.

Material for bank restoration and slope establishment will be obtained from within the project site from existing, constricting sand bars within the stream banks. This material will be rich in willow material, which will help address the bioengineering aspect and aid in the establishment of native vegetation.

Detailed plans, developed by RO Anderson Engineering, will be provided to all funding partners when made available.

Similar projects completed in Dayton Valley have been highly successful and have withstood both the high floods and runoff periods of recent years.

PERMITS:

As soon as plans are +/- 60% completed, application will be made to the following agencies:

US Army Corp of Engineers

Nevada Division of Environmental Protection

Nevada Division of State Lands

Additionally, and through the aforementioned processes, notification and authorization will be obtained from multiple agencies regarding historical/archaeological impacts, endangered/sensitive species, etc.

MONITORING AND METRICS:

Dayton Valley regularly monitors projects within the district by visual monitoring and reporting from staff/landowners. Projects are monitored regularly, and always after flood or high runoff events. As needed, funds are sought to make needed repairs.

DVCD maintains the NDEP maintenance permit and works with permitting and funding agencies to ensure that maintenance needs are met and project integrity and function is not diminished.

Additional water/sediment and site testing will be conducted when required for permit compliance.

ESTIMATED PROJECT COSTS:

Category	TOTAL BUDGET
Salaries/Fringe	\$60,000
Archaeologic Survey	\$10,000
Engineering/Survey	\$40,000
Operating/Supplies	\$5,000
Travel/Equipment Costs	\$5,000
Contractor Services	\$625,000
TOTAL	\$745,000

FUNDING:

Source	Amount	
Project Funds		
NDOT	\$100,000.00	Pending contract
Lyon County	\$150,000.00	Awarded
NDEP 319 (H)	\$200,000.00	Requested/Pending
CWSD (FY2023)	\$118,000.00	Awarded
CWSD (FY2024 requested)	\$100,000.00	Requested
CTWCD (FY2023)	\$50,000.00	Awarded
CTWCD (FY2024)	\$30,000.00	Pending
Overall Total:	\$ 748,000.00	

TIMELINE:

Timeline	Date
Initiate Archaeological and Engineering Surveys and Engineering documents	Initiated Fall, 2023, survey complete, engineering underway
Initiate Permitting Process	Winter 2023
Complete Engineering and Permitting	Summer, 2023
Begin Construction	Fall 2023
Complete Construction	Winter/Spring, 2024

PROJECT LOCATION/ADDRESS:

**Carson River Channel below
Diversion Dam to the Carson Sink**

PROJECT DESCRIPTION: Briefly describe the project. Provide maps, drawings, photographs or other information. Additional sheets may be attached.

The project is an ongoing effort to create a river channel that is clear of obstructions/abstraction and provides a free flow at natural choke points. For example, the Highway 50, Highway 95 and Bafford Bridges has historically been clogged by debris during high water flooding events. Obstructions in these locations causes back up and overflow that moves into residential housing areas in both the county and city of Fallon. Locations where sediment caused islands changed the flow, eroded banks, or blocked flows under bridge. Removal of sediment will provide debris/obstructions to flow downstream more freely.

PROJECT GOALS AND BENEFITS: Briefly describe the project goals and benefits to be realized if the project is implemented, and how it is consistent with the CRASP and/or CRRFMP. Additional sheets may be attached.

This project will prevent and minimize property loss and other damage during flood conditions. Riverbank stabilization after sediment removal will minimize erosion, improve water quality and re-establish native vegetation. Maintaining a clear channel will enable the citizens to utilize the river for recreation. Maintaining an adequate velocity of the river flow prevents stagnant pools from developing where mosquitoes can propagate and create health issues for residents along the course of the Carson River.

TOTAL ESTIMATED PROJECT COST: \$ 59,000.00

AMOUNT REQUESTED FROM CWSD: \$ 29,500.00

SOURCE OF OTHER FUNDS: List all other sources of funds to be used to match funds requested from CWSD. List the provider of the matching funds and the amount requested from each provider.

Churchill County Grant Funding	\$ 6,500.00
In-kind Match:	
Lahontan Conservation District	\$ 10,000.00
Administration and Equipment	
Landowners Equipment and	\$ 13,000.00
Labor	
Total	\$ 29,500.00

ESTIMATED DATE PROJECT TO BEGIN: November 1, 2023

ESTIMATED TIME TO COMPLETE PROJECT: March 30, 2024
(If completion date is greater than a year, please indicate how much funding is needed in each fiscal year.)

PERMIT REQUIREMENTS: If your project requires a permit, license and/or approval from a governmental agency to proceed, please provide the current status of each requirement. If approval has not been requested or is in progress, please provide the estimated date on which approval can be expected. Additional sheets may be attached.

Permit with the Nevada Division of Environment Protection.

- Site/ID Invoice # GMNT-40165
- Permit type: Routine Maintenance Activities
- Valid from July 1, 2022, to June 30, 2023 (Pending July 1, 2023, to June 30, 2024)

OTHER INFORMATION: Provide any other information that may be important to the approval of this application.

It takes a combination of debris, foliage, beaver dam and sediment removal to maintain a clear channel. This work effort provides the following benefits on an annual basis and must also be maintained and continued to overcome the normal foliage growth, discarding of manmade debris and natural obstructions that enter the channel repeatedly.

Downstream benefits to improve the Carson River Watershed.

- Minimize stream bank erosion, improve water quality, and re-establish native vegetation.
- Reduce flooding risk along the Carson River, particularly to residential and commercial development.
- Reduce flood damage risk to water and sewage infrastructure installed in Churchill County.
- Improve the administration and management of the river and stream system.
- Improve the opportunities for citizens to use the river for recreational purposes.
- Maintaining a clean/clear river channel will improve water quality and aid the overall stewardship plan.

SIGNED: Christy Sullivan

NAME: Christy Sullivan

TITLE: District Clerk

DATE: January 19, 2023

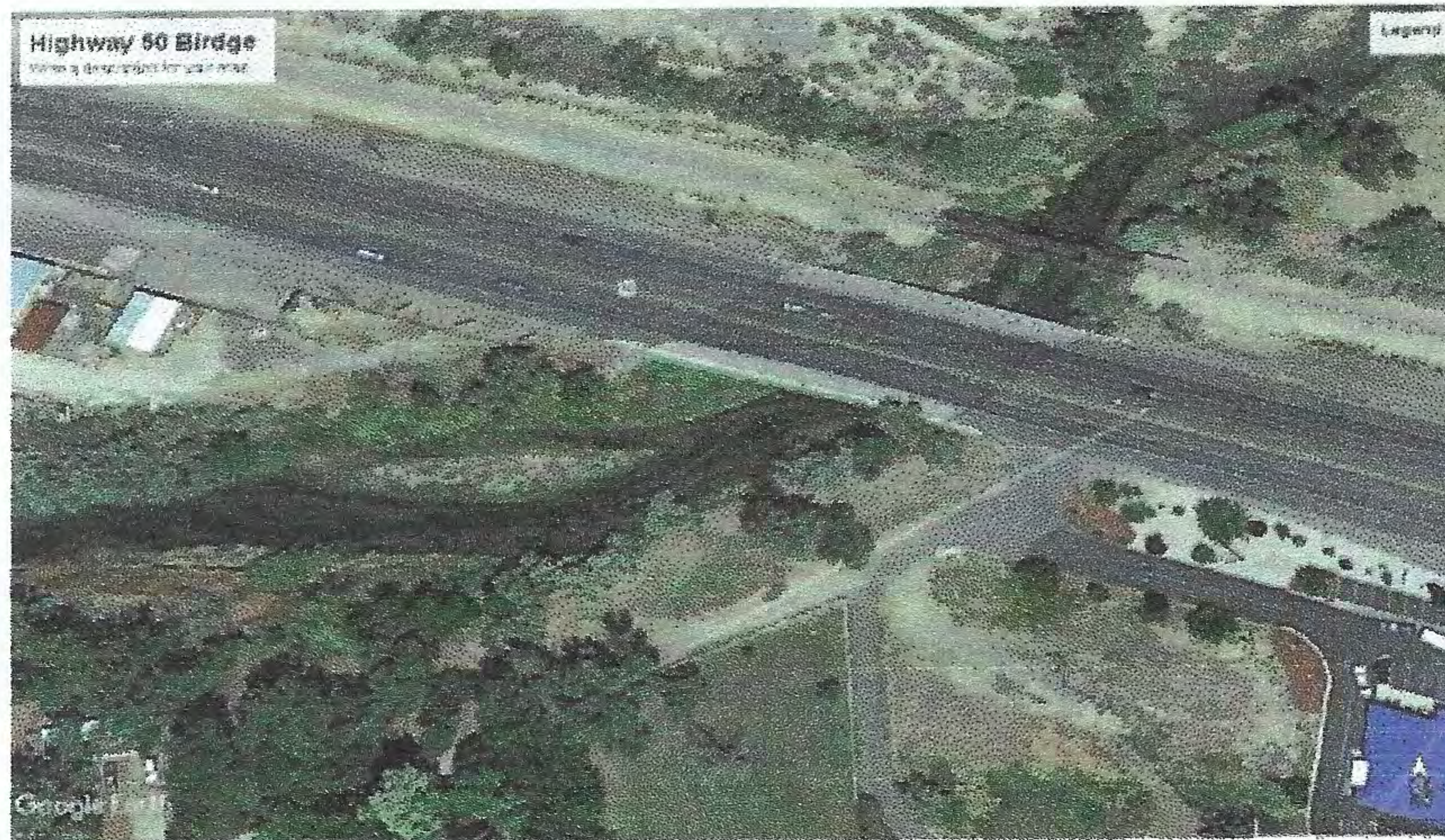
Carson Water Subconservancy District reserves the right to deny any and/or all applications for funding.

95 N Bridge



TREES AND
BRUSH

Highway 50 Bridge



SEDIMENT





6

CARSON WATER SUBCONSERVANCY DISTRICT REQUEST FOR FUNDING FY 2023-24

APPLICANT: River Wranglers

Name
P.O. Box 162

Address
Dayton Lyon

City Nevada County 89403

State Zip Code

rw@riverwranglers.org 775.386.2743

Email Telephone #

APPLICANT'S AGENT (if different from Applicant):

Rebecca Feldermann, Executive Director

Name
Same as above

Address

City County

State Zip Code

Email Telephone #

PROJECT NAME: Conserve the Carson River Workdays

PROJECT LOCATION/ADDRESS:

Multiple locations in the Carson River watershed

PROJECT DESCRIPTION: Briefly describe the project. Provide maps, drawings, photographs or other information. Additional sheets may be attached.

See attached.

PROJECT GOALS AND BENEFITS: Briefly describe the project goals and benefits to be realized if the project is implemented, and how it is consistent with the CRASP and/or CRRFMP. Additional sheets may be attached.

See attached.

TOTAL ESTIMATED PROJECT COST: 100,000.00

AMOUNT REQUESTED FROM CWSD: 30,000.00

SOURCE OF OTHER FUNDS: List all other sources of funds to be used to match funds requested from CWSD. List the provider of the matching funds and the amount requested from each provider.

See attached.

ESTIMATED DATE PROJECT TO BEGIN: July 1, 2023

ESTIMATED TIME TO COMPLETE PROJECT: June 30, 2024

(If completion date is greater than a year, please indicate how much funding is needed in each fiscal year.)

PERMIT REQUIREMENTS: If your project requires a permit, license and/or approval from a governmental agency to proceed, please provide the current status of each requirement. If approval has not been requested or is in progress, please provide the estimated date on which approval can be expected. Additional sheets may be attached.
N/A

OTHER INFORMATION: Provide any other information that may be important to the approval of this application.

See attached.

SIGNED: Rebecca L. Feldermann

NAME: Rebecca L. Feldermann

TITLE: Executive Director

DATE: 1.18.2023

Carson Water Subconservancy District reserves the right to deny any and/or all applications for funding.



CARSON WATER SUBCONSERVANCY DISTRICT

REQUEST FOR FUNDING FY 2023-24

APPLICANT: River Wranglers

PROJECT DESCRIPTION: Briefly describe the project. Provide maps, drawings, photographs or other information. Additional sheets may be attached.

River Wranglers continues to host Conserve the Carson River Workdays (CCRWD) throughout the Carson River watershed. We are thrilled to have begun the process of getting back in the classroom and at the river with students. As we continue to navigate the post-pandemic world with the schools, our workday model primarily remains the same but due to new guidelines and restrictions we have been required to sometimes make adjustments in order to continue this vital program. As allowed, we continue to go into high school FFA and science classrooms to teach high school students the necessary information and skills so that they in turn can teach elementary students at the river in a combined workday. The high school students are trained in activities that teach children about our watershed, the importance of clean water, the water cycle, and nonpoint source pollution. At the river, they become “mentors” to the younger students, spending the day with them, leading them through the activities. If high school students are unable to participate, we still provide an enriching workday with the assistance of professional volunteers from many of our partners including CWSD, NDEP, CCP&ROS, NDOW, The Nature Conservancy, RCI, and others. In addition to the educational stations, we partner with conservation districts to include river work projects that the students complete together. After workdays, elementary students are visited by River Wranglers staff to do a “wrap-up,” which reinforces the messages they learned at the river. We once again discuss nonpoint source pollution, the geography and features of the watershed, and the importance of the river and watershed to their own lives. We do a pre- and post-test with all involved students to track their increase in knowledge about the watershed and nonpoint source pollution to gauge the effectiveness of our programs.

PROJECT GOALS AND BENEFITS: Briefly describe the project goals and benefits to be realized if the project is implemented, and how it is consistent with the CRASP and/or CRRFMP. Additional sheets may be attached.

River Wranglers wants students to value the Carson River watershed and recognize their place and role in it. We want them to understand that their actions have impacts, and that even as children, there are things they can do to help with the health of the watershed. Ultimately, our overarching goal is to bring awareness and action to nonpoint source pollution issues in our watershed. By reaching children at this impressionable age, we hope to help them recognize their relationship to the watershed and the river, and to make them care for and be aware for the duration of their lives. Furthermore, our hope is that they share this awareness with their parents, families, and other members of the community.

Our goals include reaching every student in the watershed sometime during their K-12 years. We work with many of the schools in the Carson River watershed in a given year; in some counties we work with every school. We strive to reach schools that have not been reached in the past or have not participated in events since the pandemic. High school students and their teachers who get the opportunity to participate in workdays report the benefits of increased confidence in public speaking, leadership skills, and an appreciation of working with younger children. They have an increased sense of responsibility in overseeing the teaching of students and keeping them safe during the workday. When River Wranglers staff goes back into the elementary classrooms for wrap-ups, we are greeted with enthusiasm, excitement, and thank you notes expressing appreciation for all the things they learned and often their favorite part of the workday and what station they really enjoyed. This could be learning about beaver adaptations, the journey water takes through the water cycle, why it is important to pick up their dog's poop, planting pollinator plants, wrapping trees for beaver protection, learning about flora and fauna in their own backyard, or an overall excitement to be outside and at the river. It is especially important for these "pandemic" students to participate in these workdays as many of these 4th and 5th grade classes have never had a field trip, let alone ventured to the Carson River.

Years later, when we see the students again in high school or out in the community, they remember their field trip in 4th or 5th grade. They remember learning about their watershed and visiting the river, and they remember that they are stewards of the environment.

SOURCE OF OTHER FUNDS: List all other sources of funds to be used to match funds requested from CWSD. List the provider of the matching funds and the amount requested from each provider.

River Wranglers is currently involved in a grant through NDEP for environmental education. This cycle extends through the third quarter of the 2022-23 fiscal year. After that money is exhausted, we have an award of another grant from NDEP for the next cycle.

OTHER INFORMATION: Provide any other information that may be important to the approval of this application.

The \$30,000 would be utilized to provide workdays in the four main counties: Douglas, Carson, Lyon, and Churchill Counties. \$28,000 is intended for the program and \$2,000 for administrative costs/supplies/mileage associated with the project. We thank CWSD for their continued support in this important project. We appreciate the chance to partner with so many other applicants and CWSD to do our work. We couldn't do the work without you, and we appreciate your guidance and funding to continue.



CARSON WATER SUBCONSERVANCY DISTRICT REQUEST FOR FUNDING FY 2023-24

APPLICANT:

Name

Address

City

County

State

Zip Code

Email

Telephone #

APPLICANT'S AGENT (if different from Applicant):

Name

Address

City

County

State

Zip Code

Email

Telephone #

PROJECT NAME: _____

PROJECT LOCATION/ADDRESS:

PROJECT DESCRIPTION: Briefly describe the project. Provide maps, drawings, photographs or other information. Additional sheets may be attached.

PROJECT GOALS AND BENEFITS: Briefly describe the project goals and benefits to be realized if the project is implemented, and how it is consistent with the CRASP and/or CRRFMP. Additional sheets may be attached.

TOTAL ESTIMATED PROJECT COST: _____

AMOUNT REQUESTED FROM CWSD: _____

SOURCE OF OTHER FUNDS: List all other sources of funds to be used to match funds requested from CWSD. List the provider of the matching funds and the amount requested from each provider.

ESTIMATED DATE PROJECT TO BEGIN: _____

ESTIMATED TIME TO COMPLETE PROJECT: _____

(If completion date is greater than a year, please indicate how much funding is needed in each fiscal year.)

PERMIT REQUIREMENTS: If your project requires a permit, license and/or approval from a governmental agency to proceed, please provide the current status of each requirement. If approval has not been requested or is in progress, please provide the estimated date on which approval can be expected. Additional sheets may be attached.

OTHER INFORMATION: Provide any other information that may be important to the approval of this application.

SIGNED:  _____

NAME: _____

TITLE: _____

DATE: _____

Carson Water Subconservancy District reserves the right to deny any and/or all applications for funding.

CARSON WATER SUBCONSERVANCY DISTRICT
Fiscal Year 2023-24
Alpine Watershed Group Funding Request for Upper Carson River Watershed Programs
Additional Sheets

PROJECT DESCRIPTION:

Alpine Watershed Group (AWG) seeks funding for the fiscal year 2023-24 from the Carson Water Subconservancy District for the coordination of its Upper Carson River watershed programs. AWG's mission is to protect, conserve, and restore the watersheds of Alpine County by promoting sustainable community and science-based collaborative solutions. For 22 years, AWG has organized volunteers and inspired widespread participation to address water quality monitoring and restoration needs in Alpine County. To further the stewardship of our county's natural resources, our organization has developed diverse partnerships around watershed issues. As the nonprofit environmental organization for the Carson River headwaters (see attached map), our positive impacts extend downstream, where the Carson River flows into Northern Nevada.

Through this project, AWG staff will: 1) involve local citizens in watershed stewardship; 2) plan and implement priority watershed monitoring and restoration activities; 3) recruit diverse stakeholders and strengthen community partnerships; and 4) support local watershed education and community outreach.

Alpine County attracts thousands of visitors each year from Nevada, California, and beyond. It is a popular recreation area for fishing, hiking and backpacking, river-running, and winter sports, and it is particularly well-loved by outdoor enthusiasts who reside in adjoining Nevada. The recreational offerings and magnificent nature in Alpine County depend on the clean water and riparian resources that AWG helps to protect. While it is one of AWG's goals to expand involvement in the watershed group by Nevadans, we already have volunteers and participating stakeholders from throughout Northern Nevada. Our active participation in CWSD through its forums and Carson River Coalition working groups, as well as our contributions to newsletters and e-blasts, allow us to help educate residents of the other counties in the watershed about where the water originates and the programs AWG carries out—programs that protect and improve water quality for human use and habitat values both in Alpine County and downstream.

PROJECT GOALS AND BENEFITS:

In fall 2022 AWG's Board of Directors and staff participated in a strategic planning retreat. We updated our mission statement as reflected above, agreed on a vision statement, and discussed updates to the goals in our last strategic plan. We are continuing to develop action plans to complete the update of our strategic plan. AWG's goals have not changed significantly, but we continue to find that there is more to be done than our current staff capacity allows. This process is meant to help our staff by defining short-term and long-term priorities, and to enable our board and staff to work more effectively so that we can achieve the capacity to accomplish more. Ultimately this means increasing our fundraising so that we can hire a third full-time staff member.

We have a community that values and acts to protect, conserve, and celebrate the healthy, resilient watersheds of Alpine County. Our organization's goals are to broaden this support and put it to work effectively to:

- Protect, conserve, and restore Alpine County's watersheds and the waters that flow through them

- Increase community awareness and participation in watershed stewardship
- Build organizational capacity and plan for sustainability

Our monitoring, restoration, and education programs benefit the watershed not only in Alpine County, where the Carson River headwaters are located, but also have positive impacts downstream. Protecting and enhancing the headwaters is a critical start to maintaining healthy water quality conditions throughout the watershed's region. Our programs are consistent with the *Carson River Watershed Adaptive Stewardship Plan* and meet the following funding criteria:

- Provide regional benefits within the Carson River watershed
- Improve water quality
- Prevent further stream bank erosion in the long term
- Reduce flooding along the Carson River
- Improve the administration and management of river and stream systems
- Assist water users and the general public in understanding current water issues

Our work to restore and rehabilitate river function is also consistent with the *Carson River Regional Floodplain Management Plan* as these actions help to maintain the waterway in a condition to help ensure unimpeded flows during high storm water events. There continues to be heightened concern about debris flow hazards because of the 2021 Tamarack Fire, as evidenced by the debris flow in August 2022 that shut down Highway 89 and buried the Markleeville Creek bridge replacement project materials stored at Heritage Park.

In spanning two states, the Carson River watershed presents unique opportunities and challenges. Upper Carson River watershed management planning is of concern to the Nevada Department of Environmental Protection, but the Alpine County portion of the watershed depends on the State of California and the Lahontan Regional Water Quality Control Board for funding eligibility from the US Environmental Protection Agency's 319 Grant Program. For many years, AWG has worked closely with the Regional Board as part of the West Fork Carson River Multiple Pollutants Vision Project. After a variety of delays, the Regional Board now anticipates circulating the draft *Vision Plan* in spring 2023, and AWG will assist with getting community input on the draft plan. We also continue to liaison with CWSD staff so the *Vision Plan* complements CWSD's *Carson River Watershed Adaptive Stewardship Plan*, and to push the Regional Board to elevate the East Fork Carson River to the same level of watershed planning as the West Fork Carson River.

We now understand that the Regional Board's *Vision Plan* is not affording detailed studies that will result in a prioritized list of projects, therefore we have been working with CWSD staff on strategies to address these data gaps. Because the *Vision Plan* is under development, the West Fork Carson River watershed was eligible to apply for 319 funding in the most recent grant cycle. AWG submitted an application in December 2022 to hire a consultant to develop a geomorphological assessment and sediment transport model for the West Fork Carson River watershed. With CWSD desiring such a tool for the entire Carson River watershed, AWG's project would synchronize with CWSD's project, yielding the desired comprehensive assessment and plan. Funding for AWG's project could help CWSD get funding for the assessment and plan for the downstream portion of the watershed in Nevada. AWG is submitting a second funding request to CWSD for fiscal year 2023-24 for the 25% required match should AWG receive this 319 funding from the State Water Resources Control Board.

As a very small nonprofit organization, our challenge in 2023-24 is to continue all of AWG's usual programs and ongoing projects while continuing to serve as a community leader in the wake of the Tamarack Fire. Because of the strong relationships we have built with public land managers over the last two decades, AWG is uniquely qualified to be the catalyst needed for Upper Carson River watershed recovery from the Tamarack Fire. As the list of sources of other

funds shows, we have been successful at garnering support for post-fire work including data collection, community outreach and education, agency collaboration, and, when safe and appropriate, volunteer restoration projects (Bently Foundation, National Fish and Wildlife Foundation, and Trout Unlimited - Sagebrush Chapter). The goal of healing the watershed will take years and even decades to achieve, but these early actions will lay the foundation. We see the scar of the 2015 Washington Fire, and we are committed to making sure that what is needed to help heal the Tamarack Fire burn area will be done. CWSD funding in 2023-24 will serve a critical role in helping to leverage resources for post-Tamarack Fire restoration needs. In addition, for 2022-24, AWG received Regional Forest and Fire Capacity Program (RFFCP) Early Action funding from the Sierra Nevada Conservancy; this funding is helping Alpine County increase its capacity to address forest health, fire recovery, and resilience in Alpine County.

Following is a summary of AWG's monitoring, restoration, and education program plans and projects in the coming year.

Monitoring

- Continuing our long-standing river monitor program, collecting data at eight sites in the Carson River watershed four times/year
- Ongoing coordination with the Lahontan Regional Water Quality Control Board to implement the *Tamarack Post-fire Monitoring Plan 2021*
- Conducting Year 5 of harmful algal bloom (HAB) monitoring in Alpine County, in partnership with the Lahontan Regional Water Quality Control Board, and coordinating with the Alpine County Public Health Officer on public outreach; our long-term goal in continuing to build the dataset on HABs is to learn more about the causes so that we can eventually explore mitigation or control strategies to manage these water bodies to potentially prevent future toxin releases
- Ongoing coordination with Markleeville Water Company to conduct vegetation and photo monitoring of the work areas from the Musser & Jarvis drainage post-fire restoration workdays on November 19–21, 2021 (installing wattles, felling and chinking trees, and spreading native seed)
- Conduct first year of monitoring of tree seedlings planted by volunteers in burned areas in spring 2022 to inventory survival rates
- Continue partnering with California State Parks to monitor in and around Grover Hot Springs State Park meadow looking at post-fire response: common stand exam monitoring to survey seedlings in burned and unburned areas; Early Detection Rapid Response (EDRR) monitoring along bulldozer lines and roads heavily impacted by fire suppression tactics; bird and associated vegetation monitoring by partner The Institute for Bird Populations
- Entering data from water quality monitoring into the California Environmental Data Exchange Network (CEDEN), creating data summaries and reports for the public and Alpine County, and analyzing data trends over time to identify priority projects
- Ongoing recruitment of new volunteers for AWG's monitoring programs
- Developing our GIS database for the county's watersheds

Restoration

Faith Valley Project – American Rivers lead, 2017 to 2023

The overarching goal of this project is to improve hydrologic and ecosystem processes in Faith Valley meadow located in the headwaters of the West Fork Carson River. AWG's involvement includes monitoring and community outreach.

Update: *In 2022 contractors installed a grade control structure and 14 beaver dam analogs (BDAs). The project piloted several types of BDAs, which will be monitored to inform the subsequent installation of additional features in 2023.*

Hope Valley Restoration & Aquatic Habitat Enhancement Project – 2016 to 2024

This project will stabilize approximately 450 feet of eroding banks along the West Fork Carson River just downstream of the Highway 88 bridge on California Department of Fish & Wildlife (CDFW) land. The first site is a new project on the first meander downstream of the bridge; the second site is the 2015 American Rivers project site downstream of the first site, where adjustments will increase bank stability.

Update: Construction was completed in fall 2020, and the annual monitoring reports are available on the project webpage: <https://www.alpinewatershedgroup.org/hope-valley-restoration-and-aquatic>. Funding from CDFW via the National Fish & Wildlife Foundation, funded by the State Water Board as part of a settlement of a Water Board enforcement action for Kirkwood Resort, covers monitoring and adaptive management through 2024.

Markleeville Creek Restoration Project – 2005 to 2028

This project will re-establish the natural form and function of Markleeville Creek through the site of the former US Forest Service Guard Station. The project will re-create the streamside habitat by removing the floodwall and re-vegetating the floodplain. Markleeville Public Utility District is concurrently working on an infrastructure upgrade project that includes removing manholes from the floodplain and upgrading the sewer line that runs under the creek. Our community hopes that future funding will allow for development of public access amenities, such as a public restroom.

Update: AWG has secured a portion of the implementation funding from California's Integrated Regional Water Management program. Alpine County and AWG are working with Caltrans to secure the remainder of the implementation funding by having the project's revegetation serve as mitigation for Caltrans' Markleeville Bridge replacement project (construction in 2021-2023). Construction of the floodplain restoration project is anticipated in 2024.

West Fork Carson River Fuels Reduction, Aspen, and Meadow Restoration Project –

National Forest Foundation lead, 2021 to 2024

The National Forest Foundation, in partnership with the Carson Ranger District of the Humboldt-Toiyabe National Forest, began project implementation in 2022, removing conifers in the Hope Valley area. AWG's involvement includes aspen monitoring and community outreach.

Education and Community Outreach

- Hosting watershed group meetings; we anticipate upcoming speakers, topics, and discussions will be focused on fire-related topics as we help to bridge conversations between agencies and stakeholders as well as the release of the Lahontan Regional Water Quality Control Board's draft *Vision Plan*
- Ongoing education of community members about water quality to encourage stewardship, working especially closely with Alpine County Health & Human Services to communicate about harmful algal blooms
- Engaging community members and visitors through our annual Creek Day workday, and expanding volunteer opportunities through other events such as Adopt-A-Highway cleanups; volunteers who assist with restoration projects have the opportunity to help improve critical wildlife habitat while also learning about the connection between watershed conservation activities and water quality; volunteers also learn simple restoration techniques that they can implement on their own, extending the impact beyond our workday and immediate community
- Engaging volunteers to complete small on-the-ground post-fire restoration projects identified by collaborating with agencies; projects may include seeding and revegetating banks and slopes to help reduce erosion, improve water quality, and enhance both instream and riparian habitat; and removing invasive species to prevent their establishment and spread, which benefits wildlife habitat and benefits other ecological processes, such as biodiversity

- Building a stronger partnership with the Hung-A-Lel-Ti (Woodfords) community of the federally-recognized Washoe Tribe of NV and CA, as well as the Washoe Environmental Protection Department; in addition to seeking help with post-fire restoration plans, working to partner on the new community walking trail project
- Continuing to advance sustainable recreation in Alpine County through agency collaboration, community discussions, and utilizing the outreach tools of partners including Carson River Coalition, Eastern Sierra Sustainable Recreation Partnership, and Sierra Nevada Alliance; continuing to work with partners and agencies on specific issues such as graffiti and litter
- Participating in Lahontan Cutthroat Trout Carson Recovery Implementation Team meetings and helping to ensure that agency studies and plans are communicated to stakeholders, with opportunities for community involvement
- Participating in community-led efforts to create a sustainable fishery in Alpine County
- Re-starting environmental education programs with Diamond Valley School and working to reach Alpine County youth when they move on to Douglas High School, including assisting with Carson River Snapshot Day
- Expanding watershed awareness by ongoing tabling presence at events throughout the region
- Continuing to be creative on how to expand watershed awareness through virtual tools such as social media and Zoom options for watershed group meetings

SOURCE OF OTHER FUNDS:

American Rivers - \$5,000

Bently Foundation - \$10,000

California Department of Fish & Wildlife Kirkwood Settlement - \$7,500

California Integrated Regional Water Management - \$67,000

National Fish and Wildlife Foundation - \$30,000

National Forest Foundation - \$10,000

Sierra Nevada Conservancy - \$38,000

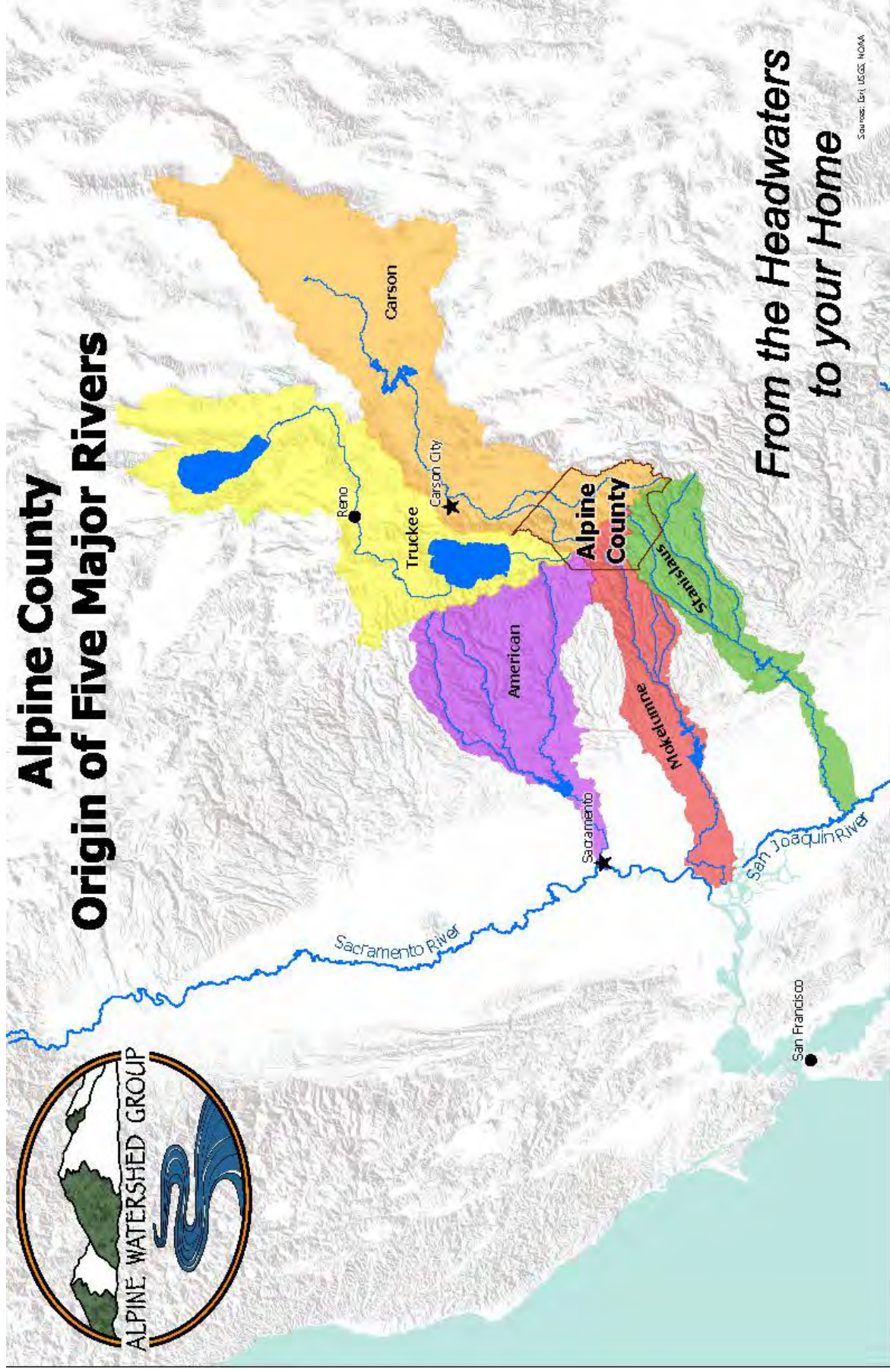
Trout Unlimited - Sagebrush Chapter - \$18,000

OTHER INFORMATION:

In 2022 AWG's 210 volunteers contributed 782 hours on water quality sampling, large community workdays for Creek Day and tree planting workdays in burned areas, highway cleanups, recycling and outreach at Death Ride, and Hope Valley project maintenance tasks. CWSD support helps our small, community-based organization build the capacity of Alpine County to address the most critical environmental concerns by utilizing local expertise to monitor changes, lead projects to improve water quality, and educate residents and visitors on water issues. Thank you!

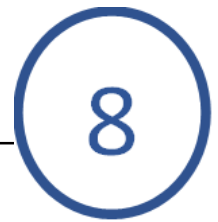


Alpine County Origin of Five Major Rivers



*From the Headwaters
to your Home*

Sources: ERI, USGS, NOAA



PROJECT LOCATION/ADDRESS:

West Fork Carson River Watershed in Alpine County, CA

AWG office - 50 Diamond Valley Road in Woodfords, CA

PROJECT DESCRIPTION: Briefly describe the project. Provide maps, drawings, photographs or other information. Additional sheets may be attached.

See Project Description attached.

PROJECT GOALS AND BENEFITS: Briefly describe the project goals and benefits to be realized if the project is implemented, and how it is consistent with the CRASP and/or CRRFMP. Additional sheets may be attached.

See Project Goals and Benefits attached.

TOTAL ESTIMATED PROJECT COST: \$333,350

AMOUNT REQUESTED FROM CWSD: \$83,350

SOURCE OF OTHER FUNDS: List all other sources of funds to be used to match funds requested from CWSD. List the provider of the matching funds and the amount requested from each provider.

State Water Resources Control Board from US Environmental Protection Agency under Clean Water Act Section 319 through the State Water Board 2023 Nonpoint Source Grant Program - \$250,000

ESTIMATED DATE PROJECT TO BEGIN: July 1, 2023

ESTIMATED TIME TO COMPLETE PROJECT: February 28, 2025

(If completion date is greater than a year, please indicate how much funding is needed in each fiscal year.)

PERMIT REQUIREMENTS: If your project requires a permit, license and/or approval from a governmental agency to proceed, please provide the current status of each requirement. If approval has not been requested or is in progress, please provide the estimated date on which approval can be expected. Additional sheets may be attached.

See attached Permit Requirements.

OTHER INFORMATION: Provide any other information that may be important to the approval of this application.

Attached please find a letter of support from Alpine County Board of Supervisors for this funding request. Also attached are the letters of support received for AWG's 319 grant application.

SIGNED:  _____

NAME: Kimra D. McAfee

TITLE: Executive Director

DATE: January 19, 2023

Carson Water Subconservancy District reserves the right to deny any and/or all applications for funding.

CARSON WATER SUBCONSERVANCY DISTRICT
Fiscal Year 2023-24
Alpine Watershed Group Funding Request for West Fork Carson Prioritization Project
Additional Sheets

PROJECT DESCRIPTION:

Alpine Watershed Group (AWG) seeks funding for the fiscal year 2023-24 from the Carson Water Subconservancy District to support completion of a geomorphological assessment and sediment transport planning model and development of a project prioritization plan for the West Fork Carson River watershed (see attached map). The purpose of this project is to identify sediment inputs and prioritize future projects to address such impairments. Addressing sediment concerns will also address other nonpoint source pollutants as other pollutants often travel through watersheds along with sediment. Prioritized projects will restore aquatic ecosystems of the Carson River and its tributaries, starting with the West Fork Carson. These projects have the potential to reduce sediment and other nonpoint source pollutants; have positive impacts on water temperature, pH, and dissolved oxygen; and reduce flood risk.

The river carries a lot of sediment and is extremely incised in areas, limiting its access to the floodplain. Vegetation on the banks has been denuded due to erosion and incision causing water quality concerns, habitat and property loss, and risks to infrastructure. Further incision increases the velocity during high-flow and flooding events causing even more erosion and cyclical damages. This planning project will provide baseline data, looking at this section of the upper watershed as a whole. The analysis will help us make informed decisions with the understanding of how our actions will impact upstream and downstream areas in relation to ecosystem impacts as well as how to reduce nonpoint source pollutants.

PROJECT GOALS AND BENEFITS:

The goals of this project are to:

- Provide a scientific geomorphological assessment of the West Fork Carson River in Alpine County
- Provide a scientific sediment transport model
- Prioritize locations and best ecosystem restoration methods to address nonpoint source pollutants for bank, riverbed, and riverine habitat improvements, and associated floodplain protection/conservation
- Identify and prioritize infrastructure maintenance and upgrades (roads, bridges, driveways, and irrigation) to reduce nonpoint source pollutants, protect ecosystems, and reduce flooding
- Determine a logical rating/ranking project system based on the geomorphology/sediment transport information
- Provide project prioritization/feasibility analysis

The project will also include outreach through the AWG newsletter updates and one stakeholder and partner meeting at the end of the project to review results and next steps.

The project would provide public land agencies, local organizations, and stakeholders a clear path on what projects to prioritize in this area. It will provide a blueprint to address nonpoint source pollutants and restoration needs, helping partners to make the most of finite funding sources. The sediment transport model will also help address other nonpoint source pollutants, such as nutrients, bacteria, and heavy metals that often attach to sediment and move with it. High sediment load also can affect stream temperatures, impact pH, and decrease dissolved

oxygen levels. In this way the management priorities from the project have the potential to address a multitude of water quality impairments identified in the West Fork Carson River watershed and improve overall water quality.

The *Carson River Watershed Floodplain Management Plan 2018* Suggested Action #28 is to “Update the 1996 Fluvial Geomorphic Assessment and create a sediment transport model of the Carson River.” With CWSD desiring such a tool for the entire Carson River watershed, AWG plans to synchronize this project with CWSD’s future project, yielding the desired comprehensive assessment and plan. Funding for AWG’s project could help CWSD get funding for the assessment and plan for the downstream portion of the watershed in Nevada, as well as for the Upper East Fork Carson River watershed. This project would be the first step in completing an updated geomorphic assessment for the entire Carson River watershed.

The future projects that this planning effort will identify are consistent with the *Carson River Watershed Adaptive Stewardship Plan* and would meet the following funding criteria:

- Provide regional benefits within the Carson River watershed
- Improve water quality
- Prevent further stream bank erosion in the long term
- Reduce flooding along the Carson River
- Improve the administration and management of river and stream systems
- Assist water users and the general public in understanding current water issues

Having this prioritized plan to point to in future grant applications will be critical to garnering funding for the identified projects.

In spanning two states, the Carson River watershed presents unique opportunities and challenges. Upper Carson River watershed management planning is of concern to the Nevada Department of Environmental Protection, but the Alpine County portion of the watershed depends on the State of California and the Lahontan Regional Water Quality Control Board for funding eligibility from the US Environmental Protection Agency’s 319 Grant Program. For many years, AWG has worked closely with the Regional Board as part of the West Fork Carson River Multiple Pollutants Vision Project. AWG understands that the Lahontan Regional Water Quality Control Board’s *Vision Plan* (draft to be circulated in spring 2023) is not affording detailed studies that will result in a prioritized list of projects, therefore this project would help to fill these data gaps.

Because the *Vision Plan* is under development, the West Fork Carson River watershed was eligible to apply for 319 funding in the most recent grant cycle. AWG submitted an application in December 2022 to hire a consultant to develop a geomorphological assessment and sediment transport model for the West Fork Carson River watershed; this application to CWSD would provide the required 25% match should AWG receive that 319 funding from the State Water Resources Control Board.

ESTIMATED TIME TO COMPLETE PROJECT (continued):

It is anticipated that all of the grant funds will be needed in fiscal year 2023-24.

The State Water Board requires that matching funds in the amount of 25% of the total project must be secured by the time of grant agreement execution, which is estimated to be in March 2024, although award announcements are anticipated in May 2023, and at that point match funds can start to be used. As a planning project, the project must be completed in no more than one year from date of grant execution. Funding in fiscal year 2023-24 would allow AWG to start coordinating with local, state, and federal agencies, make progress on Right of Entry

agreements with private property landowners; and work on the scope of work and request for proposals so that once the grant agreement is fully executed, the contractor's work is not delayed. This is critical given the short field season in Alpine County and the complexity of the contractor's scope of work.

PERMIT REQUIREMENTS:

Based on AWG's understanding of the ground-truthing that the consultant will conduct following the analysis of existing LiDAR data, AWG does not think there will be any permitting requirements, but AWG will consult with the Regional Board Project Manager and the US Army Corps of Engineers as needed regarding the sediment samples required.



Overview of Project Location

- West Fork Carson River
- West Fork Carson River Main Tributaries
- Upper West Fork Carson River Watershed
- HUC12s

West Fork Prioritization Plan 319(h) Proposal 2022 Alpine Watershed Group	Map created by Rachel Kieffer December 2022
Esri, HERE, Garmin, Sources: Esri, USGS, NOAA, Sources: Esri, Garmin, USGS, NPS, EagleView, Earthstar Geographics	



CARSON WATER SUBCONSERVANCY DISTRICT
777 E. William Street, #209, Carson City, NV 89701
775/887-7450, FAX 775/887-7457
cwsd.org

*A healthy watershed
that meets the water
needs of all users*

December 7, 2022

Lahontan Regional Water Quality Control Board
Mo Loden, Lahontan Region Grant Coordinator
2501 Lake Tahoe Blvd.
South Lake Tahoe, CA 96150

Re: Letter of Support for Alpine Watershed Group's 319(h) Grant Application

Dear Ms. Loden,

Carson Water Subconservancy District (CWSD) offers our enthusiastic support for the Alpine Watershed Group (AWG) application for funding from the 2023 Nonpoint Source Grant Program. We understand that the funding for this grant program is a grant to the State Water Resources Control Board from the United States Environmental Protection Agency under the Clean Water Act Section 319(h).

CWSD has long held that a geomorphological assessment and sediment transport model is a critically needed tool for the entire Carson River watershed. A prioritized list of projects based on this science would allow CWSD and our Carson River Coalition (CRC) partners like AWG to prioritize projects so that limited funding can be targeted and leveraged in an efficient and effective manner. Alpine County holds the headwaters of the system and addressing water quality issues there will have positive effects downstream.

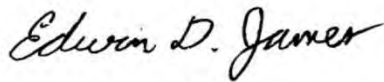
Earlier this year, CWSD submitted a pre-application to the 2023-2025 Conserve Nevada grant program for this geomorphological assessment and sediment transport model for the Carson River watershed. In August we received a Pre-Application Eligibility Determination, and we anticipate that our full application to this grant program will be due in fall of 2023. For that application, we are encouraged to show how this study will interact with other efforts along the river and its connectivity to other funding sources. If AWG were to get this funding, it would strengthen our application, and our grant could serve as a match for AWG's 319 grant, if

awarded. We are committed to working closely with AWG for any cost savings that could be accomplished by syncing our projects.

Since 2018, CWSD staff have been collaborating with the Lahontan Regional Water Quality Control Board on the West Fork Carson River Vision Project so that the Vision Plan aligns with the *Carson River Watershed Adaptive Stewardship Plan*. We understand that the forthcoming draft *Vision Plan* is not going to include a list of prioritized projects to address the identified water quality impairments. This underscores the need for AWG's proposed study and plan to fill these data gaps and supplement the *Vision Plan*. AWG has been an exemplary community partner for the Regional Board during this planning process, helping to engage the watershed community in the Vision Project by coordinating community meetings and forums. Thanks to AWG, stakeholders have been kept apprised of the lengthy process and have had multiple opportunities to communicate water quality issues to the Regional Board for inclusion in the plan. Having worked closely with AWG for over two decades, we believe AWG is the ideal entity to oversee this much needed study and planning effort in the Upper Carson River watershed.

On behalf of CWSD, I urge the State Water Board to fund AWG's proposed project.

Sincerely,

A handwritten signature in black ink that reads "Edwin D. James". The signature is written in a cursive, flowing style.

Edwin James
General Manager
Carson Water Subconservancy District

EJ:cat



File Code: 2530
Date: December 7, 2022

Lahontan Regional Water Quality Control Board
2501 Lake Tahoe Blvd.
South Lake Tahoe, CA 96150

Attn: Mo Loden, Lahontan Region Grant Coordinator

Re: Letter of Support for Alpine Watershed Group's 319(h) Grant Application

Dear Ms. Loden,

I am pleased to provide this letter of support for the Alpine Watershed Group (AWG) application for funding from the 2023 Nonpoint Source Grant Program. I understand that the funding for this grant program is a grant to the State Water Resources Control Board from the United States Environmental Protection Agency under the Clean Water Act Section 319(h).

Since becoming the Carson District Ranger in 2019, I have been following the progress of the *West Fork Carson River Vision Project* by the Lahontan Regional Water Quality Control Board. Carson Ranger District staff presented at the Vision Project community forums focused on roads and recreation that AWG coordinated in collaboration with the Regional Board in 2020 and 2021. As I communicated at one of the meetings focused on recreation; water quality is a high priority for our District. My staff and I greatly appreciate having AWG as a highly competent and respected local partner to work with to address water quality issues. This year we had the opportunity to partner with AWG on two community tree planting workdays on US Forest Service lands severely burned by the Tamarack Fire. The trees planted by volunteers that AWG helped coordinate will help to prevent erosion that negatively impacts water quality, and it gave community members an opportunity to help with post-fire restoration.

I believe that the proposed geomorphological assessment and sediment transport model is a critical tool for providing a blueprint to address water quality issues on the Humboldt-Toiyabe National Forest within Alpine County. I understand that it will fill in data gaps in the forthcoming draft *Vision Plan*. With the Carson Water Subconservancy District (CWSD) desiring such a tool for the entire Carson River watershed, AWG's project will synchronize with CWSD's project, yielding the desired comprehensive assessment and plan for different watershed agencies to use.

I urge the State Water Board to approve AWG's funding application, and, if funded, I look forward to working with AWG to accomplish this project on Forest Service land.

Sincerely,

MATTHEW D. ZUMSTEIN
District Ranger





COUNTY OF ALPINE Board of Supervisors

December 6, 2022

Lahontan Regional Water Quality Control Board
2501 Lake Tahoe Blvd.
South Lake Tahoe, CA 96150

Attn: Mo Loden, Lahontan Region Grant Coordinator

Re: Letter of Support for Alpine Watershed Group's 319(h) Grant Application

Dear Ms. Loden,

This letter serves as an official letter of support on behalf of the County of Alpine in the State of California. Alpine County Board of Supervisors hereby support the Alpine Watershed Group (AWG) application for funding from the 2023 Nonpoint Source Grant Program. We understand that the funding for this grant program is a grant to the State Water Resources Control Board from the United States Environmental Protection Agency under the Clean Water Act Section 319(h).

For the last four years, Alpine County Supervisors and staff have been following the progress of the West Fork Carson River Vision Project by the Lahontan Regional Water Quality Control Board. AWG has been an exemplary community partner for the Regional Board during this planning process. AWG has engaged the community in the Vision Project by coordinating community meetings to introduce the project, followed by a series of four topic-specific community forums. Thanks to AWG, the watershed community was kept apprised of the long process and had multiple opportunities to communicate water quality issues to the Regional Board for inclusion in the *West Fork Carson River Vision Plan*.

We believe that the proposed geomorphological assessment and sediment transport model is a critical tool for providing a blueprint to address water quality issues in Alpine County. We understand that it will fill in data gaps in the forthcoming draft *Vision Plan*. With the Carson Water Subconservancy District (CWSD) desiring such a tool for the entire Carson River watershed, AWG's project will synchronize with CWSD's project, yielding the desired comprehensive assessment and plan. Funding for AWG's project will help CWSD get funding for the assessment and plan for the downstream portion of the watershed in Nevada.

The Alpine County Board of Supervisors respectfully requests that the State Water Board approve AWG's funding application.

Sincerely,

A handwritten signature in blue ink, appearing to read "David Griffith", is written over a horizontal line.

David Griffith
Chair, Board of Supervisors
Alpine County, State of California



CARSON WATER SUBCONSERVANCY DISTRICT REQUEST FOR FUNDING FY 2023-24

APPLICANT: Truckee-Carson Irrigation District

Name
PO Box 1356

Address
Fallon Churchill

City NV County 89407-1356

State Zip Code

ben@tcid.org 775-423-2141

Email Telephone #

APPLICANT'S AGENT (if different from Applicant):

Name

Address

City County

State Zip Code

Email Telephone #

PROJECT NAME: Carson River Diversion Dam

PROJECT LOCATION/ADDRESS:

Approximately 5 miles downstream of the
Lahontan Dam in Churchill County, NV

PROJECT DESCRIPTION: Briefly describe the project. Provide maps, drawings, photographs or other information. Additional sheets may be attached.

Please see attached Project Description.

PROJECT GOALS AND BENEFITS: Briefly describe the project goals and benefits to be realized if the project is implemented, and how it is consistent with the CRASP and/or CRRFMP. Additional sheets may be attached.

Please see attached Project Goals and Benefits.

TOTAL ESTIMATED PROJECT COST: \$50,000.00

AMOUNT REQUESTED FROM CWSD: \$50,000.00

SOURCE OF OTHER FUNDS: List all other sources of funds to be used to match funds requested from CWSD. List the provider of the matching funds and the amount requested from each provider.

Please see attached Source of Other Funds

ESTIMATED DATE PROJECT TO BEGIN: July 1, 2023

ESTIMATED TIME TO COMPLETE PROJECT: June 30, 2024

(If completion date is greater than a year, please indicate how much funding is needed in each fiscal year.)

PERMIT REQUIREMENTS: If your project requires a permit, license and/or approval from a governmental agency to proceed, please provide the current status of each requirement. If approval has not been requested or is in progress, please provide the estimated date on which approval can be expected. Additional sheets may be attached.

No permits are required for this project.

OTHER INFORMATION: Provide any other information that may be important to the approval of this application.

Please see attached.

SIGNED: 

NAME: Ben Shawcroft

TITLE: General Manager

DATE: 01/19/2023

Carson Water Subconservancy District reserves the right to deny any and/or all applications for funding.

CARSON WATER SUBCONSERVANCY DISTRICT REQUEST FOR FUNDING FY 2023-24

Attachments to Application for Truckee-Carson Irrigation District

PROJECT DESCRIPTION:

This project consists of the application of a product, Aqualastic™, more fully described in the attachment hereto, to the concrete surfaces of the Carson River Diversion Dam (Dam). The Dam is located approximately five (5) miles downstream of Lahontan Dam in Churchill County, Nevada. Aqualastic™ is a polyurea elastomeric coating that when applied to concrete serves to seal cracks preventing damage to facilities, check undesired flows, and prevent water loss. (See product description enclosed herewith). We have used this product extensively in the Newlands Project and with particular success on the Truckee Canal. (See the District's "Testimonial" enclosed herewith).

The Dam is a United States Bureau of Reclamation facility constructed in 1906. (See photographs enclosed herewith). It serves to divert water released from Lahontan Dam, flowing in the Carson River channel, in one of three (3) ways: 1. Through a series of gates directing continuing flow in the Carson River Channel; 2. Through the head-works of the V-Line Canal; and, 3. Through the head-works of the T-Line Canal. The Dam is 24 feet long with a 225-foot long, 31-foot high concrete control section. In flood operations conducted in 2017, we diverted approximately 3,320 cfs of flow from Lahontan Dam. Then, at the Carson Diversion Dam, we diverted as much as 1,700 cfs. into the V-Line Canal, 1,200 cfs. into the Carson River Channel (the Carson River gates are capable of 1,950 cfs), and approximately 200 cfs into the T-Line Canal.

Pivotal to continuing water management of water on the Carson River, is our ability to make diversions through the Diversion Dam. In this application we seek to apply Aqualastic™ to cracks in the concrete of the dam thus encapsulating degraded sections of concrete. As stated previously, the Diversion Dam is very old; and, the useful life of its concrete was exceeded long-long ago. While, our hope is to replace the Diversion Dam in the future, its use in both regular operations and in flood operation remains absolutely essential. Application of Aqualastic™ will serve to prolong the life of the Diversion Dam –protecting it against potential failure particularly amidst flood operations. Protecting the dam from failure serves, ultimately, to protect all property owners on the Carson River below it from flood waters that could not be controlled.

PROJECT GOALS AND BENEFITS:

The proposed project is consistent with the Carson River Regional Floodplain Management Plan in that it improves aging infrastructure which if left undone would increase the threat of uncontrolled flooding along the Carson River (See Section 4.6 Reduction of Infrastructure Impacts in CRRFMP). Preserving the life of this important concrete structure will ensure many more years of valuable flow controls below Lahontan Dam. The benefits resulting from this project similarly satisfy the qualification criteria required in this funding application by reducing the risk of flooding along the Carson River and improving the management of the river.

SOURCE OF OTHER FUNDS:

No other funding source identified. Aqualastic™, is a sole source product that must be applied by an individual bearing product application certification. The District will contribute time and materials in preparation of application of the product, including, removal of debris and facility cleaning as necessary.



The AquaLastic® Concrete Repair System

Prolong the Life of and Protect your Infrastructure

Our solution is a complete concrete repair system capable of fixing many different areas and types of degradation problems in concrete, earthen

and metal canals, flumes, spillways, flood control channels, dams and other structures.

The AquaLastic® Concrete Repair System has millions of linear feet of successful application over more than 23 years in many irrigation districts and government run projects in the Western United States and has a highly proven track record. It is a non-toxic product that has been extensively tested and is safe in irrigation waters, including potable water.

As American technology and manufactured in the USA, AquaLastic® has the highest and most reliable standards by an ISO 9001 qualified company, bringing high efficiency, longevity and major cost savings when compared to other methods of concrete canal repair.

Our system is a valuable tool for funding and grants opportunities because it offers many improvements and water efficiency options, and may also be utilized for job creation. It is a flexible solution to many issues currently facing irrigation, as *each repair program is designed to suit the individual requirements of the customer.*



Conserve

Conserve the most valuable of our natural resources – water.



Reduce

Reduce your losses and increase your delivery efficiency.



Testimonials



" Like other irrigation districts throughout the Western United States, the Truckee-Carson Irrigation District (Nevada) has benefited greatly from the application of AquaLastic®, a polyurea elastomeric coating, to structures in the Newlands Federal Reclamation Project. We view AquaLastic® as an excellent product with which to encapsulate degraded sections of concrete -including canal linings, thus arresting the advance of facility deterioration. AquaLastic® has been applied broadly to sections of lining in the Truckee Canal; and, after many years in use, the product continues to perform without fail its role which includes the elimination of seepage from the Canal.

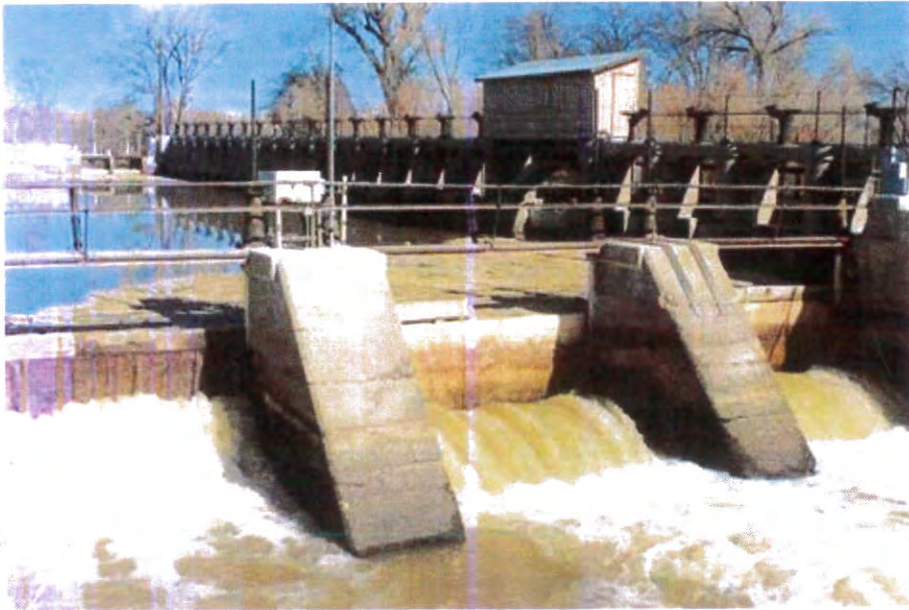
Rusty D. Jardine, Esq.
District Manager



" Our secondary reservoir has been leaking through the joints for years. In the past, we've tried to clean the joints out and seal them as best we could, even replacing sections with new concrete. AquaLastic was our last attempt to seal the reservoir without completely replacing the



*Carson River
Diversion Dam
— downstream
view*



Carson River
Diversion Dam
— V-Line Canal
Headworks.



Images may be subject to copyright [Learn More](#)

Carson River
Diversion Dam
- Down stream
view in
flood operation
2017



CARSON WATER SUBCONSERVANCY DISTRICT REQUEST FOR FUNDING FY 2023-24

APPLICANT: Sierra Nevada Journeys

Name
190 East Liberty Street

Address
Reno Washoe

City NV County 89501

State Zip Code

audreyb@sierranevadajourneys.org 775-355-1688

Email Telephone #

APPLICANT'S AGENT (if different from Applicant):

Name

Address

City County

State Zip Code

Email Telephone #

PROJECT NAME: Family Watershed Nights for Carson River Watershed Communities

PROJECT LOCATION/ADDRESS:

Four schools in Carson City and/or Douglas County

PROJECT DESCRIPTION: Briefly describe the project. Provide maps, drawings, photographs or other information. Additional sheets may be attached.

Funding from the Carson Water Subconservancy District will serve over 500 children and their parents in communities within the Carson River Watershed with four community-building and educational events called Family Watershed Nights (FWN). FWNs invite K-8 students, their parents and siblings to attend a fun, family-friendly evening, which provides watershed education at the family level and reinforces STEM concepts in the classroom. Through hands-on activities, participants will gain a sense of ownership and stewardship for the health of their community watershed. Proposed activities include group demonstration with watershed model and various watershed STEM exploration stations.

Please see attached for further information.

PROJECT GOALS AND BENEFITS: Briefly describe the project goals and benefits to be realized if the project is implemented, and how it is consistent with the CRASP and/or CRRFMP. Additional sheets may be attached.

Through programs led by SNJ's science teachers and with assistance of our volunteer program, we will be successful in the following goals:

1. Provide four watershed family events for four schools within the Carson River Watershed, including Carson City Minden or Gardnerville (i.e., Carson City and/or Douglas Counties).
2. Collaborate with partners and local experts, such as CWSD staff and NDEP professionals to lead watershed activities at these events.
3. Engage 500 individuals (students, parents and siblings) in hands-on watershed-themed activities.
4. 100% of participants will gain hands-on experience with: a. Various watershed models; b. Defining current issues impacting the Carson River Watershed, c. Identifying solutions and ideas for helping to protect local watersheds
5. This year SNJ would like to suggest a pre-planning meeting with the SNJ education team and CWSD staff members before Family Watershed Events (late summer/early fall, 2023) to collaborate on the planning and coordination of the events, and to maximize CWSD's programmatic and sponsorship

TOTAL ESTIMATED PROJECT COST: \$4,250.40

AMOUNT REQUESTED FROM CWSD: \$3,279.40

SOURCE OF OTHER FUNDS: List all other sources of funds to be used to match funds requested from CWSD. List the provider of the matching funds and the amount requested from each provider.

Microsoft Corporation: \$971

ESTIMATED DATE PROJECT TO BEGIN: August 2023

ESTIMATED TIME TO COMPLETE PROJECT: June 2024

To promote cooperative actions with communities to protect the Carson River Watershed.

PERMIT REQUIREMENTS: If your project requires a permit, license and/or approval from a governmental agency to proceed, please provide the current status of each requirement. If approval has not been requested or is in progress, please provide the estimated date on which approval can be expected. Additional sheets may be attached.

OTHER INFORMATION: Provide any other information that may be important to the approval of this application.

If funded, the CWSD will be highlighted as a sponsor of the four Family Watershed Nights. The sponsorship attribution will read: "Family Watershed Night sponsored by the Carson Water Subconservancy District." SNJ will also distribute the Carson River Watershed Map to all participating students and families. SNJ and participating schools will promote the event using flyers and social media channels; the CWSD will be recognized by thousands of school and community members. If interested, CWSD volunteers are needed and welcome to assist at the various activity stations during the evening. CWSD will be thanked publicly from the podium and if an official representative is present, can join SNJ staff at the podium in welcoming students and their families to the event. If desired, CWSD can once again have a designated table and offer their own activity during the event.

SIGNED: 

NAME: Audrey Bergmann

TITLE: Advancement Manager

DATE: January 09, 2023

Carson Water Subconservancy District reserves the right to deny any and/or all applications for funding.

Providing Family Watershed Nights for Carson River Watershed Communities

A Proposal to the Carson Water Subconservancy District

Project Description (continued)

Through funding from the Carson Water Subconservancy District (CWSD), Sierra Nevada Journeys (SNJ) will deliver four Family Watershed Nights (FWN) to schools located in Carson City and/or Douglas counties. FWNs target K-8 students and their families, offering an exciting 1.5-hour event that fosters engagement, curiosity, innovation, and teamwork, all centered on the STEM fields and watershed education. Students, their parents and siblings attend this family event at no charge and enjoy various activity stations that include mini-challenges and family-based team projects.



Most recently, CWSD funded the delivery of four FWNs featuring watershed-focused mini-challenges where participants also receive the Carson River Watershed Map. Area teachers, students and families have expressed gratitude for the CWSD's support of this program and SNJ hopes this partnership will continue. With funding from CWSD, SNJ will work to serve an increased number of schools as well as assess, evaluate, and refine current watershed-focused stations.

SNJ will measure the success of these Family Watershed Nights by the number of attendees, engagement of the participants, and feedback from the educators at the school sites. Students are evaluated by the worksheets they complete with their family during the event often for extra credit by their teacher.

SNJ Family Nights are an established program offering. We have successfully conducted several hundred Family Nights in northern Nevada over the last 12 years with participation ranging between 50-250 attendees at each event. Our program consistently receives high marks from parents, students, teachers and principals for being fun, professional and informative.

Project Benefits (continued)

In our own pre-assessments, we have found that only 17% of students could 1) list one way to protect their own watershed, and 2) describe why it would be helpful. This illustrates that children are not learning about local issues facing their watersheds. A recent national study from The Nature Conservancy might reveal why. The report notes that students who have had a personal experience in nature are increasingly uncommon: "The vast majority of today's children use a computer, watch television or play video games on a daily basis, but only about 10 percent say they are spending time outdoors every day."

However, students who have experienced 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.¹



Through SNJ’s interactive programs we focus on teaching through nature and encourage local youth and their families to have meaningful experiences outdoors, thereby increasing their likelihood to value nature, engage with it and feel empowered to care for it. Moreover, FWNs successfully teach children and their families about specific local issues facing the Carson River Watershed and actions they can take to prevent further degradation of this river ecosystem.

We know that parent engagement is critical to student success, particularly in low-income homes. Children from diverse cultural backgrounds tend to do better when parents and professionals collaborate to bridge the gap between the culture at home and the learning institution. Schools and teachers need support in reaching out to the families of their students. This is where Sierra Nevada Journeys can help bridge the gap. Family Watershed Nights address a crucial concern and provide knowledge and awareness of water issues at the family level.

Our initiative helps engage students and their families by encouraging them to adopt environmental stewardship practices aimed at reducing point-source water pollution. Through fun and hands-on activities, students and their families learn more about their local watershed and become better stewards of the Carson River. Beyond the environmental impact, SNJ’s Family Watershed Nights also:

- ✚ Involve parents in their child’s education, regardless of their own education level, ethnicity, and socio-economic status;
- ✚ Use hands-on science as the vehicle for exploration, which provides a language-neutral context;
- ✚ Provide a meaningful family activity that is linked to learning, building on parent’s instinctual desire to help their child’s academic success;
- ✚ Help forge a sense of trust between the school and the families, encouraging families to become involved in their child’s school; and,

¹ 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>

- ✚ Provide a means for the local community to engage in helping support low-income children and their success in learning.

In addition to our passionate and credentialed education team, we also have a volunteer model in place in which we can seamlessly integrate volunteers into our Family Watershed Night. A rich experience for the volunteers, assisting at an SNJ Family Night provides another interaction point between the community and the school.

APPLICANT:	Megan Poff, U.S. Geological Survey	
	Name	
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	Address	
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	NV	89005
	State	Zip Code
mpoff@usgs.gov		
702-595-6837		
Email	Telephone #	

Name	
Address	
City	County
State	Zip Code
Telephone #	

To promote cooperative actions with communities to protect the Carson River Watershed.

PROJECT LOCATION/ADDRESS:

West-Central Nevada

PROJECT DESCRIPTION: Briefly describe the project. Provide maps, drawings, photographs or other information. Additional sheets may be attached.

This funding request is for the continuation of the cooperative monitoring surface-water monitoring program between Carson Water Subconservancy District and the U.S. Geological Survey.

PROJECT GOALS AND BENEFITS: Briefly describe the project goals and benefits to be realized if the project is implemented, and how it is consistent with the CRASP and/or CRRFMP. Additional sheets may be attached.

Streamflow information and flow measurements provided at real-time and non-real-time gages in the Carson River Basin define hydrologic conditions throughout the basin.

TOTAL ESTIMATED PROJECT COST: \$278,459

AMOUNT REQUESTED FROM CWSD: \$180,998

SOURCE OF OTHER FUNDS: List all other sources of funds to be used to match funds requested from CWSD. List the provider of the matching funds and the amount requested from each provider.

Pending availability of funds from the Cooperative Water Program, U.S. Geological Survey will provide \$97,461 toward this program.

ESTIMATED DATE PROJECT TO BEGIN: July 1, 2023

ESTIMATED TIME TO COMPLETE PROJECT: June 30, 2025

(If completion date is greater than a year, please indicate how much funding is needed in each fiscal year.)

PERMIT REQUIREMENTS: If your project requires a permit, license and/or approval from a governmental agency to proceed, please provide the current status of each requirement. If approval has not been requested or is in progress, please provide the estimated date on which approval can be expected. Additional sheets may be attached.

No permits are required to proceed.

OTHER INFORMATION: Provide any other information that may be important to the approval of this application.

Please see attached sheet with additional details regarding this funding request.

SIGNED: _____

NAME: Megan Poff

TITLE: Data Chief

DATE: 1/16/2023

Carson Water Subconservancy District reserves the right to deny any and/or all applications for funding.

Additional information regarding USGS funding request:

Project description: Surface-water O&M costs include maintaining the streamgaging equipment at 10 gaging stations, real-time monitoring and display of water information, making streamflow measurements, computing streamflow, quality assurance, and data publication and archive in the USGS NWIS (National Water Information System) database.

The streamgaging stations include:

E FORK CARSON RV BLW MARKLEEVILLE CK NR MARKLEEVILLE
W FORK CARSON RV AT WOODFORDS, CA
DAGGETT CK NR GENOA, NV
CARSON RV AT GENOA, NV
CLEAR CK NR CARSON CITY, NV
CARSON RV NR CARSON CITY, NV
CARSON RV AT DEER RUN RD NR CARSON CITY, NV
CARSON RV AT DAYTON, NV
CARSON RV NR FORT CHURCHILL, NV
FRANKTOWN CK NR CARSON CITY, NV

The following tasks are included in the funding request for the above stations:

1. Operation and maintenance of the streamflow gaging stations.
2. Streamflow measurements on a 6-week schedule or as conditions warrant. Additional streamflow measurements on a biweekly schedule at West Fork Carson River at Woodfords and Carson River near Carson City during the summer when flows are lower than other periods of the year.
3. Evaluation and analysis of stage data.
4. Input of stage and measurement data to the National Water Information System (NWIS) database.
5. Development of stage/discharge relations (ratings).
6. Computation of continuous streamflow, quality assurance, and final approval.
7. Publication of the approved data. Data will be reviewed, compiled, and disseminated throughout the year and annually as water year summaries on the USGS NWIS (National Water Information System) web interface. Real time (updated every hour) provisional data from the five streamflow gaging stations will continue to be provided through NWIS web.

Project goals and benefits: Streamflow information and flow measurements provided at real-time and non-real-time gages in the Carson River Basin define hydrologic conditions throughout the basin, such as sources, sinks, and fluxes of water. Accurate flow data from streamgages provide critical information for water accounting for legal agreements, river and project operations, hazard forecasts, water-quality assessments, and research (such as interaction of water systems; groundwater/surface-water interactions).

Source of other funds: During the last CWSD/USGS two-year agreement (7/1/2021-6/30/2023), the USGS Nevada Water Science Center was able to provide 40% matching funds in recognition of our long-standing program with the Carson Water Subconservancy District and to assist with ongoing cost increases, particularly considering the COVID-19 pandemic. However, the Center standard is to provide

no more than 35% matching funds; therefore, this new agreement reverts to the Center standard of a 35% match so we may provide matching funds to all our cooperators who qualify. Costs overall are increasing because of inflation and associated labor and equipment costs. An overall 2% per year increase is proposed.

For CWSD FY23 (July 1, 2023-June 30, 2024), amount requested from CWSD is \$89,603 (USGS will provide \$48,248).

For CWSD FY24 (July 1, 2024-June 30, 2025), amount requested from CWSD is \$91,395 (USGS will provide \$49,213).

Other agencies providing funding: Bureau of Reclamation (50% of Markleeville gage), Carson-Truckee Water Conservation District (40% of Woodfords gage and 30% of Carson River at Carson City gage), Nevada Division of Environmental Protection (50% of Fort Churchill gage), and USGS Federal Priority Streamgages program (30% of Carson River at Carson City gage).

Carson River Basin Groundwater-Levels and Water-Quality Monitoring

This request seeks to combine the existing agreements between the U. S. Geological Survey (USGS), Carson Water Subconservancy District (CWSD), and Churchill County for the following groundwater monitoring projects: Douglas and Lyons Counties, Middle Carson, and Newlands. This collective Carson River basin project is requested to be funded July 1, 2023 to June 30, 2025. While each individual project has unique considerations given the different development and management of groundwater resources of the counties and municipalities in which they lie, the three projects also have the hydrologic relationship of being within the Carson River watershed. The objectives of each project will still be maintained, but the combination will also promote having a watershed perspective on groundwater trends. The goals of this combined agreement would be to: (1) streamline USGS groundwater-level and water-quality data collection efforts in the Carson River basin, (2) provide a single USGS point of contact for the CWSD and Churchill County to more efficiently receive communication on data trends, (3) bring the currently offset timing of three agreements onto the same schedule, and (4) simplify the management of Carson River basin agreements for the CWSD and Churchill County. A detailed description of each project is provided in the subsequent sections.

Collective project overview:

1. Groundwater-level observations in 269 wells. Sites will be monitored quarterly (91 wells), biannually (19 wells) and annually (159 wells). The network will be dynamic and adjust to best monitor issues reported to the USGS during the project timeline.
2. The collection of water quality biannually (5 wells) and annually (17 wells).
3. Publish and maintain data online for public use in the USGS National Water Information System database.

Permit requirements:

No permits are anticipated to complete the project. However, owner information and written permission to measure groundwater wells will be obtained.

Douglas County

Current CWSD agreement: July 1, 2021 – June 30, 2023

Requesting funds for July 1, 2023 – June 30, 2025 (Table 1)

Project description: Residents of Douglas County receive drinking water via private domestic wells throughout Carson Valley and via public supply wells in Minden. Declines in groundwater levels of up to 30 ft have occurred in residential areas of the Carson Valley since the 1980s, prompting homeowners to deepen wells to maintain a reliable water source. Increasing population and, in turn, municipal demand has also led to increased pumping from Minden public supply wells. There is concern from water resource managers that deepening domestic wells and increasing pumping from public supply wells could lower the water table to depths in the alluvial aquifer with relatively high arsenic concentrations

that would not meet drinking-water standards. Nitrate contamination of groundwater has also become a concern with increasing population in the valley. Evaluation of trends in water levels and arsenic and nitrate concentrations in the Carson Valley alluvial aquifer of Douglas County is needed to assess changes in aquifer conditions and the vulnerability of domestic and municipal supply wells to these potential contaminants.

Groundwater levels are measured in a total of 25 wells in Douglas County. This includes quarterly measurements in 20 wells throughout the Carson Valley and annual measurements in five wells in the Fish Springs area above the southeast side of Carson Valley (Figure 1). Water-quality samples are currently collected biannually from five wells and annually from six wells in Douglas County. An additional five wells will be sampled annually for water quality (total of 16 wells) beginning with the new agreement on July 1, 2023. At each water-quality well, field parameters of temperature, pH, specific conductance, and dissolved oxygen, are measured, and samples are analyzed for acid neutralizing capacity, major ions, iron, and nutrients, including nitrates. While the USGS has recently completed studies of arsenic concentrations in other areas of Carson Valley, arsenic sampling has not been

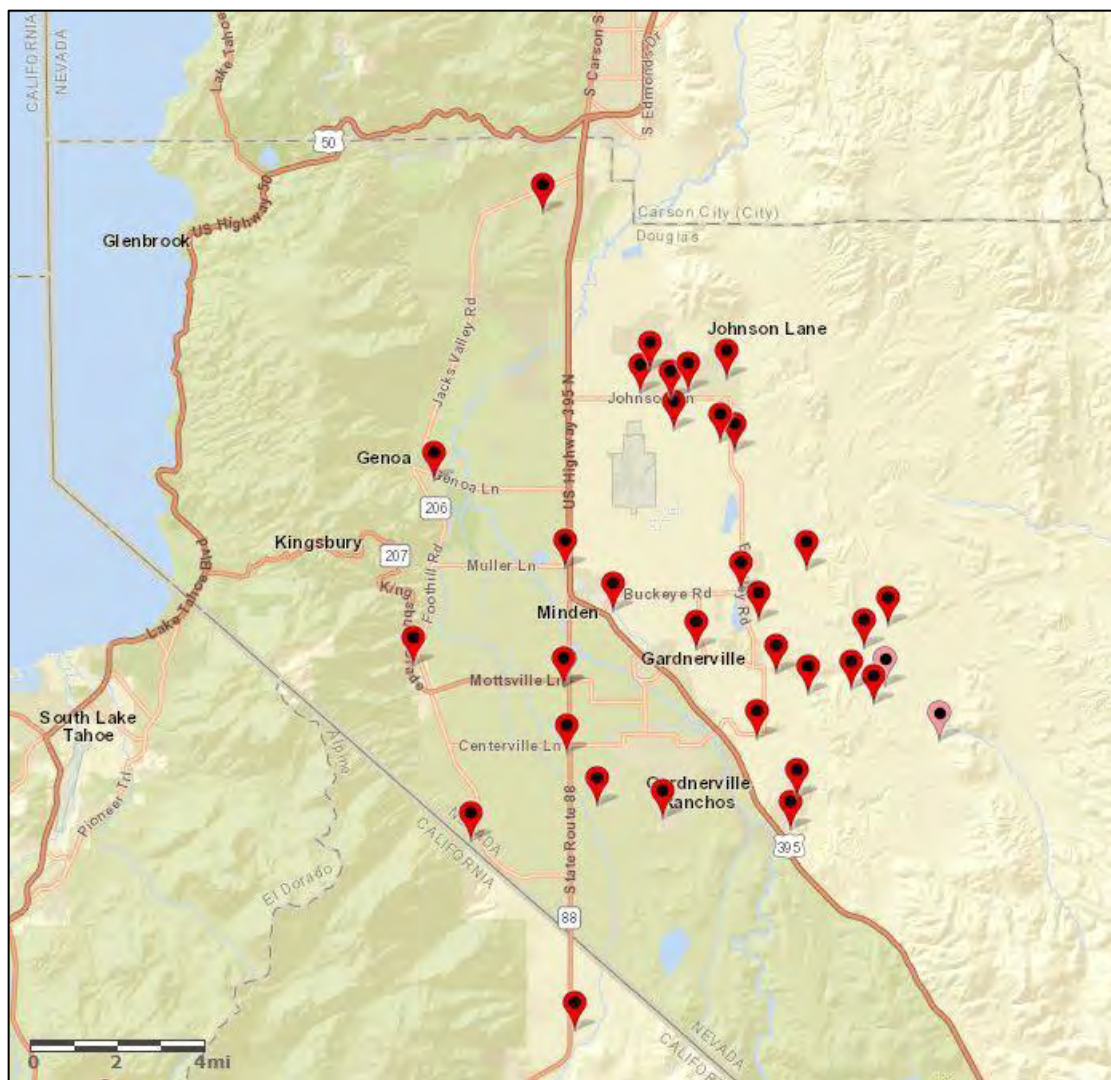


Figure 1. Douglas County wells including the Fish Springs area.

conducted for the Douglas County well network since 1995. Total arsenic will be added to the suite of chemical analyses at the biannual and annual wells.

Table 1. Funds Distributed per Fiscal Year

[Fiscal year (FY) represents the Nevada state fiscal years from is July 1 - June 30]

Agency	FY 2024	FY2025	Total
CWSD	25,600	27,000	52,600
USGS Matching Funds	18,500	19,500	38,000
Total	44,100	46,500	90,600

Middle Carson

Current CWSD agreement: July 1, 2020 – June 30, 2024

Requesting funds for July 1, 2024 – June 30, 2025 (Table 2)

Project description: Residents in the middle Carson River area, which includes Eagle, Dayton, and Churchill Valleys, depend on groundwater for domestic supply. Since the 1970's the USGS has monitored groundwater-levels in these basins helping to identify trends of groundwater supply (Glancy and Katzer, 1976; Arteaga and Durbin, 1979; Berger, 1987; Harrill and Preissler, 1994; Maurer and others, 2009). The USGS has partnered with the CWSD since the 1990s to continue groundwater data collection in the form of a long-term monitoring network. The network has established the collection of groundwater-level measurements at spatial and temporal frequency designed to (1) inform stakeholders on conditions of groundwater levels in the middle Carson River area, and (2) maintain a network that measures wells used for the USGS Middle Carson Groundwater Model, for future scenario evaluation or model validation purposes.

The middle Carson River monitoring network includes 175 wells in the current agreement and USGS will now include five wells in Churchill Valley that were historically monitored under the Douglas County agreement (Figure 2). Shifting these five wells into the middle Carson agreement is thought to be more appropriate as these are wells spatially located in the middle Carson area. This network is designed to collect quarterly water-level measurements (45 wells) nested near locations of annual measurements (135 wells). This design captures inter-annual groundwater-level trends quarterly, while expanding spatial coverage of Eagle, Dayton, and Churchill Valleys to identify areas of groundwater change. The network also captures the response of groundwater to large annual variation in precipitation over the over the last few decades.

Precipitation is measured in select areas of the middle Carson area to gain understanding of recharge. Bulk precipitation gages located on McClellan Peak, in Brunswick Canyon, Churchill Butte, and in the Virginia Range, are visited and serviced two to four times per year.

Water-quality samples are collected annually at one site in a location identified by CWSD based on aquifer storage and recover project feasibility in the middle Carson River area. The number of samples over the project duration may be reduced based on the cost of lab analysis requested.

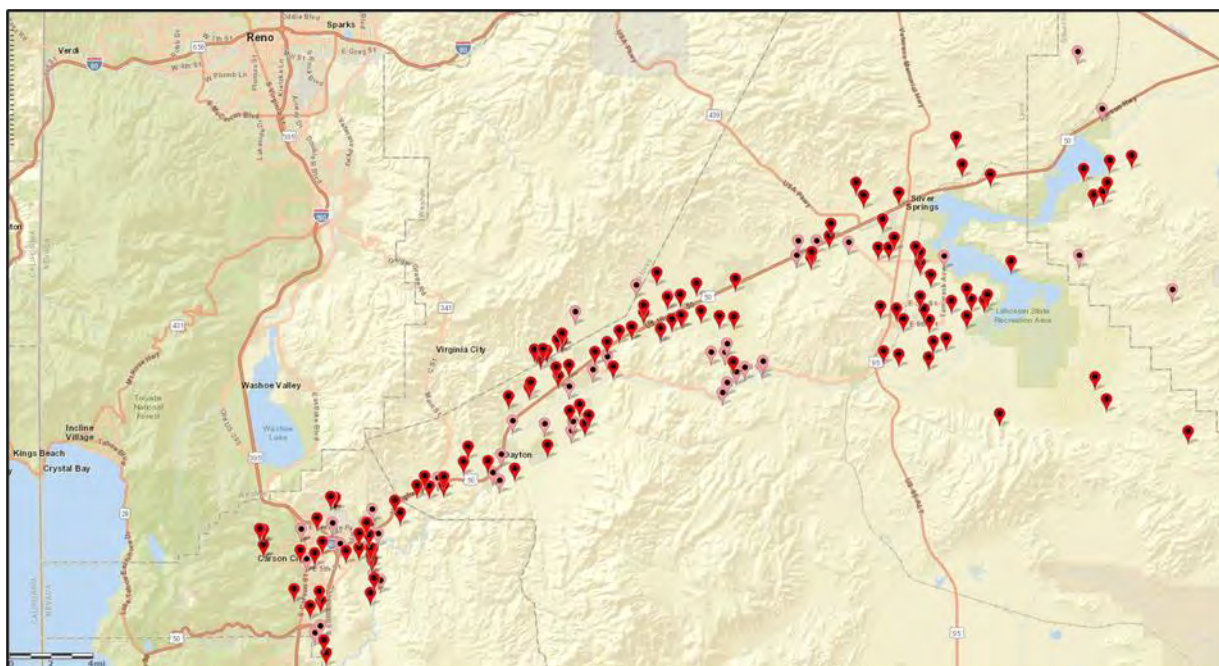


Figure 2. Wells in the middle Carson River monitoring network.

Table 2. Funds Distributed per Fiscal Year

[Fiscal year (FY) represents the Nevada state fiscal years from July 1 - June 30]

Agency	FY 2024 ^a	FY2025	Total
CWSD	N/A	18,500	18,500
USGS Matching Funds	N/A	13,400	13,400
Total	N/A	31,900	31,900

^a Fiscal year 2024 is included in the previous joint funding agreement.

Newlands

Current CWSD and Churchill County agreement: July 1, 2021 – June 30, 2023

Requesting funds for July 1, 2023 – June 30, 2025 (Table 3)

Project description: Lahontan Valley residents depend exclusively on groundwater resources for domestic and municipal drinking-water supply. To inform Churchill County and federal agencies on the changing condition of groundwater resources in Lahontan Valley, the USGS has monitored water levels from the beginning of the Newlands Project in 1903 (Stabler, 1904). The groundwater network currently monitored by the USGS consists of 64 wells distributed throughout the Lahontan Valley (Figure 3) to monitor water-level change of the aquifers used for domestic and municipal supplies. Wells are measured quarterly (26 wells), biannually (19 wells), and annually (19 wells).

Domestic water supply consists of wells completed in valley-fill deposits characterized by Glancy (1986) as the shallow aquifer, from 0-50 ft below land surface (bls), and the intermediate aquifer from 50-500

ft bls. The Nevada State Engineer's well log database indicates 1,823 shallow and 2,736 intermediate wells inventoried in the project area. Beneath the intermediate aquifer, greater than 500 ft bls, is the deep aquifer which is generally considered non-potable (Glancy, 1986). The domestic water supply monitoring network consists of 37 wells screened within the shallow aquifer and 15 wells in the intermediate aquifer.

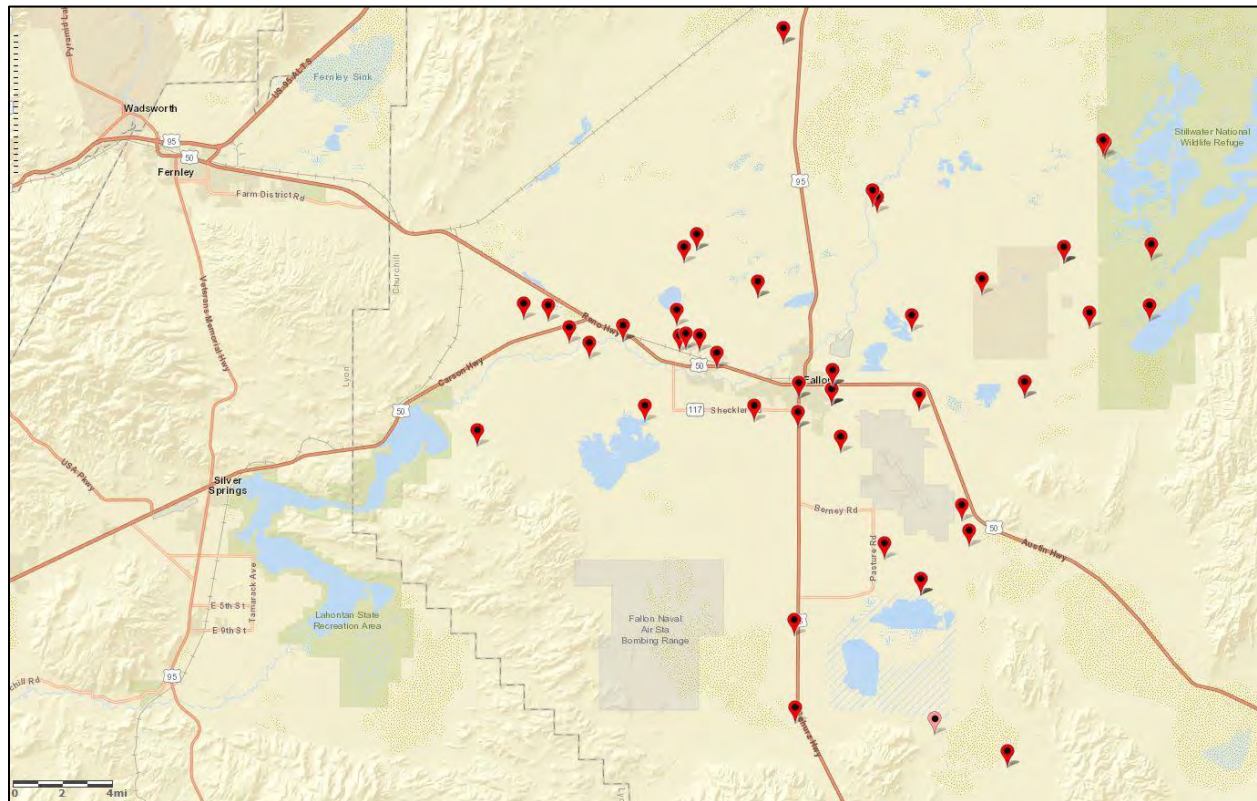


Figure 3. The Newlands network of monitoring wells.

Water-quality samples are collected from a total of four domestic wells, including two wells in the shallow aquifer and two wells in the intermediate aquifer. Samples are analyzed for field parameters of temperature, pH, specific conductance, dissolved oxygen, and major ions, total arsenic, and nutrients, including nitrates. Previous domestic wells samples have indicated increasing concentrations of nitrates and arsenic, therefore wells chosen for ongoing sample collection will be dynamic.

Municipal water supply for Fallon, the Paiute-Shoshone Tribe, and Naval Air Station Fallon (NAS Fallon) is withdrawn from the fractured basalt aquifer of limited extent, located northwest of central Fallon. Quarterly water-level monitoring of the basalt aquifer consists of measuring 12 wells nested at four locations in east and central Fallon. Annual water-quality samples are collected from one municipal well completed in the basalt aquifer well and analyzed for field parameters of temperature, pH, specific conductance, dissolved oxygen, and major ions, total arsenic, and nutrients, including nitrates. The frequency of water-level measurements and water-quality sampling of the basalt aquifer will remain annual.

Table 3. Funds Distributed per Fiscal Year

[Fiscal year (FY) represents the Nevada state fiscal years from is July 1 - June 30]

Agency	FY 2024	FY2025	Total
CWSD	18,600	19,500	38,100
Churchill County	TBD	TBD	TBD
USGS Matching Funds	13,500	14,200	27,700
Total	32,100	33,700	65,800

Combined Carson River basin project budget

Project budgets have been combined into a single budget for the purposes of the combined Carson River basin project, shown in Table 4. Estimated total cost for this project is approximately \$188,300. The USGS can provide a 42% match, which is about \$79,100. This estimate is subject to change based on availability of USGS cooperative matching funds. Carson Water Subconservancy District would be responsible for the remaining cost of about \$109,200, a portion of which may be contributed by Churchill County for the Newlands section pending their agreement to funding.

Table 4. Collective Carson River basin project, Total Funds Distributed per Fiscal Year

[Fiscal year (FY) represents the Nevada state fiscal years from is July 1 - June 30]

Agency	FY 2024	FY2025	Total
CWSD	44,200	65,000	109,200
Churchill County	TBD	TBD	TBD
USGS Matching Funds	32,000	47,100	79,100
Total	76,200	112,100	188,300

References

Arteaga, F.E., and Durbin, T.J., 1979, Development of a relation for steady-state pumping rate for Eagle Valley ground-water basin, Nevada: U.S. Geological Survey Open–File Report 79-261, 44 p.

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AGENDA ITEM #6

CARSON WATER SUBCONSERVANCY DISTRICT

TO: FINANCE COMMITTEE MEMBERS

FROM: EDWIN D. JAMES

DATE: FEBRUARY 27, 2023

SUBJECT: Agenda Item #6 - For Possible Action – Make recommendations for the Tentative General Fund, Tentative Acquisition/Construction Fund, and Tentative Floodplain Management Fund FY 2023-24 Budgets

DISCUSSION: Review and develop balanced budgets for Tentative General Fund, Tentative Acquisition/Construction Fund, and Tentative Floodplain Management Fund.

STAFF RECOMMENDATION: Provide direction to staff to submit balanced budgets for FY 2023-24 Tentative General Fund, Tentative Acquisition/Construction Fund, and Tentative Floodplain Management Fund to CWSD March Board meeting.