



Community Input on Gila Basin  
**Arizona Water  
Settlement Act**

**T O W N H A L L**

**FINAL  
REPORT**

- Summary of results from the four-county town hall
- DATE: February 16-17, 2012
- LOCATION: Grant County Business and Conference Center,  
Silver City, NM

**CONVENERS**

NM Interstate Stream Commission  
Town of Silver City  
City of Deming  
Luna County  
Grant County  
Hidalgo County

**FACILITATOR**

New Mexico First

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# CONTENTS

|   |           |
|---|-----------|
| <b>Introduction</b> .....   | <b>4</b>  |
| Purpose of the Town Hall and this Report .....                      | 4         |
| Sponsors and Conveners .....  | 4         |
| Facilitator .....   | 4         |
| Town Hall Process.....  | 5         |
| Town Hall Participants.....   | 5         |
| <b>Crosscutting Themes</b> .....                                    | <b>6</b>  |
| <b>Agricultural Infrastructure Projects</b> .....                   | <b>7</b>  |
| Gila Conservation Coalition Rosgen Diversion .....                  | 7         |
| Luna Ditch .....  | 10        |
| Sunset and New Model Ditches.....                                   | 12        |
| U.S. Forest Service Ditch Improvement.....                          | 14        |
| Pleasanton Ditch Improvements .....                                 | 16        |
| <b>Municipal Conservation</b> .....                                 | <b>18</b> |
| Deming Conservation Fund .....                                      | 18        |
| Gila Conservation Coalition Municipal Conservation .....            | 19        |
| Stream Dynamics Water Harvesting.....                               | 21        |
| <b>Diversion and Storage</b> .....                                  | <b>24</b> |
| Deming Diversion Project .....                                      | 24        |
| Gila Basin Irrigation Commission (GBIC) Diversion and Storage ..... | 27        |
| Hidalgo County Diversion and Storage.....                           | 28        |
| <b>Municipal Infrastructure</b> .....                               | <b>31</b> |
| Grant County Infrastructure and Reservoir.....                      | 31        |
| Bayard Effluent Reuse .....   | 33        |
| Deming Effluent Reuse .....   | 35        |
| Grant County Water Commission Infrastructure .....                  | 36        |
| <b>Watershed Improvements</b> .....                                 | <b>39</b> |
| Catron County Watershed Improvement.....                            | 39        |
| Grant Soil and Water Conservancy District Watershed Project.....    | 42        |
| New Mexico Forest Industry Association Watershed Improvement .....  | 45        |
| New Mexico State University Watershed Improvement.....              | 47        |
| U.S. Forest Service Watershed Improvement .....                     | 48        |
| <b>conclusion</b> .....   | <b>50</b> |
| <b>Appendix</b> .....   | <b>51</b> |
| Town Hall Participants.....   | 51        |

# INTRODUCTION

## Purpose of the Town Hall and this Report

The New Mexico First town hall on the Gila River Basin helped community members understand and offer feedback on options associated with the Arizona Water Settlement Act (AWSA) of 2004. The AWSA, described further in the background report that accompanies this document,<sup>1</sup> allows New Mexico to have additional water from the Gila system through an exchange with Arizona. The act also makes available significant federal dollars to fund projects that meet water supply demands in the four counties of Grant, Luna, Hidalgo, and Catron.

The event took place February 16-17, 2012. Participants were told that they would not select the projects; instead, the town hall enabled community members to share their likes, dislikes, and questions about options under consideration. The New Mexico Interstate Stream Commission hold the authority to select the water projects that will move forward to the next stage of consideration.

## Sponsors and Conveners

### BACKGROUND REPORT SPONSOR

The background report that informed the town hall was commissioned by New Mexico's **Interstate Stream Commission (ISC)**. This commission has authority under state law to investigate, protect, conserve, and develop New Mexico's waters, including eight interstate stream basins.

### TOWN HALL SPONSORS

A coalition of city and county governments commissioned the town hall.

- Town of Silver City
- City of Deming
- Luna County
- Grant County
- Hidalgo County

## Facilitator

**New Mexico First** engages people in important issues facing their state or community. Established in 1986, the public policy organization offers unique town halls and forums that bring people together to develop recommendations for policymakers and the public. New Mexico First also produces nonpartisan public policy reports on critical issues facing the state. These reports – on topics like water, education, healthcare, the economy, and energy – are available at [nmfirst.org](http://nmfirst.org).

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<sup>1</sup> New Mexico First's town hall background report was reviewed by participants prior to the event. Download it here: <http://nmfirst.org/events/arizona-water-settlement-act>.

Our state's two U.S. Senators – Jeff Bingaman and Tom Udall – serve as New Mexico First's honorary co-chairs. The organization was co-founded in 1986 by Senators Jeff Bingaman and Pete Domenici (retired).

## **Town Hall Process**

New Mexico First tailored the process for this town hall to the needs of the community and the realities of the surrounding activities. Because the ISC will take into account information from multiple sources, it was not prudent or necessary to ask participants to come to consensus on the projects that should move forward. The event lasted one and a half days and allowed participants to discuss their likes, concerns, and questions about each of the 20 Tier-2 proposals. Participants received a background report in advance that provided history and context on the law as well as summaries of each proposal. The proposal summaries vary in detail, because the different proposal authors drafted them.

Because participants had varying levels of information and expertise on the projects, some of their comments reflect perceptions that may be inaccurate. Some participants asked questions that may be answered in the proposals. Others addressed concerns that may not be scientifically accurate. However, summaries of all comments are included in this report because they document the concerns and questions that must be addressed before projects can move forward with community support.

## **Town Hall Participants**

Participants registered in advance of the town hall and answered a few short questions about their interests and stakeholder group. A total of 101 people registered, representing a wide range of perspectives. All four counties were represented at the town hall and participants were balanced among key stakeholder groups. The following stakeholder groups were present:

Agricultural Sector/Ditch Associations: 19  
Business Sector/Economic Development: 16  
Environmental: 18  
Municipal Government (City, Town, Village): 8  
County Government: 10  
Water Organizations and Utilities: 9  
General Public: 2  
State and Federal Organizations: 3  
Staff and Facilitation Team: 10  
Observers from State and Federal Organizations: 6

# CROSSCUTTING THEMES

A number of key ideas emerged during the town hall.

1. **Combine where possible.** Many people at the town hall saw similarities between proposals. They recommended that the ISC consider combining where appropriate, but not to “force fit” just to keep a weak proposal under consideration. They said that strong, compatible proposals should be combined – especially if doing so improved the outcome.
2. **Regional solutions are preferred.** Generally, proposals that met the needs of multiple communities seemed to be preferred over those that served only one or two counties.
3. **Traditions matter.** In several instances, people voiced the importance of maintaining existing communities and traditional lifestyles (agriculture, mining, etc.).
4. **Protect the environment.** Some people at the town hall focused on the environment above all else. Many people seemed to believe that the environmental impact of selected projects should be as low as possible.
5. **Size and scope is important.** The number of people served and the size of the area served were important issues. People wanted to know that all projects would serve a vital need.
6. **What is the cost-benefit?** Several town hall participants focused on budgets, asking repeatedly whether the costs were reasonable for the benefits of the project. Some people favored projects with diversified sources of funding and/or cost sharing.
7. **Consider infrastructure and maintenance.** For projects requiring significant construction, town hall participants voiced recurring concerns about whether infrastructure would be invasive and who would pay for maintenance and long-term operation costs.
8. **Protect existing water rights.** Some participants repeatedly voiced concerns that traditional or senior water rights not be disrupted.
9. **People did not agree about the “New Mexico Unit” projects.**
  - a. People who favored major diversion projects did so because they want the benefit of the water in their communities. They want the region to take advantage of the water allowed in the law. They think the region will need the water and that the opportunity to capture and store it should not be wasted.
  - b. People who opposed the major diversion projects did so because they believe the water needs of the region can be met through other activities. They opposed major construction on the river due to concerns about habitat and ecology, evaporation loss, as well as potential costs now and in future. Many also doubted whether local users could afford the exchange costs, and thus worry that the water would be sold to other communities outside the four-county region.

# AGRICULTURAL INFRASTRUCTURE PROJECTS

## Gila Conservation Coalition Rosgen Diversion

### SUMMARY INFORMATION

Project submitted by: Allyson Siwik, Executive Director, Gila Conservation Coalition

Project budget: \$2,150,000

Counties affected: Cliff-Gila Valley, Grant County

Water Utilization Alternative Project

Tier 2 ranking points: 10

### PROJECT DESCRIPTION PROVIDED BY PROPOSAL AUTHOR

This project is for a water utilization alternative that proposes to design, engineer, and construct Rosgen-style rock vane diversion structures on all three of the existing ditches in the Gila Valley.

Right now diversions from the Gila River are dependent on existing push-up earthen dams that must divert the entire river into the irrigation ditch in order to function. These dams do not allow for an ecological maintenance flow to stay in the main channel of the river and therefore cause the river to dry up during periods of low flow. During high flows these earthen dams wash out and need to be rebuilt. Alternately, the Rosgen-style diversion is a cross-vane grade control structure that can withstand high flows while its flow-thru design can parcel even a low flow, some to the ditch, some passing through to maintain a minimal flow in the channel. This keeps the river wet to the benefit of fish and other aquatic/riparian resources. Additionally, the Rosgen design incorporates an adjustable return flow head gate to keep sediment in the river and out of the irrigation ditch, cutting down on maintenance costs to irrigators. This project presents an opportunity to find a win-win solution for irrigators and the environment.

### TOWN HALL INPUT

#### *Likes:*

1. **Practical:** Some town hall participants indicated that the project summary made sense, appeared to have long-term benefit, had flexibility, appeared to be efficient, accomplished multiple objectives, had the potential to dovetail with other proposals, focused on specific needs, allowed for diverse needs and is more affordable compared to others. One person noted that it could prevent a lawsuit if the river dried up.
2. **Win-Win:** Some people said this project might have the potential for a win-win solution, seeing it as a “graceful resolution” to a problem.
3. **Flow preserved:** Some participants liked that this proposal could keep the river on track, offered a good concept to allow water to flow through, offered a diversion that also keeps water in the river, keep minimal/base flow in river, provides for in-stream flow, and would not create permanent structures in the main flow.

4. **Agricultural irrigation maintained:** Some attendees commented that the proposal would preserve water rights, keep the irrigation function, benefit 40 irrigators, offer a cost-benefit ratio, address problems with all three ditches, and offer stable and consistent agricultural water. People also noted that it would potentially increase agricultural production without having to develop new water supplies, directly benefit some of the most senior water users in the basin, preserve the agricultural heritage of NM culture (a priority that applies to all agricultural efficiency projects), and help agricultural water users in the four county region.
5. **Positive environmental impact:** Some participants liked the riparian and aquatic preservation priorities in this proposal, noting that it would potentially protect the environment's species, provide a conservation measure, make navigation possible, and have less impact on habitat than other proposals.
6. **Low maintenance:** Some town hall participants liked this project because it would not require rebuilding an earthen dam each year or require heavy equipment for maintenance of the river. People thought it would be better than "push up" dams and would reduce the cost of maintaining the dam structure.
7. **No sediment problem:** Some people liked that this project would not wash sediment downriver, and it would help keep it out of irrigation ditches.
8. **Diversion control:** Some participants like it that this proposal would provide a more permanent diversion point, which could provide more control of diversions and thus help both agriculture and the environment, might cut down on unauthorized diversions, and could prevent a dry ditch.
9. **Misc:** Some participants noted that other benefits would include the possibility of recreation and storage, and the opportunity to parcel the flow into the ditch or channel.

**Concerns:**

1. **Design:** Some town hall attendees were concerned about where the material needed for this project would come from, whether it would remain in place in this size of a river, how it would be kept up since manmade structures require maintenance, and whether the specific design would work on the Gila River since the river has a lot of gravel and debris. They wanted to know what the project could be made of (rock, natural materials), and whether the design conserved water. Some asked whether the Army Corp of Engineers or other researchers have done similar designs in similar rivers, whether they worked, and, if the design is not right, whether the community can substitute another diversion design without going back to the drawing board.
2. **Costs:** Some participants were concerned about this project's economic impact, cost per user, life cycle costs, maintenance costs, and how many diversions were covered under the budget. People also worried about investing money and later learning that that amount of water conserved is small. Participants wanted to know how the cost of the proposed system compared with the current one. Participants also were concerned that the project needs a feasibility study, and wonder if the project budget reflects reality since that study has not been done.



3. **Metering:** Some participants said that someone needs to meter the water distribution for individual users; others said metering is not a concern.
4. **High flow:** Some participants were concerned about this proposal because the project might not be able to handle high flows, might not deliver all the water needed for irrigation, that it lacked design specifications, and some noted that historically variable flows of the Gila River make this design inappropriate.
5. **Low flow:** Town hall participants expressed concern about low flow during droughts, resulting in inadequate water for the river and irrigation.

**Questions:**

1. **Agricultural benefit:** What percentage of total agricultural acreage benefits from this project? Has there been any preliminary study done to see how much water would really be conserved? Will this project increase crop production?
2. **Water Rights:** Will this project negatively affect the current water rights of the irrigator? Would the project ensure that irrigators get the senior water rights?
3. **Flood Control:** How can we get a river assessment study to determine how to stabilize banks and route floods without flooding farmland?
4. **Environmental analysis:** Can we get an analysis of the current system in regards to critical habitat for fish and other species? Has there been a negative impact thus far with the current system on critical habitat for fish/other species?
5. **User input:** Have the current ditch users given input on this project?
6. **Rules/regulations:** Is this federal money that will entangle the water users in rules about how the water is to be managed?(This concern applies to *all* projects)
7. **Misc:** If this is implemented on the Gila River, will it be on the other rivers? Will this project be used on all push-up style dams? (If so, there are more than three.) How many beneficiaries will there be?

## Luna Ditch

### SUMMARY INFORMATION

Project submitted by: Janice Kiehne, Secretary/Treasurer 1892 Luna Irrigation Ditch Association

Project budget: \$1,363,000

County/counties affected: Luna and Catron Counties

Water Utilization Alternative Project

Tier-2 ranking points: 53

### PROJECT DESCRIPTION PROVIDED BY PROPOSAL AUTHOR

In 1892, an Irrigation Ditch Association was formed in Luna, New Mexico to organize diversion of water for farming and subsistence gardening. A dam was constructed in the San Francisco River near what is now Alpine, Arizona. Water is released from this dam into the river channel and diverted from the river into the ditch system west of Luna. The system has received necessary maintenance over the years, but has not been upgraded or improved since the 1890's.

The 1892 Luna Irrigation Ditch Association AWSA proposal would both conserve our precious water supply and address environmental concerns raised about the diversion system. The project would eliminate the need to enter the San Francisco River each year with heavy equipment to build an in-stream diversion structure out of the river substrate. Instead, a permanent diversion structure would be designed to minimize the impact on the river ecosystem while still assuring adequate diversion of water from the river channel to charge the irrigation system. The current, unlined, dirt irrigation ditch system would be replaced by lined or piped ditch systems that would result in conserving an estimated 419 acre feet of water per year that is currently lost through seepage, evaporation and illegal diversions.

### TOWN HALL INPUT

#### *Likes:*

1. **Efficient and reduces water loss:** Some town hall participants saw this project as offering more efficient water delivery and use. People liked that the project would conserve 419 acre feet of water. Some also liked that the cement-lined and pipe ditches would improve efficiency, increase hydrostatic head, reduce conveyance loss via water loss in the ditch, lead to less evaporation, and increase delivery of the water thus providing more water to users. Participants felt conserved water is, in essence, new water, and the water would have beneficial uses, both providing the river as well as increasing agricultural efficiency.
2. **Upgrades needed:** Many participants agreed that the current system is old, needs to be upgraded, and the replacement and/or lining suggested by this project would remove costly yearly maintenance.
3. **Rural community support:** Luna is too remote to commute to jobs in other cities, participants noted, making it that much more important to support the rural economy via cultural and agricultural uses of the river. These uses are necessary for the community, helping to preserve its heritage. To that end, this project would benefit one of the most senior, biggest water users in a way that would not get met through other large-scale projects.

4. **Costs:** The budget has been validated, participants noted, and offers a high return on investment. The project is small scale and tailored to a specific need, with a small price attached to it.
5. **Diversion control:** Some participants noted that this project addresses illegal diversions with a permanent diversion, one that provides control of the issuing of the water to the users. This would reduce the amount of water being taken from the river.
6. **No heavy equipment:** This project would keep heavy equipment out of the river, creating less disturbance.

**Concerns:**

1. **Environment:** Some participants were concerned that the concrete and/or pipe-lined ditch would lead to a loss of fishing habitat along the canal, and result in environmental impacts of reduced flow to the river – and potentially destroy vegetation and wildlife. Because of this environmental impact on associated riparian wetland vegetation from lined ditches, some asked whether this project could use an environmentally friendly diversion design, like the Rosgen.
2. **Design:** Because there was no explanation about where the diversion would go and how it would work, participants wanted to be sure the stream processes and needs of the irrigators were understood by designers when determining the location of the diversions. This would better ensure the best and most appropriate fit for the setting. They also felt the lifespan of the "permanent" diversion was too vague. And there were concerns about creating another permanent structure in the river, as well as how this diversion structure would impact navigation.
3. **Less recharge:** Concrete and pipe lined ditchers would result in less groundwater recharge, and the seepage from earthen ditches can be beneficial. The water that is "lost" through seepage isn't lost, it goes into the ground. This could negatively impact ground water, wells and similar historical uses (a factor that applies to all ditch lining projects).
4. **Cost:** There was a concern that the project may go over budget.

**Questions:**

1. **Impact:** What is the economic impact on the local people? How many households will be served, how many irrigators will benefit? Will there be impacts to the natural hydrograph of the river? Though this project may be relatively low budget, it is of very high importance to Luna. How long does this pipe last? Will the ditch company attempt to evaluate the impact on ground water users?
2. **Engineering plan:** Has the preliminary engineering report been done? (The understanding in at least one group was that it had not.) The absence of this engineering report prevents monies from being spent on more specific work.
3. **Environmental impact plan:** What would the environmental impacts be of the reduced flow to the river resulting from this project?

4. **Diversion control:** Will diversion be controlled by immediate needs? Will there be control over the quantity of water diverted? Will agricultural users meter their diversions? (applies to all ditch diversion improvement projects)
5. **Conserved water:** Will the conserved water be returned to the stream?
6. **Cost:** What is the life cycle cost benefit of the project? Is this enough money for the project.
7. **Misc:** Were the HDPE pipe available in 1892, would they have used it?

## Sunset and New Model Ditches

### SUMMARY INFORMATION

Project submitted by: Tom Lovett, President, Sunset and New Mexico New Model Canals

Project budget: \$18,000,000

County/counties affected: Hidalgo County, Virden Valley & NM on both sides of the Gila River

Water Utilization Alternative Project

Tier 2 ranking points: 61

### PROJECT DESCRIPTION

This proposal is to line both canals with HDPE (high density poly-ethylene) pipe. The piping would result in a covered ditch that includes gates and cleanouts. Seventy-five percent of the surface water irrigation acreage on the Gila River is served by these two canals. This project will improve water usage, stop leaking of unlined and dilapidated canals, and lower maintenance and repair costs for many years.

There are several good reasons for lining these canals with HPDE pipe. The first is water loss. Currently, these two canals – which are concrete and dirt lined – lose between 20 to 30 percent of the water that runs through them. This loss is generally due to unwanted plants and weeds that grow in the un-piped, uncovered canals. This also has an environmental impact, as the pipe-lined canals would reduce and/or stop all weed growth. This means no more chemical spraying and burning to control the weeds.

Lining the canals with pipe would also eliminate the danger of drowning, to people and animals. Safety is of the utmost importance. There are economic benefits as well. The lined ditch would reduce maintenance costs. Saving water, improving safety, and helping the environment is beneficial for everyone. There would be meters on the diversions, which would meet AWSA regulations. The ditches would need no improvements for the next 100 years. This project would also provide needed jobs to the Virden area. It is important, however, to do this work soon. The price of HDPE pipe is based on oil prices, which in 2012 are lower than they have been at any time in the past. When oil prices go up, the price of HDPE pipes will go up tremendously as well.

**TOWN HALL INPUT****Likes:**

1. **Efficient:** Some town hall participants noted that they like this project because it would address many issues at one time. The new lining would conserve water, divert more water to the user, reduce conveyance loss, not use AWSA water, and reduce the need for groundwater pumping.
2. **Agriculture and community support:** Some participants liked this project because it supports the agricultural sector, further noting that the canals support about 75% of the farmland along the Gila River. Some participants noted that it would have economic benefits through the increased construction jobs.
3. **Cost:** Some people liked the fact that this project would use poly pipe and would not need to be replaced for 100 years, making it a good return on investment. People were pleased that there would be virtually no maintenance costs.
4. **Meters:** Some town hall participants liked the fact that this project could use meters to control consumption and distribution.
5. **Reduce pesticide use:** Some town hall participants noted this project would control the weeds, reducing the need to spray pesticides on sides of ditches.
6. **Misc:** Some participants noted that this project would improve community safety.

**Concerns:**

1. **Costs:** Participants expressed concerns about the project cost. Some participants said that it would be a huge investment for a portion of the population, that \$18 million dollars is costly for 14 miles, and that \$18 million dollars may not even cover the cost of the project. Some had concerns that it would not last 100 years.
2. **Maintenance:** Some town hall participants were concerned that the project would not really be maintenance free.
3. **Environment:** People expressed concerns about negative impact on the environment. Some voiced concerns about HDPE degrading chemicals into the environment, impacts of reduced flow to the river, and changes to the natural habitat from the piping.
4. **Recharge:** Some town hall participants were concerned that the project might reduce the flow of underground water.
5. **Engineering plan:** Some town hall participants expressed concerns about the project because the engineering plan should include alternatives.

6. **Misc:** Some town hall participants expressed concerns about the project because the Gila River is a dirty river and moves a lot of rock and sediment. Others were concerned whether people with water rights could tap into the system. People noted it it would be hard to monitor.

**Questions:**

1. **Cost:** Does \$18 million dollar budget include construction, materials and other unforeseen costs? What is the life cycle cost benefit of the project? Is there a cost share?
2. **Alternatives:** Are there alternatives? Could this project get monetary support from other entities?
3. **Environment:** Would the environmental impacts reduced the flow to the river? What quantity of pesticides are used to control weeds?
4. **Recharge:** Will there be less groundwater recharge?
5. **Natural hydrograph:** Will there be impacts to the natural hydrograph of the river? What is the impact on ground water?
6. **Number served:** Will this project serve a large population?
7. **Ag use:** Is it true that 75% of the canals serve farmland along the Gila River?

## U.S. Forest Service Ditch Improvement

### SUMMARY INFORMATION

(Also titled: "Gila National Forest San Francisco River Diversion/Ditch")

Project submitted by: Carolyn Koury, Watershed Program Manager, Gila National Forest

Project budget: \$45,000 for feasibility study, plus potential additional funds

County/counties affected: Catron County

Water Utilization Alternative Project

Tier 2 ranking points: 12

### PROJECT DESCRIPTION

The Ditches/Diversions proposal is for stream diversion improvements on one diversion on the San Francisco River (Balke Ditch). This is essentially a demonstration project. The feasibility portion of this work includes provision to evaluate both whether any type of new construction will be superior to the existing push-up structure, and which of several types of improvements may be optimal for the particular location. If the proposed feasibility study indicates the viability of an alternative to the push-up structures now being employed, then this proposal recommends that additional funds be made available for construction. Other ditch owners have similar ditch issues, and it is expected that a successful project would stimulate additional interest on NFS lands. If the feasibility study indicates that physical changes to the existing push-up diversion may not be practical because of unstable bed or banks, inordinate length, cost, or environmental issues, other alternatives will be evaluated, such as collection galleries (e.g., Ranney wells), shallow water screens, or wells. No

construction would take place until the results of the feasibility study are available to decision makers. The feasibility study alone is \$45,000. If the feasibility study shows favorable results, additional funds will be sought for design, construction, and maintenance costs of the chosen diversion method.

## TOWN HALL INPUT

### *Likes:*

1. **Study then replication potential:** Some town hall participants liked this project because the idea of producing a study before implementing an idea is appealing. Some noted that it would compare types of diversions, question feasibility of construction, potentially advance technology, provide information for other diversion projects, and address the question of push-up versus permanent structures.
2. **Cost:** Some town hall participants liked this project because the budgeted cost seemed low and reasonable.
3. **Misc:** Additional factors people liked about this project include: it references Gila National Forest, it does not use CAP water, and it benefits senior water users that are unlikely to get water from a large scale project.

### *Concerns:*

1. **Study only:** Some town hall participants expressed concerns about the project because it is only a study. Some felt the project description was too vague and worried about whether the study would lead to development or water conservation. Some thought the study may be redundant because of previous studies and projects.
2. **Costs and alternative sources of funds:** Some town hall participants expressed concerns about the project because it seemed like a lot of money for a feasibility study. People noted that it is likely that more money will be needed once the study is completed, and it might also be difficult for ISC to budget the implementation later. Some voiced concerns about what kind of project would evolve from this study and if that justifies the use of money. Some participants said that the U.S. Forest Service should use their own money to fund the study.
3. **Misc:** Some town hall participants expressed concerns about the project because the study might not directly advance water conservation or development.

### *Questions:*

1. **Study only:** Has similar study been conducted else where?
2. **Costs:** Why is the U.S. Forest Service not paying for this study and why have they not looked for other sources of money? Where would additional funds come from if a project results from the study?
3. **Misc:** How many people will be affected by this study? What diversion alternatives are going to be tested? Could existing projects be used? Is this a shared project? Does the study help resolve the conflicting mandates?

## Pleasanton Ditch Improvements

### SUMMARY INFORMATION

Project submitted by: Rob Overacker, Vice-President, Pleasanton East-side Ditch Company

Project budget: \$900,000

County/counties affected: Catron County (Pleasanton, Pleasanton Valley)

Water Utilization Alternative Project

Tier 2 ranking points: 74

### PROJECT DESCRIPTION

This project proposes to extend The San Francisco Basin water supply through reduction of conveyance Losses. Diversions of San Francisco River flows into the Pleasanton Valley of southern Catron County date to at least 1880 and are presently used to water permanent pastures, truck-farm crops, orchards, gardens, native plant nurseries and livestock. The 20,000 foot Pleasanton Eastside Ditch annually delivers approximately 925 acre feet of adjudicated water to 24 members of the Pleasanton Eastside Ditch Company (PEDCo). PEDCo members hold rights that vary from 0.75 ac. to 100 ac., with priority dates in the 1885-1895 range. These water rights are generally senior within the San Francisco Basin of New Mexico. PEDCo was formally incorporated in 1962 at the time the old dirt-banked Pleasanton Eastside Ditch was concrete lined. The ditch course crosses mostly private property of PEDCo members (85%), with minor reaches through non-member private properties (5%) and federal (USFS) holdings (10%). The 50 year-old concrete lining of the ditch has degraded to the point that delivery to end-of-ditch users is often compromised due to conveyance loss from seepage & leakage. Conveyance loss is estimated to be on the order of 1850 acre feet a year and PEDCo proposes to reduce this 80-90% by re-lining or inserting closed pipe into the ditch. Returning this conserved water to the river extends the water supply and the capacity of the basin to support natural ecosystems and/or other downstream human uses. Additionally, this project will help to secure continued use of critical senior water rights for agriculture in Catron County. Preliminary environmental scoping has been conducted. Impacts from re-lining the ditch are expected to be minimal and would be mitigated by the benefits of returned flows to the river.

### TOWN HALL INPUT

#### *Likes:*

1. **Ag and community support:** Some town hall participants liked that this project would protect those with senior water rights, serve a local economy, impact economic development in that area, and address long-standing needs.
2. **Cost:** Some town hall participants liked that this project's infrastructure would only need to be re-lined or have closed pipe inserted. Some noted that it would reduce costly yearly maintenance and offer a high return on low investment.
3. **Well done proposal:** Some town hall participants noted that the proposal had been well thought-out, showing benefits that would result from the project.
4. **Water use:** People noted that this project does not use CAP water, prevents water loss, promotes water conservation, and it is beneficial to the community.



5. **Environment impact:** Some participants noted that they like this project because environmental scoping has been conducted and has shown to have a low negative environmental impact.

**Concerns:**

1. **Cost:** Some town hall participants worried that the project seemed to require a large amount of money for a small population and small amount of water.
2. **Environment impact:** People expressed concerns about the negative environmental impact of ditches, resulting in a loss of habitat and other concerns.
3. **Recharge:** Some participants expressed concerns about the project because there might be less groundwater recharge.
4. **Design:** Some town hall participants expressed concerns about whether people with water rights could tap into the system. Some also worried that there was no mention of the lining technology that would be used or what would be the best metering practices.
5. **Who benefits:** Some worried that the project seemed to solely benefit individuals and private property owners.
6. **Not enough information:** People expressed concerns about not having enough information. Some noted that it does not seem to apply to CAP water.

**Questions:**

1. **Water rights:** Are all water rights currently used along the ditch?
2. **Environment impact:** Will this project reduced the flow to the river?
3. **Water impact:** Will there be less groundwater recharge thus affecting the natural hydrograph? Is the conveyance loss overstated? Does the conserved water actually return to the river?
4. **Cost:** Will the funds come from federal, state or local dollars? Will this money be used for implementation and future maintenance? How does this project compare to other similar projects? How long will the re-lining last and will it show a high return on a low investment?
5. **Who benefits:** How could this benefit a larger population, since it appears to benefit only individual.

# MUNICIPAL CONSERVATION

## Deming Conservation Fund

### SUMMARY INFORMATION

Project submitted by: Lawrence Brookey, Public Works Director, City of Deming

Project budget: \$1,400

County/counties affected: all four counties

Water Utilization Alternative Project

Tier 2 ranking points: 61

### PROJECT DESCRIPTION

This project proposes capitalizing a fund to implement municipal conservation projects in the four-county area of the Southwest New Mexico Water Planning Region. The regional water plan identifies many different municipal conservation strategies that water suppliers could implement. Conservation programs extend the water supply in two ways: 1) by reducing the amount of water that must be pumped, treated, and delivered to meet a particular need, and 2) by reducing consumptive uses (depletions) associated with a particular use. However, the funds for implementing water conservation measures are generally lacking.

### TOWN HALL INPUT

#### *Likes*

1. **Number served:** Some town hall participants expressed appreciation for this proposal for addressing all counties, thus affecting a larger number of people.
2. **Community support:** Participants noted that this proposal would have a positive economic impact and would help communities that need economic development.
3. **Cost:** Some town hall participants noted municipal conservation is a fiscally responsible activity, is a good use of money, reduces the cost for municipalities, defers costs that would otherwise go to create larger water projects, and might help local governments seek more grants.
4. **Project design:** Participants said that similar project designs have been successful. They said that they like the intent of the fund, the planning process, and the potential results.
5. **Collaboration:** Some participants said that this proposal would encourage more collaboration among stakeholder groups.
6. **Water use:** Some participants said that this project would have the potential to reduce water usage, it would extend life of existing water, and it would make conservation more important.
7. **Environment impact:** Some participants said that it would not have a negative affect on the environment, but that environmental conservation education is necessary for success.
8. **Misc:** Some participants said that many municipalities are starting to look at conservation funds as part of public policy and noted that this project provides future support for projects not yet identified.

**Concerns:**

1. **Population/economic growth:** Some participants noted that conservation is not the entire answer because of the increasing population expected in the region. Some said it could discourage economic growth and could make water limited because of conservation programs.
2. **Collaboration:** People said that this proposal is the similar to the Gila conservation fund and thought that the two projects could be integrated.
3. **Cost:** Some participants express concerns about fund distribution and the lack of funds to cover all four counties.
4. **Project design:** Some participants noted that the project is too broad to embrace. Some participants voiced concerns about the management of the fund, whether the project will truly conserve water, and whether it would be mandatory. Some also asked if stakeholder groups would be included in the development of the project design.
5. **Misc:** Some participants voiced concerns that more regulations would result from this project .

**Questions:**

1. **Collaboration:** Is it the same as Gila Conservation Fund project?
2. **Cost:** Who is the fiscal agent for fund allocation? Why is the cost different from the Gila Conservation project? What would be the life cycle is for this project?
3. **Meters:** How could we make the meters more effective?
4. **Number served:** Should the project name be changed to include all four counties?
5. **Economic growth:** Where is the water going to come from for economic growth? Is there a limit?
6. **Project design:** What would be the structure for the project design? Some participants noted that average water use in the four county area is estimated at 198 GPCD, and asked how does that water use compare with cities in the SW that have adopted water conservation programs, however, doubts were raised about the accuracy of the 198 GPCD number. Source: Bureau of Reclamation Report.) Some asked why the same concept of a fund be applied to agricultural conservation.

## Gila Conservation Coalition Municipal Conservation

**SUMMARY INFORMATION**

(Project also titled: "Gila Conservation Fund.")

Project submitted by: Allyson Siwik, Executive Director, Gila Conservation Fund

Project budget: \$10.9 million

County/counties affected: All four Counties

Water Utilization Alternative Project

Tier 2 ranking points: 94

**PROJECT DESCRIPTION**

This project proposes to reduce municipal and industrial water use and extend the life of groundwater supplies. The project would provide funding for implementation of municipal water conservation programs for

incorporated and unincorporated public water supply systems in the following groundwater basins: Mimbres Basin, Lordsburg Valley, Animas Basin, San Simon Basin and Gila-San Francisco Basin. This funding would extend the life of publically provided water supplies for the incorporated municipalities of Deming, Columbus, Silver City, Santa Clara, Bayard, Hurley, Lordsburg, Virden, Rodeo, Playas and Reserve, as well as unincorporated areas in the four counties.

Water conservation measures reduce the demand for water and therefore reduce the need to develop new water supplies. Many of these measures also save energy costs, reduce wastewater treatment costs, and reduce the overall environmental impacts associated with water use. According to the New Mexico Office of the State Engineer, “Because the costs of water development and treatment continue to rise, many communities are faced with expensive water and wastewater treatment facility expansions to meet growing water demands. Fortunately, water conservation can delay, and in some cases actually eliminate, the need for these costly infrastructure expansions. The simple fact is this: conservation is almost always the least costly water supply alternative.” Implementation of water conservation programs could extend the water supply by approximately 3,679 - 4,269 acre feet of water annually throughout the four-county area at a total estimated cost of \$10.9 million.

## TOWN HALL INPUT

### *Likes:*

1. **Program design:** Some participants liked the intent of the project, its design, the use of research and best practices, and the use of funds for new construction. People also liked that it would extend the life of current infrastructure, maximize industrial and municipality water conservation, and evaluate project success at a mid-point. Some people also liked the project recognized conservation as a source of supply.
2. **Number served:** Some participants noted that it would benefit most rural and unincorporated communities within all four counties, affecting a large population including communities that have not submitted projects.
3. **Water use:** Some participants noted that it would save and produce a large quantity of water, reduce usage for residential and commercial use, extend the use of existing water, not divert CAP water, reduce mining for water, and extend the life of water to ensure long term economic sustainability.
4. **Cost:** Some participants called this project the most cost-effective way to meet long-term municipal water needs; some said it would reduce the need to spend money on larger projects.
5. **Environment impact:** Some participants noted that there would be no negative impact on the environment.

### *Concerns*

1. **Collaboration:** Some participants had concerns about collaboration, whether the project should be combined with the Deming Conservation Fund Project, and whether all counties would participate.
2. **Cost:** Some participants express concern about money distribution and the lack of funds to cover all four counties because \$500,000 is not enough for this project.
3. **Rules/regulations:** Some participants expressed concerns about the development of new regulations and feared that it could be harmful to small entities because the NM Finance Authority process can be cumbersome.

4. **Water use:** Some participants said that they were concerned that this project would not truly save water, that it does not address agriculture use, and that conservation may increase the need for water.
5. **Project design:** Some participants noted that the project design is too broad, lacks information about several issues including mining, metering practices, administration of the program, and program participation.

### **Questions**

1. **Cost:** Who will administer the program? How will the funds be used both long-term and short-term? Consider implication of using AWSA funds, why are they different in price? Is there enough funding to accomplish all of the water conservation projects?
2. **Legal issues:** What is the legal viability of water trust board being the fiscal agent and are these programs going to be highly regulated?
3. **Metering:** How can metering be more effective?

## **Stream Dynamics Water Harvesting**

### **SUMMARY INFORMATION**

Project submitted by: Van Clothier

Project budget: \$15,755,000

County/counties affected: All four Counties

Water Utilization Alternative Project

Tier 2 ranking points: 51

### **PROJECT DESCRIPTION**

This proposal will meet a water supply demand for thousands of homes and businesses in the four county area by building thousands of appropriately scaled local rainwater catchments and greywater landscape irrigation systems. Each participating property owner will receive water harvesting infrastructure paid for by AWSA funds. Water harvesting will capture roof runoff in cisterns and earth basins. Greywater from washing machines will go into a tree basin. The runoff bypassing the landscaping in the street gutter and causing a puddle or dangerous icy patch at the intersection will be redirected to basins to grow trees along our public rights of way.

The water harvesting features will fill up with water every time it rains, every time the snow melts. No one will have to pay for this extra water, and it will not have to be pumped. As a community, we will have access to reliable sources of clean water in an emergency.

These practices are elegant in their simplicity, well tested regionally, entirely legal in New Mexico, and supported by the office of the State Engineer. Causing the water to soak into the ground on your property is legal, moral, ethical, and a very good idea! It benefits you and your neighbors, and harms nobody.

Huge electricity bills will be lowered as we learn to let gravity do the work of delivering free rainwater to where it is needed. Harvesting rainwater and greywater on a large scale will dramatically increase the effective supply

of water available while decreasing the demand on our precious groundwater resources. This will transform water waste and the fear of scarcity into water abundance for everyone.

## TOWN HALL INPUTS

### *Likes*

1. **Water use:** Some participants said that they like this proposal because it has effectively been used by others, is conservation based, would maximize the rainwater, and would create additional supply for households. People also noted that the project would result in less water diverting to the sewer system, reductions in road maintenance costs, remediation of some contaminants in the water, declined use of waste water treatment plants, and decrease demand for ground water. People said it might help reduce storm water damage and help beautify the area.
2. **Other benefits:** Some participants noted that there are additional benefits, such as reduced water costs to rate payers, reduced demand on municipal water, and reduced flooding. People said it would support locally grown food, create local job opportunities, offer an educational value, and use a low amount of energy.
3. **Number served:** Some participants liked that the project could benefit every county, a large number of people, and the average property owner.
4. **Cost:** Participants said that there could be a potential for tax credits, and reclaimed water costs would be reduced.
5. **Project design:** Some participants liked the project design because it is simple and technically feasible, does not involve engineering, is a proactive conservation effort, is locally controlled, is energy efficient, and captures pollutants from entering the water supply.
6. **Environment impact:** Some participants noted that the project would help control and prevent erosion.

### *Concerns*

7. **Feasibility:** Some participants noted that they had concerns about the complexity of implementing and maintaining units. They worried that it might not be a practical use of water for the average home owner, that it is hard to comprehend, that the project lacks an educational component, and that it is not economically feasible.
8. **Unintended consequences:** Some participants worried the project could breed mosquitoes, could create unintended health consequences from use of the water, and might reduce the replenishment of the water table.
9. **Collaboration:** Some participants noted were concerned that the project is not part of a larger collaborated program that includes public education.
10. **Legal issues:** Some participants noted that they had concerns about existing laws and regulations, as well as accountability and the misuse of funds.
11. **Cost:** Some participants noted that they had concerns about the project because there are no monetary guidelines in place for this proposal, that they did not know where the money would come from to support this project, and had concerns that this project is too big.

**Questions**

1. **Cost:** Will it be one large program on many small programs? Who would produce a budget and what would it look like? If set up as a fund, who would administer it?
2. **Monitor:** How will we monitor the program, from success, to utilization, to the proper disposal of equipment?
3. **Project design:** What are catchments made of and how durable are they? Would we have an educational component? Could this be turned into two projects: a gray water project and a rainwater project? Could this be a pilot project? Is there proven science behind this project?
4. **Health issues:** Are there health implications from use of this water?
5. **Legal issues:** How do we make it legal and follow New Mexico regulations.
6. **Optional vs mandatory:** Will this project be mandatory? It does require participation to make a large impact. Some participants noted that maybe 20% would participate.
7. **Number served:** Is it applicable to all four counties?
8. **Monitor:** How do we monitor success of the program?

# DIVERSION AND STORAGE

## Deming Diversion Project

### SUMMARY INFORMATION

Project submitted by: Lawrence Brookey, Public Works Director, City of Deming

Project budget: \$250 million

Counties affected: All four Counties

New Mexico Unit Project

Tier 2 ranking points: 83

### PROJECT DESCRIPTION

This project proposes the development of a regional water diversion and pipeline system. This system would divert Gila River water available to New Mexico under the AWSA for municipal, industrial, agricultural, and other uses. Diverted water would be stored in a surface reservoir. Stored water would be gravity released to supplement the Gila River flows, provided under pressure (pumped) for use up to the elevation divide, and provided to users between the elevation divide and Luna County from gravity flow. This relies on both direct use of surface and groundwater, and aquifer storage of surface water to meet long-term demand.

### TOWN HALL INPUTS

#### *Likes:*

1. **Communities served:** Town Hall participants liked it that this project would serve more of the Mimbres Valley residents. It would affect not just Deming, but much Grant and Luna counties, including Silver City, Hurley, and Bayard. Participants noted that the AWSA said projects should benefit the four county area. Some liked that it would allow partnering with Freeport. Common theme: Everyone benefits.
2. **Maximizing AWSA resources:** Many participants liked that this project develops AWSA water. It would keep water in the region and secure it for future use. These people liked that it would use some or all of the 14,000 acre feet, thus increasing the amount of water available in all four counties. Some also supported potential to add water to the river.
3. **Uses:** Those who liked this project were pleased that it potentially benefits lots of interests and numbers. Some saw it as the only proposal that addresses how everyone will benefit, including industrial, agricultural uses, economic growth, and recreation. Some also liked that it would potentially recharge the aquifer.
4. **Lake:** Some participants liked the idea that a New Mexico lake would hold New Mexico water.
5. **Long-term region viability:** Some participants focused on the long-term water demand. Their goals were to "conserve and secure" water for future growth and viability of the region. Some liked that it potentially addressed a 100-year water plan and could lead to a conjunctive, sustainable water supply.



6. **Cost:** Supporters of this project liked that it would develop water less expensively than buying existing water rights. They also liked that it would be phased in over time. Some called it a “proven concept.”

**Concerns:**

1. **Costs:** Some town hall participants thought this project was just too expensive. To them, the cost-benefit ratio seemed very high, and much more costly than conservation methods. Some were concerned that the federal money may not be there when it is needed. People worried that the location of the pipeline and corresponding right of way issues might delay the project and lead to higher costs. The project costs more money than is available under the AWSA; would it preclude other worthy projects? People worried about the cost of maintenance and operations in the future. Aside from the project costs, people worried about the cost of the actual water – since it would have to be purchased from the CAP. They said the water could be too expensive for residents in the four county area (and therefore may be sold elsewhere). There was a universal concern about pulling water out of the Gila and piping it out of the four-county region.
2. **Who pays:** People worried about the need for a legislative appropriation to cover costs over the federal fund, and wondered where else the community would get the funds. Some worried that the community could get in a situation of paying for water that is not being used. People had heard that water users would pay the overage costs; what would the costs be? People worried about whether the water would be affordable and there was general confusion on who would actually pay for the exchange costs.
3. **Exceeds need:** Some participants were concerned that there was not a demonstrated need for the additional water in Deming, per the community’s existing 40-year water plan.
4. **Other Requirements:** Participants noted that the project requires a large reservoir. Evaporative loss from the reservoir would be significant, they said, yet New Mexico would have to pay Arizona for the water that evaporates. The project would store more water than Silver City currently uses and is very energy intensive.
5. **Environmental impact:** People were concerned about the environmental impacts of taking water out of river. Some disliked moving water from Gila to Mimbres basin. Some worried about negative environmental impacts of construction and operations, as well as effects on endangered species, riparian habitats, and resident plants and animals. Others were concerned that transporting water over continental divide may require significant fossil fuel. Some people said the project ignores the ecological value of flooding and jeopardizes the “last free flowing river” in New Mexico. These environmental impacts could jeopardize the tourism industry, some worried. Others were concerned about changes in hydrology that would promote invasive and non-native species within the Gila River system.
6. **Benefits:** Some participants doubted whether this project benefits agriculture. Some noted that the mining industry may sell their water rights and benefit from public funded infrastructure. People were concerned about a project that might mostly benefit Deming, not for all four counties. If water is piped out of Gila Basin, then water might leave the four-county area.

7. **Project feasibility:** Participants were concerned that they did not have much detail on the location of pipes and storage. Combining aquifer and surface storage is redundant, some thought. Others were concerned about where the water be withdrawn from the river and how much?
8. **Flood potential:** People wondered whether this diversion could withstand a 100-year flood? They were concerned that the proposal summary did not include a flood control component.
9. **Controversial:** There was a concern about making the work and ensuring everyone is treated fairly. The diversion would be controversial, and some said there is not broad public support. Others worried about potential litigation and NEPA. Some voiced concerns that the project is categorized as only using flood water but would use ordinary stream flow water as well. People worried about inviting major federal involvement and regulations in the community (CUFA, NEPA, ESA, etc.).

### **Questions**

1. **Maintenance:** who will maintain the pipeline and storage facility?
2. **Cost:** who will pay for pipeline and storage facility? Is there anyone willing to pay for expensive water? Is there a cap on the exchange rate? Have there been studies on the cost of the project? Take a look at estimate of diversion costs versus amount of water diverted. How will users pay for CAP transfer fees? What will water cost at point of delivery? What is cost benefit analysis of the market cost of the water? Is this an underestimate of total project cost? How reliable is the CAP water for exchange? How will the unit cost of this water compare to what municipalities and farmers in the four county area are paying for water currently?
3. **Flood control:** Would the Rosgen-type diversion do anything for flood control?
4. **Conservation:** Is there demonstrated need prior to considering conservation measures? What are the impacts to the river eco-system?
5. **Project scope:** Can the pipeline loop to include Hurley, Santa Clara, Bayard and Silver City? Is there truly a need for this? What is the time horizon, what are the phases of development and implementation? Why wasn't Freeport McMoran considered in the development of the project? Where will storage and diverse be? Why doesn't it use both ground water and surface water. What is size and scope of project? Could this water be saved for future use instead of being developed now?
6. **End users:** What's to prevent diverted water from going eastward to Texas? Will the Gila basin farmers be upset because of out of basin transfer? Who is the end user? Will existing agricultural users agree to meter current diversions if they build this large scale project?
7. **Feasibility:** What diversion mechanisms are most feasible? How to address right of way with private property for pipeline? What are the impacts on those downstream from that point who depend on it? Where will the storage facility be located? What is the likely evaporation from storage facility? Does the project give all authority to the federal government?
8. **Collaboration:** could this project be combined with Hidalgo County project and the GBIC project?

## Gila Basin Irrigation Commission (GBIC) Diversion and Storage

### SUMMARY INFORMATION

Project submitted by: Topper Thorpe, Chairman, Gila Basin Irrigation Commission

Project budget: \$7,700,000

County/counties affected: All four Counties

New Mexico Unit Project

Tier 2 ranking points: 90

### PROJECT DESCRIPTION

This is a project to divert, store and distribute some or all of the water available under the ASWA, through an upgraded infrastructure. Final decisions on exactly what materials will be used and where the water will be stored depend on studies and analyses yet to be conducted. The ultimate goal is to assure a dependable and adequate supply of water in the river throughout the year to meet agricultural, environmental, recreational, and other needs, while also providing flood control to minimize damage to land adjacent to the river. This would primarily impact areas adjacent to the Gila River, beginning in the upper Gila Basin, and extending to the Arizona border. Grant and Hidalgo counties would be primarily affected with less impact on Luna and Catron.

### TOWN HALL INPUTS

#### *Likes:*

1. **Agricultural benefits:** Some town hall participants liked the fact that this project would support the farming and ranching sectors, improve irrigation, and potentially revive agriculture in the Gila Basin. People liked that it could help meet these water needs improve even in a drought.
2. **Captures the water:** Like other New Mexico Unit proposals, people who favored capturing the water noted that this project would keep the allowed 14,000 acre feet of water in our state, rather than sending it downstream.
3. **Less expensive and less infrastructure:** Several people felt that the projected costs for this project seemed reasonable, noting that its budget is smaller than other New Mexico Unit proposals. Some also liked that the “remedy” would be close to the water source, therefore minimizing the need for infrastructure. One group noted that it would also improve on existing infrastructure.
4. **Environment:** People liked the notions of flood control, keeping water in the river during dry periods, and minimizing damage to the land next to the river. One group believed this project could be positive for a wilderness area (though it is unclear from the notes the actual area to which they refer). They also liked that it would potentially recharge the aquifer. One group noted that the “surface disturbance” would be less than the Deming diversion. They liked that the project considers underground water storage.
5. **Regional benefit:** People liked the fact that this project would keep the water in the Gila-San Francisco Basin, and that it would affect all four counties. Some also noted that it would affect an under-served area (not noting which one) as well as municipalities.
6. **Economy:** Some people commented this project would be good for the economy.

7. **Misc:** Some people thought this proposal would be good for recreation. One group liked the flexibility of “inter-basin and intra-basin” water. The same group commented that the project offers the potential for leasing to Bureau of Reclamation during dry years.

**Concerns:**

1. **Cost:** Like other New Mexico Unit projects, people worried about the cost of paying for CAP water. Many believed the costs would be too high for local users. Some wondered if there is a market for water at that cost.
2. **Evaporation loss:** Some town hall participants worried about the amount of water that would be lost to evaporation, with one group emphasizing that evaporation leaves a hole in hydrologic cycle.
3. **Pumping:** People in multiple groups opposed pumping the water, some commenting that it would consume considerable energy to pump the water over the continental divide.
4. **Environment:** People worried about the environmental impacts of the project, including endangered species. One group noted that some flooding brings benefits.
5. **Unknowns:** People noted that the feasibility study was not complete, and thus the budget is potentially inaccurate. Some felt the project write-up was too vague. They wanted to know where the water would be stored, and if it would be with mine tailings. One group expressed concern that Highway 211 would be closed more frequently due to increased river flows, potentially predicating a need for bridge. Another group was concerned that, while the project does not build a pipeline to Deming, there is nothing to preclude the community from building its own pipeline and then piping the water elsewhere. One group worried whether the project could really affect all four counties, and two groups asked whether there is demonstrated need for the water by other users on the river. Some wanted a second look at this project when it is more fleshed out.

**Questions:**

In addition to the items above, people wondered whether the water would be available to industrial users, whether it could be phased in, whether the budget projects all costs, and whether it could be combined with Deming’s.

## Hidalgo County Diversion and Storage

### SUMMARY INFORMATION

Project submitted by: Vance Lee, Chairman, Gila/San Francisco Water Commission

Project budget: \$115,000,000

County/counties affected: Grant, Hidalgo, and Luna Counties

New Mexico Unit Project

Tier 2 ranking points: 82

## PROJECT DESCRIPTION

The Hidalgo County off-stream project is designed to divert up to an annual average of 10,000 acre feet of water from the Gila River near the confluence of the Gila River and Mogollon Creek. This water will be conveyed by gravity flow via pipeline or open canal approximately 15.5 miles to a location at the mouth of Schoolhouse Canyon, where it will be impounded behind a dam in Schoolhouse Canyon.

The water will be available for use by entities that contract for it as per the AWSA and CAP exchange. Any water user within Grant, Hidalgo and Luna counties can contract for this water with the Secretary of the Interior, provided they are willing to pay the exchange costs. It will be possible for agricultural users and fire-fighting personnel in the Gila Valley to utilize the water as it travels to the impoundment. And this water will also be metered to ensure that these users pay the exchange cost as well.

The location of the impoundment will allow for the availability of water to be let back into the river for downstream agricultural use. As the water travels in the river to downstream users it will provide an added benefit of keeping the river “alive” at times when the river normally dries up in the lower reaches. The impounded water will also be available for use in the Silver City, Deming, or Lordsburg areas if future decisions were made to contract for it and pipe it to those areas.

Since the AWSA water can only be diverted during high flows in large quantities and will be dirty, pumping it would be difficult. Even with continual maintenance the pumps would get clogged by the dirty water. This makes a gravity flow diversion the best option, and it would not require energy to make it run.

## TOWN HALL INPUTS

### *Likes:*

**Gravity:** Many people liked that this project, unlike others, relies principally on gravity-flow rather than pumping. All the groups but one commented that they liked the gravity flow approach. Some people liked that this approach would use less energy than pumping; others seem to think the gravity approach made the project less likely to carry water away from the four-county region.

**Costs:** Several people liked the lower cost of this project, noting that it seems to offer a good cost-benefit. One group liked that this proposal mentioned the challenge of paying the exchange costs, calling it honest and straightforward. Comments noted that anyone could contract to buy the water.

**Fires:** People liked that this project would provide fire protection for the Gila Valley.

**Capture and store:** People who support New Mexico Unit projects like that this proposal develops AWSA water and calls for the impoundment of that water for future use. They liked that it would keep the water in the state and that it would make water available during droughts. Some commented that the storage would allow sediment and debris to settle out from the irrigation water. Two groups posted comments in favor of the off-stream storage location.

**Environment:** Some people liked that the project would allow flexibility on maintaining in-stream flow. Others liked that it would capture flood waters. Some saw it as generally positive for the environment.

**Agriculture and economy:** Some people believed that this proposal could be good the economy. Some liked that it enabled water to be picked up by lower irrigation districts.

**Recreation:** Some people noted that the project offered the potential for increased recreation.

**Misc.:** Groups noted that the proposal author provided more information than the other projects in this category, and that made it easier to comment on it. One group called it the “best short-term solution for retention,” liking that would make water available to communities that need it. Some people wondered whether this project could be combined with other New Mexico Unit proposals. One group liked that the project calls for metering. Another group liked that it would keep the water in the Gila basin.

**Concerns:**

**Costs:** Some people believed that this project, like other New Mexico Unit projects, was too costly. Read one comment, “With adequate conservation, diversion projects are expensive and completely unnecessary.” Some worried that the budget needed more documentation and might be too low. Other worried about maintenance costs, who would pay for the exchange, and permitting costs.

**Location:** There seemed to be considerable confusion regarding which communities would benefit. The location would not be effective to supply water farther south in Hidalgo County, some said. Others were concerned that the location might not supply water to Deming, Lordsburg, or Silver City. Another group said the project would not benefit Luna County. Some people were also concerned about the possibility of mine tailings in the water storage location.

**Prove the need:** Some people were concerned that the project did not define the need for the water or who would use it. Some worried that the project would bypass existing water users.

**Evaporation:** People were concerned that water would be lost to evaporation, given that the location for capturing the water is far from the storage. Others wondered who would pay for evaporated water.

**Environment:** Some people disliked the fact that the project would interrupt natural patterns from flooding. Others were concerns about “high pools” that would affect forest land.

**Misc.** One group indicated there was inadequate detail to make any determination about the project. Another group was concerned that the project could take water out of the four-county region. Additional concerns include the use of fossil fuels to pump water to users, the possibility of diverting more water than just floods or high water flows, the lack of a conveyance and dispersion plan.

**Questions:**

Participants offered a number of questions. Would it be more cost-effective to go with the Rosgen diversion than with storage? Is the gravity flow design realistic? Do the impacts to the river ecosystem from a large diversion outweigh benefits of putting water in the river during low flows? Is it feasible to capture water at flood stage, or will infrastructure be washed out? Is the canyon big enough? Has a study verified that it is a good location? Who owns it? Is there buy-in from the river communities? When water is captured and then put back in the river for ecological uses, does New Mexico still pay the exchange costs?

# MUNICIPAL INFRASTRUCTURE

## Grant County Infrastructure and Reservoir

### SUMMARY INFORMATION

(Project also titled “Grant County, and partly overlapped with Bayard, Diversion and Storage”)

Project submitted by: Jon Saari, Grant County Manager

Project budget: \$9,150,000

County/counties affected: Grant County

Water Utilization Alternative Project

Tier 2 ranking points: 61

### PROJECT DESCRIPTION

This project proposes the creation of storage facility(s) in the vicinity of Ft. Bayard. The source of the water to be stored includes: effluent discharges from the Bayard Regional Wastewater Treatment Plant, as well as some normal runoff into the storage facility.

Pipeline will be laid to transport the water to the storage area in the Santa Clara/Ft. Bayard area. The transported, treated effluent will then be used to irrigate ball fields, parks, and the landscape. The water stored would also allow the community to release a steady flow of water downstream of the storage facility(s) to recharge groundwater source locations for Bayard. Improvements to the Ft. Bayard Medical Center Water System will be needed. The proposal includes conveyance systems (pipeline), a storage facility, and treatment plant improvements.

### TOWN HALL INPUTS

#### *Likes*

1. **Effluent:** Many town hall participants liked that this project would find a use for effluent and make efficient use of water. One group noted that it would save 728 acre feet a groundwater a year, save 500,000 gallons per day of treated water that would otherwise evaporate, and benefit 10,000 residents. Several noted that it provides a use for water that would not be otherwise used.
2. **Recharge:** People like that this project would recharge groundwater and well fields.
3. **Recreation:** This project’s recreational aspect was also favored by some at the town hall.
4. **AWSA:** Some liked that this project does not develop AWSA water or take water out of a river, but that it still stores water.
5. **Economy:** Some people liked that this project would offer economic benefits to Grant County and maybe the region.

- 6. Watershed restoration:** Some participants were pleased that that this project would restore a “de-watered watershed.”

**Concerns:**

- 1. Recharge:** Some participants disliked the fact that this project would introduce effluent (including salt) to aquifer and streams. Others were concerned that storage for this project would interfere with recharge of wells for Santa Clara and Bayard. People in multiple groups were concerned about “sequencing” in this project. Some worried about public health from wastewater.
- 2. AWSA:** Some were concerned that this project does not develop AWSA water.
- 3. Costs:** Participants expressed concern about maintenance, operations, and pumping costs, as well as the cost per acre foot. Some wanted a cost-benefit analysis.
- 4. More research needed.** Several groups called for the feasibility study; they felt there were many unanswered questions. Research on impacts to existing wells was important to some people, especially research on wells in Santa Clara and Bayard.
- 5. Misc. concerns:** The largest industrial water user appears not be involved. Some felt that this project may not be high enough priority compared with others. Some people were concerned about an MOU between Bayard and Santa Clara. Some people were also concerned about the use of federal land and potential associated set-backs.

**Questions:**

A number of questions surfaced. What is different about this project, as opposed to current effluent practices? Does the project create new water storage and where? Would forests be affected? Is water available for Santa Clara and Hurley? Would the project take water away from Fort Bayard Springs? What is the age of the Ft. Bayard water system? Is sediment a problem in the storage facility? Would the water need additional chemical treatment once it is stored? What are the regulatory implications? Will this project affect a current “water return credit”? Can Freeport McMoRan provide drinking water to communities in exchange for effluent? Are pumping costs included in the proposal? Is this a “purple pipe” project? Why not use gravity instead of power to recharge the aquifer.



## Bayard Effluent Reuse

### SUMMARY INFORMATION

Project submitted by: Charles Kelly, Mayor of City of Bayard

Project budget: \$3,909,405

County/counties affected: Grant County

Water Utilization Alternative Project

Tier 2 ranking points: 51

### PROJECT DESCRIPTION

The project intent is to utilize treated wastewater for non-potable irrigation, conserving existing potable water resources. The system begins at the City's new wastewater treatment plant. The system components are listed below in the order of flow from the wastewater treatment plant:

1. New effluent reuse filter / pump building at the wastewater treatment plant site.
2. Plant site yard piping.
3. New reuse storage tank at the plant site.
4. Transmission line of 5,600 feet of PVC piping – various diameters.

Plant effluent will be directed to the new filter/pump building by gravity flow. Filtered effluent will then be pumped to a new 200,000 gallon storage tank. Filtered effluent in the storage tank is then pumped to the distribution system.

The application area includes the new cemetery site for the City of Bayard. The size of this area is forty acres. Also included are the ball fields at Snell Middle School, Rominger Field and Ernie Christian Field – a total of 7.25 acres.

The plant site reuse facilities are located on the 9.93 acre plant site south of Snell Middle School. The remainder of the project area consists of the effluent application areas described above and the easements provided, or to be acquired, for the transmission lines.

The proposed project will affect 5 acres of land at the existing wastewater facility in Bayard and about 5,600 feet by approximately 50 feet of mostly developed land for the transmission and distribution pipelines.

### TOWN HALL INPUT

#### *Likes:*

1. **Water use:** Many participants supported the use of effluent and conservation of potable water. Being able to reuse the water would offer recharge credits, and if the community receives two uses out of every gallon, they have twice as much water. The NMED has ordered Bayard to stop discharging to the mine, and only two and a half years remain in the agreement for the mine to accept the effluent. While the agreement could be extended, people said, the mine does not really need the water.

2. **Benefits:** Recreation, aquifer recharge, schools, the cemetery and public fields, the conservation of ground water, and the elimination of the need for potable water for irrigation and recharge were all benefits of this project identified by participants. People noted that this project could offer these benefits without using AWSA water.
3. **Efficient:** This project is ready to go, with 95% of the engineering and planning already complete. The piping required will be over mostly developed land.
4. **Cost:** Participants liked that Phase 1 is already funded, with \$10 million invested from multiple agencies. This proposal is for Phase 2, and because the proposal is more specific some participants felt more confidence in the budget. There was also the comment that this project would be cost effective and well within the funds available.
5. **User benefit:** Upon completion, participants said, this project would give back to Santa Clara, Fort Bayard, Bayard and Hurley. It is scaled to the community itself, and would be managed by the local community.
6. **Project management:** Participants liked that there is clear leadership. Since 1995, the City of Bayard has been the lead agency in trying to resolve wastewater issues. The synopsis on this project is very clear, participants noted. It specifies what would be done, and some participants liked the specifics of the project, feeling it was innovative.

**Concerns:**

1. **Water use:** While some participants supported this project, they did not feel it was a complete solution. This project does not include use of all of the effluent, and does not put to beneficial use the 14,000 acre feet of water allowed by the AWSA. For the next 20 years, water is subsidized for residents, and there was a question as to how much water is saved.
2. **Infrastructure cost:** Some participants felt a cost-benefit analysis would be useful, as there was a concern that the infrastructure and infrastructure maintenance costs may be too large for the recycled water supply needs. Some also wondered if there was an overlap between this and the Grant County project, and, if so, whether costs would be duplicated. Finally, there was a concern that the maintenance and operation costs would be passed on to the taxpayer.
3. **Project design:** The use of gravity instead of power to recharge the aquifer (i.e., to allow the water to go downstream from the start) is a good idea, but there was a question as to where the pipes would go. There was also a concern that easements may not be obtainable, and that the acreage wouldn't use up the water that comes from the plant.
4. **Priorities:** Some felt the Gila River needed to be addressed first, and that there are health issues around treated water for public places. One suggestion was that a water exchange with Freeport may be an easier solution.

**Questions:**

Does the project assist the Hurley water system? Can this project be combined with the Grant County Project? Is this better than a regional approach? How much potable water would be saved by implementing this project? What will happen to the excess effluent? Will those in charge work with the mine to accept it? Is there enough water to serve the project/will it use all of the effluent? How many people will be affected? If it is mandated, someone will have to fund it, won't they? Is Bayard going to charge the consumers for the effluent? Has this funding need been met with the ONRT settlement or do they need this money as well? Does this project come under the AWSA?

## Deming Effluent Reuse

### SUMMARY INFORMATION

Project submitted by: Lawrence Brookey, Public Works Director, City of Deming

Project budget: \$3 million

County/counties affected: City of Deming, Luna County

Water Utilization Alternative Project

Tier 2 ranking points: 41

### PROJECT DESCRIPTION

This project will reduce demand on the municipal potable water distribution system, on Deming's municipal wells, and on the Mimbres aquifer by expanding Deming's reclaimed wastewater effluent reuse irrigation system. The expansion will add parks and recreational facilities currently served by potable water, and will supplement supplies with storm water from storm water retention ponds. This project will require the addition of 20,000 feet of pipe to the existing reclaimed water reuse system along with a chemical feed station and ancillary facilities for disinfection.

### TOWN HALL INPUTS

#### **Deming Effluent:**

#### **Likes:**

1. **Water use:** Some participants liked the water-reuse aspect of this project, feeling that it would extend the life of the groundwater, was "just as good" as Bayard's proposal, and would also use storm water. Storm water would be used for retention ponds. Some people liked that this project would not use AWSA water.
2. **Benefits:** Currently 900 acre feet of pumped potable water currently goes to irrigation, and the hope was to use effluent water instead. This project would also save 328 acre feet of water per year. Recreational facilities, sports parks, aquifer recharge, irrigate city owned farms, and the conservation of ground water are also clear benefits, as well as providing more water for the ducks.
3. **Efficient:** This project would expand a system that is already in place, reduce demand on potable water, all while looking ahead to future demands on Deming's system. Responsible use of their water resources will

make Deming less inclined to cross the divide to take water reserved for others. This project would also require minimal infrastructure.

4. **Project Design:** Reduction of wear and tear on the pumping system would result from this project. It is also a proven system which could make funding from all sources more available. And it would provide beautification to the city
5. **Benefits:** This project would benefit a large number of people.
6. **Community support:** Some participants felt this project would allow for economic growth that would benefit future generations. Others liked it because they wanted their neighbors to prosper.

**Concerns:**

1. **Collaboration:** Some participants felt water reuse projects could be put under the conservation fund project(s). Others were concerned that there were municipalities missing who needed input as well, including: Columbus, Lordsburg, and Reserve.
2. **Water use:** The 14,000 acre feet of water allowable by the AWSA would not be put to beneficial use by this project. And there was a concern as to whether current recharge from effluent would be lost?
3. **Cost:** Some felt a cost-benefit analysis would be useful, and there were concerns about potential infrastructure maintenance costs. Others also noted that the project did not project potable water savings.
4. **Misc:** It was noted that the power plant has contracted for one million gallons of water per day, but uses only half of that now. Some also felt concerned that there would be inadvertent consumption of treated water (perhaps by children). Also, this project is not from the Gila basin.

**Questions:**

Are they using all of the effluent now? Are there existing retention ponds? Would municipalities consider alternatives to chlorination? How does this relate to the big picture? Will there be enough money? Is this a priority? Why is 1,000 acre feet per year water saved considered small?

## Grant County Water Commission Infrastructure

### SUMMARY INFORMATION

Project submitted by: Alex C. Brown, Chair, Grant County Water Commission

Project budget: \$30,123,297, half of which (\$15,061,648) is sought from AWSA funding

County/counties affected: Grant County

Water Utilization Alternative Project

Tier 2 ranking points: 44

### PROJECT DESCRIPTION

This project would improve public water supplies that serve 26,000 people in central Grant County. The project proposal has two principal elements:

1. A new wellfield near Grant County Airport.

Construction of this well field would make 193 acre feet of water from existing water rights immediately available to Hurley, which does not have its own water supply. The well field would include three wells, a treatment facility, other necessary infrastructure, and a pipeline to Hurley.

This well field would also provide a means of diverting an additional 750 acre feet of water per year of new water rights based on clean water returned to the regional aquifer by the Silver City wastewater plant. This makes the total anticipated amount of water available 943 acre feet per year. An application to the State Engineer for return-flow credits is in development.

2. An intercommunity pipeline.

This pipeline would also link the new well field with Bayard, Santa Clara, Silver City, and adjacent unincorporated areas. It would deliver water as needed by all these communities to supplement their own supplies. In every case, each community would continue to manage its own established supply and system.

Substantial hydrological work has been performed to confirm the feasibility of the project. The improvements of this project are more than sufficient to meet the needs of public water supplies in central Grant County for the next 40 years, the standard planning horizon for water use in New Mexico.

The project can be staged in four phases.

## TOWN HALL INPUT

### *Likes:*

1. **Collaboration:** People liked that this proposal called for a regional approach. Some noted that the project supports the 40-year water plan and provides an alternative water source beyond the current wellfield. They commented that it is a state-supported, state funding test well. This project supports meeting a deadline to provide water to Hurley. Some participants said that Bayard fully supports project, and has supplied emergency water to Hanover Water Association. People liked that this is a four-phase project with additional funding from other sources. People noted that the state engineer has been asking for this kind of regionalization of infrastructure. The project would create a regional water system, reflect long-term planning, connect with other projects in a collaborative effort.
2. **Community support:** Some people liked that the project would complement an approach that includes return credits and allows for economic development. It represents good planning in emergencies, some people noted, and addresses urgent needs. It would help a community that is going to “hit the wall” in the immediate future in terms of water supply. Some participants noted that the project would reduce reliance on the mining industry.
3. **Size of benefit:** People liked that the project assists multiple municipalities to have a sustainable water system, benefiting 40% of the regional population, at a cost of only 22% of the AWSA funding. Some noted

that it provides long-term supply for Silver City and the mining district communities. People noted that, in the future, the water system could tie in about one third of the population of the four-county region.

4. **Efficient:** People liked that some studies are already complete, with one phase funded and constructed to provide water to Hanover. People also liked that the project would diversify the sources of water across the system.
5. **Cost:** Some people noted that the proposal only asks for half the budget, meeting the rest with cost sharing. They liked that the four phases distributes funds over time and allows for grant opportunities. Supporters liked the cost-benefit.
6. **Environment impact:** Some participants said there were no negative ecological effects.

**Concerns:**

1. **Cost:** Some participants found this project very costly, and they questioned its feasibility. They were concerned that there is no conservation provision in this project; instead it represents communities getting their water projects funded. Some participants would prefer to see this funding go to projects that maximize the return on the funding. Some worried that if the AWSA funding is not made available the communities of Bayard, Hurley and Santa Clara, they will not be able to address their water needs.
2. **Water rights:** Participants noted that water rights for this project were created from return credits; water rights and actual water are two different things.
3. **Project design:** Is there a better way to use that 750 acre feet of effluent and avoid contaminating the ground water table, some asked? People were concerned with how long the project would take to carry out? It does not develop new water, and some believe it is a waste of resources to pour water down and drill new wellfield to recapture the water that may not be available. Others were concerned that additional pumping will lower the water table.
4. **Intent:** This project is distant from AWSA intent, some noted, with no water savings.

**Questions:**

1. **Water rights:** Who owns 193 acre feet now? Is it new water or return flow effluent? Will the water rights come through?
2. **Project design:** Does this project meet the water supply and demand issue? Is the pipeline feasibility worked out with construction and easements?
3. **Cost:** Can Hurley get their water for a more reasonable cost elsewhere?
4. **Collaboration:** Why aren't leaders working with Freeport McMaRon on an exchange instead? Could this project be combined with a water savings project? How will this regional project support the water associations?

# WATERSHED IMPROVEMENTS

## Catron County Watershed Improvement

### SUMMARY INFORMATION

(Project also titled: “San Francisco Watershed Treatment: Mineral Creek, Dry Creek, and Devils Creek”)

Project submitted by: Hugh B. McKeen, Chairman, Catron County Commission

Project budget: \$8 million (note: total cost unknown, analysis will determine true cost)

County/counties affected: Catron County

Water Utilization Alternative Project

Tier 2 ranking points: 32

### PROJECT DESCRIPTION

The hope of this project is to restore the three watersheds to create a healthy forest much like it was 100+ years ago. We will remove woody growth; pines and firs in the upper watersheds and pinon and juniper in the lower watersheds. Our present unhealthy forest has 500 to 1000 trees per acre; a healthy forest in this rainfall area should have 40 to 80 trees per acre.

Forests this thick have a monoculture, creating a sterile environment, void of wildlife, dried up springs, more erosive flooding and creates the advent of catastrophic fires. Reducing this woody growth will create more forbs and grasslands to allow the percolation of water into the underground aquifer and increase stream flow. A healthy forest environment will not have endangered species; will have less severe flooding and less chance for catastrophic fires.

The forest growth will be reduced using fire management as well as mechanical and hand thinning. Wherever possible, wood products such as firewood or lumber will be harvested prior to burning. Having a saleable product helps the economy and jobs and will offset the cost of thinning the forest.

Past watershed projects have been small and scattered throughout the forest. Treating an entire watershed will be a first and prove conclusively that our stream flow can be increased. Years ago Mineral Creek and Deep Creek had year round stream flow all the way to the San Francisco River. Trout fishing was a common thing in Mineral Creek, presently you might find fishing 10 miles upstream.

Presently there are two watershed projects ongoing in this area sponsored by Catron County, Forest Service, San Francisco Soil & Water Conservation, New Mexico Environment Department and area citizens.

## TOWN HALL INPUTS

### *Likes:*

1. **Restoration:** All groups were in agreement that National Forests are a precious asset that we need to maintain. Watershed restoration is one of the best things we can do (especially if human influence has caused the current unhealthy situation), and some participants liked the scale of this project – that it would treat the entire watershed and would impact three watersheds.
2. **Positive Impacts:** The forest management offered through this project would have multiple beneficial uses. A healthier watershed would have positive impacts downstream, offering better utilization by wildlife, improved hunting and the return of trout fishing, and offer improvements to other recreational uses.
3. **Better stream flow:** This kind of project should serve to flatten the hydrograph, some participants noted, which would both increase stream flow and aquifer recharge. It would also result in less severe flooding.
4. **Decrease catastrophic fires:** Some participants believed that forest thinning and fuel-load reductions are badly needed in many areas of Southwest New Mexico. Forest density and fire risk need to be addressed and this project would decrease the possibility of catastrophic fires.
5. **Job Creation:** The project would create jobs that have been lost in Catron county, and offer economic development opportunities via selling forest products. People liked these factors.
6. **Collaboration:** This project would offer good collaboration opportunities to join with other projects, including landscape treatments for entities that on their own cannot afford the funding.
7. **Common sense:** Some participants saw this project as a common sense, proven approach with a reasonable estimated cost. It combines study and application of techniques to improve the watershed, and would provide empirical data as to the success of the project. The work could also grow.

### *Concerns:*

1. **More Detailed:** Some would have liked more detail on the project, including seeing evidence of the 500 to 1,000 trees per acre. While some felt the details in the proposal would probably help justify this project, they would like more detail on mechanical thinning. People wanted a visual of how big the area is so they could understand the size of the project. Some recommended inclusion of biological studies.
2. **Labor Intensive:** Large portions of watersheds are in wilderness area, which would make thinning extremely labor intensive, some participants said. If it is economically unfeasible to haul wood out of the forest, there is a concern that burning the wood in the forest will produce smoke in the communities. Steep areas are difficult to manage.
3. **Regulations:** Harvesting of the forest products requires a lot of USFS paperwork and a lengthy approval process. Existing regulations may make doing anything to improve the watershed difficult if not impossible.



Who would benefit from money made on forest products? Participants noted that this project would have to collaborate with the Forest Service. They also noted that the endangered species act to be applied.

4. **Costs:** Some participants were hesitant to support this project since the total costs are unknown. They felt it was premature to fund a project with an unknown analysis outcome. The project is not located in the Gila National Forest priority watersheds, and therefore may not be the best use of resources. The project may not be a priority for NEPA funding. Sustainability of the project was not addressed in the proposal summary, participants noted. A cost-benefit analysis needs to be conducted, participants said, because this would be a lot of money to put into a small area.
5. **Controversial:** There is a fear this project could get hijacked and go into litigation by those who don't want it to happen. There are multiple opinions regarding what constitutes the optimal condition of the forest. Participants recommended using the best science available. There is dispute on how effective this type of treatment can be. Some worried about the implications of wording: "A healthy forest environment will not have endangered species."
6. **Water usage:** This project doesn't address the 14,000 acre water feet available through the AWSA. It doesn't develop AWSA water.
7. **Water supply impact:** There is a concern as to whether this project will actually increase the water supply. It doesn't talk about how it will create more water. There is no proven water yield due to treatments of this nature, some participants said. This project relies too much on the notion that there will be a water yield improvement versus improving the watershed conditions. The proposal presupposes an outcome of water yield so that watershed restoration is eligible for AWSA funding (see footnote #58 of NM First town hall report).
8. **Project objectives:** Some participants would like to see fire incorporated as management objective. The project seems redundant with the two other projects noted in the proposal. Some people worry that the project is expecting too much as end goal. Some would like to see learning and management objectives. Watershed treatment needs to be site specific with multiple techniques and not a universal approach, some participants said.
9. **Project scope:** There needs to be geographic equality, some people believed. This project would only affect Catron county. Of the three watersheds that have been selected, have they been identified as priority watersheds for restoration in a larger landscape strategic plan?
10. **Lack of watershed management:** Some participants believed that if this work is not done then the area is going right back to letting "bad management" handle the forest. If this work is not done then the forest will be worse. There needs to be thinning and restoration, participants said.

**Questions:**

1. **Cost:** How was the \$8 million dollar figure derived? Will there be a charge to harvest the wood products, and if so, how much would it cost? Are the NEPA costs included in this project? Will it actually require a long term NEPA analysis?
2. **Benefits:** Will increased yield of water flowing to Arizona benefit New Mexico? (and then they answer the question: yes, if it is retained in the system longer to benefit ground covers, wildlife, etc.). Will it be worth it to haul the wood out?
3. **Priorities:** Will economics be the highest priority considered throughout the entire process? Or, when making process decisions, will it be the health of the forest?
4. **Protocols:** What is the protocol for determining what to think on the forest? What are the mechanical means for thinning? Will this create some logging?
5. **Scope:** How many acres are involved? Would like more details on this, why isn't all of the Gila forest not involved in this? Is the USFS already a partner in the proposal? If not, it should be.
6. **Water Yield:** What type of evaluation procedure will prove conclusively that it is a water yield situation?
7. **Other considerations:** Try to follow the Forest Restoration Initiative and how that's working in Arizona. Consider setting up prioritization on these projects (would apply to all watershed projects). Isn't there a lot of other funding venues that could fund a project like this? Why do we need it in the AWSA? It seems like containing the river water would be a priority. There is funding available through the CFRP, and RAC (secure rural schools act).

## Grant Soil and Water Conservancy District Watershed Project

### SUMMARY INFORMATION

Project submitted by: Rebecca Benavidez, Project Manager, Soil and Water Conservation District

Project budget: \$1,210,500 AWSA funding, \$181,000 match

Counties affected: Grant (Mangas Watershed tributary of the Gila River); Sierra (East Fork Gila River)

Water Utilization Alternative Project

Tier 2 ranking points: 50

### PROJECT DESCRIPTION

The Grant Soil and Water Conservation District (GSWCD) and the New Mexico Forest Industry Association (NMFIA) are proposing two complementary projects under AWSA to improve forest and watershed health and enhance water yield. The projects will therefore mitigate potential impacts from actual water development that may occur under the AWSA. The GSWCD and NMFIA projects reduce the potential for catastrophic wildfire, improve forest diversity, and support the communities that depend on the economic benefits and clean water supplied by resilient, healthy forests. The two proposed projects incorporate three paired watershed studies to

quantify watershed hydrology before and after prescribed burning and mechanical thinning, in ecotypes ranging from relatively low elevation pinyon/juniper stands to mid-elevation mixed Ponderosa and high elevation Ponderosa/mixed conifer. The GSWCD project includes two paired watershed studies on current projects, one in high-elevation mixed-conifer in the East Fork (Gila River) headwaters, and the second in pinyon/juniper woodland in the Burro Mountains region of the Gila watershed. A paired watershed study design analyzes pre- and post-treatment hydrologic and climate data to evaluate short- and longer term (10-year) responses in soil moisture and in ground- and surface water. Site climate and hydrology are monitored with an instrumentation network of recording soil moisture sensors, water level transducers, and weather stations. The work is supported by the Gila National Forest, NM State Forestry, NMSU's Climate Center, and landowners and grazing permittees. Continued input on land management and economic development potential will be sought from resident stakeholders as well as agency and forest industry staff.

## TOWN HALL INPUTS

### *Likes:*

1. **Pilot:** Some people felt this project could serve as a pilot for other conservation districts.
2. **Data:** This project already has historical data collected, and the project has started documenting baseline data. People thought the community might get some useful info on burning and thinning. One group commented that, at least, the authors propose to do the studies before implementing the project. People liked that it had a before and after study, over an extensive period of time. Evaluations will be quantitative and objective based on instrumentation derived data rather than subjective. Quantifies the amount of water that we produce from the watershed, helps justify these kinds of projects. Measuring runoff before and after treatment, describes benefits. Collects scientific data that is locally applicable. Allows us to compare results in high conifer and low pinion juniper habitats.
3. **Science contribution:** Some participants like that this proposal addresses a gap in the best available science in vegetative manipulation and hydrology.
4. **Maximizing investment:** More than shove-ready, this project already in progress. People thought it made sense to see this project through if it is already started, or at least increase the funding. There is already a commitment from several agencies that are already invested in the process for four years.
5. **Cost:** Some people thought the project was not very expensive and liked the matching funds component.
6. **Scope:** Some participants like the idea of mechanical thinning for a healthier forest. This project addresses two specific ecotypes. Some thought it was a good idea to have more study on the topic of increasing water yield by watershed treatment. They liked that it would be a long-term project, a paired watershed approach. Goal is to improve watershed health and enhance water supply. Great science behind it.
7. **Funds:** Both incorporate matching funds. There is a potential for economic development.
8. **Benefits:** Ecological benefits to the project, including fire. Significant economic advantages. Does not limit logging, grazing, or fire for vegetative manipulation. Improves forest and watershed health.

9. **Vetting with others:** Have consulted land owners and grazing permittees and will continue to consider land management options. Has been adequate public involvement in this project.
10. **Decrease catastrophic fires:** Forest thinning and fuel-load reductions are badly needed in many areas of Southwest New Mexico. Forest density and fire risk need to be addressed and this project would decrease the possibility of catastrophic fires.
11. **Collaboration:** Some participants liked it that the project leverages paired watershed projects and in a collaborative nature. Some liked the two paired studies in two ecotypes in the Gila. They liked that there appears to be widespread support from diversity of agencies.
12. **Stakeholder input:** People liked that the proposal called for ongoing commitment to hear from resident stakeholders.

**Concerns:**

1. **Scope:** Ten years is not really a long enough time for the treated watershed to reach equilibrium, some people said. Some people said there are no high elevation mixed conifer ecosystems outside the wilderness that we can work on, therefore studying this ecosystem does not make sense. “Mitigation” implies there is going to be damage done as a big project.
2. **AWSA usage:** Proposal doesn’t address the 14,000 acre feet of water. Doesn’t describe how it is going to produce AWSA water. Statement that this project will mitigate impacts from AWSA water is premature, as AWSA projects haven’t been selected.
3. **Cost:** Millions of dollars may be spent on the study with inconclusive results due to too many variables. Will there be enough money to do this project?
4. **Study:** Are we reinventing the wheel? Have similar studies been done on similar watersheds? Are these necessary studies? Studies should not be a precursor to other watershed restoration projects. GSWCD study mentions work on the East Fork of the Gila River in Sierra County, which is not one of the four counties in the settlement. These studies are redundant in that these studies have been done elsewhere. All studies have a presupposed outcome, therefore these are invalid scientific studies. If we don’t do these projects we will never know conclusively if the science is proven.
5. **Methodology:** The methodology needs to be looked at. Bulldozers destroy the topsoil. Not enough information to assess the protocols for what’s going to be treated and how they’re going to be treated
6. **Duplications:** There appears to be a duplication of efforts in the whole watershed area – can we consolidate, combine and/or coordinate studies? Comparable to a project that the ISC has.
7. **Regulations:** Have to work with the USFS. Would involve NEPA (already completed on this project). Collaboration between government agencies.
8. **Outreach:** Not enough public outreach for a very, very good demonstrations of projects.

9. **Outcome:** having a dead forest. . Concerned that we don't know how the science of evaluating outcomes is going to be done. Mechanical thinning would lead to road building and erosion.

**Questions:** Is this truly a paired watershed study? Consider lumping together watershed restoration projects across the basin. How do these studies meet the water supply demand? Why would we spending the money to restudy these areas? What is the cost/benefit analysis? How and why is the budget for this project so different from the next project which is supposed to be a partner project? How were these watersheds selected or prioritized? How does this project fit into the water restoration in the region? Is this project going to require NEPA analysis? Has "4-FRI" been considered as a possible model for watershed restoration projects?

## New Mexico Forest Industry Association Watershed Improvement

### SUMMARY INFORMATION

Project submitted by: Jose Varela Lopez, Executive Director, New Mexico Forest Industry Association

Project budget: \$2,270,000 AWSA funding, \$422,000 match

County/counties affected: Catron County, San Francisco River Basin

Water Utilization Alternative Project

Tier 2 ranking points: 32

### PROJECT DESCRIPTION

The New Mexico Forest Industry Association (NMFIA) and the Grant Soil and Water Conservation District (GSWCD) are proposing two complementary projects under AWSA to improve forest and watershed health and enhance water yield. The projects will therefore mitigate potential impacts from actual water development that may occur under the AWSA. The NMFIA and GSWCD projects reduce the potential for catastrophic wildfire, improve forest diversity, and support the communities that depend on the economic benefits and clean water supplied by resilient, healthy forests. The two proposed projects incorporate three paired watershed studies to quantify watershed hydrology before and after prescribed burning and mechanical thinning, in ecotypes ranging from relatively low elevation pinyon/juniper stands to mid-elevation mixed Ponderosa and high elevation Ponderosa/mixed conifer. The NMFIA project, in mid-elevation mixed Ponderosa forest, initiates forest thinning and restoration work on the San Francisco River watershed near Reserve, NM. A paired watershed study design will analyze pre- and post-treatment hydrologic and climate data to evaluate short- and longer term (10-year) responses in soil moisture and ground- and surface water. Site climate and hydrology will be monitored with an instrumentation network of recording soil moisture sensors, water level transducers, and weather stations. The work expands ongoing restoration and research at other sites, described in the GSWCD project proposal, supported by the Gila National Forest, NM State Forestry, NMSU's Climate Center, and landowners and grazing permittees. Continued input on land management and economic development potential will be sought from resident stakeholders as well as agency and forest industry staff.

## TOWN HALL INPUTS

### *Likes:*

*(Note: Two groups opted not to answer this question in detail, saying that their “likes” for this project were the same as the Grant Soil and Water Conservancy District proposal.)*

1. **Research first.** People liked that this proposal called for extensive research, including the paired watershed studies. Participants liked that the evaluations would be quantitative, before and after, and would provide useful information on burning, thinning, and water supply.
2. **Wildfires.** Some participants believe that forest thinning is badly needed to prevent catastrophic fires – especially in this large forest. They favored the project as a step in the right direction.
3. **Funding.** Some participants liked that this proposal is not very expensive and has a matching funds component.
4. **Misc.** People also liked that proposal authors already consulted with land owners and grazing permittees. It might also compliment a similar project in the mainstream Gila watershed.

### *Concerns:*

1. **Costs.** Some participants thought this proposal was very costly and could be inconclusive because of too many variables. Others were concerned about ongoing maintenance costs.
2. **AWSA.** Some participants did not like that this project would not develop AWSA water.
3. **Duplication and vagueness.** People noted that there appears to be considerable duplication among all the watershed projects and recommended consolidation where possible. The watershed proposals were also seen as vague by some participants. Scope, size and location were unclear for this project, according to some participants.
4. **Research.** Some participants thought these studies appeared redundant with other work, or they presupposed an outcome.
5. **Misc.** At least one participant would favor the Soil and Water Conservation District over outside entities to do watershed work. Project would involve NEPA. Not enough public outreach. ISC commissioners should stress the importance of developing public support for demonstration projects.

### *Questions:*

How do these studies meet a water supply demand? Would the project offer economic development benefits from the biomass generated? Has any of this research already been done? Why spend money on this? Does “mitigation” imply there will be damage done? How do you mitigate damage done by restoration? Is this an opportunity for the NM Forest Industries Association to make money? How were these locations selected? Is the Burro Mountain project in the Gila Basin or the Mibres Basin or both? What is the greater good among methods?

# New Mexico State University Watershed Improvement

## SUMMARY INFORMATION

Project submitted by: Drs. Douglas Cram & Carlos Ochoa, New Mexico State University

Project budget: \$2.2 million over 10 years

County/counties affected: All four Counties

Water Utilization Alternative Project

Tier 2 ranking points: 47

## PROJECT DESCRIPTION

We propose a watershed restoration project that will potentially increase the water supply and contribute to meeting existing and future water demands in the region. This project will also generate new and critical knowledge and understanding of the hydrologic response following thinning treatments in the Gila Basin. Increasing the water supply to meet an ever growing demand will be beneficial and useful for New Mexico stakeholders in the region. Increasing knowledge and understanding of watershed processes following thinning treatments will be useful for state and local managers, as well as policy makers. Monitoring data and analysis will provide accountability for this and other similar watershed restoration projects.

Watershed management using forestry practices such as thinning has been identified as an appropriate tool to increase water supply, protect and improve water quality, and generally improve the overall condition of the watershed. Tree densities in forests and woodlands are currently outside the historic range of natural variability. As a result, water losses due to tree uptake (transpiration) and evaporative losses from tree canopy interception are elevated. Our proposal calls for a thinning prescription designed to reduce tree densities to historic levels in forests and woodlands. This will augment the water supply through the reduction of evapotranspiration losses as well as reduce the risk of crown fire. Watersheds will be instrumented to monitor changes in the water budget following restoration treatments. Along with these benefits, forest restoration work will assist the local economy by providing employment opportunities for local labor.

## TOWN HALL INPUTS

### *Likes:*

1. **Clarity:** Some participants said this proposal was clearly explained and offered a more holistic view. Some noted that it would offer potential for improved forest health and possibly improved water supply. They liked that it would reduce forests to historic tree densities, and that there is a clear plan for how to thin.
2. **Economy:** People liked this it would create local jobs.
3. **Research:** Some people liked that the project would study different types of trees, elevations, and ecosystems – as well as current and future water demands. They liked that it would be quantitative and based on instrumentation. NMSU seen as a good partner, and some were pleased that students might work on this research. Some thought the community might get useful information on tree thinning and were pleased it would gather data on “evapotranspiration.”

4. **Cost:** The budget seemed reasonable to some participants, noting that the project will for over 10 years.
5. **Regional:** Some people liked that the project took a four-county approach and included the State Land Office.

**Concerns:**

1. **Redundancy and collaboration:** People saw all the watershed projects as duplicative. However, they wanted to see more agreement on methodology, if projects were combined. People were concerned about whether the researchers had coordinated with others including the U.S. Forest Service.
2. **Scope:** Some people were concerned about the closed Datil Basin proposed for the project. They wanted to make sure it is pertinent to the Gila/San Francisco Basin. Some opposed the location because project is outside the Gila/San Francisco Basin.
3. **Cost:** Identical concerns were raised for multiple watershed projects regarding high cost and fear of inconclusive results due to multiple variables. People also worried about “reinventing the wheel” by studying practices that have already been researched. People also worried about whether more money would be requested later. Some were concerned that there is no financial or in-kind match from NMSU.
4. **AWSA:** The proposal does not develop AWSA water. How does this study meet a water supply demand, some asked?
5. **Misc.:** Luna County may not benefit. Clarify which communities will benefit and exactly where the work will take place. Some people were concerned that this is an opportunity for NMSU to get research money and cover overhead. Others were concerned about how to determine the historical baseline. Others were concerned that mechanical thinning could lead to unnecessary road building and erosion. Some people preferred projects that also included prescribed burns in addition to thinning. Some noted that restoration is not mitigation for damages in the riparian system. Some called for clearinghouse on all national watershed restoration projects.

**Questions:**

Does watershed restoration qualify as water utilization or only as mitigation? How would this project fit into overall plans for regional watershed restoration?

## U.S. Forest Service Watershed Improvement

### SUMMARY INFORMATION

Project submitted by: Carolyn Koury, Watershed Program Manager, Gila National Forest

Project budget: \$8,405,940

County/counties affected: All four Counties

Water Utilization Alternative Project

Tier 2 ranking points: 21



## PROJECT DESCRIPTION

This proposal is for watershed restoration projects within U.S. National Forest System (NFS) lands administered by the Gila National Forest. Projects 1 (Snow Lake - \$1,005,940) and 2 (Burro Unit \$7,400,000) will extend the water supply through conservation. The Snow Lake project is designed to achieve a functional watershed, one that can retain greater amounts of water in the soil, stream banks, and main stream channels. A functional watershed, by providing increased storage, will also slow the rate of flow through the watershed, thus making more water available during low flow periods, and somewhat less water contributing to flood peaks. Whether a functioning watershed will produce an increase in total water yield cannot be predicted. The prescribed fires and thinning on the Burro Unit (Project 2) is a restorative measure that will also mitigate the effects of a catastrophic wildfire on the debris and sediment load, and on flood peaks in the Gila River. The overall water yield may not increase as a result of this work, however, as the project brings the various watersheds in the Burro Unit into the functioning watershed classification, the same water retention and release mechanisms are expected to occur, thus showing significant water conservation. The proposal also includes provision for Forest Service compensation (cost unknown) for other non-forest proposals located on forest lands. The Forest Service will require that they be reviewed and administered, and have Forest Service oversight.

## TOWN HALL INPUTS

### *Likes:*

1. **Restoration:** Participants felt that the watershed needs improvement everywhere, therefore watershed restoration is a worthy goal
2. **Positive Impacts:** This project may increase aquifer recharge, provide increased water storage, and decrease wildfires. Along with ecological benefits, an improved watershed also improves hunting and fishing and recreational activities. This proposal would also create jobs and build economic development.
3. **Ecological health:** This project would promote conservation of the existing forest. Improvement in ecological health is a beneficial use of water and funding; and this project would qualify as a water utilization project.
4. **Common sense:** Participants saw the approach proposed by this project used in other water sheds, and felt it was a proven approach. They liked that it has a specific goal of meeting defined, healthy watershed functions. Forest hydrologist has substantial experience with this sort of work, and participants appreciated that it was a forest restoration initiative conducted by the Forest Service itself. They also felt it was a reasonable estimated cost, and the NEPA has been completed for this project.
5. **Priorities:** Participants appreciated that the work in this project would focus on a high priority watershed. And that it deals with Burro Mts., which are in desperate need of help (though one group commented that they liked the Snow Lake component more than the Burro Unit component). One group noted they were more concerned with the condition of the forest than water yield.
6. **Water yield:** Proposal states that the project may not increase the overall amount of water available, and participants appreciated this honesty. The project will help retain water in the watershed,

**Concerns:**

1. **More detailed:** Some participants wanted more information, feeling the summary was too vague to assess, and even that what was being requested/what work was to be done, was unclear. Request is not understood from the summary, what work is to be done. Also, the real cost of the project was unknown. There was also the question of how the post-restoration management would be addressed. And a few groups commented on not understanding what "Forest Service compensation for other non-forest proposals" meant. Overall, the technical deficiencies in this proposal weighed more heavily in the rankings than any merits this project may have.
2. **Water usage:** This project, some participants felt, didn't address all of the 14,000 acre feet of water. Also, there was a concern that the United States Forest Service might be trying to conserve their own resources at the expense of the AWSA (though there was a note that the federal government won't fund such projects). There were a number of comments that AWSA funding should be used elsewhere, and not on this project. And that funding from this project should come from somewhere else.
3. **Water supply impact:** Some participants questioned the assertion that this project would extend the water supply by conservation.
4. **Other impacts:** This project would result in heavy equipment disturbance in the forest. In general, existing regulations may make doing anything to help the watershed difficult if not impossible. Also, too much clearing could cause more erosion if not designed appropriately. And one group noted that this project did not provide benefit to Luna county. Finally, there was a concern that all aspects of fire management needs to be components of this study.
5. **Costs/sustainability:** Some wanted a cost/benefit analysis conducted for this project while others noted that sustainability of the program is not addressed.

**Questions:**

Will economics be the highest priority considered throughout the entire process? How many acres are involved? Why are we using AWSA funds on Forest Service land? Consider cost-benefit for acres treated for benefit. Is there a mechanism for the watershed projects to be funded with non-AWSA money through congressional action? Would it be possible to do a small part of this project and see what happens? Why Snow Lake? Aren't there other funding sources available for this type of project?

## CONCLUSION

This summary represents an attempt to capture concerns and priorities from participants at the February 2012 town hall. The level of civic engagement in the four-county region should be applauded.

# APPENDIX

## Town Hall Participants

**Robert Agnew**

Gila Basin Irrigation Commission

**Elizabeth Bardwell**

Audubon

**Tom Bates**

Gila San Francisco Water Commission, Vice Chair

**Ty Bays**

Freeport McMoran Copper and Gold

**Alan Berg**

Azurite Consulting & Management LLC

**Angela Bordegaray**

NM Interstate Stream Commission

**Shanty Bowman**

Luna

**Allison Boyd**

Grant

**Gabriel Boyle**

Luna County Planning Director

**Lawrence Brookey**

City of Deming

**Alex C. Brown**

Silver City, Town Manager

**Mary Burton Riseley**

Grant

**Allen Campbell**

Gila Hotsprings Structural Steel

**Dominique Cartron**

Daniel B. Stephens & Associates

**Kim Clark**

SCR Association of REALTORS

**Van Clothier**

Stream Dynamics, Inc.

**Martha Cooper**

The Nature Conservancy

**Douglas Cram**

New Mexico State University

**Javier Diaz**

Luna County Commissioner

**Robert M. Esqueda**

Silver City, Director of Utilities

**Johnnie Frie**

Duncan Valley Electric

**Lois Fuller**

Catron

**Jeremiah Garcia**

New Mexico Gas Company

**Marco Grajeda**

Office of U.S. Senator Tom Udall

**Anthony Gutierrez**

Grant County Planning Director

**Steve Harris**

Far-Flung Adventures

**DeLoyd Haynew**

Luna

**Steven Hulsey**

1892 Luna Irrigation Ditch

**Velva Hurt**

Hurt Cattle Company

**Jim Jackson**

Columbus Electric

**Buddy Jensen**

Hidalgo

**Stanfird Jones**

Bootheel Bank

**Nancy Kaminski**

Audubon Society

**Mark Karagas**

Grant

**Brett Kasten**

Grant County Commission

**Judy Keeler**

Hidalgo

**Mayor Charles Kelly**

City of Bayard

**Ed Kerr**

Hidalgo County Commissioner

**Janice Kiehne**

1892 Luna Irrigation Ditch Association

**Carolyn Koury**

Gila National Forest

**Kelly Kuentler**

Luna County Manager

**Mario LaFragola**

Deming-Luna County Economic Development Corporation

**Latesha Latesha**

Catron

**Vance Lee**

Hidalgo

**Tom Lovett**

Hidalgo

**Priscilla Lucero**

SWNM Council of Governments

**Kim McCreery**

New Mexico Wilderness Alliance

**Rick McInturff**

City of Deming, Administrator

**Martin McMillan**

Office of State Engineer, Water Resource Specialist

**Christy Miller**

Grant County Commission

**Mary Alice Murphy**

The Grant County Beat

**Edward Nail**

1892 Luna Irrigation Ditch Association

**Carlos Ochoa**

New Mexico State University

**Robert Offutt**

Columbus Electric Cooperative, Inc.

**David Ogilvie**

Gila Basin Irrigation Association

**Dara Parker**

Office of US Senator Jeff Bingaman

**Gabriel Ramos**

Grant County Commissioner

**Shelley (Sam) Redford**

Redford Associates

**Mary Reece**

U.S. Bureau of Reclamation

**Craig S. Roepke**

NM Interstate Stream Commission

**Peter Russell**

Town of Silver City Director of Community Development

**Jon Saari**

Grant County Manager

**Dutch Salmon**

High Lonesome Books

**Arlene Schadel**

Gila Economic Development Alliance

**Todd Schulke**

Center for Biological Diversity

**Aaron Sera**

City of Deming

**Gerald Shultz**

Grant

**Mayor Andres Silva**

City of Deming

**Allyson Siwik**

Gila Conservation Coalition

**Roger Skaggs**

Pleasanton Eastside Ditch Company

**Linda Smrkovsky**

Deming Luna County Economic Development

**Ellen Soles**

Northern Arizona University

**Don Stailey**

Gila Farm Irrigation Association

**Donna Stevens**

Upper Gila Watershed Alliance

**John Strand**

Luna

**Deborah Stockton**

Luna

**Kenneth Stockton**

Luna

**Topper Thorpe**

Gila Basin Irrigation Commission

**Terry Timme**

Joint Office of Sustainability

**Don Trammell**

Faith Community Continuing Care Community

**Larry Truax**

Luna

**Mike Weinberg**

Sierra Club Water Issue Chair Person

**Dennis Weller**

Upper Gila Watershed Alliance

**Gordon West**

Restoration Technologies

**Eleanor Wootten**

T&E Inc., Foundation