

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"



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The South Central New Mexico Stormwater Management Coalition



flood
commission



flood
commission



City of Anthony
New Mexico
— Est. July 1, 2010 —

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Technical Proposal and Evaluation Criteria

1) Executive Summary

Date: November 13, 2019

Applicant: South Central New Mexico Stormwater Management Coalition (Stormwater Coalition’s fiscal agent: the Jornada Resource Conservation & Development Council))

City: Las Cruces **County:** Doña Ana
(USGS HUC unit 13030102) – HUC 8 Watershed

Federal Facilities: Watershed includes Reclamation (the Rio Grande Project (RGP)), BLM, IBWC property jurisdictions, and the Organ Mountain-Desert Peaks National Monument

Project Length: 24 months

Estimated completion date: August 31, 2022

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 will i) complete its organizational development, ii) conduct community outreach and partnership collaborator development, iii) assemble a watershed planning technical and stakeholder task force reflective of the watershed diversity, iv) develop a community-based comprehensive watershed plan from workshops, synthesized previous work and collected data, and v) develop 5-10 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 will be the strengthening of resilience of the social and ecological systems in all sectors. The objectives of this approach are 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.

2) Background Data

2.1 Watershed Description

Rural agricultural communities are the primary managers of the ecological systems of the watershed of the Hatch and Mesilla Valleys. Urban development is on the rise and expanding northwards from the southern El Paso Juarez metropolitan region. This watershed contains the most productive farming lands of New Mexico's reach of the Rio Grande and contains New Mexico's second largest metropolitan area in this El Paso-Las Cruces HUC 8 Watershed (see Figure 1). The history of irrigation in the Rio Grande basin dates back over 2000 years to early floodwater irrigation techniques by the Mogollon and Pueblo people. In the early 1600's, the Spanish introduced the *acequia* system, (earthen irrigation ditches and the governing social system) to Northern New Mexico agricultural fields. The first acequias in this region can be traced back to 1805 in the Mesilla Valley. This region occupies the northern end of the Chihuahuan Desert and thus has been arid for many centuries. However increasing desertification has transitioned much of the area from predominantly grasslands, rich grasslands in some cases according to historic eye witness accounts (Dick-Peddie and Moir 1999), to mesquite creosote shrublands.

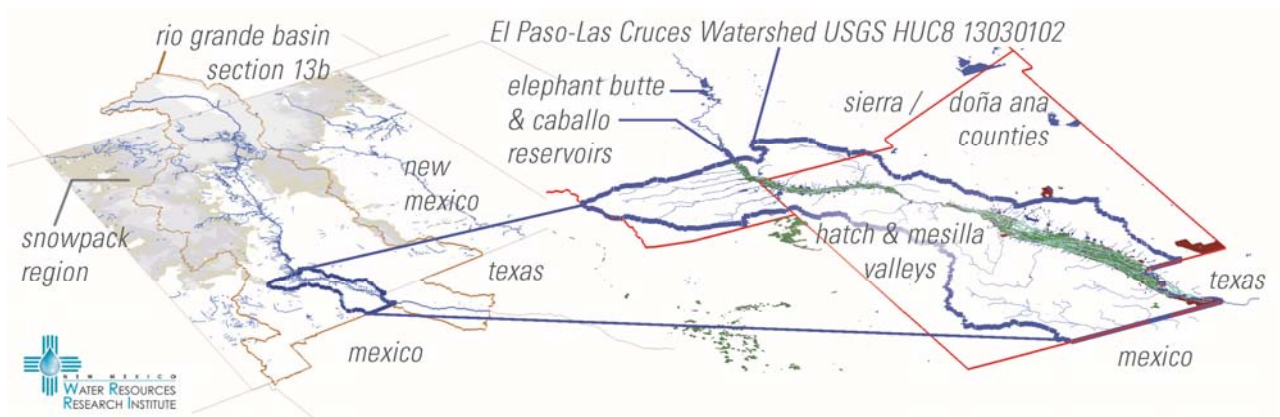


Figure 1. Project Location, the southern New Mexico region of the Rio Grande basin. This arid region relies heavily on surface water supplies from reservoirs filled primarily by snow-pack runoff.

2.2.1 Source of water supply

The Rio Grande basin relies upon headwater snow-pack storage.

The Rio Grande basin heavily relies upon headwater snow-pack storage as a source of surface water supply (see Figure 1 showing the extent of snow-likelihood probability from 1979-2012 (Klos et al. 2014)).

Surface water.

Reclamation's Rio Grande Project (RGP, Figure 2) serves to capture spring runoff from snowmelt and provide surface water to users, who in this watershed are primarily irrigators in southern New Mexico. This runoff along with summer monsoonal rain provides the majority of water storage contained in Elephant Butte Reservoir. Water is distributed from the Caballo Dam to the users in this watershed through Elephant Butte Irrigation District (EBID) irrigation canals and laterals, and downstream in the Rio Grande River to Texas and Mexico. The water is transported to the Texas state line and the border with Mexico.

Groundwater and re-use.

This watershed includes the groundwater sources of the shallow aquifers along the Rio Grande Valley. Two deeper aquifers, the Mesilla Basin and the Jornada Basin, provide potable water to municipalities, the largest being Las Cruces, villages and Colonias (informal unincorporated communities along the binational border).

2.2.2 Water rights involved

Prior appropriation. New Mexico is a prior appropriation state, where the rights are based upon beneficial use of the water, and the right to use the water during shortages is determined according to the chronological securing of the water right (Utton 2015). The agricultural users in this valley are the senior water rights holders.

Surface water. The RGP is the conduit for the surface water apportioned between New Mexico and Texas under the Rio Grande Interstate Compact and also between the U.S. and Mexico

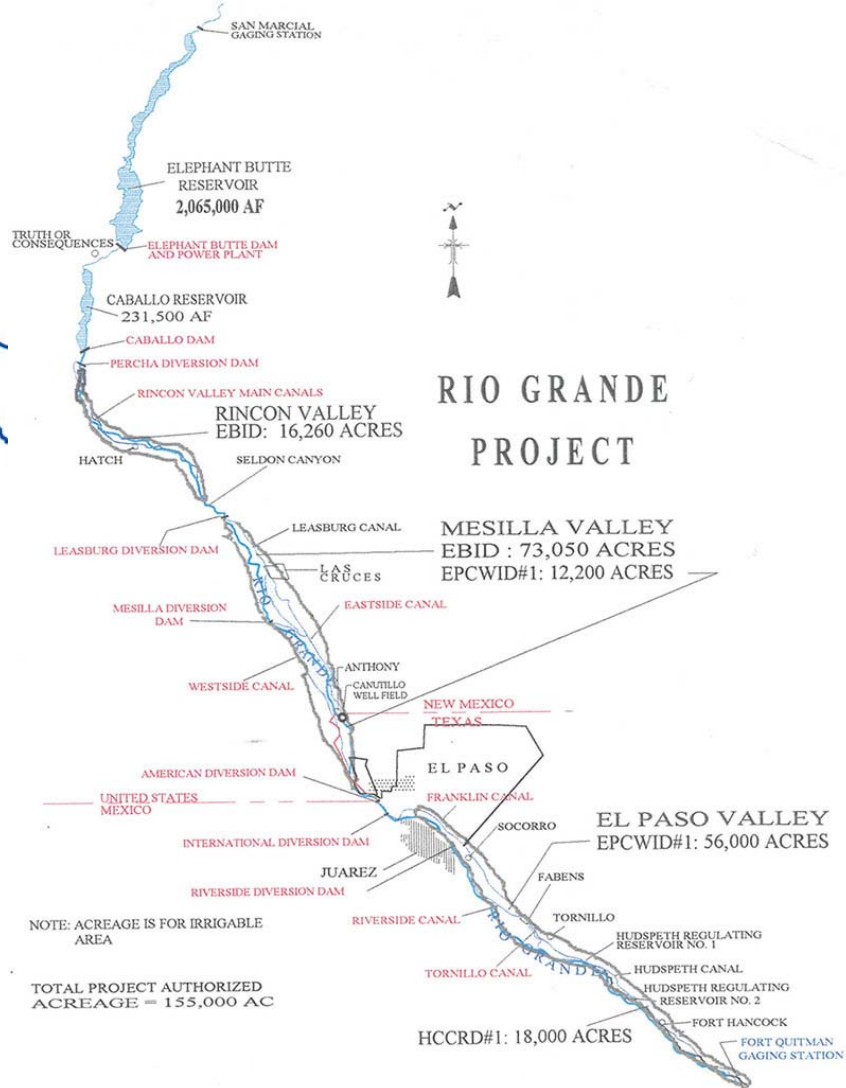


Figure 2. El Paso-Las Cruces HUC 8 Watershed superimposed onto the Reclamation Rio Grande Project (RGP) (from Bureau of Reclamation 2017)

pursuant to a 1906 Treaty. RGP water is stored at Elephant Butte and Caballo reservoirs and released to EBID, which delivers water to its members and ensures deliveries are made to EP1 in Texas and to Mexico (Wozniak, 1998). EBID customers own all the surface water rights in this region of New Mexico.

Groundwater. Groundwater rights are regulated by the New Mexico Office of the State Engineer, who is charged with administering the state's water resources and has authority over the supervision, measurement, appropriation, and distribution of all groundwater in New Mexico. See next section for uses and quantities associated with groundwater.

2.2.3 Length of existence

In 1905, The Bureau of Reclamation formed the Rio Grande Project (RGP) with the Elephant Butte Water Users Association and the El Paso Water User’s Association. The Bureau was empowered by the United States Government to construct Elephant Butte Dam, which was completed in 1916. The same authorization allocated water supplies among users in New Mexico, Texas and Mexico. The Elephant Butte Irrigation District (EBID) was established in 1919 as a political subdivision of the State of New Mexico to collect user fees to reimburse the government for the construction of the RGP and payment for operation and maintenance. In 1979, the EBID took over the operation, maintenance and distribution of surface water from the Bureau of Reclamation.

2.2.4 Current water uses

Table 1. Estimated Diversions in the region of the RGP. From the most recent NM water use data release from the Office of the State Engineer, (Magnuson et al. 2019).

Water Use Category	Diversions (acre-feet)			%
	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%		

Agriculture. In this region of the RGP, irrigated agriculture accounts for approximately 87% of the 380,000 acre-feet/year of surface and groundwater diversions in the basin. RGP surface water is allotted on a pro-rata basis annually for the irrigation of 90,640 water-righted acres within

EBID. Nearly all of the surface water and approximately two-thirds of the groundwater is diverted for irrigated agriculture.

Commercial and public water providers are the next largest categories of groundwater use in this watershed. Major water suppliers include the CLC Municipal Water System, Camino Real Regional Utility Authority, Lower Rio Grande Public Water Works Authority, New Mexico State University, and Anthony Water and Sanitation. There are also numerous smaller community water systems and Mutual Domestic Water Consumer Associations.

Municipal and industrial uses. Groundwater provides about 64% of the region's water supply and is the sole source of water for municipal and industrial uses. The CLC Utilities produces approximately 6.5 billion gallons of water annually, pumped from the Mesilla and Jornada Basins. In addition, the CLC recently acquired the Jornada Water System. The CLC provides potable water, landscape irrigation, industrial, and other municipal uses. The CLC stresses conservation and owns surface water rights. The City's long-range water plan calls for construction of a surface water treatment plant to extend the availability of potable water to residents.

2.2.5 Issues faced in the watershed

The watershed health conditions underlie all the issues listed below, and **described in detail in section 5.2.1**. Throughout this region, drought, increased flooding, and sediment transport are exacerbating landscape-scale water challenges as is common across the west. Less winter precipitation and higher temperatures have diminished snowpack storage (Fyfe et al. 2017; Hamlet et al. 2005), which results in less spring runoff quantities and flow durations for downstream water users (Jardine et al. 2013). Landscape losses of deep soils and vegetative cover in this region stem from historic overgrazing and fire suppression corresponding with climate effects (Antevs 1952; Bryan 1925, 1929). The Stormwater Coalition is committed to the strategy of addressing the underlying watershed health conditions, as we recognize that is the only way to address the root causes of the issues outlined below.

1) Degraded upper watersheds as indicated by increasing erosion and sediment transport is the critical underlying issue.

- Accelerating watershed health deterioration
- The necessity for stabilizing the overall watershed
- Identifying restoration opportunities
- Intensity, variability, and unpredictability of high-energy monsoonal storm cells
- Downstream agricultural and flood control infrastructure is clogged
- Sediment going into the Rio Grande riparian system
- Flood control infrastructure system overwhelmed
- Increased resource productivity

2) Water supply: increased variability, shortfalls, and aquifer depletion

- Landscape-scale water storage and supply challenges
- The need for an aquifer recharge strategy

3) Urban development expansion from the El Paso/Juarez metropolitan district towards Las Cruces

- Urban and suburban development
- The absence of a comprehensive planning approach to watershed protection allows
- Sustainable planning potential unrealized
- Cost-benefit ratio thresholds not met
- Loss of and the permanent fallowing of agricultural farmland

4) A need to increase watershed-scale coordination to achieve goals and reduce conflict

- Achieve stated stakeholder goals for increased watershed health and resource productivity to reduce flooding and control erosion are challenging to achieve.
- Decision making in this region not coordinated
- The Texas vs. New Mexico and Colorado water lawsuit conflict

5) A need for coordinated watershed planning efforts in the newly created Organ Mountains-Desert Peaks National Monument

- Traditional or grey engineering (concrete) flood control approaches are challenging in BLM Monument boundary
- The need for a comprehensive watershed management plan to foster collaboration with the BLM and accelerate the planning process.

2.2.6 Past working relationships with Reclamation

As a significant participant in the Stormwater Coalition, EBID’s past work with Reclamation is pertinent. EBID has worked on several projects with Reclamation, including three projects in the Water 2025 Challenge Grant program in 2004. One of those projects was in partnership with El Paso Water Utilities to improve monitoring water quality in the Rio Grande Project. Another was in partnership with the City of Las Cruces, to develop regulating retention capacity on one of the City’s storm water ponds. The third implemented various water conservation pilot projects, including drip and sprinkler irrigation using surface water. EBID has also designed and successfully accomplished a Water and Efficiency Grant (WEEG) and has recently started another. Both of EBID’s WEEG grants focused on water conservation, addressing a new energy nexus created by the pumps that help improve delivery efficiency, and creation of habitat for the Southwest Willow Flycatcher. A summary of previous work carried out by EBID with Reclamation funding is presented below in Table 2.

Table 2. Previous EBID grants from Reclamation.

Program	Grant No.	Year started	Amount
Challenge Grant 2025-EBID	05-FC-40-2394	2004	\$300,000
Challenge Grant 2025-EP	05-FC-40-2392	2004	\$154,675
Energy and Water Development Appropriation Act	06-FC-40-2541	2006	\$1,651,500
BOR Remote Sensing	08-FC-40-2799	2008	\$239,354
BOR Irrigation Management System	R12AP40019	2012	\$80,000

BOR WaterSMART – Rincon WHEN	R14AP00100	2014	\$808,557
BOR WaterSMART- Picacho WHEN	R18AP00197	2019	\$998,182

The work of Bureau of Reclamation - most prominently, the RGP - is integral to the management and function of water delivery through the Hatch and Mesilla Valley Watershed, HUC 8. As stewards of these water resources, this group intends to:

- contribute data for the better understanding of the watershed and the HUC 8,
- mitigate critical watershed issues that impact local communities and partners, with the Bureau of Reclamation,
- bolster community-driven actions that contribute to recharge and resilience,
- maximize water supplies for human use while maintaining environmental conditions necessary to protect fish and wildlife, and
- guide communities in making strategic investments designed to stretch limited resources and minimize conflicts over the next several years.

3) Project Location (See sections 2.1 & 5.1.2 for maps)

El Paso-Las Cruces Watershed USGS HUC(8) 13030102. This HUC is the portion of the Rio Grande watershed from Caballo Reservoir Dam to El Paso. The watershed area is located in the northern Chihuahuan Desert, Sierra and Doña Ana Counties in south central New Mexico and a small portion of El Paso County in Texas. It includes the State’s second largest metropolitan area, the CLC, and the combined Las Cruces-El Paso-Ciudad Juarez metropolitan area on the southern boundary (approximately 105 river miles). The eastern edge of the watershed is bordered by the Caballo, Doña Ana, Organ, and Franklin mountain ranges. The western edge of the watershed is bordered by the Mimbres Mountains of the southern Black Range, the Sierra de las Uvas, the Robledo Mountains, and fault block volcanic uplands extending south to the East Potrillo Mountains.

4) Technical Project Description and milestones

The Stormwater Coalition sees an urgent need for the proposed activities as a catalyst to revitalize the watershed’s ecosystem services, address agricultural and environmental issues, and develop collective solutions. To date no single plan has synthesized previous learning to move the watershed toward a new legacy of conservation stewardship focused on recharge and resilience. The Stormwater Coalition proposes to facilitate the process of bringing together all stakeholders and active parties within and beyond of the Stormwater Coalition in this initiative to create an integrated watershed management plan. The efforts will concurrently include development of priority project designs identified currently and during the planning process to address this region’s critical ecological issues that support watershed health and water resources and bridge stakeholders across the upper and valley reaches of the watershed.

4.1 Applicant category: Seeking funding as an Existing Watershed Group

The South Central New Mexico Stormwater Management Coalition (Stormwater Coalition) has coordinated numerous planning efforts in the Hatch-Mesilla Valley (HUC 8) watershed among its stakeholders. Stormwater is at the heart of the critical issues and needs in the watershed, as detailed in the sections 2.2.4 and 5.2.1 the hydrologic energy of our summer monsoonal thunderstorms are a major driver of the watershed conditions. Improving those conditions can

help to mitigate that energy. We are seeking funding to continue the watershed analysis across the HUC 8 watershed using this collaborative planning process.

Watershed Group History and collaborative partners. The Stormwater Coalition was established in 2010 to develop cross-agency and stakeholder regional watershed management collaboration for stormwater management informed by understandings of the ecosystem dynamics. The current website details the reason for the group’s inception and “Need for Regional Stormwater Management in Southern New Mexico.” (Stormwater Coalition 2019, emphasis added).

Across Doña Ana and Sierra counties there are 2,400 square miles of watershed stretching from the Black Range northwest of the Caballo Dam, south to the NM-TX state line. For 800 square miles, or one-third of the area, there is no existing infrastructure to manage stormwater. ... Stormwater management is typically planned, funded, and implemented independently by a variety of public agencies in towns, cities, and districts spread throughout the region. *Recognizing that stormwater does not respect political boundaries, it has become apparent that the needs of the region would best be served by a regional watershed management approach.*

Ongoing projects or efforts. The Stormwater Coalition’s major relevant current efforts and priority projects include collaboration with stakeholders on i) the development of an flood flow early warning system which also serves as a watershed monitoring network; ii) watershed restoration plans for Rincon Arroyo Watershed, the largest sub-watershed and contributor of sediment transport in this region; iii) drought planning and project implementation with a Reclamation WaterSMART Drought Resiliency project awarded to EBID, iv) flood and system development in the valleys, v) irrigation system water quality and water efficiency infrastructure development with several Reclamation WaterSMART projects awarded, and vi) an active funding strategy to support local efforts to improve watershed conditions and increase collaboration locally, regionally, and with federal agencies, including seeking funding for watershed planning from this program previously. The group’s current focus is towards efforts to restore the upland ecosystems’ ecological health and function and provide tools to irrigation and flood infrastructure managers to help them address issues of hydrologic energy, sediment transport, water quality, aquifer recharge, water supply, productivity, and social wellbeing of the rural agricultural communities in the watershed system. “Watershed restoration is our highest priority in this region” (pers. comm., Robert Faubion, former EBID Board President). Hydrologic modelling approaches and decision support tools created for the Rincon Arroyo will be used to extend watershed analysis across the HUC 8 watershed and identify the optimum restoration locations. This tool framework, Flood Flow Connectivity to the Landscape (FlowCon), integrates spatially-explicit landscape indicator model and semi-distributed hydrologic models (Maxwell et al. 2019). FlowCon identifies optimum locations and quantifies the resulting benefits and extent of management and collaborative support required for restoration of the critical landscape processes. The target processes or functional goals are reducing hydrologic energy through increasing water retention, recharge, and vegetative productivity.

4.2 Eligibility of Applicant as an Existing Watershed Group

The Stormwater Coalition is a *grassroots, non-regulatory entity that addresses water availability and quality issues within the relevant watershed*. Through a collaborative process, the group has built consensus among its stakeholders that key to stormwater and flood management in the region is watershed health and the maintenance and restoration of the ecosystem's services upon which these rural agricultural communities depend. *The Stormwater Coalition represents a diverse group of stakeholders*, outreach for its monthly meetings includes over 160 stakeholders, and active participation includes government agencies, municipalities, farmers, and ranchers. The partners include the Flood Commissions of Doña Ana and Sierra Counties; the Doña Ana, Caballo, and Sierra Soil and Water Conservation Districts; the 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. The City of Las Cruces and the Doña Ana Mutual Domestic Water Consumers Association are currently in the process of joining the Coalition. 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; the New Mexico Water Resources Research Institute; New Mexico State University; the El Paso County Water Improvement District, and municipalities and their organizations, such as the City of Las Cruces. Through this extensive collaboration Stormwater Coalition is *capable of promoting the sustainable use of water resources in the watershed*. The Stormwater Coalition members have agreed to share information, ideas, and staff resources; coordinate planning; and consolidate funding requests to meet their goal of meeting the needs of the region through a regional watershed management approach. A Joint Powers Agreement (JPA) of agencies that manage stormwater as part of their responsibilities allows for greater planning and development of stormwater projects and flood control within the region, authorization to apply for, receive, and utilize grants, loans, bonds, or other financial aid from any source approved by the Stormwater Coalition Board of Directors, as well as recognition by the State of New Mexico. The Stormwater Coalition *makes decisions on a consensus basis*.

4.3 Goals and objectives

Preliminary Goal:

Through the development of 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 will be the strengthening of resilience of the social and ecological systems in all sectors.

Objectives:

The objectives of this approach are plans and project designs that i) reduce sediment transport, ii) prevent flooding, iii) increase upland vegetation productivity, iv) increase upland flood flow infiltration, and v) increase water supply through shallow groundwater aquifer recharge from flood flows and stormwater in valleys. Objectives also include the project milestones, the Stormwater Coalition will: vi) complete its organizational development, vii) conduct community outreach and partnership collaborator development, viii) develop a community-based comprehensive watershed plan from workshops and synthesized previous work and collected

data, and ix) develop 5-10 watershed management project designs that enhance groundwater storage, watershed-scale stormwater harvesting, and aquifer recharge for all sectors.

4.4 Approach

See section 5.2.2 for a detailed description of our approach. See a brief description here of planned approach for completing watershed group development and restoration planning activities and how those activities divide between Tasks B and C. Task B will also include the completion of the organizational development since it is an existing organization and is not the primary task, and as indicated in the FOA, these activities can be included in any Task Area.

Task B – Watershed Restoration Planning and organizational development.

In this Task, the Stormwater Coalition will complete its organizational development, conduct community outreach and partnership collaborator development, assemble a watershed planning task force reflective of the watershed diversity, and develop a community-based comprehensive watershed plan from workshops, synthesized previous work, and newly collected data.

Task C – Watershed Management Project Design. The outcomes of Tasks B and C will be used to prioritize watershed management projects and identify specific project locations; initiate site-specific project design guidelines for top priority project(s) and identify milestones for completion develop 5-10 watershed management project designs that enhance groundwater storage, watershed-scale stormwater harvesting, and aquifer recharge for all sectors.

5) Evaluation Criterion

5.1 Evaluation Criterion A—Watershed Group Diversity and Geographic Scope (30 points)

5.1.1 Sub-criterion No. A1. Watershed Group Diversity

Affected stakeholders. The Stormwater Coalition watershed group serves its partners, their stakeholders, and additional collaborators in this rural agricultural region including irrigated agriculture, ranching, municipal, state and federal agencies and environmental sectors (see section 4.1). This effort will further extend outreach to promote participation in the building of the plan and priority projects. Individually, current and past efforts by affected stakeholders have targeted only the most immediate symptoms watershed decline instead of the fundamental root of the problem – the ecological resilience of the watershed. These problems are exacerbated by intense monsoonal systems, drought, environmental degradation, population growth, and economic constraints that are shared common stressors for all. A need to address the root issues is larger than any one stakeholder’s capacity and requires collaboration to resolve if this arid region is to become more resilient to the above disturbances. An ecologically resilient watershed leads to a more sustainable water supply around which trust can develop. This effort further brings together the work of many groups and offers a collective examination of the projects and best management practices that can contribute to recharge and resilience. Key to this effort is the understanding that landscape-scale stormwater harvesting can mitigate flood and water quality threats and recharge shallow aquifers. Although techniques will vary for each sector, the benefits and collective commitment will be felt universally.

Diverse stakeholders in watershed group. This proposal expands the Stormwater Coalition’s network to include outreach to and maximum collaboration with all stakeholders within the full geographic scope of the watershed together with synthesis of their previous research and project efforts (see also section 5.2.2.1). As evidenced by the Major Stakeholder List, various groups, with overlapping stakeholder members, have led and/or participated in efforts to study and respond to various watershed issues. Examples of the many organizations, geographic scope, focus and affiliation are highlighted in the table below.

Targeting stakeholders and encouraging collaborations across sectors. The proposal includes a diverse cross-section of federal, state, and local government representatives, academics, non-governmental organizations, and businesses across many sectors that will serve as the Watershed Management Task Force (Task Force) as described in Table 3. This Task Force will provide guidance, resources, and access to a large network of constituent stakeholders. *Annual workshops will offer opportunities to learn from others with diverse experiences, develop relationships, and therefore, build trust.* In year one the workshop will build consensus on a shared vision through exploring synthesized research and alternative practices and identifying issues and potential projects. The workshop in year two will review the drafted plan to ensure it captures the stakeholders vision and focus on project prioritization with an eye toward policy and financial support to activate the plan.

Communication amongst Government Entities. The proposal assumes that a diverse cross-section of federal, state, and local government entities will both serve on the Task Force and attend two comprehensive watershed workshops. Discussions on common goals, policies and practices will increase coordination and create synergistic opportunities to move the watershed toward a sustainable future. Developing priority projects will make these discussions concrete and will require the commitment of the relevant stakeholders to come to agreement on the project actions. Much of the infrastructure and institutions created from the Bureau of Reclamation’s current and prior work in the Watershed will benefit from this concerted effort and will move stakeholders toward implementing the goals of the Bureau’s initiatives.

Table 3. Organization Involvement by Geographic Scope and Project Focus

Organization	Geographic Scope	Focus & Project Examples	Main Affiliation
IBWC	The Rio Grande	Texas Clean Rivers/Water Quality/Restoration	U.S.
EBID	Lower Rio Grande	Water Distribution/Farmers	Agriculture
USACE	Lower Rio Grande	Dams and Flood Control/Restoration Wetlands	U.S.
CLC	LRG/Urbanized Area	Stormwater Pollution Prevention/GI	MS4 Permit
PdNWC	Lower Rio Grande	Non-point source Stormwater Quality Sampling	319 Grant
SCNMSMC	Mesilla and Hatch Valle	Lower Valley and Upper Watershed/Arroyos	Stakeholders
WRRI	New Mexico/Southwest	Water Supply/Drought	NMSU/University
SWEC	Lower Rio Grande	Lower Rio Grande/La Mancha Wetlands	Non-profit
NMED	New Mexico	Watersheds/Rivers/Streams/Lakes - TMDLs	State

MAJOR STAKEHOLDER LIST. Task force members to be invited demarcated with △; Stormwater Coalition member (x) or regular outreach (*)

Land managers

Farmers* △
Ranchers* △
Technical consultants for Stakeholders as relevant*

Federal Agencies

U.S. Army Corps of Engineers
Albuquerque District*
Bureau of Reclamation, El Paso Office*
Natural Resources Conservation Service, New Mexico* △
U. S. Bureau of Land Management* △
U. S. Intl. Boundary & Water Comm.* △
U.S. Fish and Wildlife Service* △
USDA Southwest (SW) Climate Hub

Irrigation Districts

Elephant Butte Irrigation District x △
El Paso Cnty Water Imprvmnt Dist. No. 1 (EP1)*

Local Governments

City of Las Cruces △, x (near future)
Village of Hatch x
City of Anthony x
Doña Ana County (DAC), New Mexico*
DAC Flood Commission x △
Caballo Soil & Water Conservation Dist. (SWCD) x △
Doña Ana SWCD x △

Sierra SWCD x △
Sierra Flood Commission x

Non-Governmental Organizations

Audubon New Mexico*
Cattle growers association
Colonias Development Council
La Semilla Food Center
La Union Watershed Group*
Paso del Norte Watershed Council* △
Southwest Environmental Center* △

State Agencies

New Mexico Dept. of Game and Fish*
NMED-Surface Water Quality Bureau* △
New Mexico Department of Agriculture* △
New Mexico State Land Office*

Universities

New Mexico State University*
New Mexico Climate Center
NMSU-CAHE Water Task Force
NM Water Resources Research Institute* / Water & Community Collaboration Lab* △
University of Texas at El Paso
Universidad Autónoma de Ciudad Juárez

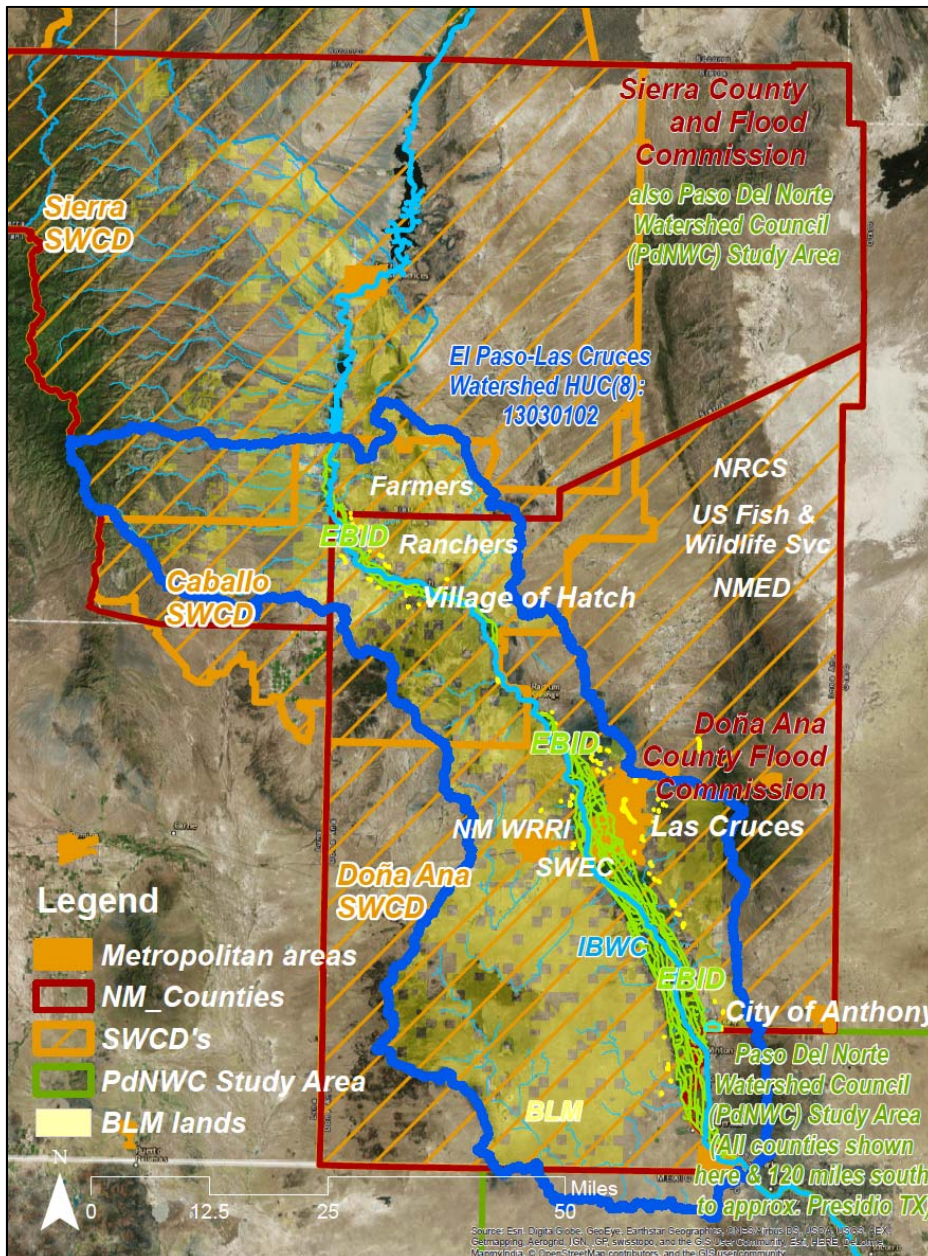
Water Utilities △*

City of Las Cruces Utilities Department*
Dona Ana Mutual Domestic Water Consumers Association*, x (near future)

5.1.2 Sub-criterion No. A2. Geographic Scope

Efforts to ensure that the watershed group will target stakeholders that represent the full geographic scope of the watershed. The Stormwater Coalition and its stakeholders and partners has been an active member in watershed management and has partnered together across the entirety of the watershed. Their combined experience has contributed to the body of knowledge that will serve as the foundation of this comprehensive planning effort (see figure below). The major stakeholder list included above identifies all the major sectors throughout the watershed and across the geographic scope, and will comprise the initial areas of outreach for both the Task Force and the annual Workshops. The intent of the cross-agency regional Stormwater membership is to facilitate grass-roots collaboration with the relevant stakeholders. Meetings have been held throughout the watershed to address issues from the border area

Colonias up through the agricultural valley, such as the La Union area up through to the village of Hatch.



5.2 Evaluation Criterion B—Addressing Critical Watershed Needs (35 points)

5.2.1 Sub-criterion No. B1. Critical Watershed Needs or Issues

In this region, as is common throughout the American Southwest drought, increased flooding, and sediment transport are exacerbating landscape-scale water storage and supply challenges (as shown in coastal studies Dettinger et al. 2015). Less winter precipitation and higher temperatures have diminished snowpack storage (Fyfe et al. 2017; Hamlet et al. 2005), which results in less spring runoff quantities and flow durations for

The watershed lands “include farmland, rangeland, urban areas, private property, and lands administered by Federal, State, and local government agencies. All these areas will benefit from properly maintained watersheds which conserve wildlife habitat and biodiversity, reduce watershed rehabilitation costs, reduce the risk of wildfires, reduce watershed erosion and the resulting deposition of sediment on downstream farmland, contribute to the economic viability of surrounding areas, and improve community protection from flooding” (EBID 2015).

downstream water users (Jardine et al. 2013). Landscape losses of deep soils and vegetative cover in this region stem from historic overgrazing and fire suppression corresponding with climate effects (Antevs 1952; Bryan 1925, 1929). Rain and snow melt are no longer held by the soils and released slowly throughout the year; instead they run off immediately in floods, resulting in catastrophic flows and severe erosion (Bryan 1925). As vegetation on uplands decreases, hydrologic energy in valley bottoms increases, which in turn increases scouring of floodplain vegetation and soil along the channel bottoms, entrenching flows in the valleys. Historically, floods along the many river networks were more connected to ~~more~~ more richly vegetated floodplains (Bryan 1929). When flood flow is connected to and can overbank onto floodplains watersheds retain more their water and soil resources and result in multiple ecosystem services such as aquifer recharge, flood mitigation, vegetation productivity, and water quality treatment (Tockner et al. 2010). Agriculture traditionally has and can again support this natural dynamic through watershed-scale systems of stormwater harvesting, employing accepted practices such as flood irrigation, with a general approach to spread flood flow onto natural floodplains or fallowed agricultural lands. This management approach provides critical functions for long-term resilience in that it has the potential to restore the buffering capacity to drought, flooding, and erosional challenges (Fernald et al. 2007) and results in infiltration into shallow groundwater aquifers (Ochoa et al. 2012).

1) Degraded upper watersheds as indicated by increasing erosion and sediment transport is the critical underlying issue.

- Accelerating watershed health deterioration to upper watershed conditions from pre-existing unstable conditions as a result of drought and the increasing intensity of monsoonal driven precipitation events and resulting high energy runoff.
- The necessity for stabilizing the overall watershed: Vegetation conditions have passed the threshold of ability to natural recovery, requiring intervention to return to a state of dynamic equilibrium
- Identifying restoration opportunities is key to insure increased ecological health, productivity, and biodiversity.

- Intensity, variability, and unpredictability of high-energy monsoonal storm cells: Storm cells that produce most damage are thunderstorms that are prone to flash floods which pose numerous challenges.
- Downstream agricultural and flood control infrastructure is clogged and compromised.
- Sediment going into the Rio Grande riparian system further impedes agricultural water deliveries and increases flooding. Sediment removal is disruptive to the ecology and stresses management resources.
- Flood control infrastructure system overwhelmed. Sediment removal from flood control dams generally initiates a new erosional sequence.
- Increased resource productivity for upland grazing managers and wildlife, will incentivize sustainable management practices that increase overall watershed health and restore ecosystem service function.

2) Water supply: increased variability, shortfalls, and aquifer depletion

- Landscape-scale water storage and supply challenges. Less and increasingly variable snowpack conditions are reducing surface water supplies, which contribute to increased ground water demand and pumping. The challenges are acute, as the record of Elephant Butte releases and storages documents (Figure 3). In addition, drought and land management practices are degrading upland vegetation reducing capacity for infiltration and resulting in an increase in major flooding events and sediment transport.
- The need for an aquifer recharge strategy: An integrated approach to landscape scale management of stormwater cannot address all water supply issues, but it has the potential to reduce pumping pressure and will concurrently restore important ecosystem services.

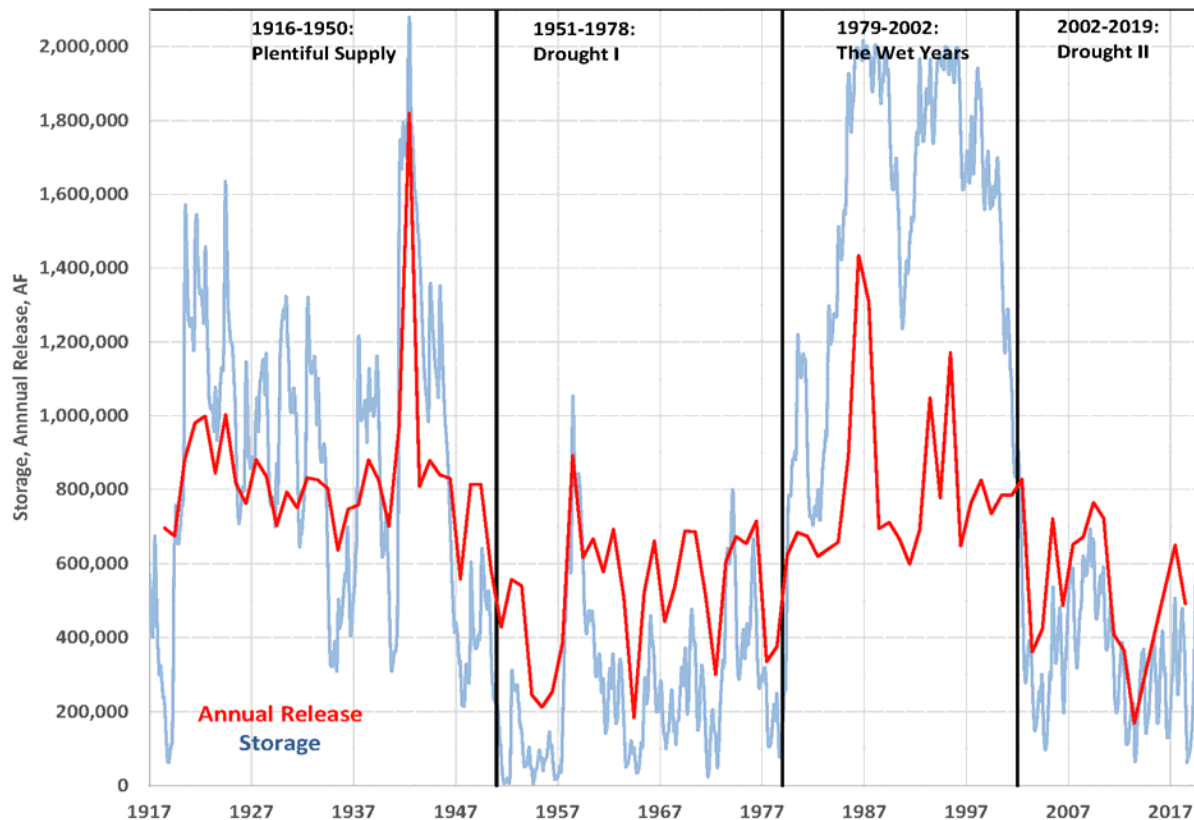


Figure 3. Elephant Butte release and storage chart through 2018, provided by J. Phillip King, PE, Ph.D. Red is the annual release, blue is the moving average storage in Elephant Butte, and the black lines divide the various eras/drought cycles.

3) Urban development expansion from the El Paso/Juarez metropolitan district towards Las Cruces

- Urban and suburban development is expanding northwards from the southern El Paso Juarez metropolitan region and encroaching into natural drainage corridors.
- The absence of a comprehensive planning approach to watershed protection allows development that blocks flow paths to river or other storage destinations, impedes infiltration while increasing flood energy, resulting in further property and irrigation infrastructure damage.
- Sustainable planning potential unrealized: New approaches to planning can improve critical watershed functions, particularly flow diversion for flood control, flow spreading for aquifer recharge, and additional water supplies for agriculture.
- Cost-benefit ratio thresholds not met by traditional Flood Control Infrastructure (FCI) requirements (e.g. grey engineering approaches such as dams and concrete flood control ditches), increasing the need for eco-engineering alternatives (e.g. nature-based designs or green engineering strategies).

- Loss of and the permanent fallowing of agricultural farmland from development and the transfer of water rights to non-agricultural uses reduces flood irrigation driven aquifer recharge.

4) A need to increase watershed-scale coordination to achieve goals and reduce conflict

- Achieve stated stakeholder goals for increased watershed health and resource productivity to reduce flooding and control erosion are challenging to achieve. Increased collaboration, additional decision-making tools and targeted priority projects are required.
- Decision making in this region not coordinated: Improved communication across agencies and landowners and the sharing of resources, data, projects and funds is needed to further regional watershed goals.
- Conflict: The Texas vs. New Mexico and Colorado water lawsuit arguing the impacts of groundwater use on surface delivery in this region will eventually be ruled upon by the U.S. Supreme Court. Regional Watershed planning is urgently needed now to increase collaboration to build management capacity for restoration of multiple ecosystem services while the region prepares for future increased potential challenges.

5) A need for coordinated watershed planning efforts in the newly created Organ Mountains-Desert Peaks National Monument

- Traditional or grey engineering (concrete) flood control approaches are challenging in BLM Monument boundary, primarily due to access and impacts of construction, yet a planning process which would include sustainable watershed management plans for downstream flood control is years away pending new Monument regulations and guidelines.
- A comprehensive watershed management plan will foster collaboration with the BLM and has the potential to accelerate the planning process.

5.2.2 Sub-criterion No. B2. Developing Strategies to Address Critical Watershed Needs or Issues

5.2.2.1 Task B - Watershed Restoration Planning and organizational development process

The facilitation team's overall strategy is a collaborative grassroots approach supported by science and cross-agency cooperation to identify and collate into a watershed restoration plan: *1) clear long-term goals to address critical needs; 2) short-term objectives to realize outcomes in order of priority; 3) key milestones; and 4) monitoring programs to assess progress and achievements.* A major focus of this approach is to support collaboration and innovation among diverse stakeholders to address critical needs throughout all watershed management systems.

Project Management Team. Our team will direct and coordinate all activities of the project (see section 5.3.1 for timeline and milestones).

Project Manager: Connie Maxwell, Environmental Planner. Post-Doctoral Fellow, New Mexico Water Resources Research Institute; Co-chair Watershed Restoration Committee, South Central New Mexico Stormwater Management Coalition

John D. Gwynne, P.E., CFM, Director, Doña Ana County Flood Commission; Chair, South Central New Mexico Stormwater Management Coalition and Co-chair Watershed Restoration Committee, Steering Committee Chair New Mexico Watershed and Dam Owners Coalition

Zack Libbin, P.E., District Engineer, Elephant Butte Irrigation District; Co-Chair South Central New Mexico Stormwater Management Coalition, Steering Committee Chair New Mexico Watershed and Dam Owners Coalition

Richard Davidson, Landscape Planner & Ecological Restoration Designer, Stormwater Coalition, Alamosa Land Institute

Nicholas Seifert, Project Engineer, Elephant Butte Irrigation District

Mary Jo Fahl, fiscal agent for South Central New Mexico Stormwater Management Coalition and grant administration for this grant, Jornada Resource Conservation & Development Council

Technical & Stakeholder Task Force. The Stormwater Coalition will convene a task force to provide technical assistance on both the content and process of the project activities and ensure full stakeholder outreach for the activities (see section 5.1.2 for anticipated invitees). The task force will reconfigure as needed from the outcome of the workshops (detailed in the planning process next).

Integrated Watershed Plan. The Stormwater Coalition will collaborate with stakeholders to complete an integrated watershed restoration plan based upon existing scientific analysis, local knowledge, and precedents of best practices to identify and address critical watershed issues and needs using the approach outlined in Section 5.2. Two major workshops will serve as focal points for the effort. In preparation for the first workshop, the project team in collaboration with the Task Force and other additional stakeholders will produce a background document that synthesizes what we know as issues and objectives, what approaches we anticipate pursuing, and what resources have already been created and completed in the past. The workshop will follow a community-based approach, where the workshop attendees will craft the plan. We will begin with an open forum on the most critical needs and issues without framing the discussion in order to capture local knowledge and stakeholder issues. These issues will be added to a synthesis map which does include the previous background work. Breakout task force groups on the major critical issues will then review the sum of the information, identify any additional potential vulnerabilities, identify and prioritize projects, and recommend the form and membership of the task force groups going forward. The second workshop will review and finalize the plan, prioritize projects, and adopt the plan for the region. The plan will include a Sub-Watershed Map corresponding to a priority project matrix and the corresponding task force groups tackling these issues. The size and complexity of the Hatch -Mesilla Watershed requires an analysis that identifies the major sub-watersheds and a matrix that lists stakeholder priorities and critical issues facing each. Specific watershed management projects can be identified, and the information can be disseminated through the task force and an interactive website. The website will record the progress of the project throughout, including the plan as it develops and contact information for the task force groups.

Analysis to prioritize watershed management projects and identify specific project locations. The prioritized project list and location map will emerge from the planning process and be incorporated in the watershed restoration plan. The plans will detail model guidelines and specifications. This will also necessitate a review of local standards, existing guidelines, ordinances, policies, standard specifications, design details, and procedures to ensure consistency among stakeholder jurisdictions. As relevant, the group will work with both Bureau of Land Management and Reclamation’s environmental and cultural resource staff to determine what type of site-specific environmental compliance will be necessary for the project(s) upon implementation.

Measures of success. The Stormwater Coalition has identified the need to restore critical watershed hydrologic, ecologic, and social functions for the long-term resiliency of both the natural and the human systems. A resilient system includes capacity for socio-ecological systems to manage and adapt to disturbances to remain within critical thresholds (Berkes and Ross 2013). This will be measured by assessing the ability of the plans to add capacity for the land managers and their communities to address both the critical issues as well as the potential vulnerabilities identified in the plans.

Organizational development. This Task section will also include the completion of the organizational development since it is an existing organization and is not the primary task, as indicated in the FOA it can be included in any Task Area. This will include assignment of fiscal agency to cover facilitation of reporting and contracting for this grant, development of bylaws, investigation of organizational tax status (and need for 501(c)3), and development of business practices including the development of a website.

5.2.2.2 Task C - Watershed Management Project Design Process Process that the watershed group will use to design projects.

From the identified and refined critical watershed issues, needs, and potential vulnerabilities, the project team in conjunction with the Task Force groups will develop a set of social, hydrological, and ecological criteria and metrics to determine the priority of proposed projects. Potential watershed projects will be reviewed through the lens of the criteria-metrics matrix during the year-two workshop. For examples, projects may be weighed using such criteria as funding availability, reductions in flows, and ability to address critical issues. From the selected priority projects, a timeline and milestones will be developed to track ongoing progress in achieving long-term goals. The currently identified priority projects that would address the major watershed issues, needs, and potential vulnerabilities are outlined below.

1) Priority projects that address this issue - Degraded upper watersheds as indicated by increasing erosion and sediment transport, critical issue underlying all other issues

- Identify expansion to early warning system. The early warning system is a network of weather stations and flow gauges. Better data collection will allow community to get a handle on giant watersheds to make better management decisions

- Develop plan for comprehensive, coordinated approach through plan to tie together network of existing monitoring and identify highest priority troubled areas that require network expansion. Objectives are to collect key watershed climatic and hydrologic data and identify how much rain turns into catastrophic or damaging flood events, e.g. what does 2” of rain means downstream.
- Extend previous watershed analysis methodology to rest of Hatch and Mesilla Valley watershed. Previous work completed on largest sub-watershed in region, the Rincon Arroyo Watershed, and other research done in region
 - Create task force of NMSU researchers to collate previous findings
 - Identify biggest flooding areas from local knowledge and previous studies
 - Identify biggest watershed restoration potential areas. Use previous developed Flood Flow Connectivity to the Landscape (FlowCon) framework developed for Rincon Arroyo (Maxwell et al. 2019), which integrates spatial and hydrologic process models to identify optimum locations and quantify the resulting benefits and extent of management and collaborative support required for restoration of the critical landscape processes. The framework targets processes or functional goals that reduce hydrologic energy through increasing water retention, recharge, and vegetative productivity.
- Continue Rincon Arroyo Watershed project planning
 - Design a project that restores the natural functions of upper watershed through management that slows flow and reconnects the flow to adjacent floodplains to achieve the objectives stated in section 4.3.
- Lower watershed infrastructure to capture sediment and water supply for largest storms
 - Design a project of a series of passive small ponds and identified fields for excess stormwater flow, these ponds serve as a “pressure release valve” to relieve some of the highest flows for sediment capture and aquifer recharge systems. They will be small enough to minimize sediment removal maintenance, divert water through gravity and utilize overflows to connect each pond, and will be diversions off the path of the flow (as opposed to a dam that is in the path of the flow) so that maintenance will not create headcuts and additional erosion. The aquifer recharge system then uses the water supply from these ponds and distributes into ditches, or fields. Fields targeted for system will be additional currently producing agricultural fields that can be used for excess flow, such as pecan orchards, fallow fields, or areas where riparian buffers can be established

2) Priority projects that address this issue - Water supply increased variability, shortfalls, and aquifer depletion

- Expand early warning system aquifer recharge network functionality
 - Develop plan for comprehensive, coordinated approach throughout Hatch and Mesilla Valley (in conjunction with item 1).
 - Identify additional technology to facilitate diversion. Automated gates to manage flow diversions because of critical timing issues. Coordinate with another awarded Reclamation WaterSMART project to EBID for Drought Resiliency, which includes some of this infrastructure. Complete plan to achieve overall watershed goals.

- Decision support model for land managers. Coordinate with and build upon model to be built for Drought Resiliency project. Identify additional watershed scenarios to be tested with model. Incorporate findings from model testing alternative scenarios into plan.

3) Urban development expansion from the El Paso/Juarez metropolitan district towards Las Cruces

- Watershed planning/regulation to anticipate and mitigate future development pressures –
 - Identify a priority project and work with developer, flood commission, planning department, EBID to come up with an approach that can be generalized. Project to be a set of proposed spot subdivisions/current developments, bring together the developers as partners in the process, identify and develop the codes that manage stormwater from subdivision all the way to river that don't unduly (or where the water goes, prefer to go to someplace that can be used)
 - Use need and anticipated costs for developer to hold back flow from precipitation that lands on their property as incentive to develop alternatives that support the natural watershed processes, such as seasonal wetlands and aquifer recharge infiltration pits,

4) Priority projects that address this issue - Need to increase watershed-scale coordination to achieve goals and reduce conflict

- Planning efforts will substantially cover this.
 - The Stormwater Coalition was created to help alleviate this issue, and the strengthening of and completing the organizational development of the group to better do this will further support. Specifically the website, overall plan to coordinate projects, creating task force groups (breaking up watershed interest groups into actual working groups)).

5) Priority projects that address this issue - Need for coordinated watershed planning efforts in newly created Organ Mountains-Desert Peaks National Monument

- Identify the critical flooding areas emanating from the new monument
- Begin an eco-engineering restoration planning approach on a high priority area within new monument regulatory framework

5.3 Evaluation Criterion C—Implementation and Results (25 points)

5.3.1 Sub-criterion No. C1 Understanding of and Ability to Meet Program Requirements

See Section 4.3 for goals and objectives and section 5.2 for a scope of work implementation detailed description. Schedule, milestones, durations, and costs are addressed here (Table 5).

Table 5. Timeline, Milestones and Project Costs Schedule

Tasks	Costs	2020			2021				2022			
		Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	
		2	3	4	1	2	3	4	1	2	3	
Milestones												
Project Administration												
Execute agreement with Reclamation	JRCD: \$7K											
Workplan approved by Reclamation												
Consultants finalized and contracted												
Grant reporting												
Development of Watershed Plan & Project Designs												
Tech. & Stakeholder Task Force assembly & meetings	NMWRRI: \$40k ALI: \$30k Caruso: \$6k											
Compile existing information												
Conduct background watershed system analysis												
Iterative ongoing watershed system analysis												
Conduct field watershed analysis												
Develop plan approaches and priority projects												
Tech. & Stakeholder Collaborative Workshop #1: <i>Plan visioning, approach, and project identification</i>												
Tech. & Stakeholder Collaborative Workshop #2: <i>Review plan, project prioritization and design review</i>												
Draft Plan and priority project plan Reclamation review												
Write Guidelines and Specifications												
Final Plan and priority project plan												
Integration of Plan into other regulatory documents												
Completion of organizational development												
Conduct community outreach and collaboration		Legal / Accounting: \$2.3k Website: \$13k Workshop: \$2k										
<i>Develop collaborator status</i>												
<i>Assembly of Tech. & Stakeholder Task Force</i>												
<i>Outreach to promote Workshop #1</i>												
<i>Outreach to promote Workshop #2</i>												
Development of bylaws												
Investigation of organizational tax status												
Development of business practices												
<i>Development of an independent website</i>												
<i>Integration of planning documents with website</i>												
<i>Posting of Final Plans on website</i>												

5.3.2 Sub-criterion No. C2 Building on Relevant Federal, State, or Regional Planning Efforts

The Watershed Restoration Plan will synthesize and build on the work of Federal, State, Regional, Municipal and other local planning efforts as described in Section 5.2. Both the Task Force and the stakeholder workshops will serve as a cross check for the completeness of this review. Some of the major efforts for review include:

[The Stormwater Coalition statement and identified regional watershed needs.](#) Unpublished early documents include mission and goals, and will be referenced for development.

[The Elephant Butte Watershed Restoration Plan.](#) Describes watershed restoration projects and small-scale flood prevention projects in watersheds that deliver overland flow to EBID facilities. The proposed activities will complement the goals of this plan by: developing solutions to address the stated goals and challenges of re-establishing favorable vegetation cover and soil characteristics at disturbed sites on the watersheds.

[The Paso del Norte Watershed-Based Plan.](#) Mitigation Measures to Reduce Bacterial Pollution in the Rio Grande - The proposed activities will complement the goals of this plan by: including many of the same stakeholders and technical experts in the activities; utilizing most of the data referenced in the plan; and continuing the outreach efforts started in 2006.

[Lower Rio Grande Water Users Organization prepared for NM Interstate Stream Commission Region 11 - Lower Rio Grande Regional Water Plan.](#) The effort built upon the previous water planning efforts in the region (1994), and was designed to bring the technical research up to the standards required by the Interstate Stream Commission (ISC). Controversies on approaches led to some limitations in some stakeholder involvement. This planning effort intends to utilize the resources of the plan.

[World Wildlife Fund Living Waters Report: Agricultural Water Use and River Basin Conservation: Rio Grande Basin chapter.](#) The proposed activities will complement the goals of this plan by addressing water scarcity issues in the watershed context. (See attached addendum for a full list of currently identified resources.)

5.4 Evaluation Criterion D—Department of the Interior Priorities (10 points) Extent that the proposal demonstrates that the project supports the Department priorities

A healthy and sustainable watershed aligns with all of the missions of the Department of Interior (DOI), **1. Creating a conservation stewardship legacy second only to Teddy Roosevelt; 2. Utilizing our natural resources; 3. Restoring trust with local communities; and 4. Striking a regulatory balance.** Additionally, this work will support the Fish and Wildlife Service’s efforts to protect the endangered Willow Flycatcher and the extirpated Rio Grande Silvery Minnow. Other DOI agencies will benefit from the increased collaboration and trust brought about through this process. As stewards of these water resources, this group intends to:

- Contribute data for the better understanding of the watershed and the HUC 8,
- Mitigate critical watershed issues that impact local communities and partners, with the Bureau of Reclamation,
- Bolster community-driven actions that contribute to recharge and resilience,
- Maximize water supplies for human use while maintaining environmental conditions necessary to protect fish and wildlife, and
- Guide communities in making strategic investments designed to stretch limited resources and minimize conflicts over the next several years.

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Project Budget

1) Budget Proposal

Table 1. Total Project Cost Table

Funding Sources	Funding Amount
Costs to be reimbursed with the requested Federal funding	\$ 99,981.53
Costs to be paid by the applicant	\$ -
Value of third-party contributions	time of stakeholder participation
TOTAL PROJECT COST	\$ 99,981.53

Continued next page

Table 2. Budget Proposal Table

CWMP - Stormwater Coalition - Southern New Mexico				
BUDGET ITEM DESCRIPTION	Total Project			TOTAL COST
	COMPUTATION		Quantity Type (hours/ days)	
	\$/Unit and Unit	Qty		
(Fiscal agent) Jornada Resource Conservation Development - direct costs				\$ 9,000.00
SALARIES AND WAGES				
Employee 1: Jornada as fiscal agent				\$ 7,000.00
SUPPLIES/MATERIALS				\$ 2,000.00
Workshop Meeting Supplies				\$ 2,000.00
No TRAVEL or EQUIPMENT				
CONTRACTUAL - planning and design scope (not construction)				\$ 90,981.53
1) Budget for legal / account services				\$ 2,300.00
Item 1: Tax status and filing consultancy				\$ 2,300.00
2) Budget for Website development				\$ 13,000.00
Website development				\$ 13,000.00
3) NM WRRRI - subtotal				\$ 39,681.53
Item 1: Project manager & Watershed Planning efforts	\$ 27.84	550	hrs	\$ 15,312.00
Item 2: GIS analysis to support planning	\$ 27.84	275	hrs	\$ 7,656.00
FRINGE BENEFITS				
Full-time employees		0.38		\$ 8,613.00
INDIRECT COSTS				
NMSU - 25.65%	on direct total ->		\$ 31,581.00	\$ 8,100.53
4) Alamosa Land Institute - subtotal				\$ 30,000.00
Watershed Planning concept development and Project Design	\$ 75.00	400	hrs	\$ 30,000.00
5) Chuck Caruso				\$ 6,000.00
Consulting/advising and workshop participation	\$ 75.00	80	hrs	\$ 6,000.00
TOTAL DIRECT COSTS				\$ 99,981.53
INDIRECT COSTS				\$ -
TOTAL PROJECT COSTS				\$ 108,981.53

2) Budget Justification

The South Central New Mexico Stormwater Management Coalition and its fiscal agent: the Jornada Resource Conservation & Development Council requests \$99,981.53 from the U.S. Department of the Interior Bureau of Reclamation for the implementation of the grant application; FY19 WaterSMART Cooperative Watershed Management Program *Phase I as an existing watershed group*. Funding is to be expended during the project period of September 1, 2020 to August 31, 2022. The total project cost per year shall not exceed \$50,000.

Salaries and Wages

The fiscal agent will conduct tasks for bookkeeping, submitting reports, facilitation and contracting responsibilities. Note that there is a separate project manager for the project, see Contractual section. Equivalent to 7% of total budget

Fringe Benefits

There are no requested fringe benefits.

Travel

There are no requested travel expenses.

Equipment

There are no requested equipment expenses.

Supplies and Materials

The "Workshop Meeting Supplies" item of \$2000 represents printing for large maps and other visualization tools.

Contractual

The project will be led and managed by the New Mexico Water Resources Research Institute at the New Mexico State University in collaboration with the project team identified in the Technical Proposal and Evaluation Criteria.

1) Contractor, To Be Procured, \$2,300: legal / account services for Tax status and filing consultancy

The "Tax status and filing consultancy" item represents discussing tax status options such as 501(c)3 status, recommendations for by-law development, and creation of collaborator status, filing tax returns and required reporting.

2) Contractor, To Be Procured, \$13,000: Website development

The "Website development" item represents initial information gathering on website needs and desired concepts, data gathering for incorporating into design, concept reviews with Stormwater Coalition, and modifications to website as project develops.

3) Contractor: New Mexico Water Resources Research Institute at New Mexico State University, \$39,681.53: Project manager & Watershed Planning efforts, and GIS analysis to support planning (qualifications-based procurement method)

Project Manager; 13% time (550 hours @ \$27.84/hr, 37.5% fringe)). The "Project manager & Watershed Planning efforts" item represents the cost of overall project planning, coordination between entities and for outreach for stakeholder diversity, coordination of workshops, major meetings, schedule and milestones, synthesis of analysis into a plan, facilitator to conduct workshops and reporting.

The "GIS analysis to support planning" item represents spatially collating local knowledge on issues and restoration needs, & using previously developed methods to identify ideal locations for interventions.

The “indirect costs” of 25.65% are the standard off-campus rate for NMSU.

4) Contractor: Alamosa Land Institute, \$30,000: Watershed Planning concept development and Project Design (qualifications-based procurement method)

Alamosa Land Institute: Richard Davidson (400 hours @ \$75/hr). The "Watershed Planning concept development and Project Design" item represents the cost of collaborative identification, evaluation, and design development of landscape and local-scale priority projects. No indirect costs are required since simple project structure.

5) Contractor: Chuck Caruso, \$6,000: Consulting/advising and workshop participation. (qualifications-based procurement method)

(80 hours @ \$75/hr). Consulting/advising on restoration approaches and workshop participation. No indirect costs are required since simple project structure.

Environmental and Regulatory Compliance Costs

There are no requested environmental or regulatory expenses.

Other

There are no requested other expenses.

Indirect Costs

Indirect cost recovery not requested for this proposal.

Total Costs

Total project cost for this proposal from the Stormwater Coalition is \$99,981.53

3) Funding plan and letter(s) of commitment

No other funding commitments are required or submitted at this time. The value of the time expended and space donated for events and meeting by the Stormwater Coalition and other collaborating entities is expected to be significant, will be tracked with the project, and submitted with the reporting.

South Central New Mexico Stormwater Management Coalition



November 12, 2019

Attn: Ms. Avra Morgan
U.S. Department of the Interior, Bureau of Reclamation
Water Resources and Planning Division
Cooperative Watershed Management Program Coordinator,
Mail Code: 84-51000, P.O. Box 25007
Denver, CO 80225

RE: WaterSMART Cooperative Watershed Management Program Phase I Grants

Dear Ms. Morgan,

On behalf of the South Central Stormwater Coalition, I am writing to document our official resolution to the Bureau of Reclamation for the project entitled ***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"***.

- The identity of the official with legal authority to enter into an agreement:
 - John Gwynne, chair, Stormwater Coalition
- The board of directors who has reviewed and supports the application submitted:
 - Elephant Butte Irrigation District
 - Doña Ana Flood Commission
 - Sierra Counties Flood Commission
 - Doña Ana Soil and Water Conservation District
 - Caballo Soil and Water Conservation District
 - Sierra Soil and Water Conservation District
 - Sierra County
 - the City of Anthony
- The capability of the applicant to provide the amount of funding and/or in-kind contributions specified in the funding plan
 - No funding or in-kind contributions are required or committed
- Note that the applicant will work with Reclamation to meet established deadlines for entering into a grant or cooperative agreement

Sincerely,

A handwritten signature in black ink, appearing to read 'John G. Gwynne'.

John Gwynne, chair
Stormwater Coalition
Director, Doña Ana County Flood Commission



Elephant Butte Irrigation District Of New Mexico

530 South Melendres
Las Cruces, NM 88005-2826

Telephone
(575) 526-6671
Fax (575) 523-9666
Dispatch Fax (575) 526-8391
Warehouse Fax (575) 526-1530
Engineering Fax (575) 541-5716

www.ebid-nm.org

Staff Members

Gary L. Esslinger, Treasurer/Manager
Leo Barrett, Maintenance Project Director
Gail Norvell, Finance Director
James Narvaez, Irrigation System Director
Delyce Maciel, HR/Safety Director
Erek Fuchs, Groundwater Resource Director
Zack Libbin, P.E., District Engineer
Patrick Lopez, SCADA Systems Director

Board of Directors

Robert Faubion, President
Michael McNamee, Vice-President
Gregory Daviet, Secretary
Jerry Franzoy
James Salopek
Robert Sloan
Bobby Kuykendyll
Joe Paul Lack
Sam Salopek

November 12, 2019

Attn: Ms. Avra Morgan
U.S. Department of the Interior, Bureau of Reclamation
Water Resources and Planning Division
Cooperative Watershed Management Program Coordinator
Mail Code: 84-51000, P.O. Box 25007
Denver, CO 80225

**Subject: WaterSMART Cooperative Watershed Management Program Phase I Grants
Letter of Support**

Dear Ms. Morgan,

On behalf of the Elephant Butte Irrigation District, I am writing to state our support for the application to the Bureau of Reclamation for the project entitled ***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"***.

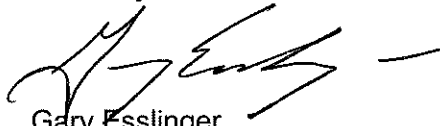
We support the proposal to create a community-based watershed restoration plan, including priority project designs, and further organizational development of the Stormwater Coalition to conduct community outreach and partnership collaborator development. EBID commits to remain a key partner within the Stormwater Coalition and work to collaboratively further the goals of the collective group. EBID has long been actively engaged as well in addressing issues related to the establishment and maintenance of a viable watershed, specifically the watershed that is below Elephant Butte Reservoir in southern New Mexico. We are the largest Reclamation irrigation district in New Mexico and certainly play a major role in supplying surface water to our members in South Central New Mexico and West Texas under the Rio Grande Project.

South Central New Mexico needs to improve the approaches to stormwater and sediment management to meet the challenges ahead. EBID believes that the health of the watershed is of paramount importance and a healthy watershed should substantially reduce the challenges of sediment accumulation from rainfall events, provide additional water supply in this normally semi-arid region, provide Stormwater capture for aquifer recharge application, help provide for continued economic growth and protect and enhance the environment. We support the proposal to create an integrated watershed plan to address this region's critical water resource issues and bridge stakeholders across the upland, urban and valley reaches of the watershed.

EBID stands ready to work with all Federal, State and local agencies. EBID is very interested in assisting and partnering with the Stormwater Coalition and NM Water Resources Research Institute as they move forward with restoration efforts and restoration planning of our region.

If you have any questions or concerns please feel free to contact me at 575-526-6671 x402, or gesslinger@ebid-nm.org.

Sincerely,

A handwritten signature in black ink, appearing to read 'Gary Esslinger', followed by a horizontal line.

Gary Esslinger
Treasurer – Manager

Doña Ana County

OFFICE OF THE FLOOD COMMISSIONER

Phone: (575) 525-5558

Fax: (575) 525-5567



Character Counts™

FLOOD COMMISSIONER

Kenneth Gutierrez

DIRECTOR

John Gwynne, P.E., CFM

Date

Attn: Ms. Avra Morgan
U.S. Department of the Interior, Bureau of Reclamation
Water Resources and Planning Division
Cooperative Watershed Management Program Coordinator,
Mail Code: 84-51000, P.O. Box 25007
Denver, CO 80225

RE: WaterSMART Cooperative Watershed Management Program Phase I Grants, Letter of Support

Dear Ms. Morgan,

On behalf of the Doña Ana County Flood Commission, I am writing to state our strong support for the application to the Bureau of Reclamation for the project entitled *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"*.

The Doña Ana County Flood Commission is a governmental agency charged with the operation and maintenance of 24 aging flood control dams, 12 detention basins and various channels and dry arroyos. Our jurisdiction covers 2800 square miles, including mountains, desert, farmland, and rural communities. The Flood Commission is a founding member of the South Central New Mexico Stormwater Management Coalition.

Watershed health plays a key role in the operation and maintenance our structures. Deteriorating watersheds have reduced the capacity of flood control structures throughout the County. Erosion in the watershed and subsequent sedimentation in channels, arroyos, ponds and dams creates maintenance issues and stretches tight budgets.

The Flood Commission supports the proposal to create a community-based watershed restoration plan, including priority project designs, and further organizational development of the Stormwater Coalition to conduct community outreach and partnership collaborator development.

Sincerely,

A handwritten signature in black ink, appearing to read "John D. Gwynne".

John D. Gwynne, P.E., CFM

Director

Doña Ana County Flood Commission



N E W M E X I C O
WATER RESOURCES
RESEARCH INSTITUTE
MSC 3167
New Mexico State University
P.O. Box 30001
Las Cruces, NM 88003-8001

November 13, 2019

Attn: Ms. Avra Morgan
U.S. Department of the Interior, Bureau of Reclamation
Water Resources and Planning Division
Cooperative Watershed Management Program Coordinator,
Mail Code: 84-51000, P.O. Box 25007
Denver, CO 80225

**RE: WaterSMART Cooperative Watershed Management Program (CWMP) Phase I Grant Application,
New Mexico Water Resources Research Institute Letter of Partnership**

Dear Ms. Morgan:

On behalf of the New Mexico Water Resources Research Institute (NM WRI) at the New Mexico State University, I am writing to state our state our strong support and commitment of partnership for the application to the Bureau of Reclamation for the project entitled ***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"***.

Watershed dynamics in this region present significant challenges for these rural agricultural communities, most significantly critical water scarcity, catastrophic flooding, and erosion and sediment deposition resulting in water quality degradation. Community-based planning towards solutions that can address and mitigate these challenges is critical. Our role is to support this collaborative watershed planning effort with the best science, and facilitate interdisciplinary collaborations. Extensive research has been completed by NMSU, other institutions, and collaborators that support this region. Through our support of research and our interaction and cooperation with other water resources entities, the institute continuously strives to alleviate water problems, working toward ensuring an ample supply of high quality water for future generations. Additionally, these support efforts inspired instituting a new Water and Community Collaboration Lab (WCC-Lab), which "fosters links between the best science, communities, stakeholders and students to inform decision-making and education on water and the environment." The WCC-Lab has committed to synthesizing research results to support the local community in this watershed and will be assembling relevant researchers to begin collecting resources to support the community and watershed needs this Spring, 2020.

Thank you,

Sam Fernald
Professor and Director
NM Water Resources Research Institute
575-646-4337
www.wrri.nmsu.edu



November 12, 2019

Attn: Ms. Avra Morgan
U.S. Department of the Interior, Bureau of Reclamation
Water Resources and Planning Division
Cooperative Watershed Management Program Coordinator,
Mail Code: 84-51000, P.O. Box 25007
Denver, CO 80225

RE: WaterSMART Cooperative Watershed Management Program Phase I Grants, Letter of Support

Dear Ms. Morgan,

On behalf of the Paso del Norte Watershed Council (Watershed Council), I am writing to state our strong support for the application to the Bureau of Reclamation for the project entitled, 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".

The Paso del Norte Watershed Council (Watershed Council) has always focused on mitigation efforts towards comprehensive stormwater management that balances flood control with ecosystem protection and other needs within the Lower Rio Grande watershed of New Mexico and Upper Rio Grande watershed of Texas. The Council works to address issues related to the establishment and maintenance of a viable watershed, specifically the watershed that includes the 430 river miles from Elephant Butte Reservoir in southern New Mexico to the confluence of the Rio Conchos in Presidio County, Texas with a population of about three million people. Among our members are representatives of non-governmental organizations, federal and state agencies, water utilities, municipal governments, and universities, as well as private citizens.

As you are aware, our region is subject to sudden and sometimes severe rain events that have the potential to cause significant threats to human safety and property. We remind you of the 2006 storm which impacted El Paso, Texas and Hatch, New Mexico as well as storms in 2013 that caused significant property damage in southern Doña Ana County. Flood control needs were addressed in New Mexico and Texas by the American Society of Civil Engineers assessment in 2012. The New Mexico document states "New Mexico has 300 jurisdictional dams of all types, 218 of which (73%) are deficient or not in satisfactory condition. Of 144 jurisdictional flood control dams, 112 (78%) are considered deficient or not in satisfactory condition." A similar assessment in Texas in 2012 received a grade of D for flood control.

We need to improve our approach to stormwater management to meet the challenges ahead. Our region must be better prepared for future events. As a Watershed Council, the health of the watershed is of paramount importance and a healthy watershed should substantially reduce the damages of large flood events, provide additional water supply in this normally semi-arid region, help provide for continued economic growth and protect, and enhance the environment.

Officers:

Chair
Conrad Keyes, Jr
Retired, NMSU and USIBWC

Treasurer
Zhuping Sheng, Director
Texas A&M AgriLife Research Center

Recording Secretary as needed

**Executive Committee
Member Organizations:**

City of Las Cruces
CONAYCT of southern Mexico
Elephant Butte Irrigation District
Frontera Land Alliance
High Desert Native Plants, LLC
New Mexico State University
Texas A&M AgriLife Research Center
Sierra Club
Universidad Autonoma de Ciudad Juarez
Other Federal, State, and Local agencies involved with PdNWC
Other Private Citizens

Paso del Norte Watershed Council
Texas A&M AgriLife Research Center
1380 A&M Circle
El Paso, TX 79927-5020

Website: www.pdnwc.org

The Watershed Council stands ready to work with all agencies; including the federal agencies in the region: Department of Agriculture, Natural Resource Conservation Service, Emergency Management Agency, Army Corps of Engineers, Bureau of Reclamation, International Boundary and Water Commission, Bureau of Land Management, and the states of Texas and New Mexico, and all municipalities and counties in the area watersheds. Perhaps, solutions can connect with the recently formed Regional Hub for Risk Adaptation and Mitigation to Climate Change at Rangeland Management Unit/Jornada Experimental Range, Agricultural Research Service, Las Cruces, New Mexico.

The Watershed Council asks that the Water Resources and Planning Division, Bureau of Reclamation, U.S. Department of Interior accept this WaterSMART Cooperative Watershed Management Program, Phase I, Grant application in order that all the agencies involved could work together to develop a community-based watershed restoration plan, including priority project designs, and further organizational development of the Stormwater Coalition to conduct community outreach and partnership collaborator development as soon as possible.

Sincerely,

A handwritten signature in black ink, appearing to read "Conrad G. Keyes, Jr.", written in a cursive style.

Conrad G. Keyes, Jr.
Chair, PdNWC
801 Raleigh Road
Las Cruces, NM 88005
www.pdnwc.org



November 12, 2019

Attn: Ms. Avra Morgan
U.S. Department of the Interior, Bureau of Reclamation
Water Resources and Planning Division
Cooperative Watershed Management Program Coordinator,
Mail Code: 84-51000, P.O. Box 25007
Denver, CO 80225

RE: WaterSMART Cooperative Watershed Management Program (CWMP) Phase I Grant Application, *Alamosa Land Institute* Letter of Partnership

Dear Ms. Morgan,

On behalf of the Alamosa Land Institute (ALI), a non-profit organization based in Sierra County, Southern New Mexico and adjacent to the Hatch-Mesilla Valley Watershed, I am writing to state our strong support and commitment of partnership with the South Central New Mexico Stormwater Management Coalition's (Stormwater Coalition) application to the Bureau of Reclamation for the project entitled: ***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"***

ALI focuses on working with farmers and ranchers to improve the ecology of the landscape upon which they rely. The Institute is committed to the planning, facilitation, and execution of projects that address community economic development through local and regional ecological health. We believe that innovative and collaborative science-based solutions can produce real change on the ground for the benefit of both local communities and the ecology of the landscapes upon which they depend.

Watershed dynamics in this region present significant challenges for rural agricultural communities most significantly critical water scarcity, catastrophic flooding, and erosion and sediment deposition resulting in overall water quality degradation. Community-based collaborative planning towards solutions that can address and mitigate these challenges is critical. ALI will support this watershed planning effort with assistance in the identification, evaluation, and design development of landscape and local-scale mitigation actions and projects, particularly watershed restoration interventions, stormwater capture and infiltration plans for the upper watershed and valley systems.

Thank you,

A handwritten signature in black ink, appearing to read "Richard Davidson", written over a horizontal line.

Richard Davidson
Founder and Director