WaterSMART Cooperative Watershed Management Program (CWMP) Grant

The Stormwater Coalition of Southern New Mexico: *Furthering Watershed Restoration Planning and Project Design for the Hatch and Mesilla Valley - "Keeping the water and the soil on the watershed"*

Location: El Paso-Las Cruces HUC 8 Watershed (13030102)

Final Project Report

Agreement #R19AP00267
Jornada Resource Conservation & Development, Inc. (Fiscal Agent for the South Central NM Stormwater Management Coalition)
2101 S. Broadway, Truth or Consequence, NM 87901
May 1, 2023

1. Recipient Information:	
Recipient Name: (Name, contact person, address and phone number)	**Merry Jo Fahl** **Executive Director** **Jornada RC&D** **2101 S Broadway** **T or C NM 87901** **575-740-7723 (cell)**
Project Name:	**The Stormwater Coalition of Southern New Mexico: Furthering Watershed Restoration Planning and Project Design for the Hatch and Mesilla Valley - "Keeping the water and the soil on the watershed"**
Assistance Agreement No:	**#R19AP00267**
Date of Award: (Month, Year)	**(Agreement effective) September, 2020**
Estimated Completion Date (Month, Year)	**September, 2022**
Actual Completion Date: (Month, Year)	**March 31, 2023**

2. Final Funding Information	Funding Amount
Non-Federal Entities	
1.	
2.	
3.	
Non-Federal Subtotal:	
Other Federal Entities	
1.	
2.	
3.	
Other Federal Subtotal:	
Requested Reclamation Funding:	$99,982.00
Total Project Funding:	99,982.00

3. One Paragraph Project Summary:
Throughout the increasingly arid Hatch and Mesilla Valleys, as is common across the Southwest, vegetation loss in upland watersheds is leading to floods that scour soils and transport sediment, which in turn clogs downstream riparian areas, agricultural infrastructure, and overwhelms downstream flood control infrastructure. Higher flow energies and decreased infiltration are diminishing water storage and supplies across the landscape, negatively impacting agriculture, communities, and ecosystems. The South Central New Mexico Stormwater Management Coalition (Stormwater Coalition) is a grass-roots, non-regulatory

group that was established in 2010 to develop cross-agency regional watershed management collaboration with diverse stakeholders for stormwater management and to identify the watershed dynamics that affect its management. The partners include the Flood Commissions, Soil and Water Conservation Districts, and Counties in the watershed; the Elephant Butte Irrigation District – the largest irrigation district in New Mexico; the Village of Hatch; and the City of Anthony. Collaborators extend throughout the watershed and include producers – both farmers and ranchers, federal agencies such as the Bureau of Land Management, the Natural Resource Conservation Service, and the US International Boundary and Water Commission; watershed groups such as the Paso del Norte Watershed Council; universities and associated organizations, and municipalities and their organizations, such as the City of Las Cruces (CLC). As part of this project, the Stormwater Coalition i) completed its organizational development, ii) conducted community outreach and partnership collaborator development, iii) assembled a watershed planning technical and stakeholder task force reflective of the watershed diversity, iv) developed a community-based comprehensive watershed plan from workshops, synthesized previous work and collected data, and v) developed 18 watershed management priority project designs. Through developing local solutions which can be implemented across the region, the Stormwater Coalition's goals are to increase collaboration to improve watershed health by *keeping the water and the soil on the watershed*. Measures of success are the strengthening of resilience of the social and ecological systems in all sectors. The objectives of this approach were to complete the project milestones, and produce plans and project designs that reduce sediment transport, prevent flooding, increase upland vegetation productivity, increase upland flood flow infiltration, and increase water supply through shallow groundwater aquifer recharge from flood flows and stormwater in valleys.

4. Final Project Description: *Briefly describe components of the project and the work completed, including each element of the scope of work and the work completed at each stage of the project. Please include maps, sketches, and/or drawing of the features of the completed project, as appropriate. In addition, please describe any changes in the project scope.*

The main outputs of the project were the organizational and collaborative development, the watershed plan, and the priority projects. See description below on the milestones identified in the agreement, and section 5 for a description of the goals of the project. Also see Attachment B for a link to the website, which has the watershed plan posted. Most milestones outputs are included in the Hatch and Mesilla Valley Watershed Plan and does not require additional detail, but see below .

Milestone / Task / Activity	Start Date (Project September 1, 2020)	Completion Date (Project January 31, 2022)
Environmental and Cultural Compliance	9/1/2020	12/31/2020
Technical & Stakeholder Task Force assembly and meetings	11/4/2020	1/31/2023
Regarding the above milestone: The Task Force provided direction and feedback through workshops (see below) and each month at the Stormwater Coalition monthly meetings.		

Compile existing information	9/1/2020	3/31/2021
Regarding the above milestone: the outputs are included in the Hatch and Mesilla Valley Watershed Plan.		
Conduct background watershed system analysis	9/1/2020	12/15/2022
Regarding the above milestone: the outputs are included in the Hatch and Mesilla Valley Watershed Plan.		
Conduct field watershed analysis	9/1/2020	12/15/2022
Regarding the above milestone: the outputs are included in the Hatch and Mesilla Valley Watershed Plan.		
Develop plan approaches and priority projects	10/1/2020	11/30/2022
Regarding the above milestone: the outputs are included in the Hatch and Mesilla Valley Watershed Plan.		
Conduct Technical & Stakeholder Collaborative Workshops	4/23/2021	1/31/2023
Regarding the above milestone: Workshops were conducted on 12/3/2020, 1/12/2021, 10/20/2021, 7/13/2022, and 1/30/2023.		
Submit 270-Day Sufficiency Report	5/1/2021	5/31/2021
Draft restoration plan and priority project plan	4/22/2022	12/15/2022
Write guidelines and specifications	7/1/2021	12/15/2022
Regarding the above milestone: the outputs are included in the Hatch and Mesilla Valley Watershed Plan.		
Finalize restoration plan and priority project plan	7/28/2022	1/31/2022
Integration of restoration plan into other regulatory documents	9/30/2021	12/15/2022
This item was complete by 12/15/22 and includes: inclusion of priority projects in agency/municipality/organizations priorities, refinements of the BLM NEPA process to be issue-based to streamline approvals for projects, and plans initiated for revisions to existing agency/municipality/organizations overall policies as they relate to watershed health.		
Conduct community outreach and collaboration	9/1/2020	1/31/2023
Regarding the above milestone: Workshops were a primary form for outreach, see "Conduct Technical & Stakeholder Collaborative Workshops" for description. Additionally, six focus group/interviews with ranchers and farmers were conducted in December 2022 and January 2023. A survey was also developed with 19 responses.		
Develop collaborator status	10/1/2020	12/31/2020
Regarding the above milestone: This was included in the by-laws adopted by group 12/21		
Assembly of Technical and Stakeholder Task Force	9/1/2020	11/4/2020
Development of bylaws	1/1/2021	3/31/2021
Regarding the above milestone: By-laws adopted by group 12/21		

Investigation of organizational tax status	1/1/2021	3/31/2021
Regarding the above milestone: Submitted 1023 non-profit form to the IRS and it was approved		
Development of business practices	1/1/2021	3/31/2022
Regarding the above milestone: This task began with working out the protocols associated with the project, and will continue with the other organizational development scope		
Development of website	1/1/2021	1/31/2023
Regarding the above milestone: The website is complete and live.		

5. Accomplishment of Project Goals: *Describe the goals and objectives of the project and whether each of these was met. Where appropriate, state the reasons why goals and objectives were not met, and describe any problems or delays encountered in completing the project. Please include whether or not the project was completed within cost.*

Goals and objectives

- Goal: Through developing local solutions which can be implemented across the region, the Stormwater Coalition's goals are to increase collaboration to improve watershed health by *keeping the water and the soil on the watershed*.
    - *Project results: the team has found that general agency collaboration increased significantly in the workshops, and the highest level of sustained collaboration occurs during actual project development and implementation. The team's watershed plan includes seven overall approaches to guide development of local solutions and twenty-two projects that support one or more of those approaches.*
        - *Four projects aligning with important objectives identified by the plan were awarded before or separately from the CWMP*
        - *Four grants including eight projects have been awarded stemming out of the collaboration of this grant*
        - *Two additional projects have been submitted for funding*
        - *Eight projects are next in line as a priority for funding opportunities*
- Measures of success are the strengthening of resilience of the social and ecological systems in all sectors.
    - A regional planning process was developed to increase water and community resilience that includes the below critical components. An assessment of progress on each component is included.
        - 1) Visions of future resilience and goals built from what is valued, issues faced, and desired strategies to employ or test
            - *Project results: Our team was successful in the planning process being driven by the diversity of stakeholder perspectives (derived through 5 workshops, 6 focus group/interviews with ranchers and farmers, field project visits with approximately 12 farmers, and the 19 responses to the survey)*
        - 2) Build collaborative network of partnerships across landscape
            - *Project results: Our team was successful in extending collaboration of the Stormwater Coalition and engaging stakeholders in the process. Over the course of the workshops,*

focus groups, interviews, field project visits, and the survey, participants included 90 individuals from 63 different organizations/businesses working to develop the 22 different projects

- 3) Build mutual understandings of critical regional dynamics of the ecosystems and the communities that rely upon them
  - *Project results: Because the team has taken care to discuss and arrive at mutual understandings of the watershed-scale dynamics and identify the drivers of degradation, consensus on the priorities is easily achieved. Extensive local knowledge is critical to understanding these dynamics.*
- 4) Identify potential pathways to resilience of combinations of strategies and triggers for action
  - *Project results: The team was successful in identifying 7 main approaches, which guides project development. One of the projects that has been awarded is quantifying the benefits of several of these pathways.*
- 5) Implement actions and monitor to assess ability to achieve visions
  - *Project results: The team has been successful in developing projects and seeking funding (once again, 22 projects developed, 8 projects awarded funding, 4 additional in collaboration with this project, 2 additional awaiting funding determination)*

- The objectives of this approach were to:
  - complete the project milestones
    - *Project results: the milestones were completed*
  - produce plans and project designs that reduce sediment transport, prevent flooding, increase upland vegetation productivity, increase upland flood flow infiltration, and increase water supply through shallow groundwater aquifer recharge from flood flows and stormwater in valleys.
    - *Project results: 18 plans that meet these objectives were created specifically out of this project*
- Rather than a problem, we had additional opportunities which compelled us to extend the project by four months.
  - *We requested an extension as described by the original request: The Jornada RC&D Board of Directors and project task force members would like to request an extension to January 31, 2023. The purpose is to allow for additional stakeholder engagement and input and subsequent plan and priority project development. While we have substantial input and project development that fulfills our milestones within our current project period, additional interest and engagement from increased potential funding sources has introduced new priority projects and plan elements that would benefit from additional engagement and subsequent development.*

Project was completed within cost.

6. Discussion of Amount of Water Conserved, Marketed or Better Managed: *In responding to the questions set forth below, Recipients should rely on the best data or information available. Actual field measurements should be used whenever possible (e.g., baseline data or post-project data derived from measuring devices, diversion records, seepage tests, etc.) Where actual field measurements are not available, water savings (or amounts marketed or better managed) may be estimated based on studies, other similar improvement projects, or anecdotal evidence.*

A. Recipient's total water supply (average, annual, available water supply in acre-feet per year):

Significant targets of this project are to better manage flood flows, as well as better agricultural management and conservation of water, particularly to refill the groundwater aquifer which both agricultural communities and the riparian vegetation rely upon. This team is currently engaged in a project to measure these flood flow quantities more precisely (Reclamation Drought Resiliency Project with EBID), we can start to understand the quantities using the NM Water Resources Research Institute's Dynamic Statewide Water Budget Model. In the information provided in Attachment D, one can see that runoff is estimated to have declined significantly over the last over 40 years. In 2000, as drought conditions were beginning in significance, the runoff estimate was approximately 20,230 AF (New Mexico Water Resources Research Institute, n.d.; Peterson, Hanson, Roach, Randall, & Thomson, 2019). Likely this is understated, as runoff from uplands is difficult to accurately measure, but better management of flood flows and diversions of water, particularly groundwater pumping, can at a minimum put tens of thousands of AF to more productive use, particularly for aquifer recharge or supplemental supplies in lieu of groundwater pumping, and increase resilience throughout the watershed. The most current uses of surface and groundwater in the region are also included in Attachment D.

B. Amount of water conserved, marketed or better managed as a result of the project (in acre-feet per year):

N/A (planning project)

C. Describe how the amounts stated in response to 6.B were calculated or estimated: *In responding to this question, please address (1) – (3) below.*

(1) Describe the information/data being relied on to calculate/estimate the project benefits. State how that data/information was obtained, if appropriate. Provide any other information necessary to explain how the final calculation/estimate of project benefits was made.

N/A (planning project)

(2) As appropriate, please include an explanation of any concerns or factors affecting the reliability of the data/information relied on.

(3) Attach any relevant data, reports or other support relied on in the calculation/estimate of project benefits, if available. Please briefly describe the data/information attached, if any.

N/A (planning project)

D. Use of Conserved Water: *Please explain where the water saved, better managed, or marketed as a result of the project is going (e.g. used by the recipient, in stream flows, available to junior water users, etc.*

N/A (planning project)

E. Future tracking of project benefits: *Please state whether and how the recipient plans to track the benefits of the project (water saved, marketed or better managed) in the future. If no actual field measurements are currently available to support the estimate of project benefits in 6.B., please state whether actual field measurements will become available in the future. If so, please state whether the Recipient is willing to provide such data to Reclamation on a voluntary basis once it is available.*

As mentioned in Section 6a, our team in engaged in a project to measure flood flow quantities more precisely (Reclamation Drought Resiliency Project with EBID), and our team would be happy to share this data with Reclamation.

In regards to future tracking of implementation of our plans, our planning process guides our implementation program, and our progress indicators in the form of the

project schedule milestones (see p. 16-19 of the watershed plan). Our aim is for our planning document to be a living document that reflects our continuing development and adaptations based upon increased understanding of our regional natural and community dynamics. Key elements include:

- Include in future funding proposals adaptations to this process, including:
    - Document results in this Watershed Plan as a plan revision
    - Update website
    - Issue press releases
- Meet regularly to monitor progress on plan milestones, adapt and develop the plan, approaches, and practices with new knowledge from project results and collaborations, and extend collaboration across the region
    - Meeting frequency, approximately twice a year, no less than once a year
- Seek commitments from agencies and the necessary funding for staff to have responsibility to collaborate across region for watershed health goals
- Seek funding for training on management strategies that can increase the regional watershed resilience
- Build a restoration and maintenance approach that has stable and continuous funding

7. Discussion of Amount of Renewable Energy Added: *If your project included the installation of a renewable component, please describe the amount of energy the system is generating annually. Please provide any data/reports in support of this calculation.*

N/A

8. Describe how the project demonstrates collaboration, stakeholder involvement or the formation of partnerships, if applicable: *Please describe the collaboration involved in the project, and the role of any cost-share or other types of partners. If there were any additional entities that provided support (financial or otherwise) please list them.*

As detailed in section 5, our team was successful in extending collaboration of the Stormwater Coalition and engaging stakeholders in the process. Over the course of the workshops, focus groups, interviews, field project visits, and the survey, participants included 90 individuals from 63 different organizations/businesses working to develop the 22 different projects.

9. Describe any other pertinent issues regarding the project:

10. Feedback to Reclamation regarding the WaterSMART Program: *Please let us know if there is anything we can do to improve the WaterSMART program in general, including the process for applying for or completing a WaterSMART project. Your feedback is important to us.*
Thank you for supporting our important project, we have leveraged these efforts to develop significant projects in the region.

11. Attachments: *Please attach the following*

- **Attachment A:** Maps showing the location of the recipient's facilities (see paragraph 4, above)
- **Attachment B:** A link to the watershed plan available on the website. The plan includes maps, sketches, and drawings of the features of the completed project, as appropriate (see paragraph 5, above)
- **Attachment C:** A table showing the total expenditures for the completed project
- **Attachment D:** Available data or information relied on in responding to paragraph 7, above

NOTE: This Final Report Format is a suggested format only; the recipient may use its own form or format. A report in this form will satisfy the requirements of 43 CFR 12.80 or 12.951, as applicable. Failure to submit timely and acceptable progress reports places a recipient in noncompliance with the terms and conditions of the assistance agreement. Noncompliance can result in the withholding of assistance payments, suspension or termination of the assistance award and may delay further awards.

Attachment A. Maps showing the location of the recipient's project

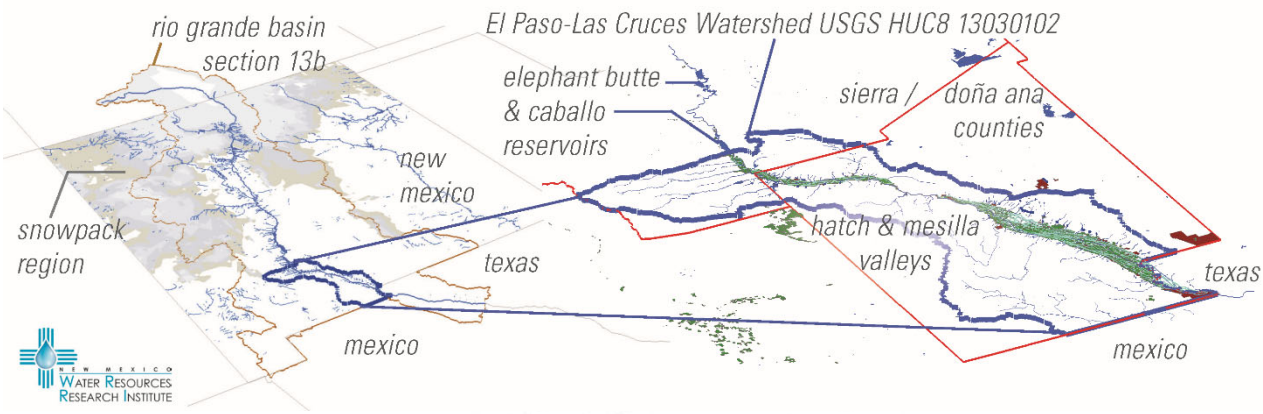


Figure 1. Project Location, the southern New Mexico region of the Rio Grande basin. This arid region relies heavily on surface water supplies from reservoirs filled primarily by snow-pack runoff.

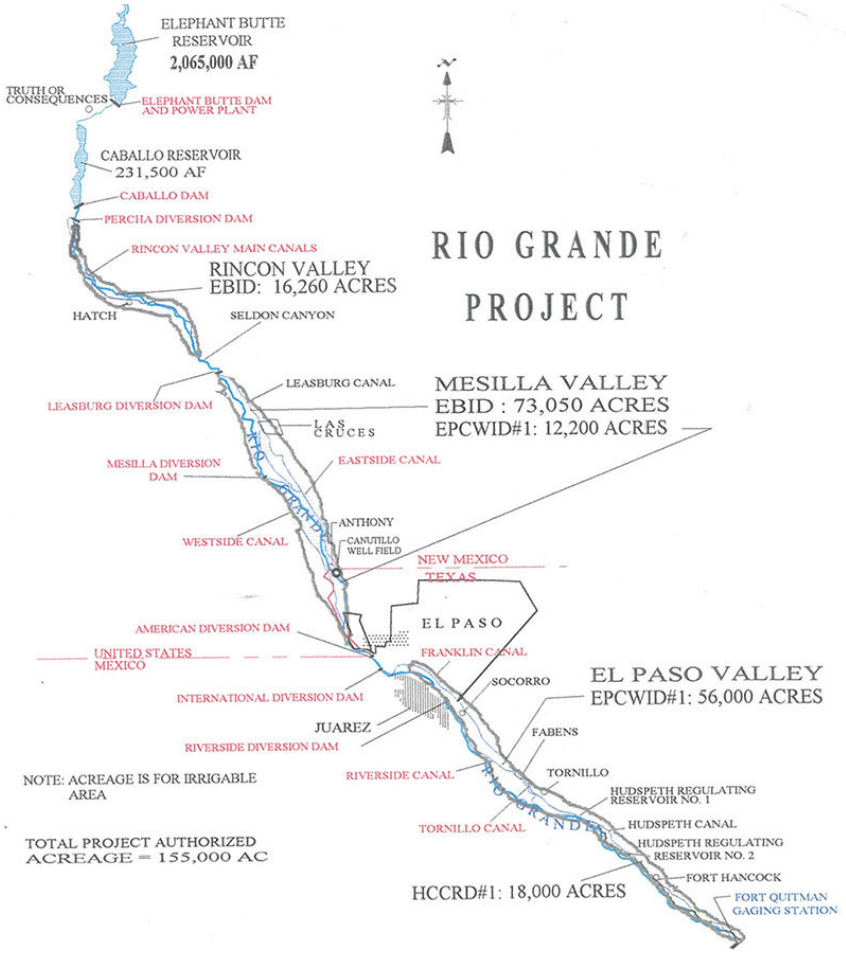
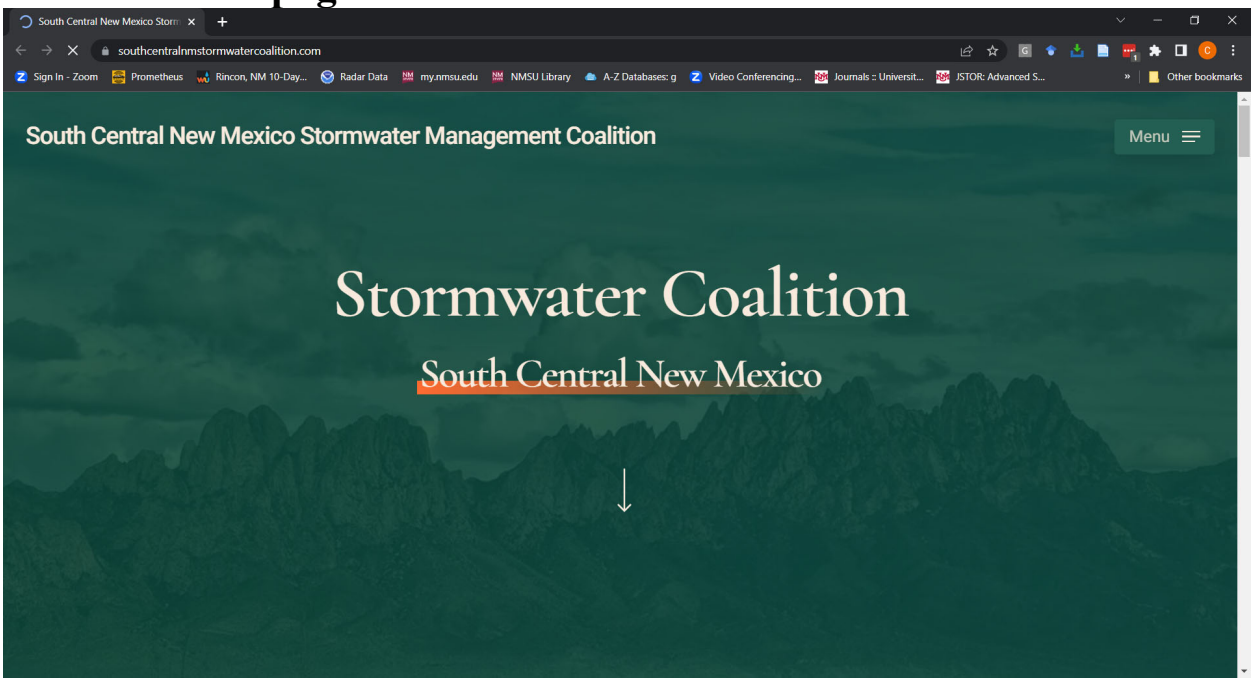


Figure 2. El Paso-Las Cruces HUC 8 Watershed superimposed onto the Reclamation Rio Grande Project (RGP) (from Bureau of Reclamation, 2017)

Attachment B. A link to the watershed plan available on the website: https://www.southcentralnmstormwatercoalition.com/

Website home page



Watershed Plan cover:

The South Central New Mexico Stormwater Management Coalition
(working with Collaborators across the region)

overall watershed planning led by:

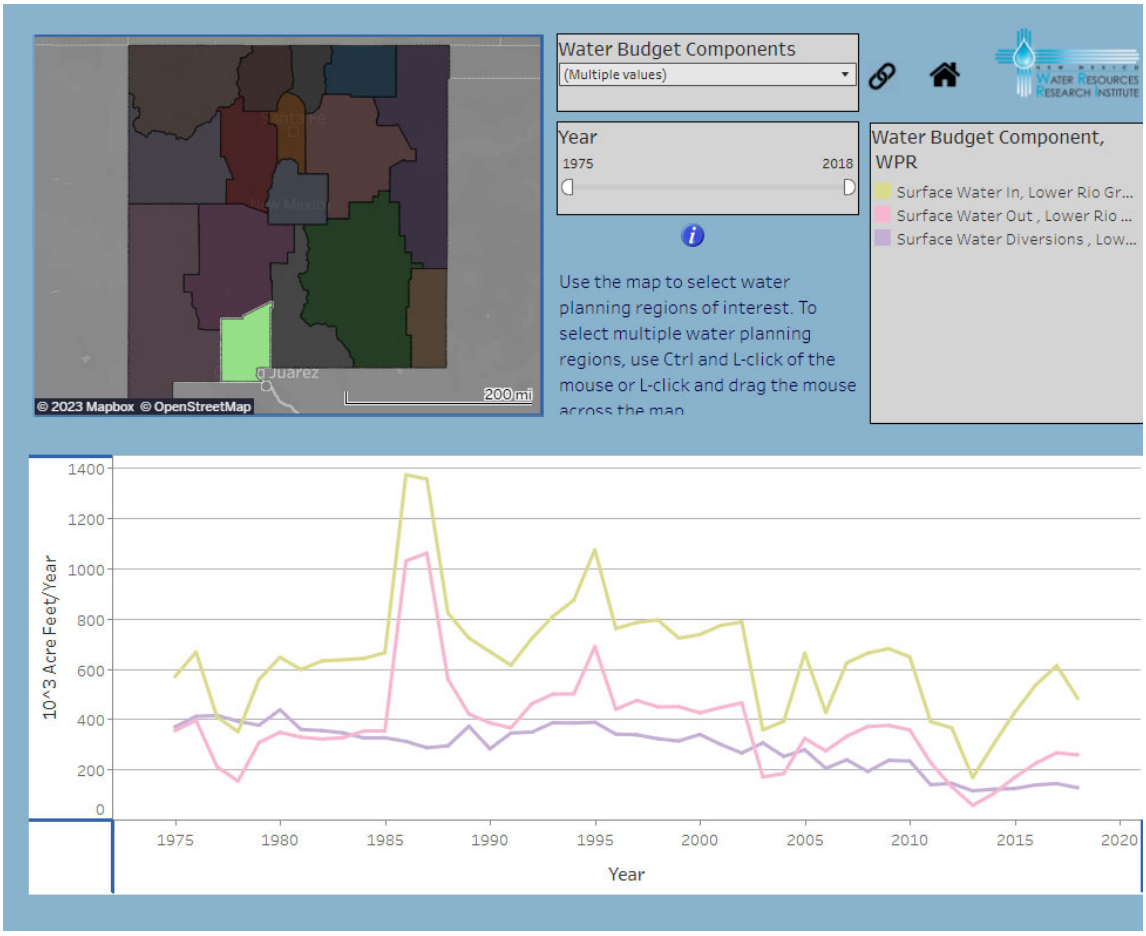
priority project planning led by:

Attachment C. FINAL PROJECT COSTS TABLE. *Please provide a breakdown of the final costs of your project. The following table is provided as an example and may be modified as needed.*

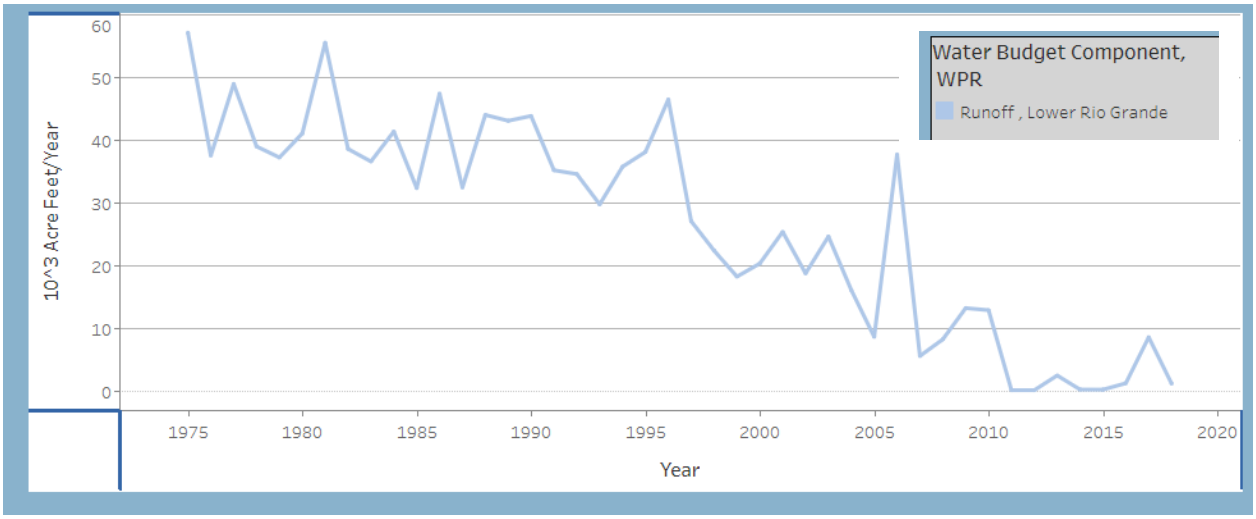
BUDGET ITEM DESCRIPTION	COMPUTATION		RECIPIENT FUNDING	RECLAMATION FUNDING	TOTAL COST
	$/Unit and Unit	Quantity			
SALARIES AND WAGES				7,000	
Employee 1					
Employee 2					
FRINGE BENEFITS					
Full-time employees __%					
Part-time employees__%					
TRAVEL					
Trip 1					
Trip 2					
EQUIPMENT					
Item A					
Item B					
Item C					
SUPPLIES/MATERIALS				2,000	
Office Supplies					
Construction					
CONTRACTUAL/ CONSTRUCTION				90,982	
ENVIRONMENTAL AND REGULATORY COMPLIANCE					
OTHER					
Reporting					
TOTAL DIRECT COSTS					
INDIRECT COSTS - __%					
TOTAL PROJECT COSTS				99,982	

Attachment D. Available data or information relied on in responding to paragraph 7

Estimated surface water in total in region (also from upland runoff)



Difference in the same year as report (2015) between surface water in and surface water out was 259,480 AF, with 123,370 AF being used in the region. While 136,110 AF remain, typically in drylands 90-95% of precipitation is consumed by evaporation and transpiration (Sun, Wilcox, & Zou, 2019)



Runoff has declined significantly over time. In 2000, the estimate was approximately 20,230 AF.

Estimated Diversions in the region of the RGP. From the most recent NM water use data release from the Office of the State Engineer, (2015) (Magnuson, Valdez, Lawler, Nelson, & Petronis, 2019).

	Diversions (acre-feet)			
Water Use Category	**Surface Water**	**Groundwater**	**Total**	%
Commercial (self-supplied)	0	6,261	**6,261**	**2%**
Domestic (self-supplied)	0	550	**550**	**0%**
Industrial (self-supplied)	0	29	**29**	**0%**
Irrigated agriculture	136,235	197,214	**333,449**	**87%**
Livestock	81	3,036	**3,117**	**1%**
Mining (self-supplied	0	17	**17**	**0%**
Power (self-supplied)	0	2,023	**2,023**	**1%**
Public water supply	0	37,055	**37,055**	**10%**
Total	**136,316**	**246,185**	**382,501**	
	36%	**64%**		

Bureau of Reclamation. (2017). Albuquerque Area Office | Upper Colorado Region. Retrieved from https://www.usbr.gov/uc/albuq/rm/RGP/index.html

Magnuson, M. L., Valdez, J. M., Lawler, C. R., Nelson, M., & Petronis, L. (2019). *New Mexico Water Use By Categories 2015, New Mexico Office Of The State Engineer Technical Report 55*. Retrieved from https://www.ose.state.nm.us/Plans/plans_annual.php

New Mexico Water Resources Research Institute. (n.d.). Statewide Water Assessment. Retrieved from https://nmwrri.nmsu.edu/category-blocks-swa/#DSWB

Peterson, K., Hanson, A., Roach, J., Randall, J., & Thomson, B. (2019). *A Dynamic Statewide Water Budget for New Mexico: Phase III–Future Scenario Implementation Technical*

Completion Report #380. Retrieved from https://nmwrri.nmsu.edu/wp-content/uploads/TR/tr380.pdf

Sun, X., Wilcox, B. P., & Zou, C. B. (2019). Evapotranspiration partitioning in dryland ecosystems: A global meta-analysis of in situ studies. *Journal of Hydrology, 576*, 123-136.